



Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and holding a beaker. The student on the left is partially visible, also smiling. The background shows laboratory equipment and shelves.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## SCHEDULE 26

Design Brief

September 2015



Department of Education

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# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## PART A

Overview

September 2015

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## **A1. PROJECT OVERVIEW**

### **A1.1 Project background**

- (a) Western Australia has some 797 public schools providing education services to over 283,000 Students. With Perth continuing to expand, the State has identified a specific ongoing need for world class teaching and learning facilities to respond to the rapid growth of residential developments across the outer metropolitan area.
- (b) The Project supports the Department's *Strategic Asset Plan 2013-2022*. The *Strategic Asset Plan* outlines the Department's asset portfolio investment strategy which is based on projections that include Student demand growth, enrolment pressure and availability of new school sites.
- (c) The building of any Department asset must take into account the Department's Strategic Plan for WA Public Schools 2012-2015, entitled Excellence and Equity, which is included in the Project Information. The plan aims to achieve excellence and equity through four priority areas:
  - (i) success for all Students;
  - (ii) distinctive schools;
  - (iii) high quality teaching and leadership; and
  - (iv) a capable and responsible organisation.
- (d) The Department's mission is for every child to be provided with a high quality public school education – whatever their ability, wherever they live, whatever their background. The Project must support this mission through the design, construction and maintenance of high quality School Facilities which meet community and government expectations.

### **A1.2 Procurement and delivery model**

- (a) Analysis conducted by SP&AS in collaboration with the Department confirmed that a package of schools delivered as a PPP under a 'design, build, finance and maintain' model would likely offer value for money to the State compared with traditional delivery models. This is due to the WOL focus of PPPs and the ability of the State to effectively transfer appropriate risks to the private sector.
- (b) The package of School Facilities which forms the Project has been developed to enable the private sector to maximise value for money to the State by allowing flexibility in the delivery program. Refer to *A6: Staging of Construction* of this Design Brief.

### **A1.3 Design Brief**

- (a) This Design Brief comprises the following parts:
  - (i) this Part A - Overview: which provides an introduction to, and overview of, this Design Brief;
  - (ii) Part B - General: which sets out the State's key design aspirations and principles, including for the management of design;

- (iii) Part C – Master Planning: which sets out the master planning principles and traffic management requirements for the Sites;
  - (iv) Part D – Functional Requirements: which sets out the State’s minimum functional design requirements for the School Facilities including the FF&E;
  - (v) Part E – Architectural Specifications: which sets out the general architectural requirements and criteria for the design, construction, commissioning and completion of the School Facilities and the Off-Site Infrastructure;
  - (vi) Part F – Landscape Specifications: which sets out the requirements for landscape and irrigation works for the School Facilities and the Off-Site Infrastructure;
  - (vii) Part G – Engineering Specifications: which sets out the general requirements and criteria for the design, construction, commissioning and completion of the Engineering Services for the School Facilities and the Off-Site Infrastructure;
  - (viii) Part H – Glossary: which sets out the defined terms used in this Design Brief; and
  - (ix) Part I – Appendices: which incorporates the Minimum Completion Tests, Room Data Sheets for Primary Schools, Room Data Sheets for Secondary Schools and Specific Layout Drawings.
- (b) This Design Brief outlines the State’s design aspirations and the minimum functional and technical requirements for the design and construction of the School Facilities and the Verge Infrastructure. The State seeks an innovative design response that goes beyond the minimum requirements and improves the outcomes for the State in terms of functionality, efficiency, amenity and aesthetics. The design, construction and maintenance proposition should aim to deliver qualitative and quantitative outcomes over the WOL of the School Facilities and the Verge Infrastructure.
- (c) In the event of any inconsistency, ambiguity or discrepancy between Schedule 27 (Services Specifications) and this Design Brief, this Design Brief applies, except to the extent that any part of Schedule 27 (Services Specifications) impose a greater or higher requirement, standard, quality, level of service, quantum or scope than any part of this Design Brief, in which case, that greater or higher requirement, standard, quality, level of service, quantum or scope prevails.
- (d) In the event of a conflict between any Quality Standards and other requirements of this Design Brief, the more onerous requirement must apply, that being the requirement which calls for the highest standard, unless otherwise agreed. The State has the right to select, and Project Co is required to provide, the option that may be the most costly or that which is most beneficial to the State.
- (e) Unless the context otherwise indicates, or where defined in Part H (Glossary), capitalised terms in this Design Brief have the meaning given to them in Clause 1 (Definitions) of the Deed.
- (f) Functional Areas and Functional Units capitalised in this Design Brief correspond to those described in Schedule 23 (Schedule of Accommodation).
- (g) In this Design Brief, references to a “Part”, “Section” or to an “Appendix” are references to parts, sections and appendices of this Design Brief and references to “Clause” and “Schedule” are references to clauses and schedules of the Deed.

## **A2. OBJECTIVES**

### **A2.1 Overall Project objectives**

The key objectives for the Project are to:

- (a) achieve functional educational facility designs that provide quality teaching and learning environments;
- (b) achieve value for money over the WOL of the School Facilities and the Verge Infrastructure pursuant to education outcomes;
- (c) improve efficiencies for the Department and School Staff in conducting the School Activities; and
- (d) achieve time and cost efficiencies in the delivery of a program of capital works through economies of scale.

### **A2.2 Development Phase objectives**

All aspects of the design, construction, commissioning and completion of the School Facilities and the Verge Infrastructure must aim to achieve the following Development Phase objectives, which align with the overall Project objectives. The Development Phase objectives are to:

- (a) deliver highly functional School Facilities that provide quality teaching and learning environments to promote the wellbeing of Students, School Staff and the community;
- (b) interpret and anticipate the specific needs of new and future technologies and learning methods, and ensure spaces have built in flexibility to accommodate these changes;
- (c) provide designs which respond to each individual Site and cultural context while conveying the civic role of the School Facilities within the communities;
- (d) provide designs which enable opportunities for shared community use of School Facilities and facilitate community engagement;
- (e) incorporate sustainability principles into the design of School Facilities and Verge Infrastructure, and maximise the opportunity for ecological sustainability initiatives during the Operating Phase;
- (f) provide a healthy and safe environment for all Users during the Term (including during construction of the Works, and during the Operating Phase);
- (g) utilise Best Industry Practices to deliver high quality design and construction outcomes which achieve value for money in the delivery of School Facilities; and
- (h) ensure a WOL approach is taken for the design and construction of School Facilities and Verge Infrastructure, including to ensure that the design and construction responds to Operating Phase requirements and objectives (including School Activities, the Services Requirements and all other requirements and objectives specified in or which could reasonably be inferred from Schedule 27 (Services Specifications) to deliver ongoing value for money to the State.

### **A3. MODELS OF EDUCATION**

The WA school system is based on the provision of separate primary and secondary schools. This is the preferred model for all new public schools. Generally, the planning for new schools assumes long term enrolments of 430 Students for primary schools and between 1450 and 1600 Students for secondary schools. The needs of schools with increased enrolments that surpass the capacity of permanent accommodation are met with the use of Transportable Units.

#### **A3.1 Primary schools**

- (a) Currently, primary education caters for children from Kindergarten (a stage of pre-compulsory education) to year 7 and generally aged between 4 years and 6 months to 12 years and 6 months. From 2015, primary education will cater for Students from Kindergarten to year 6, and year 7 Students will move to secondary schools.
- (b) Kindergarten education is available to all age eligible children, for a minimum of 15 hours a week and lays the foundation for schooling in the compulsory years.
- (c) There is a strong focus on purposeful, comprehensive and challenging learning programs, and on school and classroom environments that are intellectually, socially and physically supportive of learning.

#### **A3.2 Secondary schools**

- (a) From 2015, secondary schools will cater for children from years 7 to 12, and generally from the age of 11 years and 6 months. Learning programs from years 7 to 10 maintain the continuity of learning with primary schooling, while enabling a broader and more comprehensive understanding across curriculum areas to develop.
- (b) In senior secondary years (years 11 and 12), Students pursue courses and subjects of their choice in greater depth, including both academic and VET pathways. A wide range of programs ensure that Students are well placed to continue full time school to the end of Year 12, and make a successful transition into university, training, apprenticeships, traineeships and employment.
- (c) It is compulsory for children to attend school full time or undertake one of a range of approved education, training or employment options until the end of the year in which they turn 17 years and 6 months or until they reach the age of 18, unless they satisfy the minimum requirements for graduation from secondary school before then. Students also have the opportunity to continue with or re-enter secondary studies in learning environments which are more flexible than traditional secondary schools.

#### **A3.3 Alignment with the Australian Curriculum**

Curriculum areas and standards are prescribed by the *Australian Curriculum*, which sets out the core knowledge and skills that every child must learn in school. While every Student will be immersed in a well balanced curriculum, there are different priorities for different phases of schooling. The relative emphasis varies across the phases of schooling and is as follows:

- (a) literacy and numeracy, integrated across the curriculum, are priority areas in the early schooling years (typically Kindergarten – year 2, and into years 3 and 4);

- (b) the emphasis moves to encompass all eight Learning Areas in the upper primary years (typically years 5 and 6), and the first years of lower secondary schooling (typically years 7 and 8);
- (c) there is increasing emphasis in years 9 and 10 on creating opportunities for Students to choose learning pathways that build their individual needs and interest in secondary schooling, and lead to post school options; and
- (d) curriculum and learning program development recognises that each Student is developing and achieving in different ways, at different stages and at different rates.

### **A3.4 Independent Public Schools**

Currently 264 schools are classified as 'Independent Public Schools'. It is likely that schools in the Project, with community support, will apply for this status. The Independent Public Schools initiative provides greater autonomy and flexibility to schools. The initiative has provided enhanced staffing flexibilities for Principals and the capacity to operate with a one line budget.

### **A3.5 Students with disability**

Central to the WA school system is the requirement to cater for the different learning needs of Students. The Department no longer establishes traditional stand-alone education support schools, or education support centres that operate as separate schools on co-located school sites. Where the demographics require it, selected new secondary schools are to have additional accommodation capacity and the high level specialist facilities required to provide appropriate programs for 85 Students with disabilities and high needs.

### **A3.6 School Staff**

The Department has an average of over 35,000 full time equivalent staff and is the largest public sector employer in the State. Teaching staff are committed and highly skilled. Their top priority is to nurture Student development and raise standards of achievement.

### **A3.7 School instructional terms**

The schools operate on a four term year, with summer holidays in late December through to late January. In addition to the summer holidays, there are three lots of two week breaks in April, June/July and in September/October.



## **A4. STAKEHOLDERS**

### **A4.1 Stakeholder engagement objectives**

- (a) A stakeholder and community engagement strategy has been adopted by the State which requires open, transparent and inclusive engagement practices and methodologies to involve key Project stakeholders in the successful delivery of the Project.
- (b) The key objectives of the stakeholder and community engagement strategy are to:
  - (i) ensure the needs and expectations of Users are considered by Project Co during the Design Development Process in order to achieve the best outcomes for Users;
  - (ii) ensure that stakeholder involvement in and support of the Project is sustained during the Development Phase;
  - (iii) preserve confidence in the integrity of the stakeholder and community engagement by ensuring that commitments made to Project stakeholders are honoured and that good working relationships are maintained;
  - (iv) identify and respond to Project stakeholder concerns in a timely and responsible manner; and
  - (v) provide guidance, advice and support to Project Co as required.

### **A4.2 Project stakeholders**

A range of Project stakeholders have been identified as follows:

- (a) planning stakeholders, generally incorporating Authorities associated with the Project, including:
  - (i) the Department;
  - (ii) Department of Treasury, Strategic Projects & Asset Sales;
  - (iii) Department of Treasury, Commercial Contracting Unit;
  - (iv) Department of Finance, OGA;
  - (v) Department of Finance, BMW;
  - (vi) Department of Planning;
  - (vii) relevant LGAs;
  - (viii) Department of Environment Regulation;
  - (ix) Environmental Protection Authority;
  - (x) Department of Aboriginal Affairs; and
  - (xi) relevant Utility providers.
- (b) community stakeholders, generally incorporating other stakeholders that have an interest in the Project and the future School Facilities, including:

- (i) State Schools Teachers' Union of WA;
- (ii) United Voice;
- (iii) local residents, local businesses and institutions and the wider community;
- (iv) media (local, state and national); and
- (v) other stakeholder and interest groups.

## A5. DEVELOPMENT PHASE SCOPE OVERVIEW

### A5.1 School Facilities and Stages

- (a) Project Co must provide all Development Phase Activities for all Stages (and the relevant Off-Site Infrastructure) by the relevant Dates for Commercial Acceptance as detailed in Schedule 1(Contract Particulars) of the Deed.
- (b) Without limiting Project Co's obligations and the State's rights and remedies under the Deed, to the extent that a Stage will not be complete by the applicable Date for Commercial Acceptance, Project Co may be required to provide a Remedy Implementation Plan in accordance with Clause 19.2 and Schedule 24 (Development Phase Plans and Reports). The Remedy Implementation Plan may include the requirement for Project Co to source, transport, deliver, locate and install Contingency Transportable Units at the relevant Site if the State considers that such measures will be necessary to ensure that the School Activities are able to be provided from the relevant School Facility, by the required opening Academic Year listed in *Table 1 – Student capacities and opening academic year*.

### A5.2 School Facility capacities

- (a) Project Co must design all Stages to permanently accommodate the maximum capacity of Students, across all year cohorts, from the commencement of the opening Academic Year as detailed in *Table 1: Student capacities and opening academic year*, including the provision of a fully serviced Transportable Unit Zone as detailed in *C4: Future Development and Expansion*.

TABLE 1 – STUDENT CAPACITIES AND OPENING ACADEMIC YEAR

School Facility and Stage	Student capacity (Year cohorts)	Opening Academic Year
Alkimos South West Primary School	430 Students (Years K-6)	2017
Landsdale East Primary School	430 Students (Years K-6)	2017
Baldivis North Primary School	430 Students (Years K-6)	2017
Byford South West Primary School	430 Students (Years K-6)	2017
Ellenbrook North Secondary School - Stage 1	725 Students (Years 7-9)	2018
Ellenbrook North Secondary School - Stage 2	725 Students (1450 Total) plus 85 Students with disability (Years 7-12)	2021
Harrisdale Secondary School - Stage 2	725 Students (Years 10-12)	2020
Lakelands Secondary School - Stage 1	600 Students plus 54 Students with disability (Years 7-9)	2019

<b>School Facility and Stage</b>	<b>Student capacity (Year cohorts)</b>	<b>Opening Academic Year</b>
Lakelands Secondary School - Stage 2	900 Students (1500 Total) plus 30 Students with disability (Years 7-12)	2022
Hammond Park Secondary School - Stage 1	725 Students (Years 7-9)	2020
Hammond Park Secondary School - Stage 2	725 Students (1450 Total) (Years 7-12)	2023

### **A5.3 Harrisdale Stage 1**

- (a) The State has separately procured the design and construction of Harrisdale Secondary School Stage 1, with construction due to commence in 2015 for opening in the 2017 Academic Year. Harrisdale Stage 1 does not form part of Project Co's Design Brief.
- (b) However, Project Co is required to provide all Services Requirements for Harrisdale Stage 1 from the Date of Harrisdale Stage 1 Completion.

## A6. STAGING OF CONSTRUCTION

- (a) It is currently standard practice for the State's secondary schools to be delivered in two separate stages, with construction of the second stage commencing only once the first stage is operational. This delivery method often involves different architects or building contractors for each stage, requires the refitting of stage 1 facilities during stage 2 construction and increases the need for Transportable Units due to stage 1 facilities reaching capacity prior to the opening of stage 2.
- (b) An opportunity exists in this Project for Project Co to propose an alternate delivery program for the School Facilities which will maximise value for money to the State, potentially through:
  - (i) reduced escalation over a shorter delivery timeframe;
  - (ii) more efficient cost of capital over a shorter delivery timeframe;
  - (iii) reduced debt financing costs over a shorter delivery timeframe; and
  - (iv) a shorter delivery timeframe resulting in a reduction or potential elimination of the requirement to utilise Transportable Units at a Site, thereby promoting enhanced education outcomes through the use of higher quality permanent facilities which offer a better teaching and learning environment.
- (c) As a minimum, the State requires that:
  - (i) each School Facility for a Primary School; and
  - (ii) all Functional Units for each Stage of a School Facility for a Secondary School, as described in Schedule 23 (Schedule of Accommodation);
  - (iii) together with any associated relevant Off-Site Infrastructure, be fully constructed, commissioned and completed by the Date for Commercial Acceptance as detailed in Schedule 1 (Contract Particulars) of the Deed.

### A6.1 Alternate staging considerations

- (a) In developing options for alternate staging for the delivery of the School Facilities and any associated Off-Site Infrastructure, Project Co should consider:
  - (i) the effectiveness of the proposed Development Phase Program to minimise disruption to the School Activities;
  - (ii) the potential of the proposal to provide early access to Stage 2 facilities to cater for unexpected increases in demand;
  - (iii) the potential of the proposal to provide early access to specialist teaching facilities; and
  - (iv) the potential of the proposal to mitigate the requirement for Transportable Units.
- (b) In accordance with Clause 20.7 of the Deed, the State is under no obligation to certify Commercial Acceptance of a Stage prior to the Date for Commercial Acceptance for that Stage (which date is set by the Academic Year that the School Facility is required to open), regardless of whether Commercial Acceptance has been achieved prior to the Date for Commercial Acceptance. However, provision exists for the State to certify Commercial Acceptance prior to the Date for

Commercial Acceptance on the terms set out in Clauses 20.7(c) and (d) of the Deed. Accordingly, Project Co is encouraged to explore opportunities to schedule the Development Phase Activities in a manner which maximises construction efficiencies and economies of scale whilst providing flexibility with respect to the timing of Commercial Acceptance and the opening date of any Stage, particularly in respect of any second Stage of a Secondary School.

- (c) Where Commercial Acceptance for a Stage has been achieved and demand for earlier access to the relevant School Facility exists, the State may seek to exercise its right to certify Commercial Acceptance of the relevant Stage early in accordance with Clauses 20.7(c) and (d) of the Deed. In this instance, the Date of Commercial Acceptance may be aligned to facilitate an Operational Commencement Date of the first day of the next Academic Year or the start of the next School Term (as determined by the State in its sole and absolute discretion).

## **A7. DELAYED DESIGN AND PROCUREMENT**

- (a) The State anticipates that the Principal for each School Facility will be appointed a minimum of 6 months prior to the Operational Commencement Date for the relevant School Facility.
- (b) The State wishes to delay the design and procurement of fitout and FF&E for key Functional Areas within the School Facilities to allow for the involvement of the relevant Principal in the design process. This will facilitate the limited customisation of facilities to accommodate preferences with respect to operational practices and teaching environments.
- (c) Project Co must schedule the Development Phase Activities to allow for the delayed design and procurement of fitout and FF&E for key Functional Areas within the School Facilities for each Secondary School; including:
  - (i) fitout and FF&E selection for key Functional Units within the Administration Block, including the Foyer, Conference Room, and Principal's Office; and
  - (ii) FF&E selection for key Functional Units within the Staff Common Room, Incidental Learning Areas, Library and Cafeteria (including both enclosed and unenclosed seating areas),
  - (iii) without creating any unreasonable or unmanageable risk of achieving Commercial Acceptance for each Stage after the relevant Date for Commercial Acceptance.
- (d) Project Co must develop a Delayed Design and Procurement methodology in accordance with the requirements set out in Schedule 24 (Development Phase Plans and Reports).

## **A8. EARLY STATE ACCESS**

- (a) Without limiting Clauses 17 and 18 of the Deed, the State requires access to each Site and to the site of any works in connection with Off-Site Infrastructure during the Development Phase for a range of purposes in connection with the Development Phase Activities and School Activities, including for the purposes of:
  - (i) inspecting, observing or testing any part of the Works;
  - (ii) locating and installing State ICT devices relevant to networking, including servers, routers, computers, monitors and telephony equipment; and
  - (iii) use of the Administration Block by School Staff and visitors to commence the undertaking of School Activities, including enrolments for the opening Academic Year.
- (b) To facilitate the access and activities described in paragraph (a), Project Co must ensure that, no later than four weeks prior to the Date for Commercial Acceptance for the relevant Stage:
  - (i) all Communications Rooms and communications cupboards are constructed, commissioned and completed, including all Engineering Services, to enable the State to locate or install the State FF&E which is relevant to those rooms;
  - (ii) all Functional Units of the Administration Block are substantially complete, including all relevant FF&E, with only minor works outstanding which will not cause disruption to the School Activities including as a result of noise or odours;
  - (iii) safe public access is provided, without the requirement for PPE, to and from the Administration Block; and
  - (iv) sufficient temporary parking facilities are provided for visitors to the Administration Block.



## **A9. OFF-SITE INFRASTRUCTURE**

- (a) Some elements of the Development Phase Activities are required to be performed off the Site, for that Stage.
- (b) Without limiting Project Co's obligations under the Deed, the requirement to provide Off-Site Infrastructure includes all work necessary for the design, construction, commissioning and completion of the Off-Site Infrastructure.
- (c) Project Co's obligations for the Off-Site Infrastructure during the Development Phase include:
  - (i) design, construction, commissioning and completion of the Verge Works described in C2.3: *Verge Works* of this Design Brief; and
  - (ii) any Other Off-Site Infrastructure to be undertaken off the relevant Site for a Stage as directed by the State from time to time, as a Modification in accordance with Clause 14 (Minor Modifications) or Clause 36 (Modifications) of the Deed.

## **A10. SURROUNDING WORKS**

### **A10.1 Surrounding Works**

- (a) Surrounding Works will be required to deliver the Project but do not form part of the Development Phase Activities.
- (b) The Surrounding Works include:
  - (i) extension of Utility Infrastructure (if required):
    - (A) in respect of electricity and communications, to approximately but in any event no more than 2 metres from the State Utility Infrastructure Connection Points;
    - (B) in respect of all other Utilities (except in relation to the sewer for the Landsdale East Primary School and the Lakelands Secondary School (Stage 1 and Stage 2) and the Byford South West Primary School), to approximately but in any event no more than 2 metres from, the point on the verge adjoining the relevant Site which is perpendicular to the Project Co Utility Infrastructure Connection Point;
    - (C) in relation to sewer for the Landsdale East Primary School and the Lakelands Secondary School (Stage 1 and Stage 2), to approximately but in any event no more than 2 metres from, a point on the verge on the opposite side of the road from the Site which is perpendicular to the Project Co Utility Infrastructure Connection Point; and
    - (D) in relation to sewer for the Byford South West Primary School, to the sewer easement located within the Site,

#### **(Interface Points);**

- (ii) in respect of communications, extending the communications lead-in cable from the relevant State Utility Infrastructure Connection Point to the communications panel in the relevant School Facility provided that Project Co has first complied with its obligations in Part G6.2.1(b) of this Design Brief;
- (iii) provision of road infrastructure where new roads are required to provide access to a Site;
- (iv) works external to both the relevant Site and related Verge Works Site to deal with traffic conditions required by a relevant Authority as a result of traffic impact assessment (other than in circumstances where such condition or requirement is imposed to address Project Co's design of the School Facilities or Verge Infrastructure or work in respect of those embayments required to be completed under this Deed); and
- (v) provision of shared Sports Ovals where the Sports Oval associated with a School Facility is wholly or partially located on POS or LGA land.

### **A10.2 Utility Infrastructure**

- (a) A number of Sites are subject to the provision of Utility Infrastructure, adjacent to the Site, by the land developer as part of its sub divisional works. Availability will be dependent on the progress of these works. The location and anticipated dates for

the availability of the Utility Infrastructure have been provided by the land developers and are contained within the site information reports provided in Schedule 6 (Information Documents).

- (b) Project Co is responsible for co-ordinating, locating, connecting and extending (including by construction of branches) the Utility Infrastructure from the Interface Points to and within each Site to ensure the supply of the Utilities to each School Facility. Project Co is also responsible for the provision of all temporary Utility services required to facilitate construction, commissioning and completion of the Works at each Site.
- (c) The State must procure that the capacity of the Utility Infrastructure for which it is responsible for under Part A10.1(b)(i)(B) and (C) of this Design Brief is as a minimum that which is set out in column 3 of the table set out in Part D of Schedule 8 (Site Matters).
- (d) Project Co must ensure that the size of Utility Infrastructure provided under paragraph (b) of this Part A10.2 is as a minimum that which is set out in column 2 of the table set out in Part D of Schedule 8 (Site matters), and in any event, so that the requirements for the School Facilities as set out in this Deed, including this Design Brief are capable of being met, including the capacity of the Utilities.

### **A10.3 Road Infrastructure**

- (a) The State is liaising with relevant Authorities and third parties to provide the road infrastructure in preparation for the Development Phase Activities for each Site. The road infrastructure adjacent to the Site is expected to be delivered by the land developer as part of its sub divisional works, and its availability is dependent on the progress of these works. The location and anticipated dates for the provision of the road infrastructure have been provided by the land developers and are contained within the site information reports provided in Schedule 6 (Information Documents).
- (b) Project Co is responsible for liaising with relevant Authorities and other relevant third parties (including land developers) as required to ensure that the program for the delivery of the road infrastructure is fully integrated into the Development Phase Program for each Stage.
- (c) Project Co is responsible for the co-ordination of the road infrastructure into the Development Phase Activities and the Works, together with all alterations to the road infrastructure required to suit its design for the School Facility and other Relevant Infrastructure, including:
  - (i) street embayments adjoining the site;
  - (ii) access roads;
  - (iii) kerbing modifications;
  - (iv) pathways;
  - (v) drainage structures;
  - (vi) car parking; and
  - (vii) line marking.
- (d) To the extent that these works are located outside of the boundary of the relevant Site, such works constitute Verge Works.

- (e) Project Co is also responsible for the provision of all temporary roads and access ways required to facilitate construction, commissioning and completion of the Works at each Site.
- (f) The provision of road infrastructure for Hammond Park Secondary School is dependent on the development of the residential land adjacent to the Site, and there is a risk that development may be delayed and therefore impact its availability. Should the construction for this Stage proceed prior to any residential development in the surrounding area, the following road infrastructure will be provided by the State prior to February 2018:
  - (i) roads, drainage, and pathways for the roads surrounding the Site; and
  - (ii) the road connection between the Site and Barfield Road.

#### **A10.4 Shared Sports Ovals**

- (a) Some of the Sites are located adjacent to POS owned by the LGA, and the relevant LGA has agreed to allow access to the POS for School Use as a shared Sports Oval. A summary of the Site information and shared Sports Ovals is outlined in *Table 2 – Shared Sports Ovals*.
- (b) The POS and shared Sports Oval will be constructed by the LGA. However, in some instances the shared Sports Oval will extend onto land owned by the Department. Master plans have been prepared that show the relationship between the School Facility, POS and the shared Sports Oval. The indicative extent of the proposed Site boundary with the POS and the extent of the works associated with the shared Sports Oval is described within the master plan for the relevant Sites contained in Schedule 6 (Information Documents).
- (c) Project Co is responsible for liaising with the relevant LGA, and the LGA's third party contractors, to ensure that the design and construction of the POS and shared oval seamlessly integrate into the Works.

TABLE 2 – SHARED SPORTS OVALS

<b>School</b>	<b>Shared Ovals</b>
Alkimos South West Primary School	Yes – senior oval
Baldivis Primary School	Yes – junior oval
Byford South West Primary School	Yes – senior oval
Ellenbrook North Secondary School	No
Hammond Park Secondary School	No
Harrisdale Secondary School	No
Lakelands Secondary School	Yes – oval, soccer field
Landsdale East Primary School	Yes – senior oval

Refer to *C2: Community Partnerships*.

## **A10.5 Interface management**

- (a) It is expected that the Surrounding Works will be undertaken by third parties prior to, and concurrent with, the Works for each of the Sites.
- (b) Access to each of the Sites may be required by third parties for the purpose of undertaking the Surrounding Works.
- (c) Project Co must manage all interfaces between the Development Phase Activities and the Surrounding Works, including co-ordinating the master planning, design, construction and commissioning of the Works to ensure that:
  - (i) the design of the Works integrates seamlessly with the Surrounding Works including factoring the design assumptions, throughputs/outputs and constraints arising from the Surrounding Works;
  - (ii) the construction of the Works is fully co-ordinated with the construction of the Surrounding Works including in respect of:
    - (A) Site access arrangements; and
    - (B) ensuring that the Works seamlessly abut or connect to the Surrounding Works as and where intended. There must be no gaps in scope and the works interface must be tidy, neat and level; and
  - (iii) the timing of the Works is fully co-ordinated with the timing of the Surrounding Works, including scheduling the Works so that critical dependencies are identified and managed by all parties.

## **A11. MINIMUM COMPLETION TESTS**

Project Co must conduct all necessary testing, commissioning and other practices to demonstrate that the School Facilities together with any associated Off-Site Infrastructure:

- (a) are Fit For Purpose
  - (b) comply with the Design Requirements; and
  - (c) are otherwise constructed in accordance with the requirements of the Deed,
- including in accordance with Appendix I1: Minimum Completion Tests.

## A12. STATE REQUIRED PRELIMINARIES

### A12.1 Site Signage

- (a) (**site signboard**): Project Co must design a site signboard for each Stage in accordance with the State's 'Capital Works Projects Signage Style Guide', and submit the signboard design to the State for approval in accordance with Schedule 12 (Review Procedures), in sufficient time for the State to review and comment on it prior to commencement of construction for the Stage.
- (b) Within 14 days of commencement of construction for the Stage, Project Co must erect the site signboard in a location at the Site approved by the State. Project Co must ensure the site signboard is constructed in accordance with the State approved design and must ensure the site signboard is maintained in a good condition during the Development Phase for that Stage.
- (c) Project Co is responsible for all costs associated with the design, re-design, construction, maintenance and removal of the site signboard for each Stage.
- (d) Within one week of the Date of Commercial Acceptance for that Stage, Project Co must remove from the Site the site signboard at Project Co's own cost.
- (e) Project Co must not erect on or around a Site or Verge Works Site, or permit to be erected on or around a Site or Verge Works Site, any signs including name boards, promotions, advertisements or other displays unless:
  - (i) required by Law;
  - (ii) specified in the Deed;
  - (iii) specified elsewhere in this Design Brief;
  - (iv) required to identify Project Co's premises; or
  - (v) approved prior in writing by the State.

### A12.2 Plaque of Record

- (a) (**plaque of record**): Project Co must design and install a plaque of record for each Stage of each School Facility, where applicable. The design and installation location for each plaque of record must be reviewed and approved by the State in accordance with Schedule 12 (Review Procedures) of the Deed, prior to installation.
- (b) Project Co must refer to the Department of Finance's 'Identification of Architects and Builders on Government Projects' including the 'Consent for Attribution by the Architect' and 'Consent for Attribution by Employee' forms contained within. Project Co must ensure these forms are appropriately completed by the D&C Subcontractor's design consultants involved in the design of each Stage. Project Co must provide the completed forms to the State at the same time that the plaque of record is submitted for review and approval in accordance with (a) above.
- (c) Each plaque of record must:
  - (i) be in accordance with the plaque of record template document;
  - (ii) be made of brass, or another suitable material compatible with the aesthetic of the School Facility;

- (iii) be of a size not greater than 148mm deep x 210mm wide (ISO A5 paper size) unless otherwise approved by the State;
  - (iv) display the descriptive title nominated on the form 'Consent for Attribution by the Architect' to identify the architect;
  - (v) display the title of the D&C Subcontractor;
  - (vi) display the title of other relevant parties directly responsible for the design and construction of the Stage, as approved by the State;
  - (vii) give equal weight to, and use equal font size for, the names of all parties.
  - (viii) display the School Facility Name and Stage, where applicable;
  - (ix) display the Date of Commercial Acceptance, in lieu of the date of practical completion, unless otherwise approved by the State;
  - (x) be located in an unobtrusive location within the School Facility that will allow the identities of the participants to be easily determined by any interested party;
  - (xi) not permit interpretation of the plaque as a commercial advertisement for any of the parties involved; and
  - (xii) install the plaque of record within 10 working days after the Date of Commercial Acceptance.
- (d) Project Co must consult with the State to determine if any other information should be included on the plaque of record, such as the name of any relevant government Agency, Department or Authority.





Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking at a beaker. The student on the right is also smiling and holding a beaker. The student on the left is partially visible, also smiling. The background shows laboratory equipment and shelves.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## PART B

General

September 2015

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## **B1. ASPIRATION FOR EDUCATION ENVIRONMENTS**

- (a) There is increasing evidence that the learning outcomes of Students are closely related to the quality of their learning spaces. Benefits are also provided to other Users of the School Facilities.
- (b) The Department's aspiration for education environments is that School Facilities:
  - (i) achieve value for money for the State;
  - (ii) respect and enhance the location, environment and community;
  - (iii) are culturally relevant and engender a sense of civic pride;
  - (iv) contribute to the wellbeing, safety and productivity of Users;
  - (v) are Fit For Purpose and adapt to future changes in the delivery of the School Activities;
  - (vi) reduce WOL Costs;
  - (vii) are durable and sustainable in construction and use;
  - (viii) use space, materials and resources with imagination and efficiency;
  - (ix) are attractive and welcoming;
  - (x) provide both economic and social value; and
  - (xi) recognise WA's unique built heritage and quality of place.

## **B2. VALUE OF DESIGN**

- (a) Design quality is a significant factor in the Evaluation Criteria and is important to the State.
- (b) The State encourages innovative design with consideration of the WOL Costs of the School Facilities, the specific qualities of each of the eight Sites and the individuality of the surrounding communities. The Department and the State are fully committed to the design principles articulated in the *Better Places and Spaces* policy and the *Education Design Standard 02*.
- (c) Good design delivers value for money and better buildings, particularly when attention is paid to the WOL Costs of operating a School Facility over its Design Life. It is in the design stages that the most can be done to optimise the value of a School Facility to its Users and to the State, including the potential to:
  - (i) promote the performance of Students and make it easier for them to learn effectively;
  - (ii) help recruit and retain School Staff, and cut School Staff turnover and its associated costs; and
  - (iii) provide School Facilities that are flexible enough to respond to evolving Pedagogical modes and learning styles.

### **B3. DESIGN STANDARDS AND GOVERNMENT AGENCY POLICIES**

- (a) This Section refers to the standards and policies which articulate aspects of the School Facilities that, if well considered through project planning and delivery, can positively impact the quality of outcomes.
- (b) The pursuit of design excellence in public schools is consistent with the State's commitment to seek the best possible education outcomes for Students and value from its investment in infrastructure. Refer to *B4: DESIGN PRINCIPLES* and *C1: MASTER PLANNING PRINCIPLES* for a further description of the design and master planning intent for the Project.
- (c) Other than where a standard or policy is expressly stated to be a Quality Standard in this Section *B3: DESIGN STANDARDS AND GOVERNMENT AGENCY POLICIES* or elsewhere in this Design Brief, the following standards and policies serve as a guide only for both supporting and assessing good design, including in the context of the current and future framework and direction of the Department. While summaries are provided below, full copies of the standards and policies as per the master list must be referred to.

#### **B3.1 OGA standards and policies**

##### **B3.1.1 Better Places and Spaces: a Policy for the Built Environment in Western Australia**

- (a) The design of the School Facilities must demonstrate consistency with the State's commitment to good design quality outcomes in major public works projects, as outlined in *Better Places and Spaces: a Policy for the Built Environment in Western Australia*.
- (b) The intention of the policy is to deliver improvements in the quality of WA's built environment by acknowledging the role of good design in contributing to value for money and by providing a set of guiding principles that are fundamental to achieving good design. The guiding principles are:
  - (i) innovation and creativity;
  - (ii) functionality and build quality;
  - (iii) efficiency and sustainability; and
  - (iv) responsiveness to context.
- (c) Each of these principles must be reconciled in the context of the Design Requirements and the Site to achieve good design outcomes.
- (d) For relevant guidance and for information on the policy refer to [www.finance.wa.gov.au/betterplaces](http://www.finance.wa.gov.au/betterplaces).

##### **B3.1.2 Education Design Standard 02**

- (a) The State's requirements for good design in WA Schools are articulated in the *Education Design Standard 02* which was developed by the OGA in consultation with the Department and BMW. The *Education Design Standard 02* outlines criteria for design that is consistent with the intent of the *Better Places and Spaces* policy, organised under the following key principles:
  - (i) impact: creating a sense of place, and positive impact on the community;

- (ii) functionality: meeting the needs of staff and users; and
  - (iii) build quality: the performance of the built fabric over the full lifecycle.
- (b) The *Education Design Standard 02* formalises a set of objective, minimum provisions for design quality that must be considered for all public education projects. Their overall intention is the provision of good quality education environments that support the learning needs of every Student.
- (c) Refer to *B4.1: Education Design Standard 02*.

### **B3.1.3 Design Review Guide for Secondary Schools**

- (a) The *Design Review Guide for Secondary Schools* has been prepared by the OGA as part of an initiative to improve design outcomes and value for money in secondary school projects for the State.
- (b) It is intended that Secondary School proposals be subject to a minimum of two Design Reviews by the State at key stages in the Design Development Process. Refer to *B7: MANAGING DESIGN QUALITY*.

## **B3.2 Quality Standards and Laws**

- (a) Without limiting or excluding Project Co's obligations and Liabilities under the Deed, Project Co must undertake the Project Activities in accordance with, and to meet the requirements of, all relevant Quality Standards and Laws.
- (b) (**Quality Standards**) Without limiting Project Co's obligations under the Deed, Quality Standards which are relevant to the Project Activities, the School Facilities and the Off-Site Infrastructure (or any of them) include:
- (i) (**Australian Standards**) all relevant Australian Standards, codes and guides of Standards Australia and Standards New Zealand, including:
    - (A) AS1428.1 Design for Access and Mobility: Part 1: General Requirements for Access – New Building Work;
    - (B) AS 1428.2 Design For Access and Mobility: Part 2: Enhanced and Additional requirements – Buildings and Facilities;
    - (C) AS1926.3-2010 Swimming pool safety – water recirculation systems;
    - (D) AS 3979-2006 – Hydrotherapy pools;
    - (E) HB 241-2002 Water Management for Public Swimming Pools and Spas;
    - (F) AS/NZS 3136-2001 Approval and test specification – Electrical equipment for spas and swimming pools;
    - (G) AS 2610.1-2007 Spa pools – Public spas;
    - (H) AS 1926.2-2007 – Swimming pool safety – Location of safety barriers for swimming pools;
    - (I) AS 2818-1993 – Guide to swimming pool safety;
    - (J) AS 3780-208 – The storage and handling of corrosive substances; and

- (K) other standards, codes and guides of Standards Australia and Standards New Zealand and British and International standards referenced in the Output Specifications;
- (ii) relevant national and State policies, including:
  - (A) *Designing Out Crime Planning Guidelines* (June 2006), published by the WA Planning Commission and available at [http://www.planning.wa.gov.au/dop\\_pub\\_pdf/DOCguidelines.pdf](http://www.planning.wa.gov.au/dop_pub_pdf/DOCguidelines.pdf); and
  - (B) other national and State policies referenced in the Output Specifications, except where expressly stated otherwise; and
- (iii) all other relevant standards, codes, specifications, guidelines, policies and requirements relevant to the Project Activities, the School Facilities and the Off-Site Infrastructure (or any of them), including:
  - (A) the Changing Places standards published by the Changing Places Consortium ([www.changing-places.org](http://www.changing-places.org)); and
  - (B) relevant policies, standards and guidelines of MRWA and PTA, including as set out in paragraph (c) below.
- (iv) Project Co must liaise with all relevant bodies, such as MRWA and PTA (as applicable) for the Verge Infrastructure Works and Other Off-Site Infrastructure Works (where such works are undertaken as a Modification in accordance with Clause 14 (Minor Modifications) or Clause 36 (Modifications) of the Deed), including obtaining relevant information and complying with their relevant policies, standards and guidelines (unless agreed otherwise) and including the following Quality Standards:
  - (A) Public Transport Bus Stop Site Layout Guidelines 2010;
  - (B) PTA Lighting Design and Maintenance Guideline, January 2012;
  - (C) PTA Standard Specification for Equipment Rooms, Shelters, Enclosures and Cable Access Ways;
  - (D) PTA – A Practitioner’s Guide to Bus Movement and Priority;
  - (E) PTA Traffic Management and Control Devices;
  - (F) PTA Maintenance and Constructability Guideline;
  - (G) PTA Accessibility Policy; and
  - (H) PTA Disability Access and Inclusion Plan.
- (c) To the extent that any Quality Standards include a conflicting requirement, standard, quality, level of service, quantum or scope, the greater or higher requirement, standard, quality, level of service, quantum or scope will prevail.
- (d) (**Laws**) Without limiting Project Co’s obligations under the Deed, national and State Laws which are relevant to the Project Activities, the School Facilities and the Off-Site Infrastructure (or any of them) include:
  - (A) OHS Laws;
  - (B) Environmental Protection (Noise) Regulations 1997 (WA);

- (C) Health (Public Buildings) Regulations 1992 (WA); and
  - (D) Dangerous Goods Safety Act 2004 (WA) and the associated Dangerous Goods Safety Regulations 2007 (WA).
- (e) **(Not exhaustive)** The list of Quality Standards and Laws included in this Section is not intended to be exhaustive but provides an indication of the primary reference documents that must inform the design, construction, commissioning and completion of the School Facilities and the Off-Site Infrastructure.

### **B3.3 Relevant Department documents**

#### **B3.3.1 Strategic Plan for WA Public Schools 2012-15**

- (a) The Strategic Plan for WA Public Schools, entitled *Excellence and Equity*, outlines the strategic objectives of the Department over a four year period (2012-15).
- (b) The plan focuses on four priority areas:
  - (i) success for all Students: ensuring that every Student has the opportunity to succeed;
  - (ii) distinctive schools: providing schools that meet the needs and aspirations of Students to build strong communities;
  - (iii) high quality teaching and leadership: improving Student learning outcomes through high quality teaching and leadership; and
  - (iv) a capable and responsive organisation: utilising resources wisely and making open and transparent decisions to build community confidence in public education.
- (c) The development of WA primary and secondary schools, including the Primary Schools and Secondary Schools to be delivered within the scope of the Project, must support these four priority areas by providing good quality school facilities (or School Facilities as it relates to the Project) that support teaching and learning outcomes.

#### **B3.3.2 Classroom First Strategy**

The Department's *Classroom First Strategy* focuses on learning in classroom and underpins the strategic plan. The strategy provides a framework for future decision making and targets, and for improved instructional practice. The strategy also aims to reduce the achievement gap between Students who live in different socio-economic areas and with different home and community resources.

#### **B3.3.3 Australian Curriculum (National Curriculum Framework)**

The Australian Curriculum describes what Students learn as they progress through school, and provides a national standard for Student achievement in core Learning Areas. The Australian Curriculum means that all Students in Australia will be taught the same skills, receive the same knowledge, and be assessed against nationally agreed standards.

#### **B3.3.4 Aboriginal Education Plan 2011-2014**

This policy outlines the goal of schools working together in networks to develop local solutions and address the diverse needs of Aboriginal Students in urban, regional and remote locations. Schools will be noted as 'focus schools' or 'Aboriginal network schools',



and given the freedom to work outside normal constraints to work closely with local communities.

### **B3.3.5 Disability Access and Inclusion Plan 2012-17**

- (a) The intention of the *Disability Access and Inclusion Plan* is to ensure that people with disabilities have the same opportunities as other people to access the buildings and utilise the school facilities (or School Facilities as it relates to the Project). Inclusive and Universally Accessible facilities must be provided. This is a minimum requirement except where the Department's policies exceed these.
- (b) The *Disability Access and Inclusion Plan* is a Quality Standard for the purposes of the Deed.

### **B3.3.6 Information and communications technology in the Western Australian public school system – vision statement & priorities 2014-2016**

This statement outlines the Department's vision to establish School Facilities that enhance Student learning and community engagement through providing access to learning programs and Student data at any time and in any place. Underlying infrastructure will enable contemporary devices to connect to the education network, allowing teachers the use of ICT to effectively deliver engaging and personalised learning programs.

## **B3.4 CABE UK**

- (a) CABE is the UK Government's design advisor, now incorporated within the Design Council. CABE's function is to advise the UK government on how to achieve, assess and review good design in public buildings, landscape and urban design.
- (b) CABE has published guidance documents related to the pursuit of good design in school environments. The following are to be referred to:
  - (i) Creating Excellent Primary Schools;
  - (ii) Creating Excellent Secondary Schools; and
  - (iii) CABE Design Review: Principles and Practice.

## **B3.5 Education Policies and other Policies**

### **B3.5.1 Policy and guidance documents**

- (a) Refer to Volume 4 of the RFP for information regarding policy documents.
- (b) The onus is on Project Co to ensure that the latest version of each document, standard or policy is being referred to.

TABLE 1 – POLICY DOCUMENTS

<b>Policy and Guidance Documents</b>	<b>Web Page</b>	<b>Quality Standard</b>
Better Places and Spaces: a Policy for the Built Environment in Western Australia	<a href="http://www.finance.wa.gov.au/cms/uploadedFiles/Building_Management_and_Works/better_places_and_spaces_policy_revised.pdf?n=9793">http://www.finance.wa.gov.au/cms/uploadedFiles/Building_Management_and_Works/better_places_and_spaces_policy_revised.pdf?n=9793</a>	No, strongly recommended guidance.

Policy and Guidance Documents	Web Page	Quality Standard
Education Design Standard 02	<a href="https://www.finance.wa.gov.au/cms/uploadedFiles/Building_Management_and_Works/oga_education_design_standards.pdf?n=5768">https://www.finance.wa.gov.au/cms/uploadedFiles/Building_Management_and_Works/oga_education_design_standards.pdf?n=5768</a>	No, strongly recommended guidance.
Percent for Art Scheme	<a href="http://www.dca.wa.gov.au/DevelopingArtsandCulture/spaces-and-places/public-art/242/">http://www.dca.wa.gov.au/DevelopingArtsandCulture/spaces-and-places/public-art/242/</a>	Yes
Capital Works Projects Signage Style Guide	<a href="http://www.finance.wa.gov.au/cms/uploadedFiles/Building_Management_and_Works/About_Us/signage_style_guide1209.pdf?n=6293">http://www.finance.wa.gov.au/cms/uploadedFiles/Building_Management_and_Works/About_Us/signage_style_guide1209.pdf?n=6293</a>	Yes
Priority Start – Building	<a href="http://www.dtwd.wa.gov.au/employeesandstudents/apprenticentre/vetpractitioners/policy/prioritystartbuildingpolicy/prioritystartbuildingpolicy/Pages/default.aspx">http://www.dtwd.wa.gov.au/employeesandstudents/apprenticentre/vetpractitioners/policy/prioritystartbuildingpolicy/prioritystartbuildingpolicy/Pages/default.aspx</a>	Yes
Buy Local Policy	<a href="http://www.finance.wa.gov.au/cms/uploadedFiles/State_Supply_Commission/Policies/Buy_Local_Policy_July_2002.pdf">http://www.finance.wa.gov.au/cms/uploadedFiles/State_Supply_Commission/Policies/Buy_Local_Policy_July_2002.pdf</a>  <a href="http://www.finance.wa.gov.au/cms/uploadedFiles/State_Supply_Commission/Policies/Buy_Local_Policy_Addendum_Dec_2009.pdf">http://www.finance.wa.gov.au/cms/uploadedFiles/State_Supply_Commission/Policies/Buy_Local_Policy_Addendum_Dec_2009.pdf</a>  <a href="http://www.finance.wa.gov.au/cms/uploadedFiles/State_Supply_Commission/Policies/Buy_Local_Policy_Addendum_July_2013.pdf">http://www.finance.wa.gov.au/cms/uploadedFiles/State_Supply_Commission/Policies/Buy_Local_Policy_Addendum_July_2013.pdf</a>	Yes
Building Local Industry Policy	<a href="http://www.commerce.wa.gov.au/industry-and-innovation/industry-participation-policy-and-templates">http://www.commerce.wa.gov.au/industry-and-innovation/industry-participation-policy-and-templates</a>	Yes
Plaque of Record	Hard copy available on request.	Yes
CADD Protocols for Contractual Deliverables	Hard copy available on request.	Yes
Education Policy: Data Communication Cabling Standards and Specifications	Hard copy available on request.	Yes
Education Policy:	Hard copy available on request.	Yes

<b>Policy and Guidance Documents</b>	<b>Web Page</b>	<b>Quality Standard</b>
Occupational Safety and Health Policy		
Education Policy: School Security Policy	Hard copy available on request.	Yes
Education Policy: Visitors and Intruders on School Premises Policy	Hard copy available on request.	Yes
Education Policy: Emergency and Critical Incident Management Policy	Hard copy available on request.	Yes
Education Policy: The Principal's Guide to Bushfire	Hard copy available on request.	Yes
Education Policy: Requirements for Portable Fire Equipment Draft Guidelines	Hard copy available on request.	Yes
Education Policy: Disability Access and Inclusion Plan	Hard copy available on request.	Yes
Education Policy: Criminal History Screening Policy	Hard copy available on request.	Yes
Education Policy: Staff Conduct and Discipline Policy	Hard copy available on request.	Yes
Education Policy: Code of Conduct	Hard copy available on request.	Yes
Education Policy: Code of Conduct Handbook	Hard copy available on request.	Yes
Education Policy: Design & Technology – Hazard Identification & Risk Management Guidelines	Hard copy available on request.	Yes
Education Policy: Working With Children Checks	Hard copy available on request.	Yes
Education Policy: Fact sheet 17 Information for Education Providers	Hard copy available on request.	Yes

Policy and Guidance Documents	Web Page	Quality Standard
Education Policy: Duty Of Care For Students Policy	Hard copy available on request.	Yes
Education Policy: School Councils Policy	Hard copy available on request.	Yes
Education Policy: Naming of Facilities and Part Facilities Policy	Hard copy available on request.	Yes
Education Policy: Community Use of School Facilities and Resources Policy	Hard copy available on request.	Yes
Education Policy: Student Health Care Policy	Hard copy available on request.	Yes
Education Policy: Smoking in the Workplace Policy	Hard copy available on request.	Yes
Education Policy: Healthy Food and Drink Policy	Hard copy available on request.	Yes
Education Policy: Management of Asbestos Containing Materials in Schools and Other Workplaces	Hard copy available on request.	Yes
Education Policy: CEO Instruction: Weapons in Schools	Hard copy available on request.	Yes
Education Policy: CEO Instruction: Mobile Phone Towers	Hard copy available on request.	Yes
Education Policy: CEO Instruction: Swimming Pools At Schools	<b>Hard copy</b> available on request.	Yes

## **B4. DESIGN PRINCIPLES**

The State has identified the following design principles as fundamental to achieving good design outcomes in WA schools. School Facilities must:

- (a) be well designed and well built to:
  - (i) support effective learning;
  - (ii) inspire innovation, participation and inquiry in Students;
  - (iii) support teachers in the delivery of quality education;
  - (iv) enable flexibility to adapt to curricula, Pedagogical, technological and demographic changes;
  - (v) facilitate engagement with the local community;
  - (vi) achieve a high level of operational efficiency with respect to School Facility use, maintenance requirements and Utilities demand; and
  - (vii) deliver value for money over the School Facility's lifecycle;
- (b) provide welcoming, uplifting and stimulating environments;
- (c) be distinctive and contextually responsive;
- (d) be robust and safe environments for Users;
- (e) provide comfortable and high performance internal spaces for Users, with attention to:
  - (i) air quality;
  - (ii) ventilation;
  - (iii) appropriate natural light;
  - (iv) generous sense of volume;
  - (v) good integration of ICT and teaching aids;
  - (vi) acoustic performance; and
  - (vii) thermal comfort.
- (f) provide attractive external spaces with a good relationship to internal spaces that offer appropriate security and a variety of different settings;
- (g) be clearly organised with a easily legible plan and full accessibility;
- (h) be adaptable in order to remain Fit For Purpose over the Service Life of the School Facilities; and
- (i) make effective and efficient use of the Site.

## **B4.1 Education Design Standard 02**

- (a) The overarching design quality requirements for the Project are articulated within the *Education Design Standard 02*. These requirements apply equally to Secondary School and Primary School designs. Consistency with these requirements will be a fundamental component of the State's ongoing assessment of the Design Deliverables.
- (b) The *Education Design Standard 02* includes design quality criteria organised under the following headings:
  - (i) impact: creating a sense of place, and positive impact on the community;
  - (ii) functionality: meeting the needs of staff and users; and
  - (iii) build quality: the performance of the built fabric over the full lifecycle.

### **B4.1.1 Impact**

#### **B4.1.1.1 Character**

The Works must:

- (a) create a distinctive, place-specific School Facility;
- (b) respond sensitively to the topography, climate, heritage and ecology of the Site;
- (c) respond to the culture and aspirations of the neighbourhood or community, wherever possible;
- (d) convey the civic role of the School Facility through an appropriate architectural language;
- (e) ensure consistency of design intent across the various scales and architectural elements (master planning, built form, internal environment, external environment, materials and furniture);
- (f) provide an inspirational and welcoming environment for Users;
- (g) provide an environment which supports a diversity of learning and teaching strategies;
- (h) create an architectural character that fosters Students' sense of community and individuality;
- (i) provide support for emerging learning methods with appropriate spatial configurations that are consistent with this Design Brief; and
- (j) incorporate well integrated Public Art in the experience of the School Facility and the public realm.

#### **B4.1.1.2 Built form**

The Works must:

- (a) provide built form that is responsive to the Site and surrounding buildings;
- (b) ensure consistency between the design of the built form and functional and operational intent;

- (c) ensure built form elements are well co-ordinated and composed;
- (d) project a clear and coherent built form that confidently communicates the School Facility's function and civic role;
- (e) provide entrances that are well scaled, welcoming, clearly distinguished and with a distinctive experience of arrival;
- (f) integrate service elements seamlessly into the built form;
- (g) communicate the significance and relationships of spaces through scale, proportion, colour and materials;
- (h) integrate wayfinding and signage within built form;
- (i) enable clear and effective interaction between Learning Areas and outdoor environments;
- (j) provide a diversity of spaces, scales, proportions and surface conditions to offer Students a variety of physical environments in which to learn, play and socialise; and
- (k) provide opportunities for the School Facility to be a learning tool in its own right, through the integration of architecture, landscape architecture; sustainability and interpretive initiatives.

#### B4.1.1.3 Materials

The Works must:

- (a) ensure materials are used in a way that complements the intent of the built form;
- (b) ensure materials are used in a manner that demonstrates their inherent qualities and characteristics;
- (c) utilise materials within the building fabric suitable to the role and setting of the School Facility;
- (d) utilise materials with integral or inherent finishes, wherever possible; and
- (e) utilise materials and finishes that meet the expected standards for civic buildings, ensuring:
  - (i) consistency of finish;
  - (ii) well considered use of colour and texture;
  - (iii) durability of surface finishes and fixtures;
  - (iv) resistance to damage and vandalism;
  - (v) minimum recurrent maintenance; and
  - (vi) good amenity and a positive visual impact.

#### B4.1.1.4 Internal environments

The Works must:

- (a) provide an engaging and welcoming internal environment throughout the School Facility;
- (b) create interior environments where Students can experience a variety of different spatial conditions;
- (c) provide Learning Areas that are comfortable, stimulating and support learning through the use of:
  - (i) natural light;
  - (ii) generous volumes;
  - (iii) formal and informal furniture;
  - (iv) a diversity of materials and textures; and
  - (v) appropriate colours;
- (d) create open, generously-scaled shared and communal spaces;
- (e) provide circulation areas that are:
  - (i) enjoyable to use;
  - (ii) legible and well organised; and
  - (iii) offer clear views to strategic points including entries and exits;
- (f) provide good views and access to outdoor and landscaped areas from key internal locations where appropriate;
- (g) provide appropriate levels of natural lighting with treatments to manage glare where required;
- (h) create Learning Areas and circulation areas where Students can experience a variety of different spatial conditions;
- (i) utilise furniture that is engaging, comfortable and adaptable to different Pedagogical strategies and improvised uses; and
- (j) provide appropriate acoustic treatments to:
  - (i) enable speech clarity and facilitate Student focus in Learning Areas;
  - (ii) minimise acoustic transfer between Learning Areas; and
  - (iii) ensure privacy of offices, Conference Rooms and Interview Rooms.

#### B4.1.1.5 External environments

The Works must:

- (a) protect and contribute to existing environmental features and ecosystems;
- (b) enhance or regenerate existing natural resources;
- (c) create a distinctive landscape character that responds sensitively to the site context;



- (d) integrate with the architectural design intent of the School Facility;
- (e) utilise robust, low maintenance materials, finishes and elements;
- (f) engage climatically appropriate planting and soft landscaping;
- (g) demonstrate a consistent design intent in the use of materials, colour, textures and urban furniture;
- (h) provide landscape environments that are clearly legible and assist wayfinding;
- (i) ensure the integration of WSUD principles;
- (j) provide a diversity of outdoor spaces and conditions to facilitate various modes of recreation, gathering and socialising;
- (k) utilise landscape elements and high quality furniture in configurations that can facilitate outdoor teaching, socialisation and recreation;
- (l) integrate interpretive and educational opportunities within the landscape scheme to facilitate active and passive outdoor learning;
- (m) provide shaded areas for protection against sun and rain; and
- (n) demonstrate appropriate spatial configurations and relationships to mitigate bullying and antisocial behaviour.

#### B4.1.1.6 Urban integration

The Works must:

- (a) respond specifically to the demographic, cultural and socio-economic profile of the catchment area within each School Facility's design and planning, where appropriate;
- (b) provide opportunities for safe walking, cycling and public transport access to and from the School Facilities;
- (c) provide clear and well considered entry points to the Site with good connectivity to natural points of arrival, local landmarks and other strategic locations;
- (d) ensure entry points and the experience of arriving is welcoming and enhances the perceptions of the School Facility within the community;
- (e) ensure appropriate parking and vehicular access strategies that minimise adverse impacts on the public realm and the experience of pedestrians;
- (f) provide well considered location of access routes relative to the surrounding area's movement network;
- (g) ensure a positive impact and good integration with surrounding urban form, through:
  - (i) appropriate building form and scale; and
  - (ii) well considered façade design and address to the public realm.
- (h) enable opportunities for the School Facility to be shared by the community and cater for activities beyond traditional School Use where appropriate;

- (i) ensure that built form, urban design and landscaping contributes to a safe and secure environment; and
- (j) ensure that the design contributes to a high quality local streetscape environment.

## **B4.2 Functionality**

### **B4.2.1.1 Use**

The Works must:

- (a) promote User efficiency by minimising distances of travel between frequently used spaces;
- (b) provide optimal functional adjacencies to support the School Facility's intended operations for its Users;
- (c) co-locate similar or dependent functions where possible;
- (d) locate support zones so that they may be shared by adjacent Functional Areas;
- (e) ensure spaces have built-in flexibility to accommodate future changes to functional and operational requirements including new administrative structures, syllabuses and Pedagogies, consistent with the Department's guidance;
- (f) allow Learning Areas to adapt easily on a day-to-day basis to facilitate various activities, group sizes and teaching methods;
- (g) provide controls for School Staff to locally regulate temperature, lighting, ventilation and acoustic comfort; and
- (h) locate ICT services such that they support active use in teaching and can accommodate future technology upgrades.

### **B4.2.1.2 Access**

The Works must:

- (a) create clear hierarchies of movement and legible circulation networks within internal and external areas;
- (b) ensure Universal Access is provided without compromising legibility, connectivity and quality of experience;
- (c) ensure appropriate separation of User groups, where necessary;
- (d) ensure Ready Access to key building elements, systems and services for maintenance and cleaning;
- (e) separate service access from School Staff and Student entry points;
- (f) provide Direct Access between internal Learning Areas and outdoor areas;
- (g) provide clear and Ready Access for the community to shared facilities where appropriate, while ensuring adequate surveillance, security and safety for Users; and
- (h) ensure Students have appropriate access to School Staff.

### B4.2.1.3 Space

The Works must:

- (a) ensure functional and operational needs are supported and enhanced by spaces that are the right size, shape, proportion and orientation;
- (b) ensure flexibility and adaptability of use through generic room sizes and plans, where possible;
- (c) ensure that key functional relationships are supported within floor layouts;
- (d) enable wayfinding through a clear, intuitive organisation of functions;
- (e) provide planning that is coherent and well-composed;
- (f) enable future expansion and adaptation of the School Facilities in the planning of all spaces;
- (g) ensure planning supports security and appropriate levels of surveillance;
- (h) organise Learning Areas so that they have clear relationships to common areas, outdoor environments and breakout spaces;
- (i) locate communal areas and toilets appropriately with Ready Access and surveillance opportunities;
- (j) integrate support and storage spaces within the areas they serve; and
- (k) organise and size circulation space to enable multiple uses, where appropriate.

## **B4.2.2 Build quality**

### B4.2.2.1 Performance

The Works must:

- (a) utilise materials, finishes, elements and systems selected on the basis of LCC analysis;
- (b) incorporate initiatives for the improvement of energy conservation, reduction in waste, embodied energy and emissions and conservation of water;
- (c) demonstrate climate responsive design to reduce reliance on active climate modification;
- (d) incorporate passive environmental design measures, including appropriate orientation, responsive siting, natural lighting and ventilation wherever possible;
- (e) ensure use of durable materials, finishes and systems to limit vandalism and wear;
- (f) ensure an appropriate level of acoustic comfort relative to the function and use of spaces;
- (g) provide high quality lighting generally, and natural lighting wherever appropriate, to ensure the comfort of Users; and
- (h) be commissioned to ensure that School Facilities operate and are maintained in a manner consistent with the design intent.

#### B4.2.2.2 Engineering Services design

The Works must:

- (a) organise engineering systems clearly and logically for ease of use, maintenance and future expansion;
- (b) utilise innovative design, technologies and analytical tools to optimise energy performance and minimise resource consumption;
- (c) ensure engineering systems are flexible, efficient and economical to use;
- (d) integrate engineering systems with passive environmental design measures;
- (e) provide excellent indoor air quality utilising both mechanical and passive ventilation systems;
- (f) provide engineering systems that operate without compromising acoustic comfort;
- (g) utilise standardised and prefabricated elements in the design of engineering systems, where possible;
- (h) select systems on the basis of service and local maintenance capacity;
- (i) ensure Users, School Staff and Project Co Staff can easily operate thermal controls, where appropriate, without compromising overall system performance; and
- (j) ensure appropriate allowance is made for future expansion of service requirements.

#### B4.2.2.3 Construction

The Works must:

- (a) utilise construction systems that readily enable future horizontal and vertical expansion;
- (b) utilise construction systems that readily enable internal modification, service upgrades and replacement;
- (c) utilise construction strategies that minimise waste and adverse impacts on the environment;
- (d) ensure staged planning and construction does not the adversely impact service delivery and Users; and
- (e) utilise construction systems that are readily available.

### **B4.3 Pedagogy and space**

- (a) Spaces within school environments are determined by current and future Pedagogical requirements. The interaction and relationship between space and learning may not always be obviously apparent to Users, but still delivers tangible benefits.
- (b) Pedagogical activities require specific spatial qualities to be effective. Pedagogical approaches are applied through five core modes which have direct implications for the design of learning settings. These modes are:
  - (i) delivering;

- (ii) applying;
  - (iii) creating;
  - (iv) communicating; and
  - (v) decision making.
- (c) School Facilities are aids to teaching and must have the potential to be used in a variety of ways. Staff should be aware of the potential and limitations of the particular buildings and School Facilities in which they work.
- (d) Learning environments need to support the specific requirements of all disciplines and a diverse range of active, Student centred approaches. Learning is enhanced when connected learning spaces provide opportunities for:
- (i) active and interactive participation;
  - (ii) collaborative project work;
  - (iii) information retrieval and sharing;
  - (iv) discussion and presentation;
  - (v) production of new knowledge;
  - (vi) School Staff and Student-led activities;
  - (vii) local and global networks; and
  - (viii) personalised learning.
- (e) School Facilities must facilitate and enhance the educational program. School Facilities are to be designed in accordance with the following guiding principles:
- (i) flexibility;
    - (A) enabling multiple Users and uses;
    - (B) providing opportunities for physical, virtual and mixed-media in teaching; and
    - (C) supporting re-allocation, re-orientation and re-configuration of learning environments.
  - (ii) inclusivity;
    - (A) accommodating access and participation;
    - (B) responding to local demographic needs; and
    - (C) supporting personalised learning.
  - (iii) collaboration;
    - (A) enabling co-operative learning, teamwork and enterprise;
    - (B) encouraging community, professional and expert engagement; and

- (C) seeking local, national and global networks, partnerships and learning communities.
- (iv) creativity;
  - (A) promoting engagement, innovation and learning;
  - (B) achieving community and environmental harmony; and
  - (C) promoting growth of social capital.
- (v) efficiency;
  - (A) delivering faster, deeper learning;
  - (B) ensuring sustainable, cost effective Utilities and delivery; and
  - (C) supporting the effective management, administration and operation of the School Facilities.

#### **B4.4 Whole of Life Requirements**

- (a) (**Low Life-Cycle Cost**) The design and construction of the School Facilities should use a lowest LCC approach for all major elements where it is economically feasible, and aesthetically and technically appropriate to do so whilst satisfying the FFP Warranty.
- (b) (**Service Life**) The School Facilities must, with the necessary maintenance performed to Best Industry Practices, be capable of achieving a Service Life of at least 50 years.
- (c) (**Economic needs over Service Life**) The design and construction of the School Facilities must address the economic needs of the School Facilities over its Service Life through the application of WOL design principles to ensure:
  - (i) the minimisation of operating costs;
  - (ii) the promotion of efficient staffing models;
  - (iii) durability;
  - (iv) the minimisation of disruption to School Activities during maintenance and servicing;
  - (v) the minimisation of equipment replacement costs;
  - (vi) the minimisation of cleaning costs;
  - (vii) the minimisation of energy and water usage; and
  - (viii) the minimisation of waste.
- (d) (**Operational efficiency and viability**) The layout of the School Facilities must seek to maximise operational efficiency and therefore minimise operating costs, to the extent that it is not in conflict with the functional relationships required in *Part D – Functional Brief*.
- (e) (**Daylighting and ventilation**) The use of controlled natural light and ventilation to offset the cost of artificial illumination and environmental management must be

incorporated to the extent that it is not in conflict with other requirements described elsewhere in this Schedule 26.

- (f) **(Materials and finishes selections)** The selection of materials and finishes must minimise the costs associated with ongoing repair and maintenance. In particular, materials and finishes should be selected, detailed and installed to resist the effects of accidental and intentional damage.
- (g) Project Co must consider all of the following factors in estimating whether a proposed material, product, component, system or assembly will meet or exceed the required Service Life:
  - (i) recognised industry guidance or information from manufacturers and suppliers;
  - (ii) the quality and durability of materials and workmanship in the product, component or system;
  - (iii) supplier or manufacturer longevity and regularity of product line;
  - (iv) specifications and information provided for a component's, system's or an assembly's installation;
  - (v) the installer's and operator's skill level;
  - (vi) the location in which the proposed material, product, component, system or assembly is to be installed, including having regard for exposure to Site Conditions and exposure to particular indoor and outdoor environmental conditions; and
  - (vii) in-use conditions, wear and tear and maintenance impacts.
- (h) During the Design Development Process, Project Co must update the Appendix B (Lifecycle Services) of Schedule 27 (Services Specifications) as part of the Design Phase Reports, in accordance with Clause 2.10(b)(xi) of Schedule 9 (Design Development). A detailed justification must be provided where there is a difference between the operating costs of the initial proposed elements compared with alternative or revised selections.

#### **B4.5 Innovation**

- (a) A key design challenge of the Project is to effectively reconcile the many requirements of the Design Brief. Project Co is strongly encouraged to demonstrate design skill in resolving these requirements to achieve both a good design outcome and WOL performance.
- (b) Project Co is to make reasonable allowances for advancement in technology infrastructure. It is recognised that Australian, international and industry standards do not necessarily keep pace with technological advances, and this must not limit Project Co's ability to pursue technological solutions and innovation in the design of the School Facilities.
- (c) Technologies and innovations which may be considered, or for which future provision may be made, include:
  - (i) alternative architectural design concepts;
  - (ii) alternative building materials, including façade and roof technologies;

- (iii) alternative construction systems and methodologies (including modularised);
  - (iv) integrated management systems for Engineering Services;
  - (v) alternative energy systems;
  - (vi) alternative water usage and storage systems;
  - (vii) alternative ICT technologies;
  - (viii) alternative AV technologies;
  - (ix) innovative design features that maximise the flexibility and adaptability of the School Facilities; and
  - (x) innovative design solutions to allow for reconfiguration and expansion of the School Facilities.
- (d) Project Co is encouraged to enter into dialogue with the State where it perceives that significant value and benefit can be achieved through the adoption of technologies, innovations and alternative solutions.



## **B5. SAFETY IN DESIGN**

### **B5.1 Safety In Design process**

- (a) Safety and security of Users is of the highest priority and must be considered at every stage in the planning and design of the School Facilities and Off-Site Infrastructure.
- (b) Project Co must implement a Safety In Design process which focuses on minimising or eliminating hazards identified during the Design Development Phase that may pose a risk of injury or death throughout the Service Life of the School Facilities and Off-Site Infrastructure. The process must be undertaken in accordance with relevant Quality Standards and Laws, and must consider all aspects of design including facilities, hardware, systems, equipment, products, tooling, materials, energy controls, layout and configuration.
- (c) The Safety in Design process must be implemented early during the planning and Design Phase 1, with an emphasis on making appropriate choices with respect to design (layout and configuration), materials selection, construction methodology and maintenance approach.
- (d) The Safety in Design process must consider the Service Life of the School Facilities. Key principles to be considered include:
  - (i) **(design for safe construction)** to facilitate safe handling and installation;
  - (ii) **(design to facilitate safe use)** giving consideration to the intended function of the School Facilities and Off-Site Infrastructure, including the nature of the School Facilities, the curious nature of children, the likely workflows and systems of work of School Staff and Project Co Staff, the type of plant and equipment that may be used in the School Facilities and any specific hazards to Users;
  - (iii) **(design for safe maintenance)** so that maintenance of the School Facilities and Off-Site Infrastructure can be performed at ground level or safely from any structure and with sufficient access to undertake the work in a safe manner;
  - (iv) **(design for safe expansion, reconfiguration and refurbishment)** to enable easy and safe re-installation or removal of fittings and fixtures; and
  - (v) **(design for safe demolition)** to enable easy and safe demolition if required at the end of the Service Life of the School Facilities and Off-Site Infrastructure.
- (e) The Safety In Design process must be based on a risk management approach and involve a multi-disciplinary approach and engagement with the relevant Project stakeholders for both Development Phase and Operating Phase (i.e. designers, construction personnel, operational staff and maintenance personnel).

### **B5.2 Safety In Design Review Report**

At the conclusion of the Safety In Design process Project Co must prepare a Safety In Design Review Report which fully documents residual risks upon completion of the Safety In Design process, in accordance with the requirements set out in Schedule 9 (Design Development) of the Deed.

## B6. PUBLIC ART (PERCENT FOR ART)

### B6.1 General

- (a) Project Co must provide Public Art within the Sites for each School Facility.
- (b) The State's *Percent for Art Scheme* requires all new State buildings to commission artwork. The *Percent for Art Scheme* is jointly managed by the Department of Culture and the Arts and the Department of Finance using a transparent procurement framework. Refer to the following links:
  - (i) <http://www.finance.wa.gov.au/cms/content.aspx?id=3728>; and
  - (ii) <http://www.dca.wa.gov.au/DCA-Initiatives/spaces-and-places/public-art/242/>.
- (c) Objectives of the *Percent for Art Scheme* include:
  - (i) to improve the quality of the built environment and the value of public facilities;
  - (ii) to create opportunities for local artists through the commissioning of Public Art using an allocation of a percentage (up to one percent) of the estimated total cost of the State's projects;
  - (iii) to foster the capacity of the *Percent for Art Scheme* to recognise:
    - (A) the aesthetic excellence and quality of artwork in the built environment;
    - (B) the social value added by arts and culture across State buildings and the broader community;
    - (C) the multidisciplinary qualities of contemporary art practice;
    - (D) the need for critical analysis of commissioned artworks;
    - (E) the role of art and artists in sustainable cultural development; and
    - (F) the diversity of community groups and the importance of local perspectives in commissioned artwork projects.
- (d) The sum allowance for the Public Art for the Project is:
  - (i) Primary Schools: \$100,000 exclusive of GST;
  - (ii) Secondary School (Stage 1): \$300,000 exclusive of GST; and
  - (iii) Secondary School (Stage 2): \$200,000 exclusive of GST.
- (e) These funds are for the exclusive use of the Art Co-ordinator fees and all costs associated with the development and installation of artworks. All costs associated with the project management, co-ordination, commissioning and administration of the artists undertaken by Project Co must be excluded from the sum allowance.
- (f) Project Co must appoint an Art Co-ordinator to manage the procurement and delivery of the artworks. The Department of Finance operates a period contract for Art Co-ordinators that may be engaged to scope and deliver the artwork.

- (g) Project Co must prepare a Public Art Strategy for the Project identifying Public Art opportunities within the Sites.

## **B6.2 Artworks commissioning process**

Project Co must manage the Public Art commissioning process in accordance with the *Percent for Art Scheme*. The requirements include that:

- (a) Project Co must procure and install Public Art in accordance with the *Percent for Art Scheme* using a professional Art Co-ordinator familiar with the scheme;
- (b) Project Co must undertake transparent procurement processes for the tendering, evaluation and selection of art commissions in accordance with the requirements of the *Percent for Art Scheme*. This includes the establishment of an Artwork Selection Committee that includes representatives from the State (including from the Department), User representatives, Project Co's architectural consultant and the Art Co-ordinator;
- (c) Project Co must co-ordinate, commission and administer the selected artists as nominated by the Artwork Selection Committee; and
- (d) the Public Art may comprise works that require integration with the wayfinding strategy and landscape design. Project Co must undertake and separately allow for all necessary liaisons, provide all necessary attendance and ascertain all structural and other Engineering Services requirements to facilitate the installation of the Public Art. All trade costs for Project Co's work which is directly connected with the installation of the Public Art, including the supply of materials (including lighting and interpretative materials), may be funded from the sum allowance.

### **B6.2.1 Requirements for Public Art**

- (a) The Public Art for the Project must:
  - (i) be consistent with and complement the School Activities;
  - (ii) be delivered by practising professional artists;
  - (iii) require minimal ongoing maintenance; and
  - (iv) consider the relationship with the local community and Users.
- (b) It is highly desirable that Public Art for the Project:
  - (i) integrate with wayfinding strategies;
  - (ii) contribute to the experience of landscaped areas;
  - (iii) be visible during the day and at night;
  - (iv) integrate with and enhance the architectural design;
  - (v) include works that recognise Aboriginal and European heritage (where relevant);
  - (vi) include works that engage with educational themes; and
  - (vii) include works that are interactive for Users of the School Facilities.

## **B7. MANAGING DESIGN QUALITY**

### **B7.1 General requirements**

The design of the School Facilities and Off-Site Infrastructure must be managed using an accredited quality system in accordance with relevant Quality Standards including the ISO 9001 series.

### **B7.2 Design Review**

- (a) The process of Design Review is to maximise the benefits from public works to achieve better value for the State.
- (b) Project Co must undertake a formal Design Review process at critical phases of the Design Development Process in accordance with Schedule 9 (Design Development).

### **B7.3 Design Quality Benchmarking**

- (a) Project Co is required to prepare Design Quality Benchmarking imagery to support and convey the intent of their design for the School Facilities and all Verge Infrastructure.
- (b) During the Design Development Process, Project Co must review and update the Design Quality Benchmarking in consultation with the State to ensure the design options and solutions proposed for the Project incorporate the latest accepted design trends and feedback from national and international projects.
- (c) The Design Quality Benchmarking must:
  - (i) identify precedents and current trends that support and clarify Project Co's design;
  - (ii) demonstrate how Project Co's design will meet the State's aspirations and requirements for the Project;
  - (iii) support collaboration and consultation with project stakeholders consultation and Design Review processes during the development phase by enabling a qualitative comparison with Project Co's proposed outcomes for the Project; and
  - (iv) clearly communicate Project Co's proposed outcomes for key elements of the works, including:
    - (A) learning communities (Classroom Blocks);
    - (B) community and public facilities;
    - (C) site entry points;
    - (D) Administration Blocks;
    - (E) façades and built form; and
    - (F) landscaping.



Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking at a beaker. The student on the right is also smiling and holding a beaker. The student on the left is looking at the beaker. There are various pieces of laboratory glassware and equipment visible in the background.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

**PART C**  
**Master Planning**  
**September 2015**

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## C1. MASTER PLANNING PRINCIPLES

- (a) A holistic approach to master planning must be undertaken to explore the high level strategic opportunities and constraints for each Site.
- (b) Design driven master planning decisions have the potential to improve sustainability performance and encourage a strong, site specific sense of identity for each School Facility.
- (c) The design outcomes must support the State's educational aspirations (refer to *B4: DESIGN PRINCIPLES*), satisfy the design objectives of this Section and make a positive statement to the community.
- (d) Master plans appended to the Design Brief in Schedule 6 (Information Documents) may not reflect all requirements of the Design Brief, and are included as information only to inform the Design Development Process.
- (e) The following principles of master planning are fundamental to achieving good school environments and should underpin Project Co's design response to each Site:
  - (i) structure: organise buildings, servicing and functions so that they relate well to each other;
  - (ii) accessibility: provide ease, safety and choice of access for all Users;
  - (iii) legibility: help Users to recognise functions and navigate routes around the Site;
  - (iv) fit and function: support the intended function of School Facilities while also allowing for adaptability and future expansion, including the future provision of Transportable Units;
  - (v) character and identity: provide built form, spaces and programming with qualities that create a valued identity;
  - (vi) responsiveness to context: engage with the community through interfaces that are attractive, functional, safe and welcoming;
  - (vii) inclusiveness and interaction: create a school environment where all people are free to encounter each other as equals;
  - (viii) safety: organise the Site to support safe behaviour; and
  - (ix) environmental sensitivity: respond to Site Conditions (including climate) and enhance the natural environment.

### C1.1 Urban design

- (a) The master plan and design of each School Facility must take into account its physical surroundings to complement the cultural identity, appearance and amenity of the surrounding area.
- (b) The master planning must reference the particular local environment of each School Facility, including:
  - (i) the immediately surrounding street network, traffic and pedestrian infrastructure;

- (ii) adjacent and nearby community and recreational facilities;
  - (iii) the local and wider environmental context; and
  - (iv) the urban form and character of the local built environment.
- (c) Refer to *C3: TRAFFIC MANAGEMENT*.

## **C1.2 Landscape architecture**

- (a) The quality of landscaping is an important part of the overall experience of the learning environment. The landscape design must connect the School Facility and its Users to the local community and environmental setting, and consider the character of the Site's built heritage, cultural diversity, biodiversity and topography.
- (b) The State requires good quality external activity spaces. These spaces must be designed to stimulate learning, support social engagement and inclusion, respond sensitively to Site, climate and ecological conditions, and contribute positively to the overall quality of the learning environment.
- (c) External areas must facilitate movement and visual linkages between buildings, and ensure the security and safety of all Users through passive surveillance.
- (d) Refer to *Part F: Landscape Specifications*.

## **C1.3 Engagement with the community**

- (a) School designs must consider opportunities for community engagement. The role of LGAs must be considered in the sharing of services and as a partner in the ongoing operation and maintenance of the school and community facilities.
- (b) Where community facilities are located adjacent to the Sites, the master planning must facilitate a community precinct that encourages links and interaction.
- (c) Special consideration must be given to:
  - (i) the relationship of the School Facility to any adjoining POS;
  - (ii) the potential for afterhours and community use of the School Facilities, including the Performing Arts Learning Area, Hard Courts and the Sports Oval. Clear and Easy Access must be provided to these School Facilities for Users;
  - (iii) the creation of opportunities for school aged holiday and after school programs;
  - (iv) the separation of community access from Core School Areas;
  - (v) the planning of shared Sports Ovals that are located partially on a Site and partially on POS, where possible;
  - (vi) the master planning and built form of the School Facilities with respect to local amenities and services in the neighbourhood; and
  - (vii) the skills and experience of local community members which could complement and enrich the development of the School Facilities.
- (d) Community opinions and needs must be considered in the development of School Facilities. Links to the community are particularly significant in disadvantaged or



culturally diverse settings, and where an Education Support Learning Community is scheduled.

#### **C1.4 Character and form**

The School Facilities must reflect a strong and consistent architectural concept which is expressed through the form and character of the design including at a master planning level. This must be addressed through the following design elements:

- (i) clarity of architectural vision, including:
- (ii) clear master planning strategies that reflect the civic importance of the School Facility in the community; and
- (iii) school buildings, outdoor environments and circulation pathways that respond to the opportunities offered by the Site;
- (iv) spatial quality and variety, including:
  - (A) master planning strategies that place an emphasis on the spatial quality, consistency and variety of separate buildings and component parts; and
  - (B) spaces that are appropriate to their function and meet the performance requirements of the Design Brief;
- (v) design composition, including:
  - (A) School Facilities that have a consistent design intent across all design scales, while allowing individual elements to reflect their function; and
  - (B) built and future proposed building and Engineering Services elements that are fully integrated and considered at each Design Phase, including the requirements for a Transportable Unit Zone;
- (vi) arrangement and built form, including:
  - (A) master plans that maximise opportunities for passive design strategies, including appropriate solar orientation, the use of master planning to optimise thermal performance of buildings, passive ventilation strategies and the use of thermal mass; and
  - (B) the design of built form that is informed by and responsive to local factors including climate and topography;
- (e) functional planning, including
  - (i) the proximity and relationship between various Functional Areas;
  - (ii) master planning strategies that consider:
    - (A) scope for future expansion; and
    - (B) staging of works; and
  - (iii) alternative ways to achieve functional requirements and philosophies, provided they can demonstrate no loss in amenity. Refer to *B4.5: Innovation*;
- (f) scale and proportion, including:

- (i) scale and proportion that responds to the age group of Students;
- (ii) visual elements which break up the massing of each School Facility that are incorporated within the design;
- (iii) the considered arrangement of single and two storey massing on the Site; and
- (iv) the scale of the School Facility in its broader urban context;
- (g) use of colour, texture and materials, including:
  - (i) wayfinding cues including the use of a hierarchy for circulation elements, as well as the use of finishes, colours and patterns for demarcation and identification; and
- (h) Public Art, including:
  - (i) the co-ordination of Public Art within master planning. Refer to *B5 Public Art*.

### **C1.5 Ecologically sustainable development**

Consideration must be given to ESD principles at a master planning level. Refer to *E6: Ecologically Sustainable Development*.

### **C1.6 Security and safety**

- (a) School Facilities must provide a safe and secure learning environment. CPTED principles must be integrated within the design of the School Facilities, as well as other Best Industry Practices principles and initiatives.
- (b) To achieve this, the design of the School Facilities must:
  - (i) provide clear and logical street access to the Administration Block that permits the supervision of entries;
  - (ii) promote good supervision of all areas by School Staff;
  - (iii) incorporate clear and logical external signage;
  - (iv) separate uncontrolled community access from Core School Areas;
  - (v) compartmentalise facilities with the potential for out of hours use;
  - (vi) provide safe access to toilets at all times;
  - (vii) discourage wilful damage;
  - (viii) eliminate Easy Access to roofs;
  - (ix) avoid alcoves and spaces that hinder supervision;
  - (x) ensure that external lighting is strategically placed to facilitate visual surveillance at night;
  - (xi) include well placed external PA speakers;
  - (xii) provide Ready Access to first aid locations;

- (xiii) accommodate Ready Access for emergency services to all courtyards and school grounds;
- (xiv) provide safe access to car parks after hours;
- (xv) consider on site traffic management and separation of vehicular and pedestrian traffic;
- (xvi) provide control measures for other vehicle access in internal areas of the School Facilities; and
- (xvii) mitigate opportunities for non-approved skating activities.

### **C1.7 Information and communications technology**

- (a) Reasonable allowances must be made for advancements in ICT infrastructure.
- (b) Mobile telephone communication towers must not be provided or located within the boundaries of any Site.

### **C1.8 Design Consideration and Constraints**

- (a) In addition to the general design requirements for primary and secondary schools in WA, selected site specific conditions and constraints are contained in Schedule 6 (Information Documents). Project Co must refer to all relevant Site and technical information, and conduct further investigation where required.
- (b) Further to (a) above, the following Sites are subject to the following constraints that may affect master planning:
  - (i) Landsdale East PS:
    - (A) No driveway/crossover access from Kingsway;
    - (B) No parking embayments along Kingsway; and
    - (C) Retention of remnant vegetation located in the north-eastern, south-eastern and south-western corners of the Site, subject to final Approvals.
  - (ii) Ellenbrook North SS:
    - (A) Proximity of “Bush Forever” area west of the Site and associated potential bushfire risk to the area; and
    - (B) Retention of approximately 70% of existing “Very Good to Excellent” remnant vegetation located at the western portion of the Site, subject to final Approvals.
  - (iii) Lakelands SS:
    - (A) LGA requirement for green corridor adjacent to Mandurah Road. Proximity of shared community use of recreational ovals and recreational facilities located between the Site and Mandurah Road.
  - (iv) Hammond Park SS:
    - (A) Retention of “Very Good to Excellent” remnant vegetation where possible throughout the Site, subject to final Approvals.

- 
- (c) Where Sites are constrained in land area, Project Co may choose to compromise the following External Facilities, in order of precedence, for the purposes of providing full amenity to the built environment of Functional Areas/Units:
- (i) Reduction of the Sports Ovals in accordance with F2.6.1 (Sports Ovals);
  - (ii) Rectangular Playing Fields may be utilised as alternative Transportable Unit Zones in accordance with F2.6.4 (Rectangular Playing Fields); and
  - (iii) Reduction in the number of Multipurpose Hard Courts, to a minimum of 2 for Secondary Schools only

## **C2. COMMUNITY PARTNERSHIPS**

### **C2.1 Sports Ovals**

#### **C2.1.1 General**

- (a) On Sites where the Sports Ovals are located wholly on LGA land or across both LGA and the Department's land, the LGA will construct and maintain the Sports Ovals. This situation is applicable to:
  - (i) Alkimos South West Primary School;
  - (ii) Baldivis North Primary School;
  - (iii) Byford South West Primary School;
  - (iv) Landsdale East Primary School;
  - (v) Lakelands Secondary School; and
  - (vi) Harrisdale Secondary School.
- (b) In these instances, an MOU is to be developed between the LGA and the State.
- (c) On Sites where the Sports Ovals are located wholly on Department land, the Sports Oval is the responsibility of Project Co to design, construct, commission, complete and maintain in accordance with *Part D: Functional Brief* and *Part F: Landscape Specifications*. This is applicable to:
  - (i) Hammond Park Secondary School; and
  - (ii) Ellenbrook North Secondary School.

### **C2.2 Hard Courts**

#### **C2.2.1 General**

Hard Courts are located wholly on Department land for all School Facilities, and are the responsibility of Project Co to design, construct, commission, complete and maintain in accordance with *Part D: Functional Brief* and *Part F: Landscape Specifications*.

#### **C2.2.2 Alkimos South West Primary School and Landsdale East Primary School**

- (a) Enhanced Hard Court facilities at Alkimos South West Primary School and Landsdale East Primary School will be subject to an agreement between the State and the City of Wanneroo.
- (b) Project Co must construct and maintain Hard Court facilities to the specifications provided by the City of Wanneroo, which is an Information Document. The City of Wanneroo will manage any use of the Hard Courts out of Core Hours.

### **C2.3 Verge works**

- (a) Project Co must design, construct, commission, complete and maintain the road verge immediately adjacent to the Site including:
  - (i) landscaping;
  - (ii) street embayments adjoining the Verge Site and associated works;

- (iii) bus embayments adjoining the Verge Site where and when required;
  - (iv) all required footpaths and crossovers; and
  - (v) line marking, kerbing and drainage.
- (b) Project Co must liaise and reach agreement with the LGA regarding the design and construction of Verge Works. All design, detailing, construction and materials must comply with LGA guidelines and requirements.
- (c) Project Co may approach the LGA to share costs associated with the footpaths.
- (d) Refer to *Part F: Landscape Specifications*.

#### **C2.4 Shared Car Parking**

- (a) Alkimos South West Primary School – provision must be made for 20 car parking bays from the school's allocation to be located in the north east of the site adjacent to the POS for joint use by LGA facilities.

## C3. TRAFFIC MANAGEMENT

### C3.1 General

- (a) Movement networks within the School Facilities must be carefully designed to integrate with existing road, public transport, pedestrian and cycle traffic networks. Movement networks must enable safe and Direct Access for all Users and minimise disruption to surrounding traffic movement.
- (b) The efficient movement of people from car parks and boundary entrances to buildings is essential in delivering a legible and accessible School Facility. Pedestrian footpaths and vehicular traffic must be distinct wherever possible, however if pedestrians and vehicles have to share the same routes, care must be taken to ensure that they are clearly marked and there is sufficient separation between them.
- (c) Particular consideration must be given to the safety of pedestrians with special needs, including sight impaired persons and wheelchair users.
- (d) The impact of vehicles arriving at the School Facilities during the start and end of Core Hours is to be reduced by dispersing the car parking and bus set down areas strategically around the Site.
- (e) Car parks must be located with Ready Access to the Reception and Foyer of the Administration Block, and separate from Student play and circulation areas.
- (f) Parents must be able to park and deliver Kindergarten and Pre-Primary School Students directly to the School Facility.
- (g) The crossover between the car park and the street must comply with all relevant Quality Standards and Laws including LGA requirements, and be designed in the overall context of urban design and integration into the surrounding area.
- (h) Provision must be made for emergency vehicle access and service access within the car parks.
- (i) Refer to *E3: Access and Circulation*.

### C3.2 Scope

- (a) Transport impact assessments outline the anticipated impact of the proposals on the surrounding road network traffic flows, public transport availability, parking facilities, safe access, pedestrian and cycle facilities and local amenity.
- (b) Transport assessments must be undertaken in accordance with the Design Brief and address the following:
  - (i) the existing road, transport, pedestrian and cycling network;
  - (ii) the development proposal, and its integration with the surrounding area;
  - (iii) the estimated traffic generation of the development and its impact on existing roads, key intersections and residential areas;
  - (iv) base traffic flows and 'with development' traffic flows;
  - (v) parking demand and supply;

- (vi) access, ingress and egress issues;
- (vii) emergency vehicle access at all times;
- (viii) road safety auditing where required;
- (ix) road layout and permeability, and connections to a higher order road network;
- (x) public transport; and
- (xi) safe walk and cycle access via local pathways.

### **C3.3 Quality Standards and Laws**

- (a) The design, construction, commissioning and completion of the School Facilities must optimise the investment in and use of the roadside and internal movement network infrastructure in order to deliver safe and equitable travel outcomes.
- (b) Project Co must take into account relevant standards, guidelines and policies including the following:
  - (i) *WAPC Transport Impact Assessment Guidelines: Vol 4 – Individual Developments*;
  - (ii) DoT Travel Smart to Schools guidelines;
  - (iii) all PTA and MRWA roadside design guidelines;
  - (iv) MRWA and Austroads *Guide to Road Design* guidelines for roadside elements including intersection traffic control, line marking and signage, road design and speed zoning;
  - (v) relevant State planning policies relating to sustainable transport planning, including development control policies relating to transit-oriented development and residential road design standards;
  - (vi) AS 2890.1 – Off-Street Parking; and
  - (vii) LGA town planning schemes, and area-specific endorsed plans including district and local structure plans, overall development plans, detailed area plans and district centre plans.

#### **C3.3.1 Performance requirements**

Project Co must design the School Facilities in the context of the movement networks to accommodate, manage and respond to:

- (a) on and off street car parking requirements;
- (b) pick up and drop off areas;
- (c) bus embayments adjoining the Verge Site;
- (d) the public transport mode split (particularly for Secondary Schools);
- (e) emergency vehicle access requirements;
- (f) End of Trip Facilities, including bicycle racks;



- (g) embayments adjoining the Verge Site to accommodate traffic and car parking demands at peak periods;
- (h) existing local road connections and their impact on school access points;
- (i) wayfinding and signage, Refer to *E4: Wayfinding and Signage*;
- (j) line marking, traffic control and speed zoning; and
- (k) sustainable transport options.

### C3.3.2 Car parking – Primary Schools

- (a) Project Co must meet the following minimum car parking requirements within the Site and adjacent Verge Works Site, as required by the relevant Authorities:

Primary School Facility	Maximum projected student numbers	Project Co provision	Surrounding Works adjacent POS provision	Total Statutory Approval requirement
Alkimos	950	161	30	191
Baldivis	700	155	15	170
Byford	900	161	30	191
Landsdale	700	128	15	143

- (b) Car parking provision must be as follows:
- (i) generally:
    - (A) where on site car parking is provided for pick up and drop off activities, this should be a one way system to minimise conflict and maximise efficiency during peak periods; and
    - (B) on and off street car parking must be signed as ¼ hour car parking during the peak periods of 8:00 to 9:00am and 2:30 to 4:00pm, Monday to Friday (except during school holidays);
    - (C) where applicable, six (6) bays must be located adjacent, and dedicated to, the Dental Therapy Centre Facilities; and
    - (D) provide a minimum of two (2) Universally Accessible bays, or as required by Quality Standards.
  - (ii) Kindergarten and Pre Primary:
    - (A) dedicated on site car parking is to be provided, signed in accordance with *E4: Wayfinding and Signage* and located adjacent to the School Facility;
    - (B) access and egress is preferred via a one way system of entry and exit to minimise conflict with the adjacent road network, maximise efficiency and enhance safety for pedestrians; and
    - (C) Fifteen bays must be located adjacent, and dedicated to, the Kindergarten and Pre-Primary Functional Area to facilitate Direct Access for pick-up and drop-off; and

- (iii) School Staff car parking:
  - (A) School Staff parking should be contained, wherever possible, in a single area on the Site to minimise conflict with Student pick up and drop off activities.

### **C3.3.3 Car parking – Secondary Schools**

- (a) Project Co must provide 335 car parking bays, as a minimum, for Secondary Schools, within the Site and adjacent Verge Works Site, as required by the relevant Authorities.
- (b) In respect of Harrisdale SS, Project Co must provide the balance of car parking bays in order to achieve the total number of car parking bays required for Secondary Schools, as detailed in (a) above.
- (c) Car parking provision must be as follows:
  - (i) School Staff and visitor parking:
    - (A) School Staff and visitor parking should be contained, where possible, in a single area on the Site to minimise conflict with Student pick up and drop off; and
    - (B) provide a minimum of four (4) Universally Accessible bays, or as required by Quality Standards; and
  - (ii) Education Support Learning Community:
    - (A) where applicable, 85 bays of the total number of bays, must be provided within Ready Access of the Education Support Learning Community.
  - (iii) other parking:
    - (A) street embayments adjoining the Verge Site must be provided and may be available to other legitimate users outside of peak periods;
    - (B) where on site car parking is provided for pick up and drop off activities, this should be a one-way system to minimise conflict and maximise efficiency during peak periods; and
    - (C) on and off street car parking must be signed as ¼ hour car parking during the peak periods of 8:00 to 9:00am and 2:30 to 4:00pm, Monday to Friday (except during school holidays).
- (d) Within the car parks, provision must be made for emergency vehicle access and service access.

### **C3.3.4 Pick up and drop off procedures**

Project Co must meet the following requirements for pick up and drop off areas:

- (a) pick up and drop off areas must be designated for use between 8:00 and 9:00 am and 2:30 and 4:00 pm, Monday to Friday (during School Term). They are ideally a one way system within the on street embayments adjoining the Verge Site. These areas must be signed and line marked to suit the times of use and intended flow and function;

- (b) when picking up or dropping off, it is expected that school management will require the driver to stay with the vehicle, and that School Staff will be available to marshal Students into vehicles;
- (c) the planning of the pick up and drop off area must encourage a left hand turn out of the proposed parking area wherever possible for efficiency of operation;
- (d) the planning of the pick up and drop off areas must discourage U turns or turns in the road within car parking areas and on the local road network adjacent to the Site, in order to maximise safety for Users and the local community;
- (e) the speed limit in the vicinity of School Facilities must be 40 kilometres per hour between 7:30 am and 9:00 am, and 2:30 pm and 4:00 pm; and
- (f) pick up and drop off areas must be designed to accommodate pedestrian paths and safe crossing points.

### **C3.3.5 Bus bays**

- (a) The following number of bus bays must be provided as a minimum:
  - (i) Primary Schools: 1;
  - (ii) Secondary School: 6 (minimum); and
  - (iii) Education Support Learning Community: 4.
- (b) Bus bays must be located in an easily accessible location, in order to minimise conflict with other Users.
- (c) A suitable location for each Site must be determined in consultation with the relevant Authority.
- (d) Bus bays must be linear (end to end) and located within the road reserve parallel to the school boundary.
- (e) Bus bays must be located such that the entry and exit of a bus is accommodated in forward gear, with services provided in a 'looping' arrangement in order to minimise delays to other road users.
- (f) A secure shed or similar to accommodate a school owned 32 seat bus must be located within Secondary School grounds with Direct Access to the service area within the School Facility. Consideration may be given to the location of the shed in proximity to the Technologies Learning Area or the Sports Hall if appropriate.
- (g) Where an Education Support Learning Community is briefed, the associated bus bays must be sufficiently protected from inclement weather to shelter a minimum length of two 9.6m buses, and be located with Direct Access to the entry.

### **C3.3.6 Pedestrian and cycling infrastructure**

- (a) The *WA Bicycle Network Plan 2012-2021* aims to promote an increase in cycling to and from School Facilities. Project Co must provide cycling infrastructure and End of Trip Facilities in accordance with this Design Brief.
- (b) Project Co must provide safe and secure End of Trip Facilities that meet the following requirements:
  - (i) Primary Schools:

- (A) parking for 50 bicycles to be secured to a fixed rack, distributed across two locations; and
- (B) showers and change facilities for School Staff;
- (ii) Secondary Schools:
  - (A) parking for 75 bicycles to be secured to a fixed rack, distributed across at least two locations;
  - (B) showers and change facilities for School Staff; and
  - (C) refer also to D7: Secondary School Functional Areas;
- (iii) the provision of bicycle facilities and infrastructure must be designed in consideration to public transport services, the walkable catchment area and existing cycling infrastructure; and
- (iv) all bicycle parking facilities must comply with all relevant Quality Standards including AS 2890.3.

### **C3.3.7 School specific travel management plans**

During the Development Phase, and in consultation with each Principal and/or the State, Project Co must prepare a school specific travel management and car parking plan that:

- (a) maximises safety for Users;
- (b) minimises impacts to existing traffic operations on the adjacent local road system;
- (c) explains infrastructure that encourages parents to use pick up and drop off areas ; and
- (d) maintains a balance between these objectives and accessibility for the local community as whole.

### **C3.3.8 Service and vehicle areas**

- (a) Vehicle access roads must be minimised within the Site.
- (b) Vehicle access roads must include kerbs, drainage and line marking, safety and directional signage and provide:
  - (i) separation from pedestrian paths;
  - (ii) compliant line marking for pedestrian crossings;
  - (iii) internal trafficable vehicle areas and access to accommodate DFES requirements;
  - (iv) a single point of vehicle entry into each School Staff car parking area;
  - (v) service vehicle access; and
  - (vi) traffic calming, signage and bollards that comply with all relevant Quality Standards and Laws.

### **C3.3.9 Safety around schools**

Project Co must undertake a safe walk audit and prepare a report on the road networks adjacent to the School Facilities. The audit must consider the potential of roadside infrastructure to accommodate:

- (a) safe pedestrian and cycling crossing points;
- (b) speed zoning and local area traffic management measures;
- (c) roadside elements including central medians at crossing locations; and
- (d) signage and line marking to assist in efficient ingress and egress from parking and embayment areas.

## C4. FUTURE DEVELOPMENT AND EXPANSION

- (a) All Primary Schools and Secondary Schools must be designed with flexibility and future proofing in mind. This requires a considered approach towards future growth and predicted climate change impacts including higher temperatures, high wind and rain events.
- (b) Where possible, any existing building fabric is to be reused to avoid unnecessary demolition, and spaces must be designed with built in flexibility to accommodate future changes to functional and operational requirements.
- (c) The master plans must demonstrate that all primary and secondary learning communities can be expanded with co-located Transportable Units. Transportable Units must be located to provide learning environments that are similar in amenity to permanent spaces.

### C4.1 Transportable Unit Zones

- (a) The master plan for each Site must consider the integration of Transportable Unit Zones within the permanent Learning Areas of the School.
- (b) Project Co must master plan appropriate Transportable Unit Zones to accommodate the required minimum number of Transportable Units as detailed in C4.1(l) Table 5 – Transportable Units Utility Connection Points. Project Co must also master plan additional appropriate Transportable Unit Zones to accommodate additional Transportable Units based on the projected enrolments of each School Facility as detailed in Table 1 and Table 2 below, where required.

TABLE 1 – PRIMARY SCHOOL ENROLMENT AND TRANSPORTABLE REQUIREMENT

Enrolment	ECE	General
500	1	2
600	2	5
650	3	6
700	3	8
800	4	11
900	5	14
950	5	16

TABLE 2 – SECONDARY SCHOOL ENROLMENT AND TRANSPORTABLE REQUIREMENT

Enrolment	General Learning Areas	Science Lab	Design & Technology	Home Economics	IT Laboratory	Art
1500	2					
1600	6					
1650	7	1				1

Enrolment	General Learning Areas	Science Lab	Design & Technology	Home Economics	IT Laboratory	Art
1700	9	1				1
1750	11	1				1
1800	13	2				1
1850	13	2	1	1		1
1900	15	2	1	1		1
1950	17	2	1	1		1
2000	18	3	1	1	1	1

- (c) Forecast school enrolments for each School Facility are provided in Table 3 and Table 4 below.

TABLE 3 – PRIMARY SCHOOL FORECAST ENROLMENT

Year	Landsdale East	Alkimos South West	Baldivis	Byford South West
2017	300	350	150	350
2018	400	600	200	450
2019	500	850	300	550
2020	600	600	400	650
2021	700	650	500	550
2022	700	700	600	600
2023	700	750	700	650
2024	700	800	700	700
2025	700	850	700	750
2026	700	900	700	800
2027	700	900	700	850
2028	700	950	700	900
2029	700	950	700	900
2030	700	950	700	900
2031	700	900	700	850
2032	700	900	650	850
2033	700	900	650	850
2034	700	900	650	850
2035	650	850	650	800

<b>Year</b>	<b>Landsdale East</b>	<b>Alkimos South West</b>	<b>Baldivis</b>	<b>Byford South West</b>
2036	650	850	650	800
2037	600	800	600	800
2038	600	800	600	800
2039	600	750	600	750
2040	600	750	600	750
2041	600	700	600	700
2042	450	450	450	450
2043	450	450	450	450
2044	450	450	450	450
2045	450	450	450	450
2046	450	450	450	450
2047	450	450	450	450

TABLE 4 – SECONDARY SCHOOL FORECAST ENROLMENT

<b>Year</b>	<b>Ellenbrook North</b>	<b>Lakelands</b>	<b>Harrisdale</b>	<b>Hammond Park</b>
2017				
2018	250			
2019	500	200		
2020	800	400	1150	200
2021	1050	650	1400	450
2022	1350	900	1650	700
2023	1650	1150	1700	950
2024	1700	1350	1750	1250
2025	1700	1400	1800	1500
2026	1750	1450	1850	1550
2027	1800	1500	1900	1600
2028	1850	1550	1950	1650
2029	1900	1600	2000	1700
2030	1950	1650	2000	1700
2031	2000	1700	2000	1650
2032	2000	1700	2000	1600



Year	Ellenbrook North	Lakelands	Harrisdale	Hammond Park
2033	2000	1700	2000	1550
2034	2000	1700	2000	1500
2035	2000	1700	2000	1450
2036	1950	1650	1950	1450
2037	1950	1650	1950	1450
2038	1950	1650	1900	1450
2039	1950	1600	1900	1450
2040	1800	1600	1850	1400
2041	1750	1600	1850	1400
2042	1700	1600	1800	1400
2043	1650	1600	1800	1400
2044	1600	1550	1750	1400
2045	1550	1550	1750	1400
2046	1500	1550	1700	1350
2047	1450	1550	1700	1350

- (d) The proposed Site location of the Transportable Unit Zone must generally be flat with Clean Fill. Project Co must ensure that the location for the Transportable Unit Zone allows for easy and permanent access by a semi-rigid vehicle to deliver and pick up Transportable Units from any point within the Transportable Unit Zone.
- (e) Project Co must provide all required Engineering Services as described in *Part G: Engineering Specifications*, including security services, to service the Transportable Units to an agreed and easily accessible Utilities connection point within the Transportable Unit Zone.
- (f) For each School Facility, Project Co must ensure that all Engineering Services upstream from all new and future Utilities connection points have sufficient capacity to service the future maximum number of Transportable Units, based on the forecast enrolments in Table 3 and Table 4 above.
- (g) For the purposes of initial service provision, Project Co must install sufficient Utility connection points to support the number of Transportable Units detailed in the following Table 5, at Commercial Acceptance:

TABLE 5 – TRANSPORTABLE UNITS UTILITY CONNECTION POINTS

<b>School</b>	<b>Utility Connection Points at Commercial Acceptance</b>
Primary Schools	10 general learning Transportable Units; and 2 Pre Primary School Transportable Units located adjacent to Classroom Block 1.
Secondary Schools	12 general learning Transportable Units; and 4 science or technology Transportable Units

- (h) The master plans must allow for the Transportable Units to be placed a sufficient distance apart from one another for window outlook and environmental performance, and allow for covered walkway access.



Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and looking at the beaker. The student on the left is looking towards the camera. There are various pieces of laboratory glassware, including beakers and flasks, on the table in front of them. The background is a brightly lit laboratory with shelves and equipment.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

**PART D**  
**Functional Brief**  
**September 2015**

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## D1. FUNCTIONAL REQUIREMENTS

- (a) This *Part D: Functional Requirements* outlines the State's minimum functional design requirements for the School Facilities including the FF&E. The State encourages Project Co to develop innovative proposals that go beyond the minimum requirements and improve the outcomes for the State in terms of functionality, efficiency, amenity and aesthetics.
- (b) Whilst the State has endeavoured to populate Schedule 23 (Schedules of Accommodation), Schedule 20 (FF&E) and *I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools* as comprehensively as possible, these have been compiled in the absence of a design for the new School Facilities and there may be additional requirements that go beyond those noted in this Section to ensure that the School Facilities are Fit For Purpose. The absence of information in the RDS does not in any way alter, limit or affect Project Co's obligations to comply with the Design Requirements, including Fit For Purpose obligations.

## **D2. FIT FOR PURPOSE**

- (a) Project Co must design, construct, commission and complete the School Facilities (including all Engineering Services, FF&E, elements and components) so that:
  - (i) the School Facilities will be Fit For Purpose by reference to the standards required at the Date of Commercial Acceptance for the Stage;
  - (ii) the School Facilities are at least of a similar standard and quality as comparable school facilities in WA; and
  - (iii) the School Facilities are capable of being maintained in accordance with the minimum standards set out in Schedule 27 (Services Specifications).
  
- (b) Without limiting the definition of Fit For Purpose contained in Clause 1 of the Deed, Fit For Purpose in the context of this Design Brief means also that the School Facilities, Engineering Services, Functional Areas, Functional Units, FF&E, elements or components of the School Facilities are designed, constructed, commissioned and completed to:
  - (i) satisfy each of the purposes, objectives, functions, uses and requirements set out in or reasonably inferred from this Design Brief and the remainder of the Deed;
  - (ii) allow the School Activities to be performed, including in a safe, efficient and effective manner, without impacting, impairing or adversely affecting the manner in which School Activities are performed;
  - (iii) enable Project Co to provide the Services in accordance with the Services Requirements;
  - (iv) comply with and satisfy the overarching design and engineering principles, requirements, criteria and specifications, as set out in this Design Brief; and
  - (v) comply with and satisfy the Design Requirements and all relevant Quality Standards and Laws.

### **D3. SCHEDULES OF ACCOMMODATION**

- (a) The SOAs for all School Facilities are contained in Schedule 23 (Schedule of Accommodation) and are organised into Functional Areas, which contain Functional Units, and includes the Stage for each Functional Area of each School Facility.
- (b) SOAs are provided by the Department to describe the spatial requirements and functional room relationships for the School Facilities. The SOAs have been developed over time in consultation with Users and benchmarked against education departments in other states.
- (c) Whilst all SOAs endeavour to address specific Department requirements, including those for Education Support Learning Communities, as comprehensively as possible, the SOAs have been compiled in the absence of a design for the new School Facilities and there may be additional requirements that go beyond those listed in the SOA.
- (d) Project Co must provide the minimum UFA for all Functional Areas and Functional Units as set out in the SOAs. The total UFA of each School Facility must be no less than the total UFA detailed in the SOA. There is scope to reallocate area between Functional Units within a Functional Area provided it can be demonstrated that there is no loss in amenity or functionality, and where agreed with the State during the Design Development process.
- (e) Circulation percentages in the SOAs for each Functional Area are provided as a design guideline only and may be reallocated elsewhere throughout the School Facility, or reduced, where agreed with the State during the Design Development process.
- (f) For Secondary Schools only, Project Co must provide sufficient overall circulation that is Fit for Purpose, does not compromise amenity or functionality, and is not less than 17% of the total briefed UFA for that entire School Facility, inclusive of all Stages.

## **D4. ROOM DATA SHEETS**

- (a) RDSs have been developed from the generic SOA for a standard Primary School and Secondary School.
- (b) The RDSs describe the function, content and characteristics of each Functional Unit and provide a minimum specification of finishes, fittings, FF&E and environmental requirements.
- (c) The RDSs must be read in conjunction with other requirements set out in this Design Brief, including the SOAs.
- (d) All accommodation must comply with the requirements as detailed in the RDSs.
- (e) Refer to *Appendix I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools* and Schedule 23 (Schedules of Accommodation).



## **D5. PRIMARY SCHOOL FUNCTIONAL AREAS**

- (a) Primary schools in WA generally cater for Students from Kindergarten to year 6. The focus during a Student's primary years is the development of literacy and numeracy abilities, and a strong foundation in a range of subjects and skills. Curriculum areas and standards are prescribed by the Australian Curriculum, which sets out the knowledge and skills that every Student must learn in school.
- (b) The School Facilities will routinely be used outside of Core Hours and School Term dates for School Activities, School Third Party Use and Project Co Third Party Use. These uses will incorporate a range of activities including School Staff preparation, instrument tuition, sporting matches, club activities, parent interviews, School Staff meetings, school council meetings and community use.
- (c) The design of the School Facilities must consider community engagement and provide opportunities for families and the community to be involved in the teaching and learning relationship. Furthermore, all Primary Schools must:
  - (i) provide a safe, secure and Universally Accessible learning environment for Students and School Staff;
  - (ii) have a congenial atmosphere for Users and the surrounding community;
  - (iii) be single storey, but respond sensitively to its context;
  - (iv) be distinctive and identifiable;
  - (v) be economical in design and construction;
  - (vi) be designed for minimal maintenance, maximum security and to resist vandalism;
  - (vii) allow for the accommodation of Transportable Units required to cater for future increases in Student population; and
  - (viii) demonstrate equivalence or enhanced performance against a 4 Star Green Star Education V1 certified project.

### **D5.1 Classroom Blocks**

- (a) Classrooms and Internal Activity Areas in WA primary schools are accommodated within four or five Classroom Blocks. Classroom Block 1 comprises the Kindergarten and Pre Primary School facilities, and years 1-6 are accommodated within Classroom Blocks 2-4 or 5. Classroom Block 4 also accommodates the Inclusive Education Classroom, and the Art and Craft Classroom as set out in the SOAs. An additional Classroom Block, Classroom Block 5, is to be provided at Alkimos South West Primary School and Byford South West Primary School.
- (b) A description of the requirements of the various Learning Areas is provided below.

#### **D5.1.1 Kindergarten and Pre Primary Learning Areas**

##### **D5.1.1.1 General Classrooms**

General Classrooms are occupied by Students for large proportions of their learning programs, and must:

- (a) be flexible spaces which enable Students to be grouped in different ways (using operable walls, partitions or other dividers) for different purposes;
- (b) create opportunities for displaying Student work;
- (c) maintain a strong visual connection with the natural, outdoor environment;
- (d) provide withdrawal areas that enable passive surveillance by School Staff;
- (e) provide storage space for Student belongings including schoolbags, jackets and work that is age appropriate, accessible, safe and secure;
- (f) accommodate classroom groupings of up to 27 Students for explicit instruction;
- (g) be designed to focus on secure Learning Areas that foster strong learning and teaching relationships;
- (h) provide Kitchens and Internal Stores such that they are directly connected to Learning Areas, or situated in between Learning Areas where they are located in pairs;
- (i) provide Student Toilets that are located directly at the Kindergarten and Pre Primary School Learning Areas and adjacent to the external Play Area; and
- (j) facilitate integration of technology within the space without limiting flexibility of use and access for maintenance.

#### D5.1.1.2 Integrated resources

A diverse range of resources will be used to support the learning program and assist School Staff in meeting the individual learning needs of Students. It is required that:

- (a) ICT and multimedia are readily accessible for a variety of purposes at any time;
- (b) School Staff Areas are adjacent to Learning Areas; and
- (c) storage facilities are plentiful, diverse, secure, accessible and innovative, with the capacity for a range of resources.

#### D5.1.1.3 Innovative, flexible space and furniture

Individual learning needs must be supported by well resourced flexible spaces, such that:

- (a) at one time, Students can engage individually, in pairs or in different sized groups in active, creative and passive learning activities;
- (b) the space is symbolic with distinctive architectural features, colourful designs and comfortable furniture;
- (c) furniture is age appropriate, ergonomic, adaptable, mobile and modular;
- (d) School Staff can plan, work, share and learn in teams to facilitate Student-centred learning;
- (e) the arrangement of structures, objects and activities encourages choices, problem solving, and discovery;
- (f) learning can be demonstrated creatively through presentation using a variety of media;

- (g) the spaces encourage encounters, communication and relationships, and can easily be converted to suit different purposes;
- (h) Student movement is minimised and there is emphasis on safety and connectedness to one place; and
- (i) the spaces can be used for parent and community interaction, including for the purpose of community engagement in providing learning.

#### D5.1.1.4 Outdoor Environments

Outdoor environments must be provided that:

- (a) provide a variety of spaces that allow Students to engage in different types of play and learning experiences, including reflective and exploratory activities and small or large group work;
- (b) are clearly connected to indoor Learning Areas and accessible for all Students;
- (c) are protected from prevailing winds and weather;
- (d) support development of motor skills and co-ordination and are used for increasingly complex games and activities as Students develop; and
- (e) stimulate inquiry, curiosity, exploration, imagination and reflection.

### D5.1.2 Years 1-6 Learning Areas

#### D5.1.2.1 General Classrooms

General Classrooms are occupied by Students for large proportions of their learning programs, and must:

- (a) be located in pairs, with an operable wall in between;
- (b) be flexible spaces which enable Students to be grouped in different ways (using operable walls, partitions or other dividers) for different purposes;
- (c) create opportunities for displaying Student work;
- (d) maintain a strong visual connection with the natural, outdoor environment;
- (e) provide withdrawal areas that enable passive surveillance by School Staff;
- (f) consider storage walls for Student belongings including schoolbags and work that is age appropriate, accessible, safe and secure;
- (g) accommodate classroom groupings of up to:
  - (i) years 1-3: 24 Students; and
  - (ii) years 4-6: 32 Students;
- (h) provide learning support for individual Students in Internal Activity Areas;
- (i) have the capacity to accommodate 32 Students to allow for maximum flexibility; and
- (j) facilitate integration of technology within the space without limiting flexibility of use and access for maintenance.

### D5.1.2.2 Internal Activity Areas

Flexible, multipurpose spaces located adjacent to or integrated with the General Classrooms must be provided such that:

- (a) areas can transform into spaces for different purposes, sizes and audiences, to accommodate individuals, small groups, class activities and large group activities;
- (b) breakout spaces or semi-private niches can be created to enable individual learning support, silent or supported reading, specialist tuition, quiet activities or resource immersion;
- (c) areas can be used for parent and community interaction;
- (d) many activities can occur simultaneously without congestion and disruption;
- (e) spaces can be reconfigured for special functions; and
- (f) a wide range of functions can be accommodated including multimedia presentations, performances, physical activities or eating, and these are supported by appropriate lighting levels, acoustic conditions, AV and ICT.

### D5.1.2.3 Integrated resources

A diverse range of integrated resources must be provided to support the learning program and assist School Staff in meeting the individual learning needs of Students. It is required that:

- (a) ICT and multimedia are readily accessible for a variety of purposes at any time;
- (b) School Staff Areas are adjacent to Learning Areas;
- (c) storage facilities are plentiful, diverse, secure, accessible and innovative. Appropriately designed and located storage areas must be provided for specialised areas including art and science;
- (d) resources are provided that support School Staff to plan, scaffold and deliver a program that supports passive and active learning and enables Students to demonstrate progression using a variety of media and tools;
- (e) Students can produce, use and evaluate ICT controlled models including reports, slide shows, multimedia, cartoons, tables, websites and other programs;
- (f) Students and School Staff can use ICT and multimedia to research, develop, communicate and present ideas;
- (g) the capacity for interactive whiteboards is provided in each General Classroom, and mobile technology is able to be safely and securely stored; and
- (h) classrooms are equipped with whiteboards, in accordance with the Primary School Room Data Sheets at Part I2 of this Brief, on the front learning wall of the room on either side of the reserved central 2100mm wide space for audio visual equipment. Whiteboards should be a minimum of 1500mm wide and 900mm high, be mounted using screw fixings (not glued), and be positioned so that the bottom edge is typically 750-800mm AFL. Where whiteboards are provided on storage walls, or similar, one section must be a minimum of 900mm wide. Excessive joins in whiteboards are not acceptable. Any hinged whiteboards provided must not be able to swing onto audio visual equipment.

#### D5.1.2.4 Innovative, flexible space and furniture

Individual learning needs must be supported by well resourced flexible spaces, such that:

- (a) at one time, Students can engage individually, in pairs or in different sized groups in active, creative and passive learning activities;
- (b) furniture is age appropriate, ergonomic, adaptable, mobile and modular;
- (c) School Staff can plan, work, share and learn in teams to facilitate Student-centred learning;
- (d) active and passive learning can be demonstrated in teams using a variety of media, including performance;
- (e) small activity spaces encourage learner engagement in tasks, School Staff involvement with individual learners, exploratory behaviour, social interaction and co-operation amongst learners;
- (f) spaces incorporates sound, colour, graphics and movement catering for different learning styles and intelligences;
- (g) secluded study space and structured reading areas promote literacy engagement; and
- (h) spaces encourage activities that develop behavioural, social, emotional and cognitive engagement.

#### D5.1.2.5 Inclusive Education Classrooms

- (a) The Inclusive Education Classrooms allow for the School Facility to cater for Students with special needs or disability inclusively throughout the Classroom Blocks.
- (b) In addition to the requirements for General Classrooms, the Inclusive Education Classrooms must be fitted with a kitchenette and have Direct Access to a storeroom. Where the General Classrooms are not located in pairs, consideration must still be given to the creation of flexible spaces which enable Students to be grouped in different ways.

#### D5.1.2.6 Community engagement

The community must be engaged in learning, welfare and health support for Students and their families. Opportunities for community engagement include:

- (a) spaces which face on to welcoming entries, or are a component of multipurpose spaces, that enable visitors, parents, the community and other stakeholders to conduct special activities or performances in the School Facilities;
- (b) a meeting place or resource centre that creates opportunities for parental involvement and community meetings. Their flexible use is enhanced if they are accessible and visible from Learning Areas; and
- (c) provision for inclusion of family in the teaching and learning relationship.

#### D5.1.2.7 Outdoor environments

Outdoor environments must be provided that:

- (a) provide a variety of spaces that allow Students to engage in different types of play and learning experiences, including reflective and exploratory activities and small or large group work;
- (b) are clearly connected to indoor spaces and accessible for all Students;
- (c) support development of motor skills and co-ordination and are used for increasingly complex games and activities as Students develop;
- (d) stimulate inquiry, curiosity, exploration, imagination and reflection; and
- (e) enable small groups to engage in active learning, rotating through challenging activities and team games.

### **D5.1.3 Art and Craft**

#### **D5.1.3.1 Art and Craft Classroom**

- (a) The art and crafts classroom accommodates the teaching of specialist art and craft, and is used by all year levels of the School Facility. The space must be well ventilated and endowed with natural light. The room must be directly connected to a secure external courtyard to provide inspiration and support the teaching of art techniques.
- (b) The area must also be able to accommodate low level science activities, and the furniture in the room must offer flexibility in configuration and use so as to allow for different year levels, curriculum areas, teaching approaches and learning styles.
- (c) The art and crafts classroom must be provided as a wet area, and include ample space and facilities for the display of Student work.

#### **D5.1.3.2 Kiln Room**

- (a) The Kiln Room must accommodate a kiln and drying rack as set out elsewhere in this Design Brief. Access must be considered for the installation and movement of these large items, and the floor must be of an appropriate stain resistant, non-slip material that is easily cleaned and maintained.
- (b) The Kiln Room must be well ventilated. The kiln hood must be connected to a roof mounted, wind operated rotary ventilator.

#### **D5.1.3.3 Paper and Science Stores**

The Paper and Science Stores must be designed to accommodate appropriate shelving and cupboards set out elsewhere in this Design Brief. The stores must be lockable, and the Science Store must be ventilated by a roof mounted, wind operated rotary ventilator.

## **D5.2 Administration Block**

The Administration Block is the main entrance of each School Facility, and contributes strongly to its civic importance and identity. It houses the administrative functions of the School Facilities, as well as providing a point of public interface. Relationships to car parking, arrival, community engagement and the separation of public and administrative functions must be highly considered.

### **D5.2.1 Foyer and Waiting**

- (a) A spacious and welcoming Foyer and waiting area adjacent to the Reception must be provided.

- (b) The Public Foyer must be designed in such a way that there is no Ready Access to any other part of the Administration Block.

#### **D5.2.2 Reception and General Office**

- (a) The General Office is the first point of contact to all the visitors and must be easily visible from the entrance doors.
- (b) The Reception counter must form a barrier to the public. While the counter must have an area designated for wheelchair access, it must still be designed to prevent able bodied persons from gaining access to the clerical area.
- (c) The General Office must be located near the Principal's Office but not directly accessed from it.
- (d) The General Office must have Direct Access to the Business Manager's Office.
- (e) It is required that a door or access control measure separate the School Staff Areas and corridor from the Public Foyer, to allow School Staff to move freely and securely between administration areas.
- (f) An entrance for Students and School Staff (with the exception of subcontractors) to the Administration Block is to be provided from the internal courtyard of the School Facility.

#### **D5.2.3 Business Manager's Office**

- (a) The location of the office must provide the Business Manager a level of security and seclusion from visitors, while permitting surveillance of the General Office and the corridor. All external visitors are required to first report to the Reception.
- (b) The Business Manager's Office must be securable, and includes a safe.
- (c) Acoustic separation from adjacent administration and circulation areas must be provided. Refer to *G8: Acoustic Services*.

#### **D5.2.4 Principal's Office**

- (a) The Principal's Office must have an external view.
- (b) The Principal's Office must be located near to the General Office but not be accessed directly from it.
- (c) The location must provide the Principal a level of security and seclusion from visitors, with all external visitors being required to first report to the Reception.
- (d) The Principal's Office must have a visual connection to the corridor by a glazed door panel or other measure.
- (e) Acoustic separation from adjacent administration and circulation areas must be provided. Refer to *G8: Acoustic Services*.

#### **D5.2.5 Deputy Principals' Offices**

- (a) The Deputy Principals' Office must accommodate two deputy principals, and may be a shared room, separate offices, or offices separable by an operable wall.
- (b) The location must provide the deputy principals a level of security and seclusion from visitors, with all external visitors being required to first report to the Reception.

- (c) The Deputy Principals' Office must have a visual connection to the corridor by a glazed door panel or other measure.
- (d) The Deputy Principals' Office must have an external door that opens directly to the courtyard area.
- (e) Acoustic separation from adjacent administration and circulation areas must be provided. Refer to *G8: Acoustic Services*.

#### **D5.2.6 Staff Office**

- (a) The location of the Staff Office must provide the staff member a level of security and seclusion from visitors, with all external visitors being required to first report to the Reception.
- (b) The Staff Office must have a visual connection to the corridor by a glazed door panel or other measure.
- (c) The Staff Office may be separated from the Interview Room by an operable wall, however acoustic separation from the adjacent interview, administration and circulation areas must still be provided. Refer to *G8: Acoustic Services*.

#### **D5.2.7 Interview Room**

- (a) The Interview Room may be used by School Staff and Students as well as by visitors and community members, and must be accessible from the General Office.
- (b) The Interview Room may be separated from the Staff Office by an operable wall, however high level acoustic separation from adjacent areas must still be provided. Refer to *G8: Acoustic Services*.

#### **D5.2.8 Reprographics Room**

- (a) The Reprographics Room is generally used to house a multifunctional photocopier and for the storage of stationery and photocopier consumables.
- (b) The Reprographics Room must have Ready Access to other Functional Units within the Administration Block.
- (c) The Reprographics Room must be mechanically ventilated.
- (d) The PA system console outlet is to be located in the Reprographics Room, as is the siren control switch.

#### **D5.2.9 Communications Room**

The Communications Room must be lockable, air conditioned and have appropriate ventilation for the active equipment within the room but no external windows.

#### **D5.2.10 Medical Room**

- (a) The Medical Room is for the administration of first aid and as a rest room for sick Students. It must be located close to the General Office and must be visible from the Deputy Principals' Office and the corridor.
- (b) It must be in close proximity to a UAT and include provision for two beds.
- (c) The room must be located to provide Ready Access for ambulance services.



### **D5.2.11 Secure Store**

The Secure Store is for general storage purposes, including archives and the storage of confidential material including Student records. It must have Ready Access to other Functional Units within the Administration Block.

### **D5.2.12 Staff Common Room**

- (a) The Staff Common Room must be located in a central part of the School Facilities to be accessible by, and promote interaction between, all School Staff. It may be co-located with either the Library or the Administration Block. Access to an external courtyard may be considered.
- (b) Members of the public must not be able to gain Direct Access to the Staff Common Room.
- (c) The Staff Common Room is an integrated social and work area. The separation of these functions can be achieved by the arrangement of furniture. The emphasis on the design and furniture layout is relaxation and interaction between all School Staff.
- (d) The Staff Common Room must include a Kitchen area and facilities for casual use by School Staff.
- (e) Consideration must be given to locating the Staff Common Room adjacent to other spaces, including the Conference Room that enables School Staff to use these spaces when available. The Staff Common Room may be separated from the Conference Room by an operable wall, however acoustic separation must still be provided. Refer to *G8: Acoustic Services*.

### **D5.2.13 Conference Room**

- (a) The Conference Room will be used for meetings and presentations. The room must be comfortable and welcoming to Users and community members, and furnished in a professional manner that permits the flexible arrangement and configuration of FF&E.
- (b) The Conference Room must be able to accommodate an interactive whiteboard or equivalent and AV facilities. The lighting system must allow for dimming.
- (c) This room may frequently be used by visitors and community members, and must be located accordingly. The Conference Room may be separated from the Staff Common Room by an operable wall, however acoustic separation must still be provided. Refer to *G8: Acoustic Services*.

## **D5.3 Library**

The Library houses the majority of the School Facility's information resources and must be in a location that is central to all blocks to provide Ready Access from all buildings. Particular consideration should be given to its relationship with other common facilities, including the Covered Assembly Block.

### **D5.3.1 Library Resource and Work Area**

- (a) The Library fulfils a number of important roles associated with a range of learning and teaching activities. It must offer flexible learning spaces that can be used by a whole class, small groups or individuals to undertake learning activities based upon Library resources.

- (b) The Library must be able to house the physical resources of the School Facility, including books, magazines and maps, as well as offer access to online, electronic, AV and other resources through the provision for network access and AV equipment.
- (c) Both formal and informal furniture must be provided to facilitate the range of activities that will take place in the Library.
- (d) The Library must include facilities for themed displays, and include a lockable storeroom.

#### **D5.4 Covered Assembly Block**

- (a) The Covered Assembly Block accommodates a variety of roles, including general assemblies, physical education, music, functions and community use. It must be located in close proximity to the Sports Oval and Hard Courts.
- (b) The Covered Assembly Block also houses the Canteen and Gardener's Facilities, and consideration must be given to access for deliveries, parking, service, and waste management. The trolleying of goods over short distances is acceptable.

##### **D5.4.1 Covered Assembly Area**

- (a) This area is used for a variety of roles, including general assemblies.
- (b) The Covered Assembly Area needs to be flexible, and capable of being fully opened or enclosed, through the provision of large format operable walls or doors. It must have a height suitable to its proposed function, including as a physical education space.
- (c) Care must be taken to ensure that nothing projects from the walls that would prove hazardous while the area is in use. Lighting must be functional with switching provision to allow for the separate control of artificial lighting, to complement varying levels of natural lighting within the area. Light fittings must be robust and protected from damage during sport and play.
- (d) The floor build-up and finish must be suitable for physical education use and as a meeting hall. It must be able to support chairs, not be damaged or show surface marks if subjected to street shoe traffic and be easily cleaned and maintained.

##### **D5.4.2 Music Room**

- (a) The Music Room is for the teaching of specialist music curriculum, and is used by all year levels. It must provide flexibility in use and configuration to accommodate a variety of individual and group activities, and a range of musical instruments of varying sizes.
- (b) These activities must be supported by the necessary level of power and data outlets and the required acoustic conditions.
- (c) The Music Room may also be used for drama, and it is therefore important that the central floor area be unencumbered
- (d) The Music Room must be located such that it has a direct connection to the Covered Assembly Area that can house an audience, thereby allowing it to be used for performance. Operable walls may be used. However, this must not compromise the primary function of the Music Room, as described in paragraph (a).

- (e) The Music Room must be appropriately located and acoustically treated to ensure that noise does not affect other learning or administration areas. Refer to *G8: Acoustic Services*.

#### **D5.4.3 Sports Store**

- (a) The sports store must be lockable and open directly off the Covered Assembly Area for the storage of equipment. The layout must be rectangular in shape, based on sizes of equipment to be stored.
- (b) The opening width to the store must be adequate to allow for the transfer of large pieces of equipment in and out of the store without difficulty. External doors may be considered depending upon the location of the Sports Oval and Hard Courts.

#### **D5.4.4 Canteen**

- (a) The Canteen must be able to cater to the needs of Students of all year levels, and be designed to discourage bullying and other antisocial behaviour.
- (b) The Canteen must meet all relevant Quality Standards and Laws for the preparation of food as well as the reheating and selling of pre-cooked and packaged foods.

#### **D5.4.5 Gardener's Workshop, Machine Store and Fertiliser Store**

- (a) The Gardener's Workshop, Machine Store and Fertiliser Store is to be located with Ready Access to service vehicle parking, and planned to minimise interaction with Students. Risk areas include vehicle access and the storage of tools, fertiliser and chemicals in the facility.
- (b) The Gardener's Workshop, Machine Store and Fertiliser Store must be well ventilated and fire rated as set out elsewhere in this Design Brief.
- (c) An eye wash facility must be provided.

#### **D5.4.6 Uniform Store**

The Uniform Store must have Direct Access to the Covered Assembly Area.

#### **D5.4.7 PA Cupboard**

The PA Cupboard must be located to allow Ready Access, a clear view and communication between the stage area and PA operator.

#### **D5.4.8 Bin Enclosure**

- (a) The location, layout and construction of the Bin Enclosure must be suitable for the delivery of Services in accordance with Schedule 27 (Services Specifications).
- (b) The Bin Enclosure must be lockable, accessible to service vehicles, and fitted with a hose tap and drain for wash down.
- (c) Adequate lighting is required for early morning and evening access by cleaning staff.
- (d) The location, layout and construction of the Bin Enclosure must mitigate fire and vandalism risk.
- (e) Refer to *F2.8.4: Bin Enclosures* for other Site Interface requirements.

## **D5.5 Amenities**

### **D5.5.1 Staff Toilets**

- (a) Staff Toilets must be dispersed around the Site, and comply all relevant Quality Standards and Laws. Provision of toilet facilities must accommodate an increase in School Staff associated with the future provision of Transportable Units.
- (b) Staff Toilets should be located on an external wall where possible and must be sufficiently and naturally ventilated. Staff Toilets must be located to provide privacy and acoustic separation.

### **D5.5.2 Student Toilets**

- (a) Student Toilets must not be provided in large blocks but rather dispersed throughout the School Facility with Ready Access from Classroom Blocks, the Covered Assembly Area, the Sports Oval, Hard Courts and the Library.
- (b) The cisterns to Student Toilets should be located in a service duct to prevent vandalism. Kindergarten and Pre Primary School toilets, the UATs and the assisted access toilets (AATs) may be designed with cisterns located in the cubicles.
- (c) Kindergarten and Pre Primary School toilets must have Direct Access to Kindergarten and Pre Primary School classrooms and play spaces.
- (d) Student Toilets must be well ventilated. The State has a preference for designs that are light, open and visible. The design must discourage antisocial behaviour, while still maintaining adequate privacy.
- (e) Strong consideration should be given to the provision of passive surveillance 'anti-bullying' toilets, where washbasins are located in an open area off a corridor, rather than behind a door. In this instance, lockable cubicles with full length doors are to be co-located with the washbasins, and urinals need not be provided.

### **D5.5.3 Assisted Access Toilets**

- (a) AATs must be provided in accordance with the requirements set out elsewhere in this Design Brief, including *14: Specific Layout Drawings*. These facilities are predominantly intended for use by Students with an education assistant.
- (b) The requirements for the facilities exceed the requirements of relevant Quality Standards and Laws, including AS1428, the NCC, and the *Access to Premises Standards* and are in accordance with dimensions and floor areas specific to the Department's requirements.
- (c) The toilet is to be positioned in a peninsula layout, which allows for transfer from both sides of the pan or assistance by one or two persons. The shower facility is to be located in one corner, and all fixtures must be Universally Accessible.

### **D5.5.4 Universal Access Toilets**

- (a) UATs must be provided in accordance with the requirements set out elsewhere in this Design Brief, including *14: Specific Layout Drawings*. These facilities are predominantly intended for use by Users with disabilities.
- (b) The requirements for the facilities exceed the requirements of relevant Quality Standards and Laws, including the Disability (Access to Premises – Buildings) Standards (2010) under the *Disability Discrimination Act 1992* (Cth), AS1428 and

the *Disability Discrimination Act 1992* (Cth), and are in accordance with dimensions and floor areas specific to the Department's requirements.

#### **D5.5.5 Circulation**

- (a) The design must ensure ease of circulation, orientation and wayfinding for Users. Refer to *E3: ACCESS AND CIRCULATION*.
- (b) Providing requirements for travel and circulation are adequately met, the minimum space allocation for circulation may be used to supplement other areas of the School Facility.

#### **D5.5.6 Engineering Services**

- (a) Engineering Services plant and equipment must be located so as to provide for the economic distribution of Engineering Services.
- (b) The layout of plant and equipment must accommodate safe access for maintenance, removal and replacement.

### **D5.6 External facilities**

#### **D5.6.1 Sports Oval**

- (a) The Sports Oval, including goal posts, cricket pitch and all associated line marking for football, cricket and soccer, for each primary School Facility will be constructed by others as part of the Surrounding Works.
- (b) Project Co must provide two cricket practice nets with Ready Access to the Sports Oval.
- (c) Universal Access must be provided from the School Facility to the Sports Oval.
- (d) Consideration must be given to the proximity of the Sports Oval and cricket practice nets to the Covered Assembly Area, other playing fields and courts, and car parking.
- (e) Refer to *F2.6: Playing Fields and Courts* for specification requirements.

#### **D5.6.2 Hard Courts**

- (a) Project Co must provide the number of multipurpose Hard Courts, including all line markings, for each Primary School Facility in accordance with Schedule 23 (Schedule of Accommodation) of the Deed.
- (b) Universal Access must be provided from the School Facility to all Hard Courts.
- (c) Consideration must be given to the proximity of the Hard Courts to the Covered Assembly Area, other playing fields and courts, and car parking.
- (d) Project Co must provide enhanced Hard Courts as specified in *C2.2: HARD COURTS* of *C2: COMMUNITY PARTNERSHIPS*.
- (e) Refer to *F2.6: PLAYING FIELDS AND COURTS* for specification requirements.

#### **D5.6.3 Car park**

Refer to *E3: ACCESS AND CIRCULATION* and *C3: TRAFFIC MANAGEMENT* for car parking requirements.

#### **D5.6.4 Street embayment**

Refer to *C3: TRAFFIC MANAGEMENT* for street embayment requirements.

#### **D5.6.5 Bus bay**

Refer to *C3: TRAFFIC MANAGEMENT* for bus bay requirements.

#### **D5.6.6 Landscaping**

- (a) Landscaping must be provided to external areas of the School Facilities that are not used for car parking or recreational facilities. Wherever possible, such landscaping must contribute to the creation and definition of outdoor learning and play spaces and enhance the overall appearance and appeal of the School Facilities.
- (b) Refer to *Part F: LANDSCAPE SPECIFICATIONS* for detailed landscape requirements.

#### **D5.6.7 Bicycle facilities**

- (a) Refer to *C3: TRAFFIC MANAGEMENT* for pedestrian and cycling infrastructure requirements.
- (b) Refer to *E6: ECOLLOGICALLY SUSTAINABLE DESIGN* for information related to equivalency with the Green Star requirements.

#### **D5.6.8 Play equipment**

Refer to *F12: LANDSCAPE ARCHITECTURE* for play equipment requirements.

### **D5.7 Dental Therapy Centre Facility**

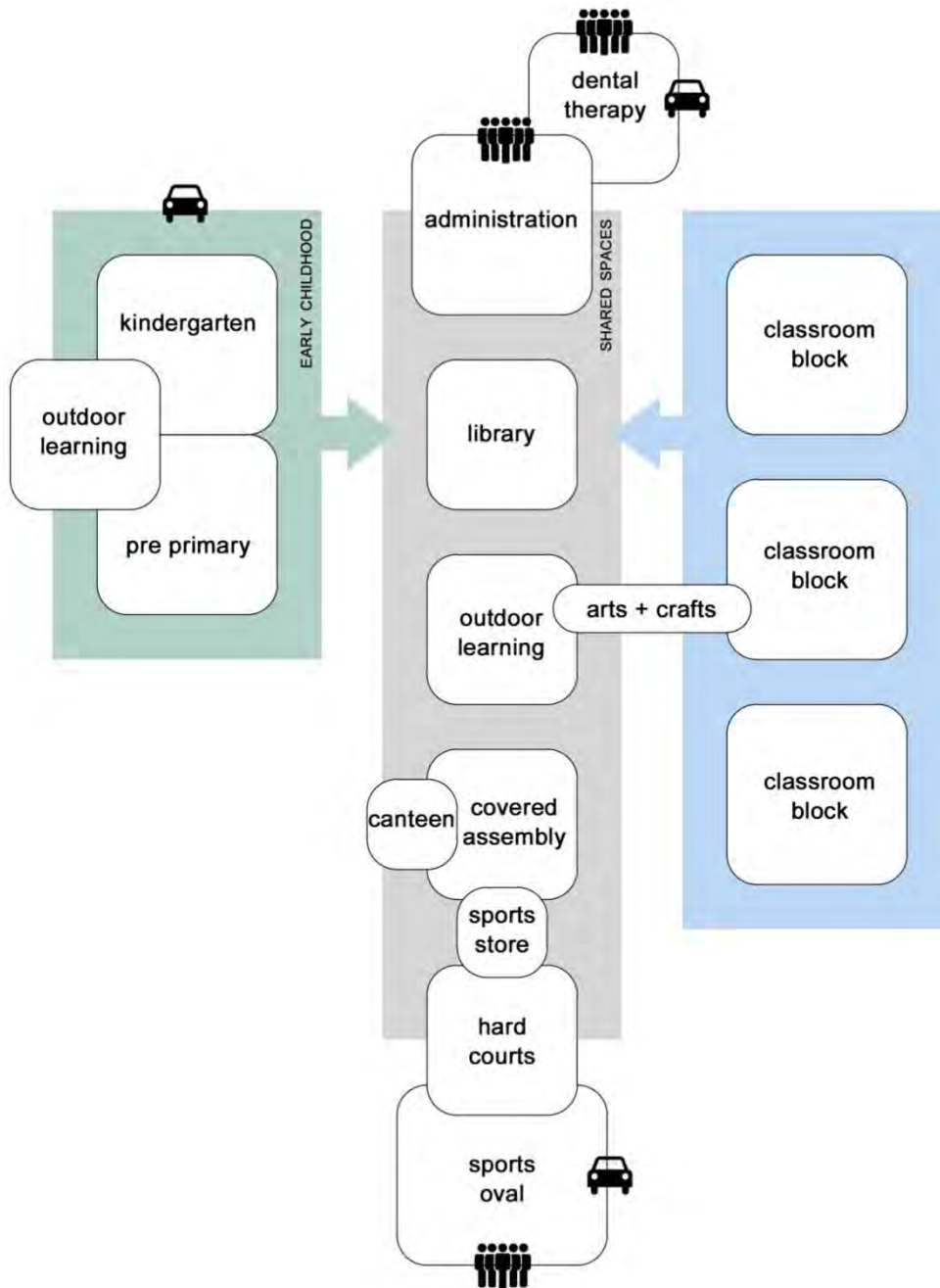
- (a) Where briefed, Dental Therapy Centre Facilities are to be provided at Primary Schools to serve the surrounding schools in the area. The Dental Therapy Centre Facilities must be provided as set out elsewhere in this Design Brief. Refer to *I4: SPECIFIC LAYOUT DRAWINGS*. The drawings must not be altered without direction and approval from the State.
- (b) The preferred location for the Dental Therapy Centre Facility is co-located with the Administration Block. Where this occurs, signage must be used to make the entrance to the Dental Therapy Centre Facility clear and distinct from the entry to the Administration Block to avoid confusion. Where the Dental Therapy Centre Facility abuts any building, it must be fire separated.
- (c) Car bays are to be provided adjacent to the Dental Therapy Centre Facility as per the requirements of this Design Brief. Both Student drop off and vehicle access must be considered.
- (d) The Dental Therapy Centre Facility must be Universally Accessible, and Ready Access must be provided to a toilet suitable for the Dental Therapy Centre Facility users.
- (e) The Dental Therapy Centre Facility must be provided with a separate and dedicated meter for power to enable manual reading for the purposes of pass-through costs to the Department of Health. Refer to *G6: ELECTRICAL AND COMMUNICATIONS* for further details on metering requirements.

## **D5.8 Transportable Units**

Refer to *C4: FUTURE DEVELOPMENT AND EXPANSION* for Transportable Units and Transportable Unit Zone requirements.

### D5.9 Functional Relationships Diagram

The following functional relationship diagram illustrates the curriculum connections across a standard primary school, and must be read in conjunction with this Design Brief, including the SOAs.





## **D6. SECONDARY SCHOOL FUNCTIONAL AREAS**

- (a) Secondary schools in WA generally cater for Students from years 7 to 12. All secondary schools teach a varied and relevant syllabus as set by the Australian Curriculum. Students normally undertake a Western Australian Certificate of Education, and secondary schools in WA consider a mixture of courses, VET and endorsed programs when planning Student pathways.
- (b) The School Facilities will routinely be used outside of Core Hours and School Term dates for School Activities, School Third Party Use and Project Co Third Party Use. These uses will incorporate a range of activities including School Staff preparation, instrument tuition, sporting matches, club activities, parent interviews, School Staff meetings, school council meetings and community use.

### **D6.1 Learning Communities**

General Learning Areas, Incidental Learning Areas and inclusive education Learning Areas in WA secondary schools are accommodated within learning communities. A description of the requirements of the various Learning Areas is provided below.

#### **D6.1.1 Years 7-9 Learning Areas**

##### **D6.1.1.1 General Learning Areas**

General Learning Areas are occupied by Students for large proportions of their learning programs, and must:

- (a) be located in pairs, with an operable wall in between, or where the Learning Areas are not located in pairs, consideration must still be given to the creation of flexible spaces which enable Students to be grouped in different ways;
- (b) accommodate classroom groupings of up to 32 Students for explicit instruction;
- (c) be flexible spaces enabling Students to be grouped in different ways (using operable walls, partitions or other dividers) for different purposes;
- (d) enable learning support to be provided for individual Students either in the General Learning Area or the Incidental Learning Areas;
- (e) enable Students to use a variety of media, materials, equipment and technologies; and
- (f) facilitate integration of technology within the space without limiting flexibility of use and access for maintenance.

##### **D6.1.1.2 Inclusive Education Classrooms**

- (a) The Inclusive Education Classrooms allow for the School Facility to cater for Students with special needs or disability inclusively throughout the general learning communities.
- (b) In addition to the requirements for General Learning Areas, the Inclusive Education Learning Areas must be fitted with a kitchenette and have Direct Access to a store.

##### **D6.1.1.3 Incidental Learning Areas**

Flexible, multipurpose spaces must be provided such that:

- (a) spaces can be easily reconfigured to accommodate different size groups;
- (b) the adaptability of spaces enables conversion from lecture style to tutorial style instruction, small group learning and individual learning support;
- (c) the design of the space enables as many of these activities as possible to occur simultaneously without congestion and disruption;
- (d) furniture, lighting and acoustic systems maximise the adaptability of spaces and spatial relationships, allowing multiple uses to occur concurrently; and
- (e) the multipurpose spaces cater for current and future purposes, including collaborative project based learning, multimedia presentations, creative arts, drama and musical performances and eating.

#### D6.1.1.4 Innovative, flexible space and furniture

Individual learning needs must be supported by well resourced flexible spaces, such that:

- (a) inquiry, project-based learning emphasises problem solving and the development of higher order thinking;
- (b) teams vary in size and can be formed and re formed spontaneously;
- (c) School Staff can work with Students individually and privately to provide one to one learning support, counselling and to develop individual learning plans;
- (d) the furniture is mobile and modular. It supports teamwork by School Staff and Students and the convenient conversion of spaces to suit different purposes;
- (e) the furniture is functional and adaptable. It is age appropriate and comfortable and suits the purpose of specialist spaces and community activities;
- (f) the social needs and skills of Students are accommodated in formal and informal spaces; and
- (g) the furniture accommodates Students with disabilities, including both the selection of appropriate furniture and its arrangement to ensure sufficient zones of circulation and movement.

#### D6.1.1.5 Integrated resources

A diverse range of integrated resources will be used to support the learning program and assist School Staff in meeting the individual learning needs of Students. It is required that:

- (a) these resources include ICT hardware, software, equipment, books, magazines and games;
- (b) these resources support assessment for learning and demonstration of learning outcomes, including presentations;
- (c) ICT is integrated with the day to day operations of the School Facility. School Staff use ICT for all operational tasks, and through technology, provide Students with a variety of ways to engage in a curriculum activity. Technology is also used to connect Students to other schools, School Staff and industry experts;
- (d) Learning Areas are equipped with workstations on portable furniture;

- (e) Learning Areas may be equipped with workstations on portable furniture. Specialist ICT equipment is throughout the building, including high-end multimedia machines, presentation devices and specialist scientific devices. All Learning Areas have the necessary infrastructure to support data projectors;
- (f) storage facilities, presentation and display spaces are versatile, innovative, plentiful and adaptable and ensure that the resources are easily accessible and secure;
- (g) School Staff can readily engage in coaching and professional learning in teams with support from reliable technology and software. Interactive capacity is guaranteed to enable virtual support from external expertise in a networked learning model involving School Staff and Students;
- (h) Students are able to bring personal laptops to school or to access them at school and effortlessly use these on the network;
- (i) mobile devices (including laptops and tablets) are able to be charged easily within the learning community;
- (j) Learning Areas must be equipped with whiteboards on the front learning wall of the room, on either side of the reserved central 2100mm wide space for audio visual equipment. Whiteboards should be a minimum of 1500mm wide and 900mm high, be mounted using screw fixings (not glued), and be positioned so that the bottom edge is typically 750-800mm AFL. Where whiteboards are provided on storage walls, or similar, one section must be a minimum of 900mm wide. Excessive joins in whiteboards are not acceptable. Any hinged whiteboards provided must not be able to swing onto audio visual equipment; and
- (k) where whiteboards are not listed on the Secondary School RDS and are required, the following number of whiteboards are to be additionally provided throughout the relevant Secondary School Facilities:

<b>Secondary School</b>	<b>Total No. of whiteboards</b>
Ellenbrook	75
Harrisdale	57
Lakelands	83
Hammond Park	73

#### D6.1.1.6 Community engagement

The community must be engaged in learning, welfare and health support for Students and their families. Opportunities for community engagement include:

- (a) spaces which face on to welcoming entries or are a component of multipurpose spaces enable and encourage visitors, parents, and other User groups to conduct special activities or performances in the School;
- (b) Learning Areas that provide digital, audio, video, and computer links to tertiary learning centres and sources including business and community organisations, community colleges, and institutions of higher learning;

- (c) interactive and virtual learning opportunities that can be accessed by Students, School Staff and the community in order to enhance the potential for the creation of a networked learning community;
- (d) conference facilities for larger groups to meet and exchange information and teaching experiences with each other and with visitors; and
- (e) facilities which include a balance between formal and informal, and break-out meeting spaces, with support space.

#### D6.1.1.7 Outdoor environments

Outdoor environments must be provided that:

- (a) support active learning for all Students;
- (b) provide diversity in the range of resources that Students can use to demonstrate complex and reflective gross motor skill development, team work and reflection on physical fitness;
- (c) allow Students to participate in a variety of team and individual games and activities, using and building on skills and strategies from other sports as well as continuing to develop new, sport-specific, skills;
- (d) allow Students to participate in a range of outdoor recreation and adventure activities; and
- (e) provide quiet and comfortable settings adjacent to indoor Learning Areas for small group work and for individual, reflective activities.

### D6.1.2 Years 10-12 Learning Areas

#### D6.1.2.1 General Learning Areas

General Learning Areas are occupied by Students for large proportions of their learning programs, and must:

- (a) be located in pairs, with an operable wall in between;
- (b) accommodate classroom groupings of up to:
  - (i) year 10: 32 Students; and
  - (ii) years 11-12: 25 Students.
- (c) be flexible spaces enabling Students to be grouped in different ways (using operable walls, partitions or other dividers) for different purposes;
- (d) enable learning support to be provided for individual Students either in the General Learning Area or the Incidental Learning Areas;
- (e) enable Students to use a variety of media, materials, equipment and technologies; and
- (f) facilitate integration of technology within the space without limiting flexibility of use and access for maintenance.

### D6.1.2.2 Incidental Learning Areas

Flexible, multipurpose spaces must be provided such that:

- (a) spaces can be easily reconfigured to accommodate different size groups;
- (b) the adaptability of spaces enables conversion from lecture style to tutorial style instruction, small group learning and individual learning support;
- (c) spaces may have the capacity to be converted from small to large spaces; and
- (d) spaces accommodate a wide variety of activities including quiet reading and other independent work, small and large group work, lectures, presentations, simple art and science activities and research activities.

### D6.1.2.3 Innovative flexible space and furniture

Individual learning needs must be supported by well resourced flexible spaces, including:

- (a) inquiry, project based learning emphasises problem solving and the development of higher order thinking;
- (b) teams vary in size and can be formed and re formed spontaneously;
- (c) School Staff can work with Students individually and privately to provide one to one learning support, counselling and to develop individual learning plans;
- (d) the furniture is mobile and modular. It supports teamwork by School Staff and Students and the convenient conversion of spaces to suit different purposes;
- (e) the furniture is functional and adaptable. It is age appropriate and comfortable and suits the purpose of specialist spaces and community activities;
- (f) the social needs and skills of Students are accommodated in formal and informal spaces; and
- (g) the furniture accommodates Students with disabilities, including both the selection of appropriate furniture and its arrangement to ensure sufficient zones of circulation and movement.

### D6.1.2.4 Integrated resources

A diverse range of accessible resources will be used to support the learning program and assist School Staff in meeting the individual learning needs of Students. It is required that:

- (a) ICT is integrated with the day to day operations of the School Facilities. School Staff use ICT for all operational tasks, and through technology, provide Students with a variety of ways to engage in a curriculum activity. Technology is also used to connect Students to other schools, to staff from other schools and industry experts. This is used to support new and innovative curriculum activities and programs;
- (b) Learning Areas are equipped with workstations on portable furniture. Specialist ICT equipment is found throughout the building, including high-end multimedia machines, presentation devices and specialist scientific devices. All Learning Areas have the necessary infrastructure to support data projectors;
- (c) Students are able to bring personal laptops to school or to access them at school and effortlessly use these on the network; and

- (d) mobile devices (laptops, tablets) are able to be charged easily within the learning community.

#### D6.1.2.5 Outdoor environments

Outdoor environments must provide:

- (a) facilities to support recreational, social and fitness needs;
- (b) diversity for the range of resources that Students will use to demonstrate complex and reflective gross motor skill development, team work and reflection on physical fitness; and
- (c) quiet and comfortable settings adjacent to indoor Learning Areas for small group work and for individual, reflective activities.

#### D6.1.2.6 Community engagement

The community must be engaged in learning, welfare and health support for Students and their families. Opportunities for community engagement include:

- (a) Learning Areas that provide digital, audio, video, and computer links to tertiary learning centres and sources including business and community organisations, community colleges, and institutions of higher learning; and
- (b) interactive and virtual learning opportunities that can be accessed by Students, School Staff, and the community in order to enhance the potential for the creation of a networked learning community.

#### D6.1.2.7 Inclusive Education Classrooms

- (a) The Inclusive Education Classrooms allow the School to cater for Students with special needs or disability inclusively throughout the learning communities.
- (b) In addition to the requirements for General Learning Areas, the inclusive education Learning Areas must be fitted with a kitchenette and have Direct Access to a storeroom. Where the Learning Areas are not located in pairs, consideration must still be given to the creation of flexible spaces which enable Students to be grouped in different ways.
- (c) Refer to *D6.6: Education Support Learning Community* for further requirements of Inclusive Education Classrooms. .

#### D6.1.3 Staff Studies

- (a) The Staff Studies must include workstations, networked printing facilities, a planning area and kitchenette facilities. The location must provide the staff members a level of security and seclusion from visitors.
- (b) The Staff Studies must provide School Staff space for preparation, marking, storage and collaboration, adjacent to classrooms.
- (c) The Staff Studies are to be dispersed and located in association with learning communities or Learning Areas.

#### D6.2 Science Learning Area

- (a) The Science Learning Area must be designed to support Students in undertaking a specialised science curriculum and a broad range of science activities. The Science

Learning Areas comprise general and Chemistry Laboratories, Preparation Areas and Chemical Stores. Consideration should be given to the location of the Science Learning Area in relation to the Technologies Learning Area, to provide Students with opportunities to undertake overlapping activities.

- (b) Refer to the RDSs and to the functional relationships diagrams in this *Part D: Functional Brief* for further detail and description of the Science Learning Areas.

#### **D6.2.1 General Laboratories**

- (a) The General Laboratories must seek to maximise their capacity and adaptability within the available space allocation. While the designated laboratory areas must accommodate the characteristics of different sciences and the curriculum requirements of the Department, they must be connected to one another and offer flexibility in use.
- (b) As well as supporting sciences including chemistry, biology and physics, the General Laboratories must also be able to support VET studies and emerging sciences including nanotechnology, biotechnology and green chemistry.
- (c) Fixed bench space and sinks must be provided along the perimeter of the laboratory to allow for Easy Access, movement and flexibility. A demonstration bench and one adjustable height bench must be provided in each laboratory. Mobile benches are not recommended.

#### **D6.2.2 Chemistry Laboratories**

- (a) The Chemistry Laboratories must be able to support complex experiments involving flammable and reactive chemicals and require integrated supporting facilities as scheduled.
- (b) A minimum of 40% of laboratories must be provided with a fully serviced fume cupboard, which may be double sided and shared between the Preparation Area and a Chemistry Laboratory.
- (c) At least two laboratories must be able to be darkened (for example by curtains that are safe from Bunsen flames).
- (d) Fixed bench space and sinks must be provided along the perimeter of the laboratory to allow for Easy Access and movement. A demonstration bench and one adjustable height bench must be provided in each laboratory. Mobile benches are not recommended.
- (e) Two exits each are required for the Chemistry Laboratories, opening in the direction of egress. Safety shut offs must be provided.

#### **D6.2.3 Preparation Area**

- (a) The Preparation Area must accommodate the preparation and storage of experiments for use in the Science Laboratories, as well as the storage of apparatus and low-level hazardous substances. The safety of Students and School Staff is a design priority.
- (b) The Preparation Area must have sufficient circulation space, good ventilation and be fitted with exhausts and fume cupboards as required. In addition, fire and personal safety equipment must be provided, including an eye wash, fire protection equipment and emergency cut off switches.

- (c) The Preparation Area must have good proximity to the general and Chemistry Laboratories, the Chemical Store and the Science Technician's Area, and the floor finishes between areas must be level to facilitate the trolleying of equipment and chemicals without jolting.
- (d) If sufficient cross flow ventilation cannot be achieved passively, mechanical extraction is required. There must be no gas heaters in the Science Preparation Areas.
- (e) Two exits are required to open in the direction of egress, one of which must open to an external area.

#### **D6.2.4 Chemical Store**

- (a) The Chemical Store must be ventilated and secure for the storage of various chemicals, flammables, corrosives and volatile materials. It must have a Direct Access to the Science Preparation Areas. Metal shelving must not be used. An approved flammable cabinet must be provided in the store or nearby, clear of power outlets.
- (b) The Chemical Store must be lockable and separately keyed, and there must be no windows. An exhaust system must run continuously, and air intake louvers in the door must be provided.
- (c) No hot water systems, communication systems or electrical switchboards are to be installed inside or within three metres of the Chemical Store.

#### **D6.2.5 Equipment Store**

A secure equipment store is to be located within the Science Preparation Area, and open directly towards the preparation benches. Shelving must be provided on all available perimeter walls.

#### **D6.2.6 Science Technicians Area**

The Science Technicians Area must function as an office for the technicians, and have Direct Access to the science Preparation Areas.

### **D6.3 Technologies Learning Area**

- (a) The Technologies Learning Area provides opportunities for Students to safely use specialist equipment and materials to enable experimentation and production in a range of technologies study areas, including materials technology, food science and textiles, digital technologies and business studies.
- (b) Consideration should be given to the location of the Technologies Learning Area in relation to the Science Learning Area and Performing Arts Learning Areas, to provide Students with opportunities to undertake overlapping activities.
- (c) Refer to the RDSs and to the functional relationships diagrams in this *Part D: Functional Brief* for further detail and description of the Technologies Learning Areas.

#### **D6.3.1 Materials technology**

##### **D6.3.1.1 Woodwork and Metalwork Workshops**

- (a) All Woodwork and Metalwork Workshops must be separate, with individual external and internal entries. One adjustable height bench must be provided in each



Woodwork and Metalwork Workshops. It is required that keyed whole room emergency shutoffs be provided for each Woodwork and Metalwork Workshops and Machine Room.

- (b) Consideration must be given to locate noise sources away from Learning Areas and work areas.
- (c) The Woodwork and Metalwork Workshops must have large format or roller door access and be accessible by truck for the delivery of materials and equipment. Stores must be elongated to allow for maximum shelving space.
- (d) The Woodwork and Metalwork Workshops must have a strong relationship with the other Technologies Learning Areas.

#### D6.3.1.2 Machine Room

- (a) The Machine Room is to be located between the two Woodwork Workshops, adjacent to the Wood Materials Store.
- (b) The Machine Room is a specialist room is for the cutting and finishing of larger wood projects, and has very high safety and acoustic requirements.
- (c) Equipment and access must be provided as per the RDSs.

#### D6.3.1.3 Senior Engineering Workshop and Senior Construction Workshop

- (a) The Senior Engineering Workshop and Senior Construction Workshop must adjoin other workshops and Planning Rooms. They may be provided as a single large workshop.
- (b) The Senior Engineering Workshop and Senior Construction Workshop must have Direct Access to the secure External Covered Work Area.

#### D6.3.1.4 Welding Bays

Welding bays must accommodate a variety of welding projects, and be located in or have to Direct Access to the Metalwork Workshops.

#### D6.3.1.5 Finishing Room and Store

- (a) The Finishing Room must accommodate spray painting.
- (b) The Finishing Room and Store is classified as a Zone 1 Hazardous Area.
- (c) Separation is required from ignition sources as per the RDSs and in accordance with relevant Quality Standards including AS/NZS 4114.1. This includes no ignition sources within the Zone 1 Hazardous Area when spray painting, and significant separation from any other ignition sources including switches, lights, grinders and welding.
- (d) Mechanical extraction must be provided, including a pressure differential gauge, purge air system, ductwork and an exhaust stack.
- (e) Paints must be stored within a separate flammable liquids cabinet in the associated Chemical Store.

#### D6.3.1.6 Planning Rooms

- (a) Planning Rooms must have a visual connection to as many workshops as possible (a minimum of two workshops).
- (b) Planning Rooms must be a clean environment for planning, BIM, CAM and CADD drawing and instruction.

#### D6.3.1.7 Mechatronics and Robotics Laboratory

- (a) The Mechatronics and Robotics Laboratory must accommodate mechanical, pneumatic, electronic and computer technologies and provide opportunities for Students to learn and experiment with circuits, control systems, simple automated machines and robots.
- (b) It must have Direct Access to an appropriate workshop and Mechatronics Store.
- (c) It must have Ready Access to a Planning Room.

#### D6.3.1.8 External Covered Work Area

The External Covered Work Area must be secure, powered and weatherproof on three sides. It must accommodate the delivery of large materials and equipment.

#### D6.3.1.9 Fenced Work Compound

The Fenced Work Compound must be located adjacent to the External Covered Work Area.

### **D6.3.2 Food and textiles**

#### D6.3.2.1 Food Technology Studios

- (a) Food Technology Studios must include a height adjustable bench and demonstration bench in each studio. A minimum of one commercial Kitchen must be provided in accordance with all relevant Quality Standards and Laws. Stainless steel surfaces are required throughout, and suitable stain resistant, non-slip, easily cleaned flooring must be provided.
- (b) The Food Technology Studios must have Direct Access to the food Preparation Area, Pantry, Food Stores, Cool Room and the Planning Room.

#### D6.3.2.2 Food Preparation Areas

Food Preparation Areas must be provided with Direct Access to the Food Technology Studios for food assistants to store and prepare ingredients.

#### D6.3.2.3 Planning Room

- (a) The Planning Room is to be a flexible area, provided for group work, small scale presentations and seminars. This room may be used as a demonstration restaurant or cafe for practical learning exercises.
- (b) The Planning Room must be located adjacent to the Food Technology Studio that contains a commercial Kitchen.

#### D6.3.2.4 Textiles and Human Development Studio

- (a) The Textiles and Human Development Studio must provide learning opportunities regarding the properties and performance of textiles, and allow Students to design and produce textiles items.
- (b) The Textiles and Human Development Studio must have Direct Access to the Laundry, Fitting Room and Textiles Store.
- (c) The Textiles and Human Development Studio must have Direct Access to a secure external shaded area with amenities including a low trough.
- (d) Particular attention must be given to the location of the Food and Textile Studios to the workshops and the Arts Learning Area.

### D6.3.3 Digital technologies and business studies

#### D6.3.3.1 IT Laboratories

IT Laboratories must accommodate specialised studies in information technology, including BIM, CAM, CADD and business applications. One height adjustable workstation must be provided in each laboratory.

## D6.4 The Arts Learning Area

- (a) The Arts Learning Area must support a variety of different arts curriculum areas, including visual arts, performing arts, dance, music and media. The spaces must be flexible in their design to allow for changing combinations of the art curriculum areas to be studied.
- (b) The different arts curriculum areas must have a strong functional relationship with each other, and also with the Technologies Learning Area to support overlapping activities, including the design and creation of costumes and sets for drama productions.
- (c) Refer to the Design Brief, the RDSs and to the functional relationships diagrams in this *Part D: Functional Brief*.

### D6.4.1 Visual arts

#### D6.4.1.1 Gallery

The Gallery must provide hanging tracks, good lighting and white walls for the display of Student artwork. The Gallery space may be combined with the performing arts and dance Foyer.

#### D6.4.1.2 Studios

- (a) The Painting and Drawing Studio, Sculpture Studio and Printmaking Studio must have direct outlook to external areas and indirect natural light. This space should provide inspiration and support teaching. Display space must be plentiful and include opportunities to display Student artwork in travel and circulation areas.
- (b) Refer to the RDSs for specific requirements.

#### D6.4.1.3 Art Seminar Room

The Art Seminar Room is to be a flexible area, provided for work on prolonged projects or for small scale presentations, group work and seminars.

### **D6.4.2 Performing arts and dance**

The Performing Arts and Dance Area is to provide learning and performance spaces for music, drama and dance, and must have Direct Access from a foyer that may be combined with the visual arts Gallery space.

#### **D6.4.2.1 Teaching Spaces 1 (Drama Studio) and 2 (Drama and Dance Studio)**

- (a) Teaching Spaces 1 and 2 must support both drama and dance activities.
- (b) The proximity of the Teaching Spaces 1 and 2 must mitigate noise transfer to Noise Sensitive Spaces.
- (c) Furniture must be flexible and informal and allow for active, performance based learning.
- (d) Teaching Spaces 1 and 2 must be separated by an operable wall, and include retractable seating (and an associated Retractable Seating Recess in Teaching Space 2) to allow the spaces to be used as a multipurpose theatre.
- (e) Teaching Space 2 must provide Direct Access to the Foyer.
- (f) Lighting bars and other performance equipment must be provided as per the RDSs. A Bio Box must also be provided that has a clear view of Teaching Space 1.
- (g) Teaching Spaces 1 and 2 must have Ready Access to the Green Rooms and Direct Access to the Property, Flats & Chair Store.

#### **D6.4.2.2 Dance Studio**

The Dance Studio must be fitted with a sprung timber floor, mirrors along one wall with a ballet barre and high ceilings.

#### **D6.4.2.3 Bio Box**

- (a) The Bio Box is a control room for operators to monitor and adjust lights, microphones and sound mixing equipment to deliver the best outcome in the performance space.
- (b) The Bio Box must have a clear view of Teaching Space 1.

#### **D6.4.2.4 Property, Flats & Chair Store**

- (a) The Property, Flats & Chair Store must have Direct Access from Teaching Space 1 (Drama Studio), and have Direct Access to external areas for the delivery of large items.
- (b) The Property, Flats & Chair Store must accommodate four metre long flats, either horizontally or vertically.

#### **D6.4.2.5 Green Rooms**

- (a) Green Rooms must be provided that are associated with Teaching Space 1 and 2. Separate male and female rooms must be provided.
- (b) The Green Rooms may also be used as Music Practice Rooms.

### **D6.4.3 Music and media**

#### **D6.4.3.1 Music Classrooms**

- (a) The Music Classrooms must provide the flexibility required to accommodate the range of activities that take place in junior and senior secondary music curriculum, including individual and group work and the use of musical instruments of various sizes.
- (b) There must be sufficient power points and ICT infrastructure to support whole class use of musical instruments and technology.

#### **D6.4.3.2 Music Ensemble Rooms**

- (a) Music Ensemble Rooms must provide an area for a wide variety of musical instruments to be played together.
- (b) Significant acoustic treatment is required. Refer to *G8: Acoustic Services* for acoustic treatment requirements.

#### **D6.4.3.3 Music Practice Rooms**

- (a) Music Practice Rooms must enable small group music theory, practice and drama to be carried out. Music Practice Rooms must be acoustically treated as per *G8: Acoustic Services*.
- (b) The Green Rooms may also be used as Music Practice Rooms.

#### **D6.4.3.4 Music Store**

The Music Stores must allow for the storage of a range of instruments, and include an area that permits Student access for the short term storage of portable instruments.

#### **D6.4.3.5 Media Classroom**

Media Classrooms must accommodate a range of general learning activities, and include the use of multimedia computers, cameras, microphones and other equipment. Refer to *D6.1: Learning Communities* for further detail on Media Classrooms.

#### **D6.4.3.6 Film, TV and Audio Studio**

- (a) The film and TV studio and audio studio must enable Students to record and edit film, audio and TV productions. They must have Ready Access to the Media Classroom.
- (b) Acoustic isolation must be provided to the Film, TV and Audio Studio, including mitigating external noise intrusion. Refer to *G8: Acoustic Services* for acoustic treatment requirements.

#### **D6.4.3.7 Visual and Audio Control Room**

The Visual and Audio Control room should be located facing the Film, TV and Audio Studio, with Ready Access to the Media Classroom.

### **D6.5 Health and Physical Education Learning Area**

- (a) The Health and Physical Education Learning Area caters for the learning of physical education skills. It is also used for general assemblies, functions and community use.

- (b) The Health and Physical Education Learning Area needs to be integrated with the learning and teaching areas of the School Facility. Consideration must be given to the potential for community use outside of Core Hours, and mechanical and electrical services must be zoned to facilitate such separation. Direct access to toilet facilities must be provided to facilitate use by children and adults during afterhours use.
- (c) The Health and Physical Education Learning Area must have Ready Access to the Sports Oval, Hard Courts and car parking.

#### **D6.5.1 Sports Hall**

- (a) The Sports Hall must have a height suitable to its proposed function, in accordance with the relevant RDS. Line marking in different colours must be provided to enable a range of sports including basketball, netball, volleyball and badminton to be taught and played with allowance for perimeter run-off space.
- (b) Fixed and demountable sporting equipment for basketball, netball, volleyball and badminton, including nets, posts, fixture sockets and fittings must be provided and installed to the Sports Hall. Flush finished fixture sockets must be fitted with screw in caps for when posts are removed. Wall and post mounted basketball goal posts must be able to sustain the imposed loads of game use without any risk of collapse.
- (c) Care must be taken to ensure that nothing projects from the walls that would prove hazardous while the area is in use.
- (d) Lighting must be functional with switching provision to allow for the separate control of artificial lighting, to complement varying levels of natural lighting within the area. Light fittings must be robust and protected from damage during sport and play.
- (e) The use of HVLS fans is strongly encouraged.
- (f) The floor build-up and finish must be suitable for physical education use, and as a meeting hall. It must be able to support chairs and not be damaged or show surface marks if subjected to street shoe traffic.

#### **D6.5.2 Sports Hall Store**

- (a) The Sports Hall store must be lockable and open directly off the Sports Hall area for the storage of equipment. The Sports Hall store must be rectangular in shape and the opening width to the store must be adequate to allow for the transfer of large pieces of equipment without difficulty.
- (b) The Sports Hall store must have Direct Access to an external door of the Sports Hall to facilitate transfer of equipment to and from external play spaces.
- (c) The Sports Hall store must be fitted out with racks and shelving including as set out elsewhere in this Design Brief.

#### **D6.5.3 Fitness Centre**

The Fitness Centre is a flexible use facility for specialised fitness training. It must accommodate functions including weights, aerobics activity and gym equipment. A resilient sports floor must be provided.

#### **D6.5.4 Health and Physical Education Classrooms**

Health and Physical Education Classrooms must fulfil the requirements previously listed for General Learning Areas. Refer to *D6.1: Learning Communities* for further information on Health and Physical Education Classrooms.

#### **D6.5.5 Student Change Rooms**

- (a) Student Change Rooms (male and female) must have Direct Access to the Sports Hall. They must also have Ready Access to the Sports Oval and Hard Courts.
- (b) Student Change Rooms must have the capacity to be locked while still permitting access to toilet facilities. Consideration must be given to the use of the Sports Hall and Student Change Rooms by the community outside of Core Hours.
- (c) A Secure Area is to be provided for the storage of student valuables during physical education lessons, with Ready Access to the Student Change Rooms.

#### **D6.5.6 Outdoor Education Store**

- (a) The Outdoor Education Store must be weatherproof, lockable and have Ready Access to the Hard Courts and Sports Oval, and Direct Access to car parking and vehicle access roads. The Outdoor Education Store must be rectangular in shape and the opening width to the store must be adequate to allow for the transfer of large pieces of equipment without difficulty.
- (b) The Outdoor Education Store must be fitted out with racks and shelving including as set out elsewhere in this Design Brief.

### **D6.6 Education Support Learning Community**

- (a) The Education Support Learning Community provides programs for Students with a range of special needs and disabilities including significant intellectual or physical disabilities, autism spectrum disorder or multiple disabilities.
- (b) The Education Support Learning Community provides areas including Learning Areas, a Low Stimulus Room, a Life Skills Learning Area, Physio-Gym facilities, a Hydrotherapy Pool, Change Rooms, Laundry facilities and Staff Offices as set out elsewhere in this Design Brief.

#### **D6.6.1 Education Support Learning Areas**

In addition to the requirements for General Learning Areas, the Education Support Learning Areas must be fitted with a kitchenette and have Direct Access to a storeroom. Where the Learning Areas are not located in pairs, consideration must be given to the creation of flexible spaces which enable Students to be grouped in different ways.

#### **D6.6.2 Low Stimulus Room**

- (a) A Low Stimulus Room must be provided as a calm, quiet and controlled space to accommodate a variety of functions. These functions include its use as a withdrawal room, for intensive individual or group work or behaviour management.
- (b) The Low Stimulus Room must have Ready Access to the Staff Study Area within the Education Support Learning Community. A high level of acoustic separation must be provided. Refer to *G8: Acoustic Services*.

- (c) This Low Stimulus Room is required to have a secure viewing area to enable an externally seated Teaching Staff member to constantly monitor any Student placed in this environment. The staff member requires telephone and data access.
- (d) Switches must be located external to the room, and the door must open in an outwards direction. There must be no lights suspended from the ceiling, or intrusion from other fittings. All fixtures and fittings must be anti-ligature.

### **D6.6.3 Life Skills Learning Area**

- (a) The Life Skills Learning Area must include a mock up living room, Kitchen and Laundry, or home.
- (b) The Life Skills Learning Area enables Students to undertake activities both individually and in small groups, including cooking, food preparation, dining and other practical skills.
- (c) The area must be Universally Accessible.
- (d) The Life Skills Learning Area should be central and must as a minimum have Ready Access to other Education Support Learning Areas and external areas.

### **D6.6.4 Indoor Hydrotherapy Pool**

- (a) The Indoor Hydrotherapy Pool facility incorporates a pool, spa, Change Room and toilet within the enclosure. The pool environment is highly corrosive and humid due to the chemicals and temperature of the pool and all equipment, materials and finishes must be suitable for these conditions over the Design Life as set out in *11: Design Life Requirements*.
- (b) As a minimum, Project Co must provide:
  - (i) an overhead tracking hoist system with a sling to provide Direct Access from the Change Rooms to the Hydrotherapy Pool for Student transfer;
  - (ii) stairs to facilitate pool entry for ambulant Students;
  - (iii) a bench seat fitted with air jets for spa therapy;
  - (iv) depths ranging from 1.2m (shallow end) to 1.5m (deep end);
  - (v) a pool store for toys and equipment, with Direct Access to the pool areas; and
  - (vi) associated pool equipment, including a pool cover, a safety stretcher and life safety ring fixed to the wall.
- (c) In addition to the requirements set out in *E8: Building Structure and Fabric* and *Part G: Engineering Specifications*, the design and construction of the Indoor Hydrotherapy Pool must ensure an environment that is:
  - (i) non-irritating;
  - (ii) free of algae growth;
  - (iii) free of obvious smell or taste;
  - (iv) in accordance with Best Industry Practice; and



- (v) sufficiently robust to withstand normal operational activities.
- (d) A water powered assisted access lift must be provided in accordance with the requirements of *E8: Building Structure and Fabric* and this Design Brief.

#### **D6.6.5 Physio-Gym**

- (a) The Physio-Gym is an exercise area for Students to assist in their movement. It must have Direct Access to the Student Change Room and shower facilities.
- (b) The Physio-Gym must provide a resilient sports floor.

#### **D6.6.6 Student Change Room and Shower**

- (a) Student Change Room and shower facilities must be provided to accommodate Students with high levels of disability.
- (b) Project Co must provide:
  - (i) separate entrances for male and female Students;
  - (ii) a fully refrigerative air conditioned facility;
  - (iii) overhead heating in each changing bay;
  - (iv) an electrically operated change table in each bay;
  - (v) a ceiling mounted, electrically operated overhead tracking hoist with a sling to provide Direct Access from the centre of the changing bay to the pool, and from change tables to the toilet and shower facilities. Further requirements of the overhead tracking hoist include:
    - (A) be AS ISO 10535 compliant;
    - (B) be a fixed and permanent system;
    - (C) be easy to operate;
    - (D) be able to accommodate various weights;
    - (E) eliminate the need for manual lifting;
    - (F) design integration of Engineering Services, structure and finishes; and
    - (G) consideration of the comfort and dignity of the Users.
  - (vi) two shower cubicles for ambulant Students with shower curtains, benches and hooks for training in showering and hygiene;
  - (vii) one shower and pan for hoisted Students;
  - (viii) AATs as set out elsewhere in this Design Brief;
  - (ix) space to store wheelchairs while the Students are in hydrotherapy, with the possibility of the wheelchairs being recharged; and
  - (x) secure automatic sliding doors at the entrance, operable by Teaching Staff only.

### **D6.6.7 Staff Change Room and Shower**

The Staff Change Room and Shower must include a shower and toilet.

### **D6.6.8 Laundry**

The Laundry must contain a washing machine, dryer, sink and a small cupboard with air extraction.

## **D6.7 Administration Block**

The Administration Block is the main entrance to the School Facility, and contributes strongly to its civic importance and identity. It houses the administrative functions of the school, as well as providing a point of public interface. Relationships to car parking, arrival, community engagement and the separation of public and administrative functions must be highly considered.

### **D6.7.1 Public Foyer**

- (a) A spacious and welcoming Public Foyer adjacent to the Reception and General Office must be provided.
- (b) The Public Foyer must be designed in such a way to restrict unauthorised public access to other areas of the Administration Block.

### **D6.7.2 Student Foyer**

A Student Foyer must be provided, separate to the Public Foyer and accessible from the internal courtyard of the School Facility.

### **D6.7.3 Reception and General Office**

- (a) The Reception and General Office is the first point of contact for all visitors and must be easily visible from the entrance doors.
- (b) The Reception counter forms a barrier to the public. While the counter or hatch opening must have an area designated for wheelchair access, it must still be designed to prevent able bodied persons from gaining access to the clerical area.
- (c) The Reception and General Office must have Ready Access to the Principal's Office and must not have Direct Access. It is required that a door or access control measure to restrict unauthorised access to other offices in the Administration Block from the Public Foyer.

### **D6.7.4 Principal's Office**

- (a) The Principal's Office must have an external view.
- (b) The Principal's Office must be located near to the General Office but not be accessed directly from it.
- (c) The location must provide the Principal a level of security and seclusion from visitors, with all external visitors being required to first report to the Reception.
- (d) The Principal's Office must have a visual connection to the corridor by a glazed door panel or other measure.
- (e) Acoustic separation from adjacent administration and circulation areas must be provided. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.

#### **D6.7.5 Education Support Associate Principal's Office**

- (a) The location of the Education Support Associate Principal's Office must provide a level of security and seclusion from visitors, with all external visitors being required to first report to the Reception.
- (b) The Education Support Associate Principal's Office must have a visual connection to the corridor by a glazed door panel or other measure.
- (c) Acoustic separation from adjacent administration and circulation areas must be provided. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.

#### **D6.7.6 Business Manager's and Education Support Business Manager's Offices**

- (a) The location of the offices must provide the Business Manager and Education Support Business Manager a level of security and seclusion from visitors, while permitting surveillance of the General Office and the corridor. All external visitors are required to first report to the Reception.
- (b) Acoustic separation from adjacent administration and circulation areas must be provided. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.

#### **D6.7.7 Staff Offices**

- (a) The location of the Staff Offices must provide the staff members a level of security and seclusion from visitors, with all external visitors required to first report to the Reception.
- (b) The Staff Offices must have Direct Access to an external area.
- (c) The Staff Offices must have a visual connection to the corridor by a glazed door panel or other measure.
- (d) The Staff Offices may be separated from the Interview Room by an operable wall, however acoustic separation from the adjacent interview, administration and circulation areas must still be provided. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.

#### **D6.7.8 Interview Room**

- (a) The Interview Room is used by School Staff and Students as well as by visitors and community members, and must be accessible from the Public Foyer.
- (b) The Interview Room may be separated from the Staff Office by an operable wall, however high level acoustic separation from adjacent areas must still be provided. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.

#### **D6.7.9 Conference Room**

- (a) The Conference Room is used for meetings and presentations. The room must be comfortable and welcoming to Users and community members, and furnished in a professional manner that permits the flexible arrangement and configuration of FF&E.
- (b) The Conference Room must be able to accommodate an, interactive whiteboard or equivalent and AV facilities. The lighting system must allow for dimming.
- (c) This room may frequently be used by visitors and community members, and must be located accordingly. The Conference Room may be separated from the Staff

Common Room by an operable wall, however acoustic separation must still be provided. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.

#### **D6.7.10 Office Staff Tea Room**

The Office Staff Tea Room must include kitchenette facilities for casual use by School Staff and must have Ready Access to the Conference Room.

#### **D6.7.11 Reprographics Room**

- (a) The Reprographics Room will accommodate a multifunctional photocopier, must include paper storage and collation space and must be mechanically ventilated.
- (b) The Reprographics Room must have Ready Access from offices within the Administration Block.

#### **D6.7.12 Communications Room**

The Communications Room must be lockable, air conditioned and have appropriate ventilation for the active equipment within the room but no external windows.

#### **D6.7.13 Secure Store**

The Secure Store is for general storage purposes, including archives and the storage of confidential material including Student records. It must be located for good accessibility from the administration areas of the School Facility.

### **D6.8 Student Services and Medical Centre**

- (a) A Student Services and Medical Centre must be provided as scheduled. The Student Service Centre may be located with the Administration Block, or could be in two parts with one part located elsewhere in the School Facility (often co-located with learning community 4).
- (b) The medical centre must be centrally located, and located to facilitate Ready Access for ambulance and emergency services.
- (c) The facilities accommodate the school psychologist, nurse, chaplain, career advisor, year co-ordinators, and hot desks for other staff as per this Design Brief. Consideration must be given to a location that is easily accessible to Students.
- (d) The facilities must be welcoming and non-intimidating for Students.

### **D6.9 Information Resource Centre and Staffroom**

- (a) The Information Resource Centre will house the majority of the School Facility's resources and functions as a knowledge management hub.
- (b) The Information Resource Centre must be centrally located and should have Ready Access to other common areas, including the Cafeteria and Student Services, given that both senior Students and School Staff will spend a significant proportion of their non-timetabled time in this area. Formal and informal spaces must be provided for both Students and School Staff.
- (c) Storage space must be provided for Student belongings that is accessible, safe and secure.

- (d) While the Information Resource Centre will be used by all Students and must be located accordingly, the design must consider that it will be used significantly more by senior Students.
- (e) Ready Access should be provided from the Information Resource Centre to the Lecture Theatre.

#### **D6.9.1 Resource Area**

- (a) The Resource Area must be able to house the physical resources of the School Facility, including books, magazines and maps, as well as offer access to online, electronic, AV and other resources through the provision for network access and AV equipment.
- (b) The Resource Area must offer flexible learning spaces that can be used by a whole class, small groups or individuals to undertake learning activities based upon Library resources. To facilitate the range of activities that will take place, both formal and informal furniture must be provided. School Facilities must also be provided for themed displays.

#### **D6.9.2 Secure Store**

The Secure Store must have no windows.

#### **D6.9.3 AV Workroom**

An acoustically separate AV Workroom must be provided adjacent to the administration area to record, edit and store a range of AV resources and equipment.

#### **D6.9.4 Student Group Room**

A seminar style Student Group Room must be provided that has Direct Access to the Resource Area.

#### **D6.9.5 Staff Common Room**

- (a) The Staff Common Room is an integrated social and work area and is to promote interaction between all Users. The separation of these two functions can be achieved by the arrangement of furniture, which must include an appropriate mix for relaxation and work as well as sufficient power and data points.
- (b) The Staff Common Room must include kitchen facilities for casual use by School Staff.
- (c) The Staff Common Room must be located with the Library, and adjoin the Resource Area by an operable wall. Acoustic separation from adjacent areas must be provided, and members of the public must not be able to gain Direct Access.

#### **D6.10 Lecture Theatre**

- (a) The Lecture Theatre must accommodate groups of up to 100 in a tiered seating arrangement for the delivery of lectures and demonstrations. Appropriate acoustic treatments to walls, an audio loop and specialised lighting must be provided. The Lecture Theatre must also accommodate the integration of specialised AV equipment. Refer to *G8: Acoustic Services* for further detail on Acoustic requirements.
- (b) The Lecture Theatre should be designed to also function as an audience space for performances in the drama activity area.

- (c) The Lecture Theatre must be Universally Accessible.
- (d) The location of the Lecture Theatre should have Ready Access to both the Information Resource Centre and to the year 11 and 12 Learning Communities.

### **D6.11 Cafeteria**

- (a) The Cafeteria is part of the social hub of the School, and may have Ready Access to the Information Resource Centre or performing arts facilities.
- (b) Access for deliveries, parking, service, and waste management must be considered. The trolleying of goods over short distances is acceptable.
- (c) The Cafeteria must be able to cater to the needs of Students of all year levels and be designed so as to discourage bullying and other antisocial behaviour
- (d) Enclosed and unenclosed eating areas must be provided including as set out elsewhere in this Design Brief.
- (e) The Cafeteria must meet all relevant Quality Standards and Laws for the preparation of food as well as the reheating and selling of pre-cooked and packaged foods.

### **D6.12 Amenities**

#### **D6.12.1 Staff Toilets**

- (a) Staff Toilets must be dispersed around the Site, and comply all relevant Quality Standards and Laws. Provision of toilet facilities must accommodate an increase in School Staff associated with the future provision of Transportable Units.
- (b) Staff Toilets should be located on an external wall where possible and must be sufficiently and naturally ventilated. Staff Toilets must be located to provide privacy and acoustic separation.

#### **D6.12.2 Student Toilets**

- (a) Student Toilets must not be provided in large blocks but rather dispersed throughout the School Facility.
- (b) The cisterns to Student Toilets should be located in a service duct to prevent vandalism. The UATs and the AATs may be designed with cisterns located in the cubicles.
- (c) Student Toilets must be well ventilated. The State has a preference for designs that are light, open and visible. The design must discourage antisocial behaviour, while still maintaining adequate privacy.
- (d) Strong consideration should be given to the provision of passive surveillance 'anti-bullying' toilets, where washbasins are located in an open area off a corridor, rather than behind a door. In this instance, lockable cubicles with full length doors are to be co-located with the washbasins, and urinals need not be provided.

#### **D6.12.3 Assisted Access Toilets**

- (a) AATs must be provided in accordance with the requirements set out elsewhere in this Design Brief, including *14: Specific Layout Drawings*. These facilities are predominantly intended for use by Students with an education assistant.

- (b) The requirements for the facilities exceed the requirements of AS 1428, the NCC, and the *Access to Premises Standards* and are in accordance with dimensions and floor areas specific to the Department's requirements.
- (c) The toilet is to be positioned in a peninsula layout, which allows for transfer from both sides of the pan or assistance by one or two persons. The shower facility is to be located in one corner, and all fixtures must be wheelchair accessible.

#### **D6.12.4 Universal Access Toilets**

- (a) UATs must be provided in accordance with the requirements set out elsewhere in this Design Brief, including *I4: Specific Layout Drawings*. These facilities are predominantly intended for use by Users with disabilities.
- (b) The requirements for the facilities exceed the requirements of relevant Quality Standards and Laws, including the Disability (Access to Premises – Buildings) Standards (2010) under the *Disability Discrimination Act 1992* (Cth), AS1428 and the *Disability Discrimination Act 1992* (Cth), and are in accordance with dimensions and floor areas specific to the Department's requirements.

#### **D6.12.5 Student storage**

- (a) Student storage space must be allocated from the circulation provision. Storage spaces must be strategically located, distributed around the School Facility with Ready Access to General Learning Areas.
- (b) Student storage spaces must be well and evenly lit with no dark recesses. The location and design must give careful consideration to the discouragement of bullying and other antisocial behaviour.

#### **D6.12.6 Gardener's Workshop, Machine Store and Fertiliser Store**

- (a) The Gardeners' Workshop, Machine Store and Fertiliser Store is to be located with Ready Access to service vehicle parking, and planned to minimise interaction with Students. Risk areas include vehicle access and the storage of tools, fertiliser and chemicals in the facility.
- (b) The Gardener's Workshop, Machine Store and Fertiliser Store must be well ventilated and fire rated as set out elsewhere in this Design Brief.
- (c) An eye wash facility must be provided.

#### **D6.12.7 Circulation**

- (a) The design must ensure ease of circulation, orientation and wayfinding for Users. Refer to *E3: Access and Circulation* for further detail on circulation requirements.
- (b) Providing requirements for travel and circulation are adequately met, the minimum space allocation for circulation may be used to supplement other areas of the School Facility.

#### **D6.12.8 Engineering Services**

- (a) Engineering Services plant and equipment must be located so as to provide for the economic distribution of Engineering Services.
- (b) The layout of plant and equipment must accommodate safe access for maintenance, removal and replacement.

### **D6.12.9 Bin Enclosure**

- (a) The location, layout and construction of the Bin Enclosure must be suitable for the delivery of Services in accordance with Schedule 27 (Services Specifications).
- (b) The Bin Enclosure must be lockable, accessible to service vehicles, and fitted with a hose tap and drain for wash down.
- (c) Adequate lighting is required for early morning and evening access by cleaning staff.
- (d) The location, layout and construction of the Bin Enclosure must mitigate fire and vandalism risk.
- (e) Refer to *F2.8.4: Bin Enclosure* for further detail on Bin Enclosures.

## **D6.13 External Facilities**

### **D6.13.1 Sports Oval**

- (a) Where detailed in Schedule 23 (Schedule of Accommodation) of the Deed, Project Co must provide a Sports Oval, including goal posts, cricket pitch and all associated line marking for football and cricket for each Secondary School Facility.
- (b) Universal Access must be provided from the School Facility to the Sports Oval.
- (c) Project Co must provide two cricket practice nets with Ready Access to the Sports Oval.
- (d) Consideration must be given to the proximity of the Sports Oval and cricket practice nets to the Sports Hall, other playing fields and courts, and car parking.
- (e) Refer to *F2.6: Playing Fields and Courts* for specification requirements.

### **D6.13.2 Hard Courts**

- (a) Project Co must provide the number of multipurpose Hard Courts, including all line markings, for each Secondary School Facility in accordance with Schedule 23 (Schedule of Accommodation) of the Deed.
- (b) Universal Access must be provided from the School Facility to all Hard Courts.
- (c) Consideration must be given to the proximity of the Hard Courts to the Sports Hall, other playing fields and courts, and car parking.
- (d) Refer to *F2.6: Playing Fields and Courts* for specification requirements.

### **D6.13.3 Rectangular Playing Fields**

- (a) Project Co must provide one rectangular playing field, and line markings for both soccer and hockey, for each Secondary School Facility in accordance with Schedule 23 (Schedule of Accommodation) of the Deed.
- (b) Universal Access must be provided from the School Facility to the Rectangular Playing Field.
- (c) Consideration must be given to the proximity of the Rectangular Playing Field to the Sports Hall, other playing fields and courts, and car parking.
- (d) Refer to *F2.6: Playing Fields and Courts* for specification requirements.



**D6.13.4 Car park**

Refer to *E3: Access and Circulation* and *C3: TRAFFIC MANAGEMENT* for car parking requirements.

**D6.13.5 Street embayments**

Refer to *C3: TRAFFIC MANAGEMENT* for street embayments requirements.

**D6.13.6 Bus bays**

Refer to *Part F: Landscape Specifications* and *C3: TRAFFIC MANAGEMENT* for bus bay requirements.

**D6.13.7 Landscaping**

- (a) Landscaping must be provided to external areas of the School Facilities that are not used for car parking or recreational facilities. Wherever possible, such landscaping must contribute to the creation and definition of outdoor learning and play spaces and enhance the overall appearance and appeal of the School Facilities.
- (b) Refer to Part F: Landscape Specifications for detail on Landscaping requirements.

**D6.13.8 Bicycle facilities**

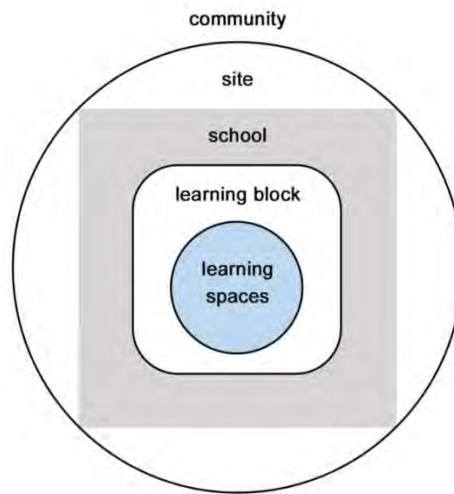
- (a) Refer to *C3: TRAFFIC MANAGEMENT* for detail on Bicycle facility requirements.
- (b) Refer to *E6: Ecologically Sustainable Design* for information related to equivalency with the Green Star requirements.

**D6.14 Transportable Units**

Refer to *C4: Future Development and Expansion* for Transportable Units and Transportable Unit Zone requirements.

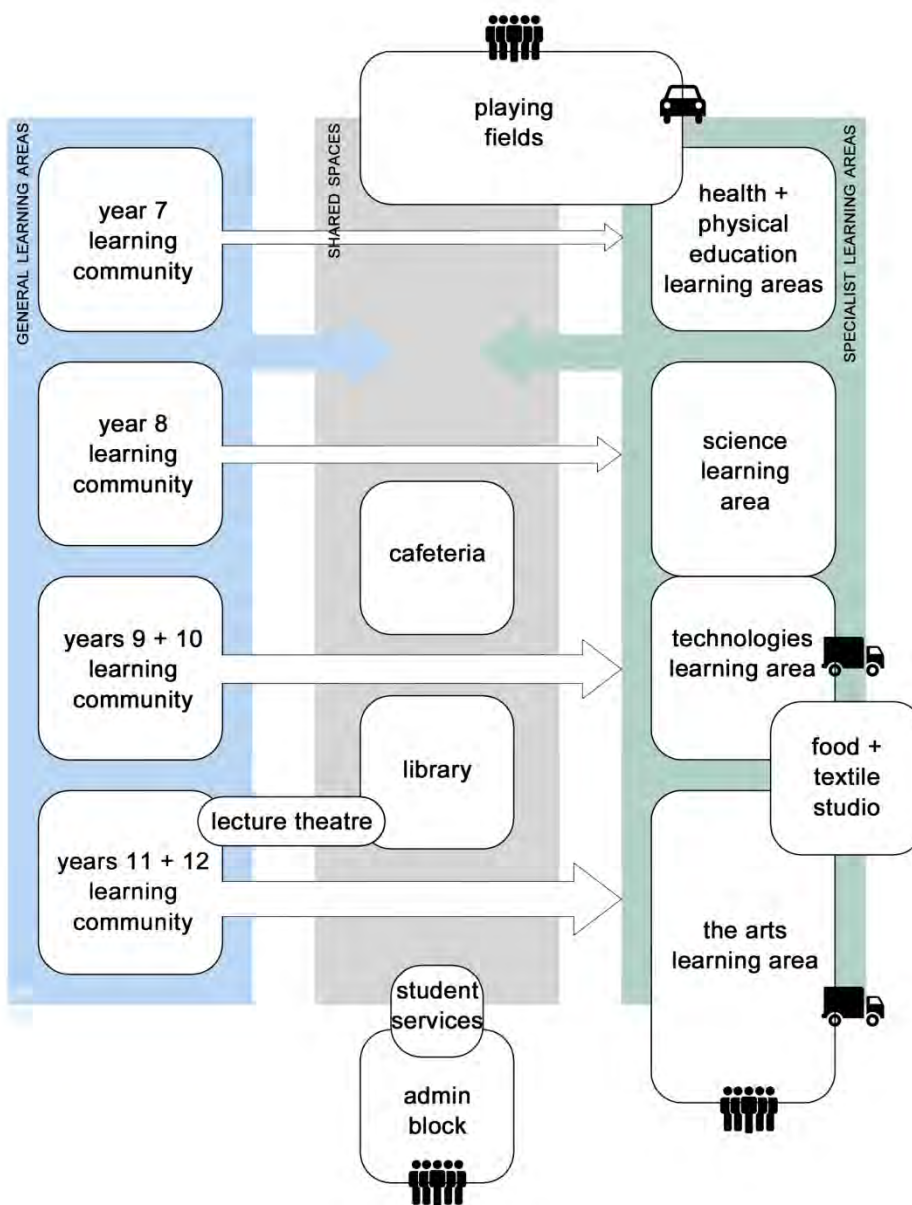
### D6.15 Functional relationships diagrams

The following diagrams illustrate the curriculum connections and functional relationships required by the Department, and must be read in conjunction with this Design Brief.



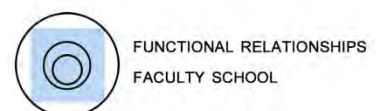
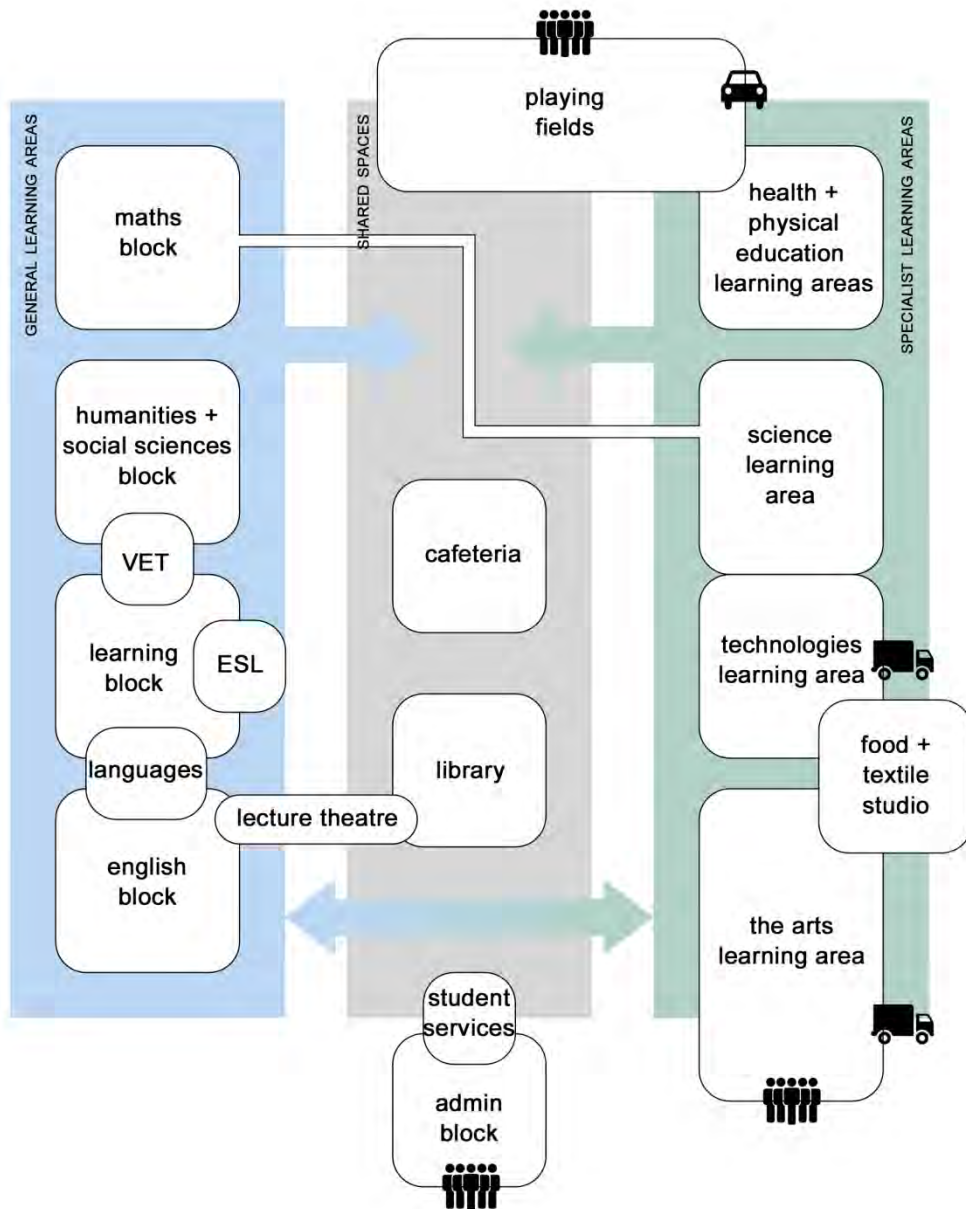
### D6.15.1 Learning Communities

This diagram is for information only on the relationship between Secondary School learning communities.



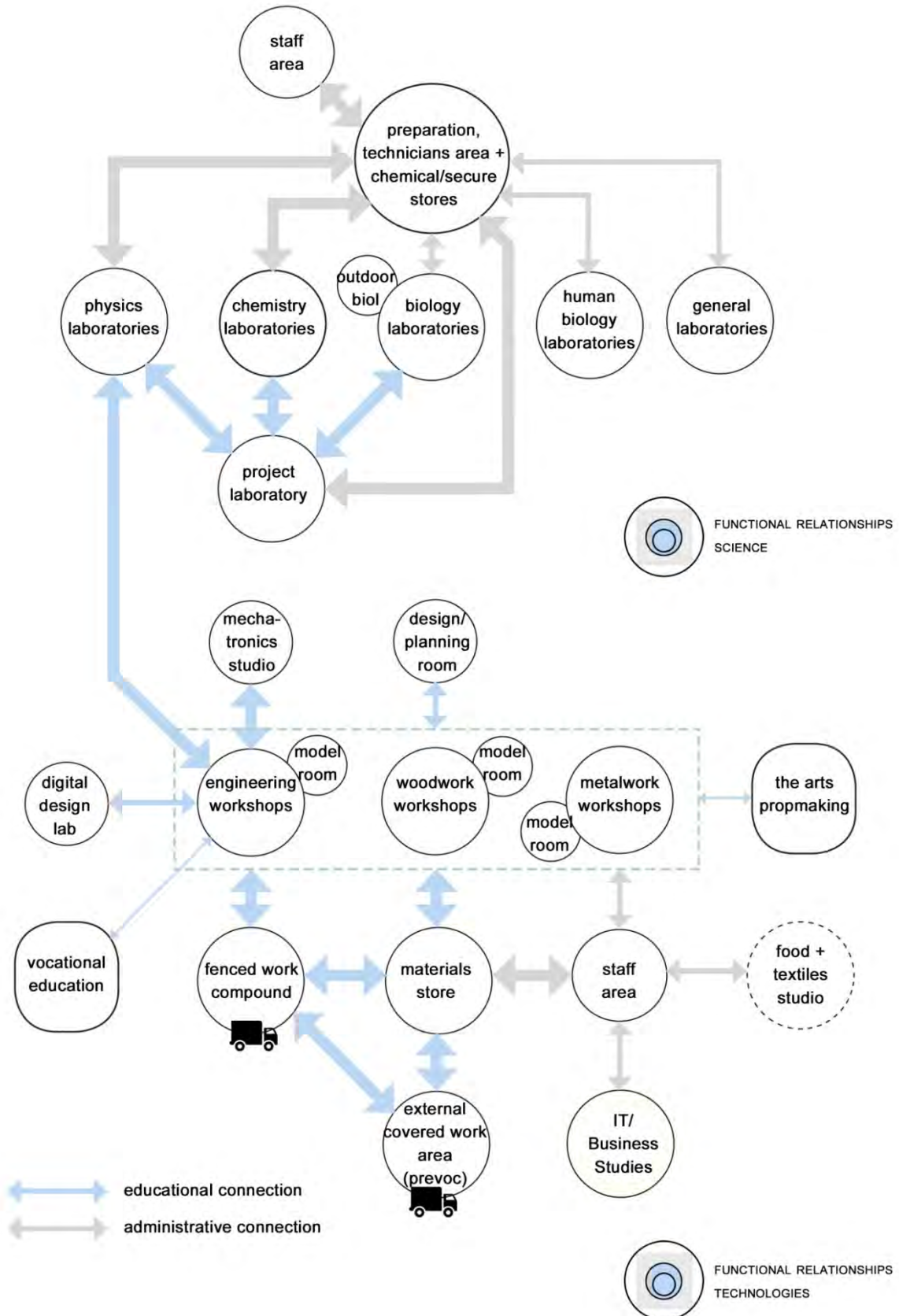
### D6.15.2 Faculty school

This diagram is for information only on alternative school organisational models that may be relevant to specific School Facilities.



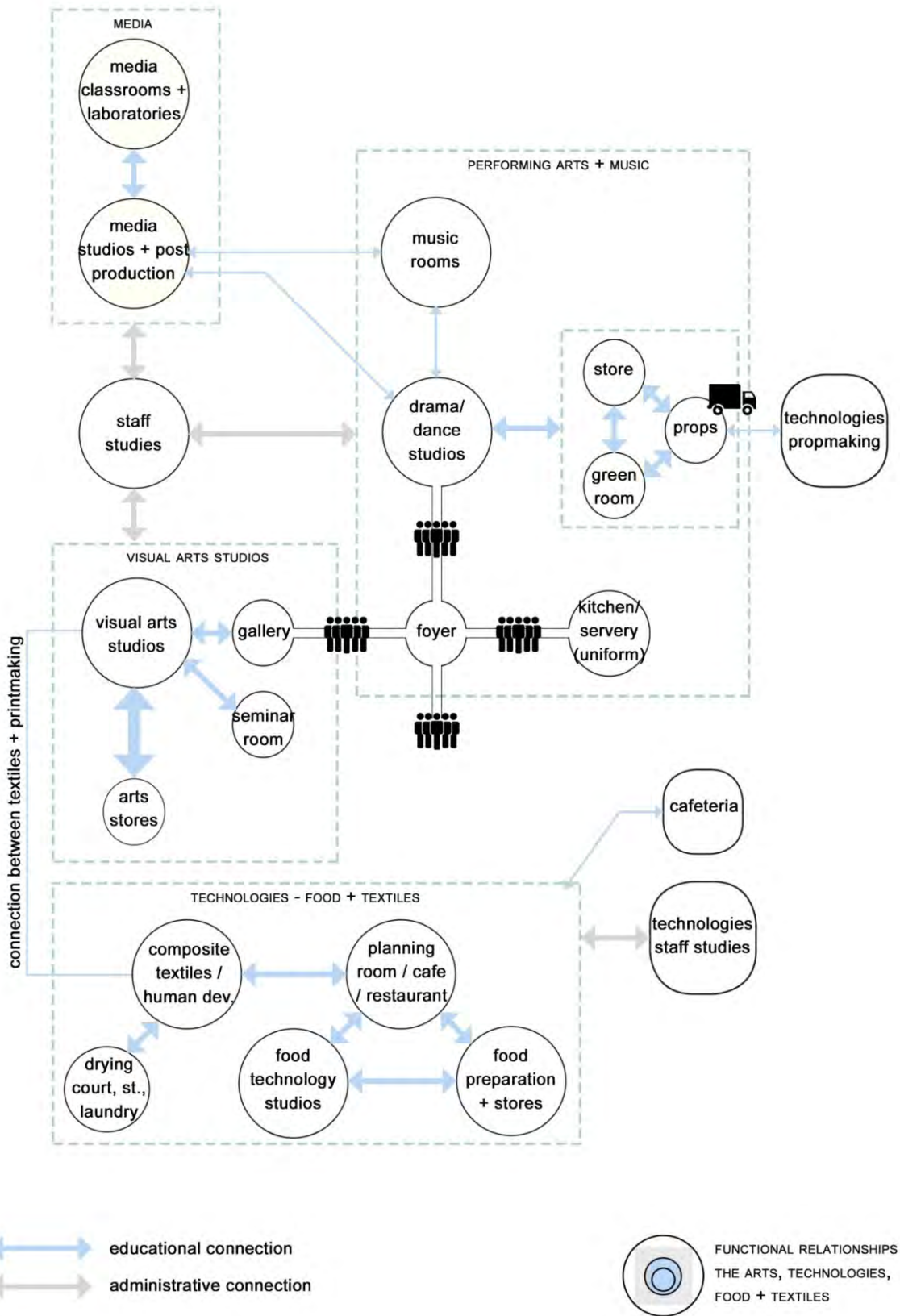
### D6.15.3 Science and Technologies

This diagram is for information only on key relationships between elements of the science and technologies curriculum.



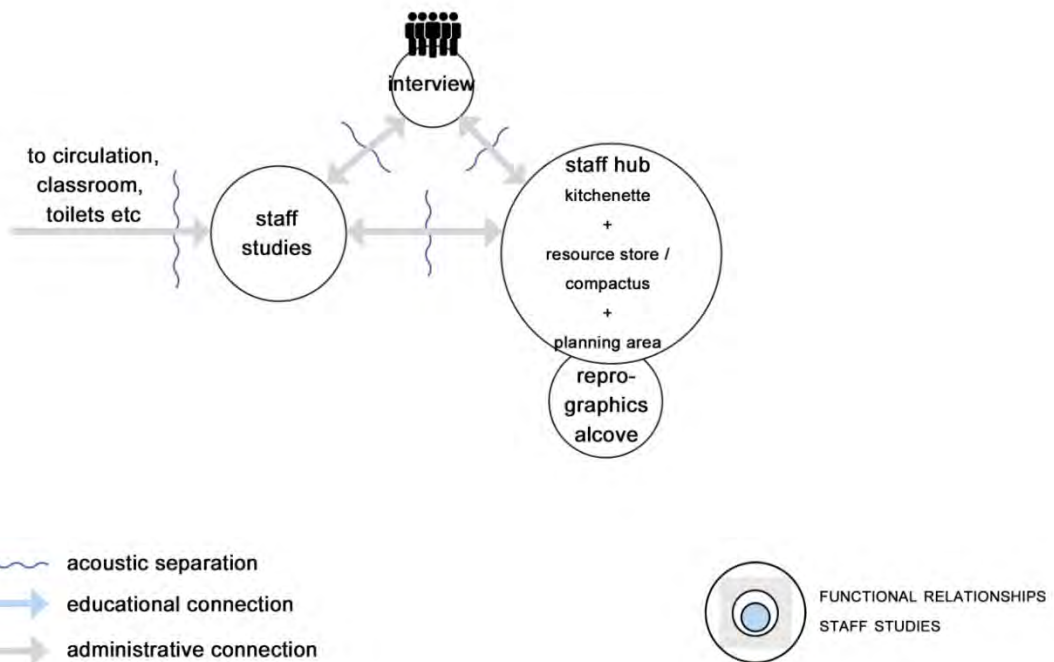
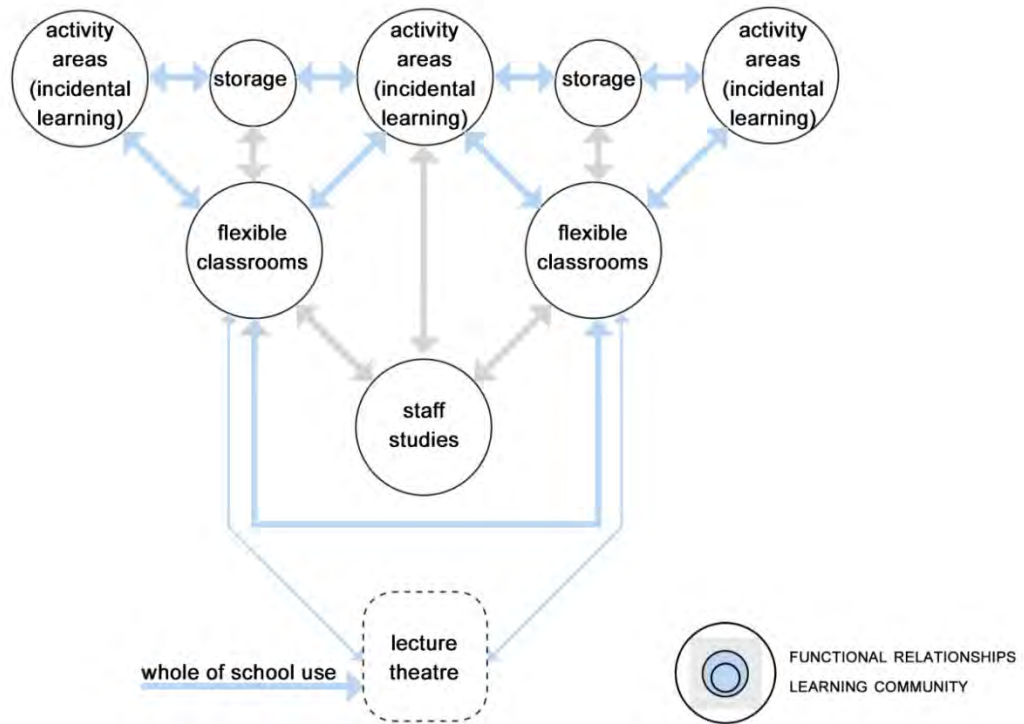
### D6.15.4 The arts, technologies, food and textiles

This diagram is for information only on key relationships between elements of the arts and technologies curriculum.



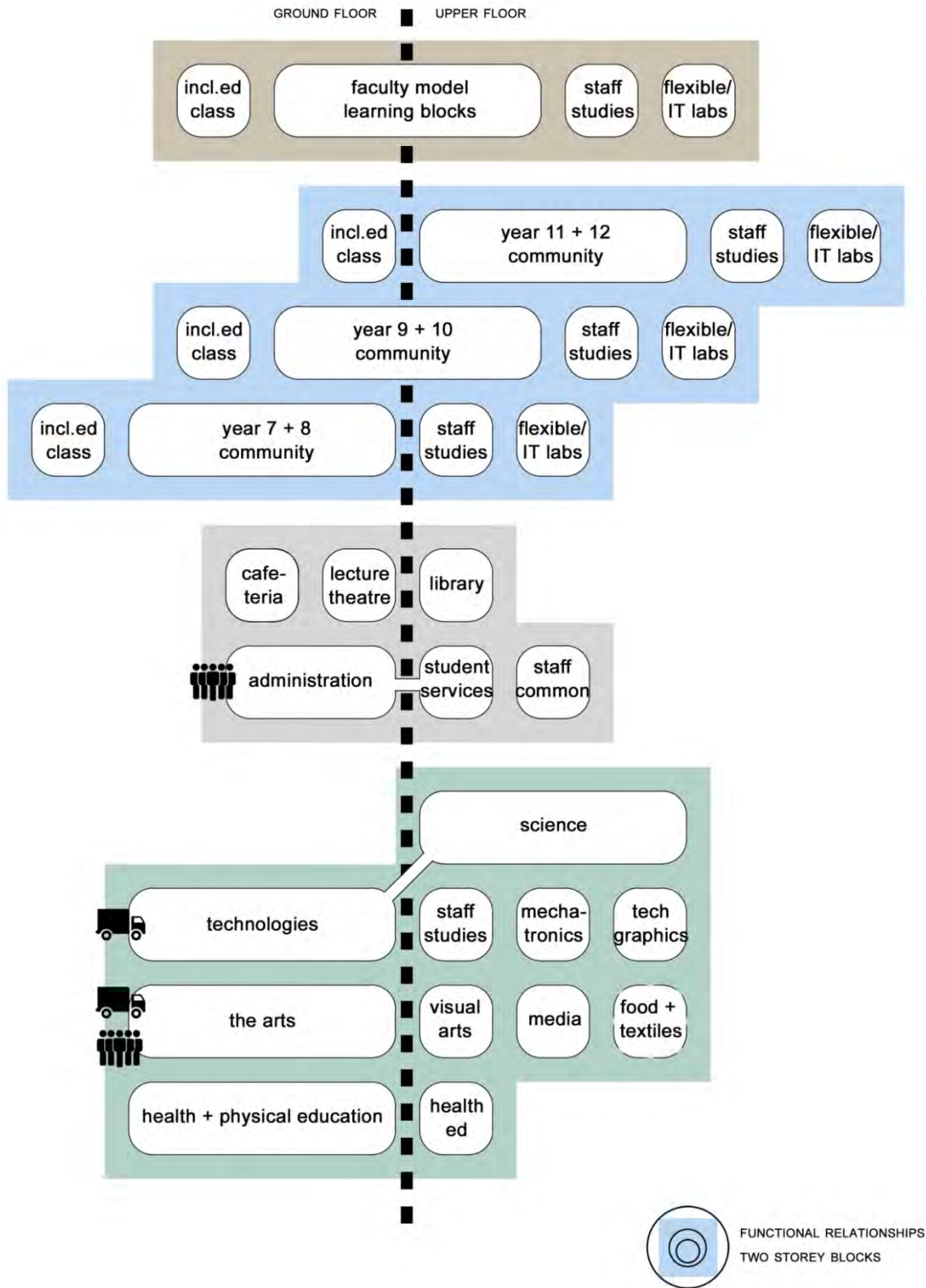
### D6.15.5 Learning Communities and Staff Studies

This diagram is for information only on key relationships between learning communities and School Staff Studies.



### D6.15.6 Two storey blocks

This diagram is for information and illustrates a typical configuration of distribution of areas between the ground and second storeys.







Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and looking at the beaker. The student on the left is looking towards the camera. There are various pieces of laboratory glassware and equipment visible in the background.

# **WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT**

## **PART E**

**Architectural Specifications**

**September 2015**

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## **E1. ARCHITECTURAL STANDARDS**

- (a) The following Section outlines the general requirements and criteria for the design, construction, commissioning and completion of the School Facilities and the Verge Infrastructure.
- (b) The materials, workmanship, design and installation of the Engineering Services and structure must comply with all relevant Laws and Quality Standards.
- (c) Refer to *Part G: Engineering Specifications* for specific technical performance and installation requirements.

## E2. UNIVERSAL ACCESS

- (a) Universal Access is of high importance to the State and must be incorporated and integrated within the School Facilities to create an inclusive educational environment. All Users benefit from enhanced accessibility, including people making deliveries, people with young children, people with prams and many older people.
- (b) Movement and access within and to the School Facilities must be Universally Accessible and comply with all relevant Quality Standards and Laws.
- (c) Project Co is strongly encouraged to deliver solutions that are over and above the requirements of the NCC, AS 1428 and the *Access to Premises Standards* where it is practicable and feasible to do so.
- (d) The design of the School Facilities must consider people with physical, cognitive, mental, sensory (primarily vision and hearing), emotional or developmental impairment, or a combination of these.
- (e) The design of the School Facilities must ensure that people with disabilities are not required to be separated from their friends, family, carers or assistance animals in their use of the School Facilities.
- (f) Universal Access design principles must be demonstrated within the design of the School Facilities. These principles include:
  - (i) **(equitable use)**: the design must be able to accommodate people of diverse abilities with dignity;
  - (ii) **(flexibility in use)**: the design must be able to accommodate a wide range of individual preferences and abilities;
  - (iii) **(simple and intuitive design)**: the School Facilities must be easy to understand, regardless of the User's experience, knowledge, language skills or education level;
  - (iv) **(perceptible information)**: the design must communicate necessary information effectively, regardless of ambient conditions or the User's sensory abilities;
  - (v) **(tolerance for error)**: the design must minimise hazards and the adverse consequences of accidental or unintended actions;
  - (vi) **(low physical effort)**: the design must facilitate efficient and comfortable movement and circulation with a minimum of fatigue; and
  - (vii) **(size and space for approach and use)**: appropriate size and space must be provided for approach, reach, manipulation, and use regardless of User's body size, posture, or mobility.

## **E3. ACCESS AND CIRCULATION**

### **E3.1 General circulation and spatial organisation**

- (a) Movement networks within the School Facilities, including pedestrian links, bicycle paths, bicycle parking and links to public transport, must be integrated with existing walking and cycling networks. The design of movement networks must promote and support the use of alternative means of transport.
- (b) Footpaths must be designed to enable safe and Direct Access to the School Facilities, with a clear separation between vehicular traffic and pedestrian movement.
- (c) On-site roads and vehicular access within the Site must be minimised; while ensuring ease of parking and access to the School Facilities.
- (d) The main entrance to the School Facilities must be prominent, clearly visible, well orientated, well sized and easily accessible from car parking.

### **E3.2 Pedestrian access**

- (a) Pedestrian movement through the School Facilities must be well planned, safe and clearly legible. Special attention must be paid to the separation of vehicular traffic from pedestrians and bicycles.
- (b) The building and landscape design must enhance the pedestrian experience.
- (c) Movement through the School Facilities must consider travel distances and protection from adverse weather.
- (d) Public thoroughfare through the School Facilities either by default or design must be avoided. Where School Facilities are being used by the community or after hours, community access must be separated from Core School Areas.
- (e) Pedestrian access must be facilitated from adjacent streets, including from public transport nodes and car parking.
- (f) Particular consideration must be given to the safety of pedestrians with special needs, including sight impaired persons and wheelchair users.

### **E3.3 Vehicle access**

- (a) The design of traffic management must comply with all relevant Quality Standards and Laws as well as the requirements of the State and LGAs. Traffic management must include traffic calming, signage and bollards to enhance safety.
- (b) Roads and vehicular access within the Site must be minimised.
- (c) Vehicle access roads must provide functional and safe access to and from each Site. Delivery vehicles require access as close as possible to areas including the Administration Block, Canteen or Cafeteria and Technologies Learning Area. Direct access to these areas is not mandatory and the trolleying of equipment and goods over short distances is acceptable.
- (d) Vehicle parking must be provided as scheduled. The impact of vehicles arriving at the School Facilities during peak periods must be mitigated by design strategies including the dispersion of car parking and bus set down areas strategically around the Site.

- (e) Vehicle crossovers at Site boundaries must comply with all relevant Quality Standards and Laws. The vehicle crossovers must integrate with the overall context of the urban design of the School Facilities.
- (f) Refer to *Part D: Functional Brief* and *C3: TRAFFIC MANAGEMENT* for further detail on vehicle access requirements.

### **E3.4 Egress**

- (a) All emergency exits must be well signposted and comply with all relevant Quality Standards and Laws, including the requirements for fire safety certification.
- (b) Refer to *C3: TRAFFIC MANAGEMENT* and *G7: Fire Services and Fire Engineering* for further detail on egress requirements.

### **E3.5 Access for emergency vehicles**

- (a) The design must facilitate Ready Access for emergency vehicles.
- (b) Access for emergency vehicles must be carefully considered in terms of the location of car parking and Play Areas, including the Hard Courts and Sports Oval. Consideration must also be given to emergency vehicle access in terms of headroom, gate widths and gate locations.
- (c) Refer to *C3: TRAFFIC MANAGEMENT* and *G7: Fire Services and Fire Engineering* for further detail on access for emergency vehicles.

## **E4. WAYFINDING AND SIGNAGE**

### **E4.1 Wayfinding and signage**

- (a) The design of the School Facilities must be supported by a distinctive, cohesive and integrated wayfinding and signage strategy that creates a welcoming, enjoyable, safe and easy to navigate environment.
- (b) Users must be able to move easily and intuitively through the Site, guided by clear and consistent wayfinding and signage devices.
- (c) Signage must be part of a holistic way finding strategy. Signage may be directional, be used as a means of identification or be a statutory requirement. In addition to assisting wayfinding, signage has an important role in site safety and security.

#### **E4.1.1 Wayfinding**

- (a) Project Co must develop a wayfinding strategy for each School Facility that integrates architecture, landscape architecture, urban elements, Public Art, lighting, signage and graphics.
- (b) The wayfinding must integrate signage with other elements and not undermine visibility, legibility or understanding for those that have an impairment or disability.
- (c) Cues to assist wayfinding, other than signage, must be incorporated. These may include the use of a hierarchy for circulation elements including courtyards and paths, as well as the use of finishes, colours and patterns for demarcation and identification.
- (d) Wayfinding for the School Facilities must:
  - (i) comply with the requirements for Universal Access;
  - (ii) foster a sense of place by responding to the local environmental, cultural and community context;
  - (iii) provide visual connectedness and intuitive paths to destination points;
  - (iv) include identification of all locations;
  - (v) reinforce the identity of the School Facility and its local community;
  - (vi) include architectural, graphic, lighting and tactile wayfinding cues;
  - (vii) include social prompts, including reinforcement with bollards, barriers, surface treatments and furniture;
  - (viii) achieve a reduced reliance on signage;
  - (ix) include interpretive possibilities;
  - (x) enable safe escape in an emergency; and
  - (xi) incorporate a signage system that is flexible and adaptable to accommodate any future development without compromising the wayfinding strategy.



### E4.1.2 Signage

- (a) A visible, legible, flexible and effective signage system must be provided to complement the integrated wayfinding strategy. The signage strategy and design must incorporate and address:
  - (i) statutory signage, including in relation to Universal Access, emergency egress and management, hazard regulation and warnings and the location of Engineering Services; and
  - (ii) general wayfinding signage, including directional, identification and reinforcement.
- (b) Project Co must develop the signage strategy in consultation with the State 6 months prior to the Date for Commercial Acceptance for each Stage.
- (c) All signage must comply with the following requirements:
  - (i) signage must satisfy the orientation needs of Users;
  - (ii) signage must be clearly legible at all times and be positioned at strategic points of arrival;
  - (iii) signage must be robust and vandal proof;
  - (iv) name signs must be provided at each School Facility entrance, in accordance with the following requirements:
    - (A) a main external sign must be provided that details the name of each School Facility on the Site and other pertinent information (which must be provided in consultation with the State); and
    - (B) a minimum lettering height of 200mm must be used;
  - (v) building name signs must be provided to each Functional Area, in accordance with the following requirements:
    - (A) signage must be provided to denote Functional Areas for directional purposes to aid circulation and the identification of the buildings and facilities; and
    - (B) a minimum lettering height of 50mm must be used;
  - (vi) room name signs must be provided at each Functional Unit entry door both internally and externally, in accordance with the following requirements:
    - (A) signs must be provided which can be readily changed, but are not easily removed (including by Students);
    - (B) lettering must be a minimum of 12 mm high;
    - (C) signs must have a co-ordinated style, length and height AFL; and
    - (D) internal doors must be both identified and numbered, and signs must be updated as necessary;
  - (vii) UAT and AAT signage must be provided in accordance with the following requirements:

- (A) signage must be Braille inclusive in accordance with relevant Quality Standards including AS 1428.1; and
  - (B) signage located within 1200mm of floor level must be profiled to cater for blind or visually impaired Users.
- (d) Signage must satisfy all relevant Quality Standards and Laws including:
- (i) AS 2899.1 – General information signs;
  - (ii) AS 2899.2 – Water safety signs;
  - (iii) AS 1319.0 – Safety signs; and
  - (iv) AS 1428 – Parts 1 and 2 Disabled access signs.

## E5. SECURITY

- (a) School Facilities must provide a safe and secure environment for Users. To achieve this, Project Co must adopt passive and active design strategies and a holistic approach to security.
- (b) Security measures must be incorporated within master planning strategies, architectural design and electronic security systems.
- (c) Project Co must, in consultation with the State, develop a security risk and threat assessment for each School Facility early in Design Phase 1. The relevant security risk and threat assessment must be used to inform the concept security design for each School Facility, and must be reviewed and updated in consultation with the State at each Design Phase to ensure that any new risks and threats are identified as the design develops.
- (d) All security systems must support the State's design requirements set out in this Design Brief, including those referred to in this Section *E5: Security*, and must include systems and materials which are user friendly, appropriate for the School Facility, Fit For Purpose, durable, readily maintained, flexible, adaptable, sustainable, energy efficient and cost effective.

### E5.1 Master planning

- (a) At a master planning level, CPTED principles must be integrated with the layout and design of the School Facilities. The layout and built form of the School Facilities must discourage antisocial behaviour by enabling surveillance, minimising opportunities for vandalism, encouraging custodianship and managing access through the School Facility.
- (b) Refer to:
  - (i) relevant CPTED Quality Standards;
  - (ii) C1: Master Planning Principles; and
  - (iii) *Part F: Landscape Specifications* (for Site fencing requirements).

### E5.2 Architectural design

- (a) The architectural design must consider that different degrees of risk are associated with different Functional Areas and Functional Units, and must implement security features accordingly. Security features may include security films to glazing, security mesh or internal secure door access.
- (b) Refer to *D5: Primary School Functional Areas*, *D6: Secondary School Functional Areas*, *E8: Building Structure and Fabric* and *E9: Openings* for further detail on architectural design requirements.

### E5.3 Electronic security

- (a) An electronic security system must be provided that includes intruder detection and EACS. The security system must be monitored at all times by a security alarm response service to mitigate damage to the School Facilities and the disruption of School Activities.
- (b) The extent of security services must take into consideration the risk of crime, vandalism and the level of physical security being provided for each School Facility.

- (c) Refer to *G6: Electrical Services* for further detail of electronic security requirements.

## **E6. ECOLOGICALLY SUSTAINABLE DEVELOPMENT**

### **E6.1 General**

- (a) The State requires a focus on sustainability initiatives and strategies that have tangible, measurable benefits to the State and community.
- (b) Each School Facility is required to demonstrate a minimum equivalence with a 4 star Green Star Education V1 certified project and should target a 5 star equivalence.
- (c) Whilst formal certification from the GBCA is not required, a detailed self assessment against the Green Star Education V1 tool must be provided at each Design Phase for each School Facility.
- (d) The State will review the reports and compare them to the Design Documentation at each Design Phase for consistency and correlation between documentation and the initiatives claimed. This includes ongoing construction, commissioning, monitoring and tuning obligations as nominated in the proposed equivalence path.

#### **E6.1.1 Mandatory initiatives**

- (a) To achieve an official certification, Green Star has only two mandatory requirements: energy efficiency and site location. For the Project, the State has increased the number of mandatory requirements to align more closely with the desired Project outcomes.
- (b) Mandatory requirements are noted in *E6.2: Specific Credit Requirements* below.
- (c) For the purposes of sustainability reporting, All School Facilities within the scope of the Project can be considered to comply with the requirements for site location, however, certain School Facilities may have additional requirements based on the Site and surrounding areas.

#### **E6.1.2 Approach to green star equivalence**

- (a) In some instances, minor non-compliances with Green Star benchmarks may be acceptable if the intent or initiative can be demonstrably met. Project Co must clearly report the non-compliance and provide a reasonable explanation of how the design can be shown to achieve the intent of the specific Green Star credit.
- (b) Published alternate compliance pathways and credit interpretations must be utilised in determining if an approach is considered reasonable.
- (c) Project Co must provide a completed Green Star Education V1 Score Card and Calculator (available from the GBCA website) for each School Facility.

#### **E6.1.3 Green star updates**

- (a) The Green Star Education V1 rating tool is soon to be superseded by the 'Design and As-Built' and 'Interiors' rating tools. Equivalence with the updated tools is not required to be demonstrated. Some or all of the revised criteria from the new tools may be utilised in submitting the equivalence assessment.
- (b) Credit weightings or scores from the Education V1 system must not be altered, irrespective of any changes which may be made by the GBCA.

**E6.1.4 Marketing requirements**

The Green Star rating system is being used by the State to provide benchmarks for the sustainable design outcomes for the Project. This does not entitle Project Co to breach any marketing rules or regulations as described by the GBCA.

**E6.1.5 Referenced documents**

Refer to the Green Star Education V1 technical manual, published rulings, clarifications and new credits. These documents are available from the GBCA website and are an Information Document.

## E6.2 Specific credit requirements

TABLE 1 – SPECIFIC CREDIT REQUIREMENTS

Credit Reference	Ruling for This Project	Comments
Man-1 – Sustainable Design Professional	Mandatory, changed criteria	<p>A specific consultant must be nominated as the Green Star accredited professional for each School Facility. This consultant must be a specific individual within an organisation who holds appropriate qualifications and has a minimum of five years' experience in building design and construction.</p> <p>The consultant will be the primary contact for sustainable design reporting. Their role includes the requirement to provide certification that the design and construction of each specific School Facility meets the design intent of sufficient Green Star recognised initiatives in order to be considered equivalent to a 4 star Green Star Education V1 certified project.</p>
Man-3 – Building Tuning	Mandatory	<p>Project Co must undertake building tuning for each School Facility for a period of at least 12 months following occupancy of the School Facility.</p> <p>Project Co must provide monthly reports of each energy and water meter for each School Facility in a standardised format, for the first 12 months of operation and annually thereafter. The reports must include comparisons between actual and simulated energy usage for each meter, normalised for area and usage type in accordance with the Green Star Education V1 Energy calculator guide.</p>
Man-4 – Independent Commissioning Agent	Mandatory	<p>An independent commissioning agent must be appointed as part of the Independent Certifier team.</p>
Man-5 – Building Users Guide	Mandatory	<p>A Building Users Guide must be provided for each School Facility, written in plain English such that it can be readily understood by School Staff, Project Co Staff and Students. Guides should follow the Green Star template, but be provided in a web based format to be made available on the school intranet.</p>
Man-6 – Environmental Management	Mandatory	<p>Site specific environmental management plans must be produced and implemented which meet the Green Star requirements.</p>

Credit Reference	Ruling for This Project	Comments
Man-7 – Waste Management	Mandatory	Site specific waste management plans must be implemented. Project Co must report quarterly on their performance regarding construction and demolition waste, irrespective of their compliance with the specific credit requirements.
Man-10 – Learning Resources	Mandatory	<p>Project Co must comply with the requirements of the Green Star credit in full. As a minimum, the compliance solution must include at least one live display for Primary Schools and at least two live displays for Secondary Schools.</p> <p>In addition to the minimum requirements as nominated in the Green Star credit, Project Co must also:</p> <ul style="list-style-type: none"> <li>• make building specific displays for energy and water consumption available on the school intranet;</li> <li>• provide specific explanatory documentation that allows Students and School Staff to understand the displays and interact with them; and</li> <li>• provide at least one non-digital display for each School Facility.</li> </ul>
Indoor Environment Quality – General	Mandatory, Additional requirement	Project Co must ensure that an appropriate indoor environment can be maintained without expert knowledge or a high degree of engagement from Users. A high degree of automation, or simple and well signed building controls, is recommended.
IEQ-1 – Ventilation Rates	Mandatory	<p>It is required that all occupied spaces are capable of functioning as naturally ventilated spaces, as well as by the mechanical ventilation systems nominated. However, Project Co must still ensure that in either ventilation mode (heating or cooling), all spaces are provided with minimum code compliant outside air without the need to manually open windows, doors or any other opening.</p> <p>Project Co is required to increase minimum outside air rates to classrooms beyond the levels required by relevant Quality Standards including AS 1668.2. Refer to <i>G5: Mechanical Services</i>.</p>
IEQ-3 – Carbon Dioxide Monitoring and Control and VOC Monitoring	Encouraged	<p>Project Co must provide mechanical systems to adjust outside air rate based on internal pollution concentration as a means to save energy.</p> <p>Project Co is encouraged to include information from this monitoring as part of their response to Man-10 Learning Resources.</p>



Credit Reference	Ruling for This Project	Comments
IEQ-4 – Daylight Factor	Mandatory for Primary Schools	<p>Project Co is required to achieve the same levels of daylight performance as is currently delivered by following the requirements of the PSB included in the Information Documents.</p> <p>Demonstrating equivalence with this credit must not compromise the requirement to exclude direct solar radiation on work surfaces between 8.45am and 3.15pm.</p>
IEQ-5 – Thermal Comfort	Mandatory	Project Co must deliver thermal performance to occupied spaces sufficiently to demonstrate compliance with this credit.
IEQ-6 – Hazardous Materials	Not Applicable	All School Facilities must nominate this credit as not applicable.
IEQ-8 – Low VOC Content	Mandatory	Project Co must use low VOC materials in accordance with the requirements of the IEQ-8 credit.
IEQ-9 – Formaldehyde Minimisation	Mandatory	Project Co must use low formaldehyde materials in accordance with the requirements of the IEQ-9 credit.
IEQ-11 – Daylight Glare Control	Mandatory	Project Co must exclude direct solar radiation on work surfaces between 8.45am and 3.15pm, as per the requirements of the PSB and SSPG, both of which are included in the Information Documents.
Ene-1 – Greenhouse Gas Emissions	Mandatory	<p>Project Co must deliver an energy efficient solution which exceeds NCC Section J minimum requirements by at least thirty percent (30%).</p> <p>Project Co, in consultation with the State, must ensure that the ESD design solution maintains the inherent principles adopted in the Initial Design Deliverables subject to any material changes driven through the Design Development process.</p> <p>Project Co is required to demonstrate this equivalence with the predicted energy consumption used as part of the School Facility tuning and educational outcomes described above. Energy consumption must be predicted separately for every meter for every month.</p>

Credit Reference	Ruling for This Project	Comments
Ene-2 – Energy Submetering	Mandatory	<p>In addition to complying with Green Star Education V1 Ene-2 requirements, Project Co must deliver energy submetering to separate lighting, power and mechanical consumption for each block.</p> <p>Refer also to the requirements under Man-10.</p>
Tra-3 – Bike Parking	<p>Recommended</p> <p>Innovation point for exceeding benchmarks is not allowable.</p>	<p>Project Co must provide bike parking in full compliance with the requirements of this credit.</p> <p>Project Co must include information regarding these facilities in the Building Users Guide nominated in the management Section above.</p> <p>Refer to <i>Part D: Functional Brief</i> and <i>C3: TRAFFIC MANAGEMENT</i> for further detail on bike parking requirements.</p>
Water – General	Mandatory, Additional requirement	<p>Credits in the water category are considered unlikely to have economically feasible payback periods. However, ongoing water conservation and education are still considered to be key outcomes for each School Facility. As such, Project Co is required to provide at least one visible water conservation initiative with appropriate signage and educational information per School Facility, irrespective of whether it is sufficient to achieve equivalence with a Green Star credit point.</p>
Wat-2 – Water Meters	Mandatory	<p>Project Co must provide a water meter at the boundary, and submeters for areas where large amount of water will be used (including each block, with separate meters for wet labs or pools). Meters must be connected to meter recording system.</p> <p>Refer also to the requirements of Man-10 above.</p>
Wat-5 – Fire System Water	Not Applicable	<p>This credit must be nominated as not applicable for each School Facility.</p>
Mat-1 – Recycling Waste Storage	Mandatory	<p>Project Co must comply with the requirements of this credit.</p> <p>Project Co must have a qualified waste auditor complete a waste management assessment for each Site.</p> <p>Provision must be made for the implementation of recycling collection at each School Facility.</p>

Credit Reference	Ruling for This Project	Comments
Mat-3 – Recycled Content & Re-Used Products and Materials	Encouraged	Project Co is considered to have met the credit intent if they achieve 1% of contract value (instead of 2%) but provide educational material within the Building Users Guide and Operation And Maintenance Manuals about product selection and its recycled content.
Mat-9 – Dematerialisation	Encouraged	<p>Project Co is encouraged to meet the requirements of this credit.</p> <p>Waterless urinals or toilets are not allowed as part of the demonstration of compliance.</p>
Eco-4 Change in Ecological Value	Encouraged, changed criteria	<p>Where Project Co provides an area (greater than 100m<sup>2</sup>) of regenerated native bush land to facilitate nature play and education, they may claim an additional two points under Eco-4 in addition to any points scored by the Green Star calculator. Project Co may achieve six out of four for Eco-4.</p> <p>In completing the self-assessment, Project Co must consider the original condition of the Site as being when the Site was procured by the State, not when possession was taken by Project Co.</p>
Innovation	Encouraged	<p>It is recommended that Project Co consider equivalence with the new innovations credits from Green Star. Innovation credits must either be demonstratively innovative and include detailed educational material for Users, or follow the innovation rulings released by the GBCA.</p> <p>Where innovation challenges are being undertaken, Project Co must either obtain the approval of the State or demonstrate a similar approach which has been acknowledged as acceptable by the GBCA.</p>
Inn-3 – Innovation Challenger – Market Transformation	Encouraged	<p>In addition to the challenges nominated by the GBCA, the State considers the provision of an automated and centralised energy collection and comparison system for all of the School Facilities as worthy of two innovation points. The system must meet the following requirements:</p> <ul style="list-style-type: none"> <li>• provide information to a granularity in accordance with Wat-2 and Ene-2 from the Green Star Education V1 Technical Manual, or the following meters for each block (whichever is the more stringent): <ul style="list-style-type: none"> <li>○ mechanical (water and electrical);</li> <li>(A) lighting (internal and external separately);</li> </ul> </li> </ul>

Credit Reference	Ruling for This Project	Comments
		<p>(B) power; and</p> <p>(C) sanitary use (water);</p> <ul style="list-style-type: none"> <li>• be readily expandable to include additional School Facilities in the future;</li> <li>• provide easy trending and comparison of the performance of the School Facilities, based on area and usage type;                             <ul style="list-style-type: none"> <li>○ Project Co may use Green Star categories to provide area definitions;</li> </ul> </li> <li>• capable of accepting direct data input from controls and monitoring systems or by email; and</li> <li>• include the connection of all School Facilities which are part of the Project.</li> </ul>

## **E7. BUILDING ENVIRONMENT**

### **E7.1 General**

- (a) The planning and massing of School Facilities must respond to the environmental conditions specific to the Site.
- (b) The building envelope and associated insulation, fenestration, and shading strategies must incorporate passive thermal strategies to optimise the performance of the School Facilities. Strategies include:
  - (i) energy efficiency;
  - (ii) using thermal mass to moderate temperature;
  - (iii) optimising daylight;
  - (iv) passive solar design; and
  - (v) passive ventilation.
- (c) Environmental noise must be considered in accordance with the requirements of *G8: Acoustic Services*.
- (d) Refer to *E6: Ecologically Sustainable Design* for further detail of building environment requirements.

### **E7.2 Applicable standards and regulations**

Project Co must comply with all relevant Quality Standards and Laws including:

- (a) Section J of the NCC;
- (b) Part F4 of the NCC; and
- (c) AS 1668.2.

### **E7.3 Climatic design**

- (a) The climate of the applicable Site must be considered within the planning and design of each School Facility.
- (b) The annual climate patterns need to be analysed, as well as their potential positive and negative effects on both buildings and outdoor spaces. Where the climatic analysis identifies issues which affect Users or environmental systems, the risks and their possible consequences must be identified and solutions implemented.
- (c) The planning and design of School Facilities must respond to issues including:
  - (i) passive design opportunities;
  - (ii) overshadowing;
  - (iii) prevailing wind speed and direction;
  - (iv) rainfall and direction;
  - (v) exposure to traffic and noise sources;

- (vi) temperature;
- (vii) humidity; and
- (viii) the effect of these on the School Facilities, including the Site.

### **E7.3.1 Passive design strategies**

- (a) Passive design strategies must be included in the design of each building. School Facilities must be designed to be naturally ventilated for most of the Academic Year, with the provision of mechanical air cooling and active heating to cope with high temperature days in summer and cold conditions in winter.
- (b) Passive design strategies that must be considered include:
  - (i) passive solar building orientation, to minimise heat gain in summer and permit cooling breezes to enhance natural ventilation;
  - (ii) the use of building planning to optimise thermal performance, including:
    - (A) locating plant rooms, toilets, lifts, stairs and stores on east and west façades to act as thermal buffers;
    - (B) locating air supply serving air conditioning units to avoid 'hot spots';
    - (C) providing effective sun shading, to minimise heat gains during hot weather; and
    - (D) the use of windows, skylights and other strategies to admit daylight and reduce reliance on artificial lighting;
  - (iii) incorporating passive ventilation strategies and ceiling fans to all habitable spaces to reduce the reliance on active systems; and
  - (iv) the use of thermal mass, in conjunction with effective passive ventilation strategies.
- (c) Where incorporated, passive solar heating should be limited to spaces which are not sensitive to glare.

### **E7.3.2 Prevailing winds**

- (a) Prevailing winds can have a negative impact on outdoor space, spaces between building structures and building entry points.
- (b) The design and construction of School Facilities must mitigate negative impacts of prevailing winds, including the potential for wind funnelling between building blocks and door slamming at entry points.
- (c) Wind calming strategies must be incorporated, with consideration given to minimising the negative impact on natural ventilation strategies for adjacent buildings.

## **E7.4 Energy efficiency of the building envelope**

### **E7.4.1 Conditioned spaces**

- (a) Each building envelope must be energy efficient and conform to all relevant Quality Standards including the minimum requirements of Section J of the NCC.

- (b) Project Co must be aware that the minimum thermal performance criteria required by Section J are based on controlling energy consumption when buildings are operating in 'conditioned' mode.
- (c) Consideration must be given to avoiding issues related to localised radiant heat loads and overheating associated with direct sun penetration, to optimise thermal comfort in the buildings when operating in passive mode.
- (d) Project Co must consider strategies that optimise the energy efficiency and passive performance of the School Facilities beyond the minimum requirements of the NCC.

#### **E7.4.2 Non conditioned spaces**

Non conditioned habitable spaces must incorporate adequate control of heat gains and losses in order to be considered Fit For Purpose. These areas include the Sports Hall, Covered Assembly Block and other covered activity areas. These spaces must incorporate adequate thermal insulation, control radiant heat and include effective natural ventilation to optimise thermal comfort.

### **E7.5 Natural ventilation**

Natural ventilation must be provided wherever possible. All evaporative cooled and air conditioned buildings must be able to be effectively naturally ventilated as well.

#### **E7.5.1 Part F4.5 of the NCC**

- (a) Part F4.5 of the NCC requires that all habitable spaces have natural ventilation complying with Part F4.6, or mechanical ventilation or air conditioning complying with AS 1668.2 and AS/NZS 3666.1. Refer to *G5: Mechanical Services* for further detail on mechanical ventilation and air conditioning requirements.
- (b) Even where a space is conditioned or mechanically ventilated, Project Co must still endeavour to maximise the extent of openable windows and ventilation apertures such that natural ventilation can be optimised when ambient conditions are suitable.
- (c) Wherever possible, openable windows and other ventilation apertures must encourage cross ventilation and passive stack ventilation. Where natural ventilation apertures form part of a night purge ventilation strategy, openable areas must incorporate appropriate security screens.
- (d) Where evaporative cooling is used, it is strongly recommended that external openable windows and doors are not relied upon as the sole external air relief path. A portion of the required relief area should be provided via stack ventilation apertures to reduce the reliance on building occupants having to manually operate windows to provide the required relief air path.
- (e) Ventilation systems must be designed to be easy to operate and manage, and have low maintenance requirements. If systems require occupant participation, this must be communicated simply and clearly. All maintenance and operation requirements must be contained within the Building Users Guide and Operation and Maintenance Manuals.

#### **E7.5.2 Ceiling fans**

- (a) Ceiling fans must be used wherever possible to enhance air movement and improve comfort conditions in habitable spaces, including in areas where air conditioning is provided. Where ceiling fans are located beneath lights (including skylights), they must be appropriately specified and located to avoid light strobing effects.

- (b) In Sports Halls and other large volume areas including Technologies Workshops, the use of HVLS fans is strongly encouraged.

### **E7.5.3 Stack ventilation**

- (a) Where possible, passive stack ventilation strategies must be considered for the larger multiple occupancy spaces including Learning Areas, Libraries and Information Resource Centres, workshops and Sports Halls. A stack ventilation strategy may consist of operable roof mounted ventilators or operable louvres in clerestory or other high level arrangements (correctly oriented to account for prevailing winds).
- (b) Where roof mounted ventilators are used, they must incorporate dampers (air flow controllers) to ensure the vent can be closed and effectively sealed in winter and during inclement weather. The dampers or other operable vents must be linked to the evaporative cooler controls and automatically open whenever the evaporative coolers are in use.
- (c) Roof vent damper controls must have an indicator clearly visible to the room occupants to show the open or closed status of the damper. The operating mechanism must be capable of remaining in either a fully open or fully closed position.

### **E7.5.4 Control of cross-talk, flanking and external noise intrusion**

- (a) Careful consideration must be given to preventing cross-talk and other forms of room-to-room sound transmission via elements of the natural ventilation strategy. Shared ducts and plenums must be designed so as not to downgrade the Sound Reduction provided by acoustic rated building elements including walls, ceilings and floors.
- (b) Consideration must be given to potential sources of environmental noise intrusion via ventilation openings, including traffic, aircraft and rooftop mechanical plant.
- (c) Refer to *G8: Acoustic Services* for further detail on acoustic requirements.

## **E7.6 Daylighting**

- (a) Daylighting strategies must be used in all Learning Areas and wherever possible to ensure the best possible indoor environmental quality and to minimise the need for artificial lighting.
- (b) The impact of glare must be mitigated, while still allowing for the provision of natural light.
- (c) The following requirements must be met:
  - (i) windows must be designed to provide optimum levels of low glare lighting;
  - (ii) methods of introducing diffused natural light deeper into the floor plate must be considered. This may include:
    - (A) incorporating skylights or clerestory windows;
    - (B) utilising borrowed light from adjacent spaces; and
    - (C) using light shelves to reflect light deeper into the building; and



- (iii) it must be demonstrated that the lighting strategy does not affect the ability to see the Teaching Wall and any other whiteboards, data projections or digital screens. Where necessary, mechanisms must be provided to control the amount of light entering a room.
- (d) For further detail relating to daylighting requirements, refer to the following:
  - (i) AS 1680;
  - (ii) E6: Ecologically Sustainable Design; and
  - (iii) Part F4 of the NCC.

### **E7.6.1 Top lighting (overhead skylights)**

#### **E7.6.1.1 Domed skylights**

- (a) Where roof lights are used for internal spaces, domed skylights should be employed that are approximately 500mm diameter and include daylight dimmers or dampers, a ceiling level diffuser and a rigid light reflective shaft between the skylight dome and the diffuser. This lighting strategy is based on ceiling diffusers that are located a minimum of 3500mm AFL.
- (b) Requirements for the skylights include:
  - (i) variable dimming from 2% to 100%;
  - (ii) dimmer controls that are arranged to allow zoned dimming, including a separate zone for the Teaching Wall. Switches must be clearly marked to identify the relevant zones;
  - (iii) that dimmers are not required to stores, toilets, corridors or Foyer areas;
  - (iv) skylights that are co-ordinated with light fittings, ceiling fans and ducts to result in evenly distributed and diffused daylight; and
  - (v) skylight shafts from roof dome to ceiling diffuser that are a rigid, specularly reflective silver tube, with a visible light reflectance of at least 97%.
- (c) The daylighting strategy must be verified by undertaking daylight modelling.
- (d) Any daylight strategy within conditioned spaces must comply with all relevant Quality Standards including the NCC Section J 'Energy Efficiency' requirements.

#### **E7.6.1.2 Translucent roof sheeting.**

- (a) Strip skylights consisting of translucent roof sheeting may be provided to external covered activity areas and Sports Halls to provide evenly distributed, low glare natural light.
- (b) Roof lights must be designed to meet the insulation requirements of all relevant Quality Standards and Laws including Section J of the NCC and relevant safety requirements. In areas which are at risk of bushfire, it must be ensured that skylights are Bushfire Attack Level rated to resist ember attack.

### **E7.6.2 Sun penetration and glare**

- (a) Sun penetration and the impacts of glare within Learning Areas and School Staff Areas must be mitigated. The impact of glare includes:

- (i) sun falling onto work surfaces (including desks, Teaching Walls and screen based technology);
  - (ii) sun shining directly into the eyes of Users; and
  - (iii) extreme contrast between the brightness of a sun patch and the ambient light levels in the room.
- (b) Direct sunlight must not enter spaces including Learning Areas, School Staff Areas and Sports Halls due to problematic glare, unless it can be demonstrated that solar control strategies are configured to prevent sun falling onto work surfaces and playing courts between the hours of 8:45am and 3:15pm throughout the Academic Year.

## **E8. BUILDING STRUCTURE AND FABRIC**

- (a) This Section provides the requirements for the design, building, commissioning and completion of the built fabric of the School Facilities.
- (b) Project Co must provide the building structure and fabric of the School Facility to satisfy all relevant Quality Standards and Laws.

### **E8.1 Pests**

#### **E8.1.1 Excluding birds, reptiles and rodents**

- (a) Nesting and roosting opportunities for birds in undercover areas including Sports Halls must be avoided.
- (b) Vents and other building openings must be designed to prevent access by Pests and other animals, and be fitted with vermin mesh.

#### **E8.1.2 Termite protection**

- (a) The design and construction of the School Facilities must provide termite protection. The following requirements must be met:
  - (i) materials must be selected that are not attractive to termites;
  - (ii) physical termite barriers must be incorporated;
  - (iii) termite protection systems which rely on chemical barriers must not be selected;
  - (iv) as part of the FFP Warranty, Project Co must warrant the termite protection barriers for a minimum of 10 years; and
  - (v) the design must facilitate regular termite inspections.

### **E8.2 Materials and products**

#### **E8.2.1 Material and product selection**

- (a) Designs must utilise hard wearing, durable materials and products while still enabling the School Facility to provide an uplifting and engaging environment.
- (b) Materials must be selected that are:
  - (i) durable and easy to maintain;
  - (ii) attractive and appropriate for the type and location of the building;
  - (iii) Fit For Purpose;
  - (iv) climatically appropriate;
  - (v) readily available and replaceable;
  - (vi) resistant to vandalism, graffiti and general abuse; and
  - (vii) sustainable and have low environmental impact including:

- (A) using the minimum amount of material required;
- (B) maximising the use of recycled content material;
- (C) minimising the use of building materials with high embodied energy and no compensatory benefits;
- (D) minimising the use of building materials that have damaging ecological effects; and
- (E) minimising the use of building materials produced from limited or non-renewable natural resources.

### **E8.3 Building structure**

- (a) The structure must address the Site Conditions and future flexibility. It must be simple and suit the need for clear span buildings to allow for long term internal re-planning.
- (b) Consideration must be given to building elements, materials and forms of construction that are low embodied energy, that are readily available and that serve the passive or active harnessing of solar energy.
- (c) Structures must be designed and constructed so that deflections, vibrations and resonances do not adversely affect the performance, serviceability, stability or appearance of the structure, equipment, applied finishes or secondary construction.
- (d) Structures must be designed and constructed to facilitate maintenance procedures on the structures and on systems and equipment items within the School Facilities.
- (e) All structures comprising the School Facilities must exclude water and mitigate prevailing winds.
- (f) All structures comprising the School Facilities must be efficient to operate, durable and adaptable and Fit For Purpose.

#### **E8.3.1 Structural steel**

- (a) All external steel, or steel built into cavity walls, must be hot dip galvanised. Where steel cannot be hot dipped galvanised due to its size or thickness, alternative protective coatings must be provided, and approved by the State. Where light weight steel framing wall systems are used, all fabricated metalwork, including anchorages, fixings, finishes and trims must be selected and installed for the conditions and performance requirements, including corrosion resistance and Design Life and durability requirements.
- (b) Steel finishes and all associated work must be provided that meets the following requirements:
  - (i) the materials, products and design must mitigate against the effects of corrosion;
  - (ii) steel structures must be designed and constructed to eliminate any exposed sharp edges which may be a safety hazard; and
  - (iii) the finished surface quality must be free of defects and smooth over each element, and visible galvanising must be carried out to an architectural grade.

- (c) Exposed steel structures must be avoided in corrosive environments including coastal locations.
- (d) Refer to *G3: Structural Engineering* for further detail on structural steel requirements.

### **E8.3.2 Structural concrete**

- (a) Structural concrete must comply with all relevant Quality Standards and Laws.
- (b) The use of sealants for concrete in Sites with a corrosive nature must be considered.
- (c) Concrete finishes must achieve the following minimum class ratings as defined by AS 3610:
  - (i) Class 1 for selected precast in highly visible areas and areas subject to glancing light;
  - (ii) Class 2 for concrete generally for precast or in situ, exposed concrete or concrete with an applied high build finish; and
  - (iii) Class 3 for non-exposed concrete soffits or fully concealed columns and similar.

## **E8.4 Walls**

### **E8.4.1 External walls and wall systems**

- (a) Exterior walls and wall systems must resist damage from:
  - (i) vertical loads superimposed onto the building structure and transmitted by the building structure;
  - (ii) horizontal and lateral wind loads;
  - (iii) seismic loads;
  - (iv) dimensional changes caused by temperature related reactions of building materials;
  - (v) forces generated by differential settlement, lateral ground movement or other foundation related movement; and
  - (vi) the penetration of water through or into the exterior walls and condensation within the wall composition or penetrations.
- (b) Exterior walls and wall systems must:
  - (i) be robust, durable and able to withstand impact, especially at low levels;
  - (ii) accommodate all permanent and temporary loads;
  - (iii) consider an inherent finish, or be prefinished;
  - (iv) not require regular maintenance or reapplication of finishes;
  - (v) weather appropriately;

- (vi) be able to withstand high pressure cleaning;
  - (vii) minimise corrosion or deterioration of the building fabric;
  - (viii) provide thermal resistance;
  - (ix) minimise air leakage and infiltration into the building; and
  - (x) provide acoustic performance in accordance with the requirements set out in *G8: Acoustic Services*.
- (c) Materials selected for external walls must comply with *E8.2: Materials and Products*. Cladding including all finishes, fixings, sealants, flashings and trims must be Fit For Purpose.

## **E8.4.2 Brickwork and blockwork**

### **E8.4.2.1 General requirements**

Brickwork and blockwork walls must:

- (a) utilise grade 316 stainless steel or an engineered polymer that is immune to corrosion for built in products;
- (b) be selected for resistance to salt attack or general spalling due to atmospheric contaminants and other Site Conditions which may be reasonably expected on the Site where units are used below the damp course and in external leaves;
- (c) incorporate flexible masonry ties where accommodation of movement is required at control joints and where masonry units abut structural elements including column faces and slab soffits; and
- (d) include control joints that coincide with those in the floor structure, which must:
  - (i) be located inconspicuously to limit masonry panel sizes in order to prevent cracking;
  - (ii) incorporate sealants and bond breaking backing materials that are non-staining to masonry and paintable if the masonry will be painted; and
  - (iii) incorporate fire stopping materials in the joint composition to ensure that the fire resistance requirements of the element in which it is located are maintained.

### **E8.4.2.2 Face brickwork and blockwork**

Face brickwork and blockwork walls must:

- (a) be cleaned on completion to remove mortar smears, stains and discolouration using cleaning agents that do not erode the masonry or damage adjacent materials;
- (b) ensure visible face unit colours are evenly distributed to prevent colour concentrations and 'banding';
- (c) ensure face units are selected of uniform width and face quality; and
- (d) ensure sills and thresholds are solidly bedded and laid so that the top surfaces drain away from the building.

### E8.4.2.3 Cavities

Brickwork and blockwork cavities must:

- (a) be kept clear;
- (b) be filled with mortar up to one course above adjacent finished (ground) level;
- (c) utilise wall ties, connectors and accessories that are sufficient to withstand any lateral loads applied to the wall and to ensure monolithic action. Wall ties, connectors and accessories must be installed so as to prevent water passing across the cavity; and
- (d) utilise damp proof courses.

### E8.4.2.4 Flashings

Brickwork and blockwork flashings must:

- (a) be installed to prevent moisture from bridging cavities and to flash to adjacent structures to prevent the ingress of moisture to the building;
- (b) discharge to the roofing gutter system or to the exterior of the building, in such a way that the discharge does not transfer to the building façade materials and cause staining or discolouration; and
- (c) be compatible with the adjacent building materials.

## E8.4.3 Cladding systems

### E8.4.3.1 General requirements

Cladding systems must:

- (a) provide a waterproof skin to the building except for ventilated open cladding systems;
- (b) be self draining, such that any moisture which does permeate the exterior face is discharged externally;
- (c) minimise the extent of the following cladding materials:
  - (i) polycarbonate sheeting; and
  - (ii) materials that have a site applied painted finish;
- (d) have surfaces and profiles that are durable and self cleaning or easily cleaned by high pressure spray; and
- (e) have fixings that are concealed unless expressly featured in the design.

### E8.4.3.2 Sheet metal

Sheet metal cladding systems must:

- (a) be proprietary systems with preformed sheets and purpose made accessories;
- (b) be pre-painted or organic film products, or metal laminate products; and

- (c) be of highly robust materials and finish, and mitigate vandalism.

#### E8.4.3.3 Stone cladding

- (a) Stone cladding must be:
  - (i) of uniform quality within any grade;
  - (ii) selected for the optimum matching of visual properties including colour and pattern; and
  - (iii) sound, and free from defects liable to affect its strength, appearance or durability under the intended conditions of use.
- (b) Stone cladding installation must ensure that:
  - (i) masonry and components are protected from ground moisture and aggressive attack or staining arising from exposure to the Site Conditions;
  - (ii) cutting, carving and moulding achieves a sharp and clean finish;
  - (iii) variations in colour, texture, pattern or finish are distributed randomly throughout the work so that local concentrations do not occur;
  - (iv) stone is laid on a full bed of mortar unless dry stone walling techniques are being utilised;
  - (v) fixings are sufficient to support and restrain each stone and effectively resist the loads from permanent, imposed, wind and earthquake actions to which it is subjected;
  - (vi) all fixings are:
    - (A) corrosion resistant metal, including non-ferrous metal or stainless steel; and
    - (B) compatible with the materials with which they are in contact, or effectively insulated from electrochemical reaction with incompatible materials.
- (c) All cladding sheets, tiles and other tile setout must:
  - (i) ensure edges are matched and patterns aligned;
  - (ii) be arranged so that variation in appearance is minimised; and
  - (iii) ensure that cut cladding sheets and tiles are located so that they give a cut dimension of at least 100mm by full tile width.

#### E8.4.3.4 Aluminium composite panel

Aluminium composite cladding systems must be:

- (a) a proprietary prefinished corrosion resistant aluminium alloy sheet bonded to a fire resistant core material;
- (b) constructed of highly robust materials and finish, reinforced where necessary, if vulnerable to vandalism or required for trafficability;



- (c) of sufficient thickness and rigidity to prevent deflections and deformation in the sheet from human impacts and weather including hail (both metal sheet and total panel); and
- (d) highly UV stable for fade resistance and gloss consistency throughout the Design Life of the material, with self cleaning properties and no tonal variation between batches.

#### **E8.4.4 Curtain wall systems**

Curtain wall system design and installations must:

- (a) be fully integrated into the building and design;
- (b) accommodate deflections, displacements and other movements within the curtain wall, or between the curtain wall and the building (including fire stop and smoke flashing connections);
- (c) accommodate movements silently and without permanent deformation, reduction of performance or other detrimental effects, including:
  - (i) damage to or undue stress on structural elements, fixings, glass and spandrel panels;
  - (ii) failure of joint seals; and
  - (iii) loss of normal function in operable elements including doors and windows;
- (d) exhibit vertical deflection of structural members under dead load which does not:
  - (i) reduce the glass bite below 75% of the design dimension;
  - (ii) reduce below 3mm, the clearance between the member and a non-structural member (including glass or spandrel panel) immediately below; and
  - (iii) reduce below 3mm, the clearance between the member and operable elements including windows and doors; and
- (e) be capable of supporting loads in horizontal or near horizontal surfaces that form part of the curtain wall, including copings, beam encasements, ledges and those which may carry human live loads, including for maintenance access without permanent distortion, failure of seals or fastenings or other damage.

#### **E8.5 Roofing**

- (a) Efficient and simple roof designs are encouraged. Roof pitches and drainage systems must be designed to avoid leaks, minimise maintenance requirements and limit the damage that may be caused by an overflow.
- (b) The roofing system must be low maintenance to avoid the future disruption of School Activities.
- (c) Roof and roof systems must:
  - (i) make provision for the overflow of gutters which can alert building maintenance to blockages;

- (ii) prevent air leakage and water vapour transmission through and into the roof systems by incorporating air barrier and vapour barrier systems to internal areas;
- (iii) allow for the discharge of all water and moisture, including leakage and condensation, outside the building and into the drainage system;
- (iv) accommodate the wind loads applicable to the Site;
- (v) be light in colour, if appropriate for the surrounding environment, to reduce summer overheating;
- (vi) minimise corrosion or deterioration of the building construction and finishing materials underneath or within;
- (vii) ensure that adjacent materials and products are chemically and electrolytically compatible;
- (viii) provide thermal resistance to heat transfer through the roof systems;
- (ix) resist damage from dimensional changes caused by temperature related reactions of building materials;
- (x) provide acoustic performance in accordance with the requirements set out in G8: Acoustic Services;
- (xi) maintain the integrity of any roof membranes at all roof penetrations;
- (xii) resist the ingress of Pests to all areas;
- (xiii) incorporate all necessary provisions for safe roof access including access ways, safety railings, safety anchor joints and fall arrestor system;
- (xiv) support the specific imposed loads and types of roof access; and
- (xv) prevent unauthorised access to roofs.

#### **E8.5.1 Roof pitch**

The minimum roof pitch must be whichever is greater of: 5°, or the roof sheeting manufacturer's recommendation plus 1°.

#### **E8.5.2 Materials**

Materials and finishes selected must comply with the *E8.2: Materials and Products*. Prefinished sheeting is preferred.

#### **E8.5.3 Roof drainage, gutters and downpipes**

Roof design must comply with all relevant Quality Standards and Laws, and meet the following requirements:

- (a) Fit for Purpose roof drainage that is appropriate to suit the predicted rainfall events having regard for the Site location and relevant Quality Standards, including *Australian Rainfall and Runoff Volumes 1 and 2 (1987)* and the interim guidance included in *Australian Rainfall And Runoff Discussion Paper: An Interim Guideline For Considering Climate Change In Rainfall And Runoff (November 2014)*. Refer to *Part G4.5.6: Roof drainage, gutters and downpipes* for further requirements;

- (b) eaves gutters or no gutters are strongly preferred to valley or box gutters that collect leaf debris. Box gutters must not be used in bushfire prone areas;
- (c) the use of gutters and downpipes is not essential provided there are effective storm water disposal systems in place;
- (d) the design must facilitate easy and safe access to gutters for cleaning. Guttering and downpipe detailing and arrangement must be robust and securely fixed to withstand accidental damage during maintenance works;
- (e) downpipes must be designed to take the most direct path to the ground and eliminate horizontal sections in roof drainage systems, and so that they can be easily cleared of blockages;
- (f) downpipes must be non-climbable and must be designed such that they are not vulnerable to vandalism through being kicked or otherwise crushed. Down pipes must be located in protected areas away from heavy Student traffic. Ground connections must be designed to avoid the creation of trip hazards; and
- (g) additional rainwater goods to be installed must be similar in design and appearance to the existing.

#### **E8.5.4 Skylights**

Roof lights must be designed to meet the insulation requirements of Section J of the NCC and all relevant safety requirements, including relevant Quality Standards and Laws. In areas which are at risk of bushfire, it must be ensured that skylights are BAL rated to resist ember attack.

#### **E8.5.5 Roof safety systems**

Roof access and safety systems must be designed in accordance with relevant Quality Standards including:

- (a) AS 1657 – Fixed platforms, walkways, stairways and ladders: design, construction and installation;
- (b) AS/NZS 1891.4 – Industrial fall arrest systems and devices: selection, use and maintenance; and
- (c) WA Commission for Occupational Safety and Health Code of Practice – *Prevention of Falls at Workplaces*.

### **E8.6 Moisture protection, insulation and vapour barriers**

#### **E8.6.1 Moisture protection**

- (a) Project Co must:
  - (i) ensure construction assemblies prevent the ingress of moisture or water vapour into the fully enclosed interior spaces within the building and building fabric from the exterior;
  - (ii) ensure construction assemblies prevent the passage of air through the building envelope from fully enclosed interior spaces to the exterior and vice versa;

- (iii) provide insulation and protection to resist the transfer of heat through the exterior walls and roofs to create comfortable and liveable interior environments;
  - (iv) provide construction assemblies that resist the propagation and spread of fire through the exterior walls and through those interior walls designated as fire rated separations; and
  - (v) prevent moisture ingress through foundations and walls below ground.
- (b) Waterproofing membranes must:
- (i) be provided over suspended slabs and decks and associated walls over habitable spaces, where water collection is anticipated, to prevent water ingress and damage caused by such water ingress;
  - (ii) be provided in exterior walls, as part of the building envelope, which are integral to the rain screen or cavity wall assemblies; and
  - (iii) be properly installed across all expansion and control joints so that the waterproofing system accommodates movement without damage.

### **E8.6.2 Waterproofing materials**

Waterproofing materials must:

- (a) maintain their protection for the Design Life of the building or structure;
- (b) not be adversely affected by exposure to ultra violet radiation;
- (c) sustain traffic loads which may be reasonably expected;
- (d) remain functional in the ambient conditions to which they may be exposed;
- (e) convey trapped water and moisture to a drainage system to discharge it from the building or structure; and
- (f) be unaffected by chemical or other discharges from Engineering Services installations which may be located above them.

### **E8.6.3 Vapour barrier materials**

Vapour barriers must provide a continuous barrier:

- (a) to prevent water vapour transmission into the exterior wall assembly and the resultant condensation of moisture in the wall assembly;
- (b) in the roofing assembly, to prevent water vapour transmission into the roof cavity and the resultant condensation of moisture within the roof cavity; and
- (c) under concrete slabs on grade within the building perimeter to prevent water and water vapour transmission through the slab.

### **E8.6.4 Thermal insulation**

Thermal insulation materials must:

- (a) be provided as part of the building envelope to limit the transfer of heat, both from the internal enclosed spaces to the exterior and from the exterior to the internal enclosed spaces, dependent on seasonal conditions;
- (b) be comprised of materials that are of a type and quality that provide consistent environmental quality to the internal enclosed spaces;
- (c) not absorb moisture or contain loose airborne material; and
- (d) provide thermal values and fire resistance characteristics in conformance with the requirements of the NCC, except where this Design Brief requires a higher standard of performance than the NCC requirements.

## **E8.7 Ceilings**

- (a) Project Co must provide all ceilings, external soffits and all associated works and fixings.
- (b) Lay-in ceiling tile systems must not be provided in Learning Areas and public areas including Foyers and waiting areas.
- (c) Engineering Services must be well considered and integrate with the ceiling design.
- (d) Project Co must as a minimum provide ceilings and all associated works that:
  - (i) allow for services and access for future installations;
  - (ii) ensure sufficient rigidity to ceiling framing in areas likely to be affected by vibrations;
  - (iii) comply with the fire resistance requirements of the relevant codes and regulations;
  - (iv) ensure movement joints in ceilings are configured so that they are not present in ceilings in any wet areas;
  - (v) remain stable without deflection, distortion, looseness or rattling under normal conditions of use including slamming of doors;
  - (vi) resist sag and resist the effects of mould and humidity; and
  - (vii) have sufficient adjustment to accommodate long term base structure deflection.

### **E8.7.1 Acoustic requirements**

- (a) Ceiling construction and materials must achieve the acoustic requirements nominated in *G8: Acoustic Services*.
- (b) Acoustic treatment must be provided over acoustic partitions that terminate at ceiling level as required to comply with the acoustic performance requirements set out in *G8: Acoustic Services*.

### **E8.7.2 Ceiling systems**

- (a) Where provided, ceiling grid systems must be set out so that tile or panel joints and centrelines of visible suspension members coincide with planning grid lines. Suspension systems must be co-ordinated with the in-ceiling Engineering Services.

- (b) Bulkheads and other similar ceiling formations must be an integral part of the ceiling structure, and must:
  - (i) be braced to prevent lateral movement; and
  - (ii) accommodate requirements for the engineering services, including motors and cabling associated with roller shutters and grilles.
- (c) Ceiling tiles must fit accurately and neatly and be free from air leakage and staining.
- (d) Patterned or heavily textured materials must be set out to give consistency in direction of pattern or texture.

### **E8.7.3 Metal strip ceilings**

Metal strip ceilings must:

- (a) be provided in the Learning Areas, School Staff Areas, Libraries and Information Resource Centres, Conference Rooms and the Administration Block. Any proposed changes to these areas must be in consultation with, and approved by, the State.
- (b) include shadow line angle trims to perimeter walls;
- (c) be prefinished steel or aluminium; and
- (d) include insulation over the metal strip ceilings with fabric adhered to the underside. Insulation must be provided in accordance with *G8: Acoustic Services*.

### **E8.7.4 Flush plasterboard ceilings**

Flush plasterboard ceilings must:

- (a) include shadow line angle trims to perimeter walls;
- (b) be constructed of water resistant gypsum in wet areas (including Staff Toilets, Student Toilets and cleaners stores);
- (c) be impact resistant in high risk and unsupervised areas (including Student Toilets and Change Rooms); and
- (d) be paint finished (low VOC 100% acrylic flat).

### **E8.7.5 Access panels**

- (a) Removable panels must be provided to gain safe and effective access to all in-ceiling services requiring maintenance, and must provide access to each separate ceiling space.
- (b) Removable panels must be located to align with other ceiling elements and located to minimise their number.
- (c) Removable panel installations must:
  - (i) match the ceiling in appearance and performance; and
  - (ii) have a reinforced back to prevent warping and facilitate handling.

### **E8.7.6 Trims**

- (a) Trims including beads, mouldings and stops must be used to make neat junctions between lining components, finishes and adjacent surfaces.
- (b) Prefinished aluminium angles must be provided at ceiling edge terminations.
- (c) Perforated stopping beads must be installed to all edge terminations against abutments.
- (d) Perforated casing beads must be installed to all edge terminations where the sheet edge is exposed.

### **E8.7.7 Sealants**

- (a) Non-hardening fire rated sealants must be compatible with the materials to be sealed and with a fire rating equal to that of the partition it seals.
- (b) Non-hardening acoustic sealants must be compatible with the materials to be sealed and rated consistent to the requirements of the space.

## **E8.8 Hydrotherapy pool**

### **E8.8.1 General**

- (a) The Hydrotherapy Pool, including structures, reinforced concrete, filtration and treatment systems, finishes and equipment must be constructed and co-ordinated by a specialist swimming pool subcontractor.
- (b) Materials, equipment and ancillary items must be Fit For Purpose and comply with the requirements of this Design Brief and all relevant Quality Standards and Laws.
- (c) Project Co must provide complete construction of the Hydrotherapy Pool and associated work including:
  - (i) all waterproofing systems;
  - (ii) all pool finishes;
  - (iii) all pool fittings and furniture including chair lift;
  - (iv) a pool cover and pool cover enclosure;
  - (v) all pool, gutter and balance tank structures (including access);
  - (vi) ladders and handrails;
  - (vii) all water filtration and circulation systems including:
    - (A) circulation pumps;
    - (B) wet deck, gutter, balance tank and circulating pipework between the pool and plant room, and filtered water return outlets;
    - (C) vertical cartridge filters;
    - (D) natural gas fired pool heater with stainless steel flue;
    - (E) heating slip stream circulation pump;

- (F) UV unit on floor mounting stand and associated work;
  - (G) water chemistry monitoring;
  - (H) booster pump for in pool seat jets; and
  - (I) associated pipework and fittings;
  - (viii) all structural and building penetrations, concrete plinths and the like;
  - (ix) pipework layouts, including supports, anchoring, expansion, fixing and the like;
  - (x) plant layouts including details of site constructed items of plant and pool furniture;
  - (xi) electrical and control system schematics;
  - (xii) electrical switchboards including front panel and internal layouts;
  - (xiii) make up water systems;
  - (xiv) water chemistry control systems;
  - (xv) chemical storage tanks and bunds;
  - (xvi) flow meters;
  - (xvii) PLC diagrams and software codes;
  - (xviii) ancillary equipment, including:
    - (A) robotic pool cleaner;
    - (B) manual cleaning equipment;
    - (C) protective clothing; and
    - (D) pool rescue equipment;
  - (xix) proprietary manufactured equipment product data, capacity, performance and dimensional characteristics;
  - (xx) specialist systems manufactured equipment product data, capacity, performance and dimensional characteristics; and
  - (xxi) signage.
- (d) Refer to *D6: Secondary School Functional Areas* and *Part G: Engineering Specifications* for further detail on Hydrotherapy Pool requirements.

### **E8.8.2 Materials**

- (a) Metal components in direct contact with circulated water and within the plant room must be kept to a minimum.
- (b) Stainless steel metal components must be grade 316L stainless steel versions.



- (c) Mild steel components must be hot dipped galvanised after fabrication and where visible, finished with a minimum of two coats of epoxy paint.
- (d) Where fixings are required, metal expansion of epoxy resin devices must be used.

### **E8.8.3 Waterproofing**

- (a) The waterproofing system must be certified for use with potable water and chlorinated pool water.
- (b) The waterproofing system must be applied strictly in accordance with the manufacturer's recommendations and must:
  - (i) prevent water from penetrating the concrete or from coming into contact with and oxidising the steel reinforcement within the concrete structure;
  - (ii) prevent water leakage from the structure into the surrounding ground;
  - (iii) present a smooth finish surface with minimal surface roughness as a location for algae to adhere; and
  - (iv) be compatible with all substrates, fixings and materials it contacts.
- (c) The waterproof lining must be provided to all associated concrete structures including gutters, balance tanks, holding tanks, backwash tanks in their entirety.

### **E8.8.4 Pool finishes**

#### **E8.8.4.1 General**

- (a) The tiles and associated products used to line the pool and provide the final finish must be a complete compatible system inclusive of all render, waterproofing, additives, adhesives, grouts and finishing products, suitable for permanent submersion in chlorinated swimming pool water.
- (b) Project Co must ensure the materials and installation will not cause harm to any Users of the pool.

#### **E8.8.4.2 Expansion joints**

- (a) Project Co must provide full depth tile movement joints in wall, floor and bulkhead tiles at uniform centres.
- (b) The width of expansion joints must match the grout joint width and tiling set out, and colour must match the grout colour.

#### **E8.8.4.3 Tile selection**

- (a) Project Co must provide glazed ceramic pool tiles to all finished areas of the Hydrotherapy Pool that are of uniform surface coloration, texture and sheen, and suitable for permanent submersion in chlorinated swimming pool water.
- (b) Slip resistance must conform to the requirements of the *Code of Practice for the Design, Construction, Operation, Management and Maintenance of Aquatic Facilities* by the Applied Environmental Health Branch of the Department of Health.

#### **E8.8.4.4 Pool depth markers**

Project Co must install depth tile markers.

#### E8.8.4.5 Warranty

As part of the FFP Warranty, Project Co must warrant that the pool will remain watertight for a ten year period and that tiles installed are the correct finish for the purpose of cleaning, maintenance and slip resistance.

#### E8.8.5 Stainless steel fabrication

- (a) Project Co must provide and install stainless steel components including:
  - (i) removable screens in gutters at balance tank entry;
  - (ii) skimmer grating tracks;
  - (iii) pool ladders;
  - (iv) stair handrails;
  - (v) pool handrails;
  - (vi) miscellaneous items of fabrication in the manufacture of plant and equipment; and
  - (vii) threaded fasteners and fixings.
- (b) All fixings including bolts, nuts and washers must be of an alloy grade at least equivalent to the fixed components. All components of the fixing system must be of the same specified grade of stainless steel.
- (c) All equipment used to install fixings must be of high nickel grade steel. Iron and carbon steel components must not be permitted to come into contact with stainless steel components.

#### E8.8.6 Pool lift

- (a) The water powered assisted access lift must be specifically designed for use with an in ground pool and have a minimum safe working load of 160kg.
- (b) The pool lift must be fabricated from stainless steel with a solid plastic seat.
- (c) The lift must be activated by a valve easily accessible from the lift seat while in both the raised (deck) and lowered (pool) positions.
- (d) The lift assembly and installation must meet the following requirements:
  - (i) 160 kg lift capacity;
  - (ii) lift range of 1,300mm;
  - (iii) elevated deck clearance to allow easy fitting and removal of the pool blanket;
  - (iv) powered by water pressure only;
  - (v) adjustable side mounted seat with foot rest which accommodates wheelchair transfers;
  - (vi) automatic 180 degree rotation of seat during transfer;
  - (vii) height adjustable seat;

- (viii) seat harness;
- (ix) deck sockets and socket caps;
- (x) equipotentially earth bonding to relevant Quality Standards including AS 3000; and
- (xi) co-ordinated with all structural and finish elements.

### **E8.9 Pool hoist and tracking system**

- (a) A ceiling mounted, electrically operated overhead tracking hoist with a sling must be provided to enable access from the centre of the changing bay to the pool, and from change tables to the toilet and shower facilities. Further requirements are that the overhead tracking hoist must:
  - (i) be AS ISO 10535 compliant;
  - (ii) be a fixed and permanent system;
  - (iii) be easy to operate;
  - (iv) be able to accommodate various weights;
  - (v) eliminate the need for manual lifting; and
  - (vi) be designed to consider charging requirements, the required ceiling structure, aesthetics, noise and the comfort and dignity of the Users.

### **E8.10 Fire protection**

- (a) Project Co must as a minimum ensure that all fire protection:
  - (i) complies with all relevant Quality Standards and Laws; and
  - (ii) is co-ordinated with the overall design intent.
- (b) Access must be provided to both sides of all fire and smoke wall to facilitate inspections of the complete surfaces of both sides of the walls. Any ceiling access panels, access platforms and walkways required to achieve this access must be provided.
- (c) All materials and finishes must have appropriate certification confirming fire hazard properties.
- (d) Refer to *G7: Fire Services and Fire Engineering* for further detail on fire services requirements.

## **E9. OPENINGS**

### **E9.1 Glazing**

- (a) All glass must comply with relevant Quality Standards and Laws, including AS 1288.
- (b) Project Co must:
  - (i) provide laminated or toughened and laminated safety glass in accordance with relevant Quality Standards, including to glazed doors, floor length windows and where there is a risk of a fall greater than 1m if the glass fails;
  - (ii) minimise full height glazing to mitigate the risk of damage to low level glass;
  - (iii) consider ease of replacement when specifying glass;
  - (iv) where incorporating glazing plastics, provide glazing plastics that are free from surface abrasions and selected to prevent yellowing or other colour change, loss of strength and impact resistance and general deterioration;
  - (v) where ceramic coated glass is used, provide coloured ceramic coating fused with the surface of the glass; and
  - (vi) where opacified glass is used, provide the opacifier permanently bonded to the inner face of the glass ensuring that there are no obvious blemishes in heat treated flat glass (including tinted and coated glass).

### **E9.2 Windows**

- (a) The design of each School Facility must incorporate windows, window systems and all associated works that:
  - (i) are anodised or powder coated aluminium;
  - (ii) are weatherproof and watertight, and exclude water and moisture from entering the inside of the School Facility in all weather and rainfall conditions;
  - (iii) for aluminium extrusions, are high quality commercial suites;
  - (iv) accommodate all permanent and temporary loads individually and in combination, without failure, deflection or damage to adjacent or applied work;
  - (v) remain stable without deflection, damage or rattling under normal conditions of heavy use;
  - (vi) allow thermal movement to take place freely in the plane of the glazing system without stressing or induced loading in the installed work, or other damage;
  - (vii) are corrosion resistant;
  - (viii) ensure that adjacent materials and products are chemically and electrolytically compatible with each other, or are separated by suitable spacers; and
  - (ix) ensure the discharge of water and moisture outside the building.

- (b) Where windows are operable, Project Co must provide window systems and associated works that:
  - (i) ensure the latches or opening mechanisms are within easy reach;
  - (ii) are generally sliding windows or double hung;
  - (iii) are not casement and hopper windows;
  - (iv) are not awning windows, except at a sill height greater than 2100mm above ground level, or over areas which are not trafficable (including garden beds);
  - (v) avoid glass louvres due to maintenance requirements;
  - (vi) are fitted to prevent the risk of children falling or climbing in or out of the window;
  - (vii) are not hazardous to people passing by windows internally or externally; and
  - (viii) are fitted with insect and security screens that are stainless steel woven mesh, robust and vandal resistant.

### **E9.2.1 Window treatments**

- (a) School Facilities must minimise the use of blinds or other internal window treatments, other than for privacy reasons.
- (b) Refer to *E13: Loose Furniture, Fittings and Equipment* for further detail on window treatment requirements.

### **E9.3 Doors and frames**

Project Co must provide doors and all associated works that:

- (a) are suitably designed for their location and the range of Users, and to accommodate the nature of anticipated User movements within the building;
- (b) maintain a good quality finish, structure and appearance under heavy and constant use;
- (c) are designed to prevent impact to adjoining surfaces;
- (d) allow for disabled access, including motorised wheelchairs;
- (e) maintain the acoustic, smoke and fire integrity of the walls in which they occur;
- (f) are designed to consider the potential hazards from accidental slamming and strong breezes, and fitted with safe close mechanisms where required; and
- (g) are capable of being held open where trolleys, wheeled traffic, or equipment are to be moved through. Where this requirement coincides with the requirement for self closing operation, electromagnetic hold open devices or other technology must be provided to hold the door open, but allow automatic closure when deactivated.

#### **E9.3.1 External doors**

Project Co must provide external doors that:

- (a) are either glazed aluminium (with a premium polyester powder coat or anodised finish) or flush panel solid core timber;
- (b) are watertight, weatherproof and protected from climatic influences, including strong winds;
- (c) are fitted with proprietary draft seals to the full perimeter of hinged doors and pivot doors;
- (d) are sufficiently robust to provide appropriate security to the building and withstand high wind conditions without any stress or damage to the door, glazing or hinges;
- (e) are keyed to a master key system;
- (f) if located at a required exit, are a single action opening door, operable from the inside;
- (g) are fitted with woven steel mesh that is robust and vandal resistant to food Preparation Areas;
- (h) where security screen doors are used, are fitted with a three way locking system to prevent the door being bent at the underside; and
- (i) have metal cladding to timber doors where unprotected by a veranda.

### **E9.3.2 Automatic doors**

Automatic sliding doors or automatic door operators must:

- (a) be installed to access points requiring hands free automatic opening or closing, or requiring access credential activated operation at entry and exit locations, to ensure closure of the door after opening;
- (b) utilise heavy duty automatic sliding door assemblies selected to suit the location and use;
- (c) be a proprietary product, fully mounted in an extruded aluminium housing;
- (d) have passive sensors to prevent the door from closing when the path is obstructed;
- (e) have adjustable dwell time;
- (f) have an electric motor lock, where applicable, so that doors are able to be locked at certain times, with the lock only being able to be overridden by push buttons (internally) and access credentials or when released on signal from the FIP; and
- (g) have a self recharging battery backup or other supply system capable of operating the doors under power failure.

### **E9.3.3 Internal doors**

Project Co must provide internal doors that:

- (a) are of a robust, heavy duty construction that resists impact damage including damage from wheeled traffic;
- (b) provide adequate sound reduction for their intended usage; and

- (c) are operable by young Students and people with disabilities, including people in motorised wheelchairs.

#### **E9.3.4 Roller panel doors**

Roller doors and shutters must:

- (a) be a proprietary system comprising a flexible continuous curtain sliding between vertical guides, be raised or lowered by rolling or unrolling around a horizontal drum (barrel) mounted above the opening and must be inclusive of the manufacturer's standard operating gear, hardware and accessories necessary for satisfactory performance;
- (b) comply with acoustic, fire, wind loading and egress requirements;
- (c) be of highly durable and non-corrosive components for reliable operation;
- (d) use finishes that integrate the doors into the architecture of the surrounding walls and the design language of the School Facilities;
- (e) be of sufficient size to accommodate access for all goods and vehicles required;
- (f) where roller doors are too large to be operated manually without the use of chains (i.e. larger than a domestic single garage door), they must be automated; and
- (g) where automated:
  - (i) include electrical motors incorporating limit switches, manual safety stop and reversing mechanism and overload cutout operated by battery powered remote controller, supplied as part of the system and also by push button or key switch; and
  - (ii) incorporate a manual override in event of a power failure.

#### **E9.4 Acoustic operable walls**

- (a) Acoustic operable walls may be a folding type or large format sliding panel doors.
- (b) Panel surfaces for folding panel types are generally finished in full height pin board material with a fabric facing. The exposed panel when in the stacked position may be finished in whiteboard material.
- (c) Sliding panels are generally glazed and used to maintain visibility between Learning Areas and other spaces.
- (d) Operable walls must form a sound retardant closure, and panels must achieve the specified sound rating. Refer to *G8: Acoustic Services* for further detail on acoustic operable walls.
- (e) Acoustic operable walls that are a folding type must be top supported, manually operated panels that can be linked together.
- (f) Folding type panel facings must be contained within a perimeter frame with interlocking stiles, and must be replaceable in situ.
- (g) When the operable wall is opened, folding type panels must be parked in a centre tracking configuration and closed by an expanding jamb located at the stacking end of the track system.

- (h) Sweep or other seals must be provided to seal the wall acoustically.
- (i) The operable wall must operate smoothly, freely and easily for the Design Life under normal conditions of use, without racking or binding.

## **E9.5 Vents and ventilators**

- (a) Vents and ventilators may be provided to assist the passive thermal design of the School Facilities. They must not leak, and must be weatherproof under high wind conditions.
- (b) Where operable vents are required, vents must be selected that are simple to operate.
- (c) In areas at risk of bushfire, Project Co must ensure that vents are compliant with all relevant Quality Standards including AS 3959 and ember screens are fitted as appropriate.
- (d) Where windblown sand and dust are likely to be encountered, filters must be incorporated behind vents and ventilators. Vents must be designed to enable access for maintenance of the filters.
- (e) Vents and ventilators must be designed to prevent access by Pests including rodents, snakes, frogs and birds. Anti-vermin mesh must be used as appropriate.

### **E9.5.1 Wall vents and door grilles**

Vents and grilles must be positioned in locations where they are less likely to be subjected to damage or vandalism. Where vents are accessible, grilles must be selected that are robust, vandal resistant and prevent objects being passed through.

### **E9.5.2 Roof vents and ventilators**

- (a) The design must minimise roof penetrations. Where vents are installed in the roof, they must be well flashed and sealed. All roof vents must be designed so that under normal operating conditions, rain does not enter the throat.
- (b) The following requirements must also be met:
  - (i) slope mounted ventilators must be avoided;
  - (ii) rotary ventilators must be passive wind driven. Where circular roof ventilators are used, they must incorporate motorised dampers to ensure the vent can be closed and effectively sealed in winter and during inclement weather;
  - (iii) fixed opening ridge vents must have a self cleaning drainage system. Under normal operating conditions rain must not enter the throat;
  - (iv) where linear ridge vents are used, twin side damper systems must be specified; and
  - (v) electric and manual winder roof vent operators must have an indicator panel to clearly show the open or closed status of the damper. The indicator panel must include the following engraved words: 'vent fully closed' and 'vent fully open'. The operating mechanism must be capable of remaining in either a fully open or fully closed position, without damage to any part of the mechanism.



### E9.5.3 Flues

- (a) Vertical flues (including to gas heaters) must be installed at a high level, or in a location where they are not subject to damage and will not cause staining of facades.
- (b) Refer to *G5: Mechanical Services* for further detail on flue requirements.

### E9.6 Keying

- (a) School Facilities must be safely secured by means of keyed locking devices that permit controlled access by authorised personnel only.
- (b) Where a physical key lock system is provided, Project Co must ensure that:
  - (i) access to components is restricted to an approved locksmith, and that cylinders are able to be serviced on site;
  - (ii) the keying system has extensive master keying capabilities (at least a suite of 12 stand alone profiles with four sub master and one grand master profile);
  - (iii) cylinders are interchangeable between different lock manufacturers;
  - (iv) the keying system is capable of being re keyed;
  - (v) the keying system is capable of accommodating any future expansion and, where possible, does not require the replacement of existing locks; and
  - (vi) keys and key lock cylinders are stamped with the key codes.
- (c) Where an electronic key or proximity card system is provided, Project Co must ensure that the key card is secure and cannot be copied by individuals.
- (d) A master keying schedule must be determined in consultation with the State on a school specific basis. As a minimum, Project Co must provide the following:
  - (i) Primary Schools:
    - (A) duplicate keys for each lock;
    - (B) 10 master keys; and
    - (C) 6 sets of keys to the Dental Therapy Centre Facility, including keys to the nominated toilets for after hours access and to the gate adjacent to the centre;
  - (ii) Secondary Schools:
    - (A) duplicate keys for each lock; and
    - (B) 20 master keys;
  - (iii) keying for fire hydrant valve covers, service ducts, irrigation auxiliary plant rooms, water storage tank manholes and water storage tank ladders. This key must open all plumbing, communication and electrical duct doors;
  - (iv) keying to open the electrical metering cabinets of the relevant Authority, keyed to a standard key of the relevant Authority; and

- (v) keying for perimeter gates, Bin Enclosures and letterboxes.
- (e) Each key must be clearly labelled.

## **E9.7 Hardware**

- (a) Project Co must provide all door and window hardware and related items necessary to operate the School Facility. Project Co must provide ironmongery with regard to the availability of that particular product over the duration of the Term, including the following:
  - (i) kickplates in high traffic areas;
  - (ii) door stops, where doors open against walls or furniture. The location of door stops must not create trip hazards;
  - (iii) door restrainers to all external doors; and
  - (iv) door closers to all external doors, and to the internal entry doors of all teaching areas.
- (b) Door hardware must be of commercial quality, suitable for heavy duty applications, and made from plated brass or stainless steel. Hardware fixings must only be accessible from within the locked room or when the door is in an open position.
- (c) Push pull handles must be installed on doors which are generally unlocked during the routine operation of the School Facilities. Doors without external door handles must be considered, as the handles are often subject to vandalism.
- (d) Project Co must provide snibs to the internal sides of all interior and exterior doors to Learning Areas, to allow for School Facility lockdown. The snib must be of the type that deactivates once the internal handle is turned.
- (e) Door hardware must be selected to allow the operation of the door so as not to compromise the acoustic, smoke or fire integrity of the walls in which they occur.

## **E10. VERTICAL TRANSPORTATION**

### **E10.1 Stairs, ramps and walkways**

- (a) All stairs, ramps and walkways must comply with all relevant Quality Standards and Laws, and:
  - (i) consider useability for all Users;
  - (ii) be designed for safe and accessible wheelchair use;
  - (iii) complement the design and layout of the School Facilities;
  - (iv) consider alternate and innovative construction methods; and
  - (v) include stainless steel individual elements integrated within the ground surface material or precast concrete tactile ground surface indicators in preference to thermoplastic.
- (b) Project Co must provide fire isolated stairways and fire isolated ramps as required in accordance with relevant Quality Standards.

### **E10.2 Lifts**

- (a) To the extent that lifts are provided, they must satisfy the minimum requirements of all relevant Quality Standards and Laws.
- (b) Project Co must ensure the provision, distribution and performance of lifts that:
  - (i) are key protected, for the use of Users with disabilities, School Staff and Project Co Staff only;
  - (ii) contain alarm communication devices such that Project Co and School Staff are aware of a trapped person and communication can be made with a 24 hour help line via a direct link to notify an appropriate party of their location and initiate their release; and
  - (iii) are capable of accommodating a stretcher for emergency services use.
- (c) Project Co must maintain all lift cars, plant, power supply, controls and associated equipment, and routine inspections must be carried out, to ensure efficient functioning and safety.

## E11. INTERNAL AND EXTERNAL FINISHES

### E11.1 Floor finishes

- (a) As a minimum, floor finishes must be provided that are:
- (i) appropriate for their particular use and provided in accordance with this Design Brief;
  - (ii) selected to minimise cleaning and maintenance requirements including:
    - (A) frequency and durability of joints;
    - (B) ease of replacement when required; and
    - (C) to facilitate mechanised cleaning procedures;
  - (iii) slip resistant, particularly in wet areas or where water, oil, grease, sawdust or steps may occur;
  - (iv) graded to be self-draining where exposed to surface water, including in wet areas for showers and swimming pools, in accordance with relevant Quality Standards and Laws;
  - (v) acoustically compatible with the background and activity noise levels within the space;
  - (vi) of thermal and tactile comfort in relation to the usage of the space;
  - (vii) patterned and textured, where applicable, in accordance with the requirements for pedestrian safety;
  - (viii) appropriate for heavy pedestrian traffic, and remain stable and safe to minimise the risk of slipping;
  - (ix) of a smooth transition between all adjacent flooring types;
  - (x) appropriate for the Functional Area and Functional Unit, including suitability for exposure in hydrotherapy areas, ease of cleaning to facilitate infection control in Medical Rooms and the requirements of food Preparation Areas;
  - (xi) low formaldehyde and low VOC finishes which do not off gas or contain lead based materials; and
  - (xii) provided with a minimum warranty of 10 years as part of the FFP Warranty.
- (b) Preferred floor finishes are as follows:
- (i) carpet: direct stuck. Provide PVC reducing strips at junctions with different materials;
  - (ii) vinyl: direct stuck sheet vinyl with welded joints. Must have R10 non-slip finish to wet areas;
  - (iii) monolithic concrete with non slip clear or tinted sealed finish: generally provided to storerooms and design and technology workshops;
  - (iv) polished or honed concrete: non-slip clear or tinted sealed finish;

- (v) ceramic tiles: non-slip, and laid to fall;
- (vi) entrance mats: to be provided at all external doorways, and to rooms with carpet or vinyl. Generally mats must be direct stuck and inset into carpets and vinyl surfaces. Mat wells must be provided;
- (vii) applied finishes: commercial quality applied finishes that provide a non-slip, hardwearing, durable and easy to clean surface (including coloured cementitious based coatings or similar acrylic based coating systems);
- (viii) multipurpose sports floor: sprung timber floor or cushioned synthetic floor. The sports floor must be capable of withstanding other likely uses of the Sports Hall, including for school assembly. The Dance Studio must have a sprung floor; and
- (ix) painted sacrificial MDF flooring: performing arts theatre.

### **E11.1.1 Carpet**

#### **E11.1.1.1 General requirements**

- (a) Carpet finishes must be selected that facilitate ease of cleaning, are resistant to staining and are appropriate for the design quality and wear expected.
- (b) Carpet selection must conform to all relevant Quality Standards including AS 1530 – Fire Test to Building Materials. Refer to the NCC for building classification.
- (c) Project Co must ensure the use of solvent free adhesives that are approved by the carpet manufacturer.

#### **E11.1.1.2 Substrate**

Carpet substrates must be clean and free of any deposit or finish which may impair adhesion or location.

#### **E11.1.1.3 Installation**

- (a) Carpet junctions must incorporate heavy duty, tackless or adhesive fixed, protective edge strips.
- (b) Carpet junctions must be able to accommodate different levels of adjacent floor finishes at exposed edges of the carpet with differing thickness.
- (c) When occurring at doorways, the junction between dissimilar materials must be located directly below the closed door, must be level and must not present a trip hazard.
- (d) Broadloom carpet must be installed by 'permanent stick method' in accordance with manufacturer's requirements and laid in continuous lengths without cross joins in the body of the area.

#### **E11.1.1.4 Carpet tiles**

- (a) Carpet tiles must be loose laid to aid replacement, but have sufficient adherence to be held in place and prevent lifting.
- (b) Carpet tile installation must ensure:
  - (i) cut tiles are not be less than half a tile in width;

- (ii) where laid across doorway openings, full size tiles are used;
- (iii) joints lines are straight; and
- (iv) edges are inconspicuous in the final installation.

#### E11.1.1.5 Carpet products

- (a) Carpet laid in a single area and of a single specified type, quality, colour and design, must come from one manufacturing batch and dye lot.
- (b) Carpets, including broadloom carpet and carpet tiles, must:
  - (i) provide maximum resistance to wear and tear appropriate to their proposed environment;
  - (ii) resist staining and retain appearance and colourfastness for the life of the product;
  - (iii) comply with all relevant codes and standards including NCC flammability indices requirements;
  - (iv) incorporate a system to prevent fluids coming in direct contact with the concrete floor substrate; and
  - (v) have pile characteristics that facilitate the ease of wheeled traffic movement and assist with cleaning regimes.

#### E11.1.1.6 Carpet tile products

Carpet tiles must:

- (a) have an integral impervious backing;
- (b) be a non-curling type;
- (c) be capable of being taken up without damage and then re-laid in different positions;
- (d) have maximum squareness difference of 2mm between lengths of diagonals;
- (e) be at least 600mm x 600mm; and
- (f) be dimensionally stable.

### E11.1.2 Resilient finishes

#### E11.1.2.1 General requirements

- (a) The selection of resilient flooring must conform to all relevant Quality Standards including AS 1530 – Fire Test to Building Materials. Refer to the NCC for building classification.
- (b) Resilient finishes must:
  - (i) be suitable for the intended application;
  - (ii) remain secured to substrates;
  - (iii) be a low maintenance material;

- (iv) have been tested for resistance to staining;
  - (v) be available in a wide variety of colours and designs; and
  - (vi) incorporate a significant proportion of recycled material.
- (c) Floor finishes to all UATs (whether tiled or resilient floor finishes) must have a minimum luminance contrast of 30% with the pan.

#### E11.1.2.2 Floors and skirtings

- (a) Floors and skirtings must be provided in a minimum 2mm thick homogeneous surface, with fully welded joints.
- (b) Skirtings must be formed integral to floor finish and coved up walls to a minimum height of 150mm.
- (c) In UATS and AATs that are not tiled, a skirting must be formed integral to floor finish and coved up walls to a minimum height of 300mm.
- (d) Coving of floor finishes at internal and external skirting corners must be formed with butterfly joints.
- (e) Wet area floor finishes must be installed as part of a complete proprietary wet area system, incorporating the floor, skirting and wall finish and must be installed in accordance with the manufacturer's instructions.
- (f) Wet area floor and skirtings must be provided in minimum 2mm thick non-slip homogeneous material and be capable of being coved to facilitate wet area mopping.
- (g) Wet area skirtings must extend up the wall at least 170mm to facilitate a minimum 20mm overlap with the wall finishes.

#### E11.1.2.3 Homogenous sheeting set out

- (a) Sheets must be set out:
  - (i) to produce the minimum number of joints;
  - (ii) to run sheet joints parallel with the long sides of floor areas and vertically on walls; and
  - (iii) so that margins abutting walls are laid in the same direction as the body of the floor.
- (b) All joints in the sheet must be butt and weld type joints, including the joints between vinyl floor sheets and vinyl wall sheets.

#### E11.1.2.4 Homogenous sheeting junctions

- (a) Resilient finishes junctions must:
  - (i) be scribed neatly up to returns, edges, fixtures, fittings and joinery;
  - (ii) incorporate butterfly joints at external and internal corners of integrally coved skirtings. Vertical butt joints in corners are not acceptable;
  - (iii) be neatly scribed and sealed to door frames;

- (iv) incorporate the dressing of the homogenous sheeting down into the floor waste flange (installed specifically for the purpose) and secured with a clamping ring forming part of the floor waste fitting;
  - (v) ensure that no puckering of the flooring around floor wastes occurs; and
  - (vi) be set out to ensure that where changes of floor finish occur at doorways, the junction is located on the centreline of the closed door leaf, is level and does not present a trip hazard.
- (b) The finished floor surface must remain level at junctions with other floor finishes including carpet and floor tiles.

### **E11.1.3 Tiled floor finishes**

- (a) All required tiling construction and associated works must be provided. Project Co must ensure that the tiled floor finishes are suitably selected and installed for the conditions and performance requirements.
- (b) As a minimum, it must be ensured that:
- (i) the selection conforms to all relevant Quality Standards including AS 1530 – Fire Test to Building Material. Refer to the NCC for building classification;
  - (ii) floor tiles are fully vitrified, and laid to fall in a minimum format size of 100x100mm;
  - (iii) tiled skirtings are specified in all wet areas except where vinyl floor finish is used;
  - (iv) grout must be selected that resists staining and odours, including from urine;
  - (v) tiling can accommodate movement and deflections in the base structure and substrates, without failure or loss of adhesion, performance or durability;
  - (vi) pedestrian surfaces are stable, safe and minimise risk of slipping or tripping due to slippery or uneven surfaces;
  - (vii) joints are plumb, even and neat;
  - (viii) tiling must be flush with adjacent work unless stepped level change is indicated or required; and
  - (ix) the waterproof membrane system provides a permanent barrier to moisture and water, and must remain intact and properly fixed to the substrate under all conditions.
- (c) For tiled floors, the recommended skirting type is generally ceramic tiled skirting with a minimum height of 150mm.

### **E11.1.4 Monolithic concrete finishes**

- (a) Applied finishes to monolithic concrete slabs must be industrial quality water or solvent based penetrating sealers that provide a non-slip, durable, case hardened, densified, dust proofed and easy to clean surface. Should an impervious finish be required, a non-slip 2-pack epoxy system may be used. The finishes are generally used in the Technologies Workshops, storerooms and similar.
- (b) The following requirements must be met:



- (i) paving paint or similar is not to be used as it wears in a relatively short time;
- (ii) polished or honed concrete finishes may be used to the entry, public Reception and circulation areas;
- (iii) polished or honed concrete finishes require an application of clear or tinted 'non-slip' sealed finish which meets the above criteria;
- (iv) entry mats must be provided at all external entrance doors, set into mat wells with brass or aluminium edge stripping. This is of particular importance in public Reception areas; and
- (v) all finishes must comply with all relevant Quality Standards including AS 4586 in terms of slip resistance. The testing of slip resistance must be undertaken.

### **E11.1.5 Sports flooring**

- (a) Generally Sports Halls in secondary schools are multipurpose facilities. Consequently, flooring must be selected which is appropriate for the multiple functions of the facility, including as a school assembly area.
- (b) The preferred finishes for sports floors are sprung timber floor or a cushioned synthetic floor type.
- (c) The following issues must be considered:
  - (i) potential non-sporting use (including assemblies and examinations);
  - (ii) load bearing and wear requirements, including the need to withstand traffic for maintenance equipment and furniture;
  - (iii) risk of physical injury;
  - (iv) stable environmental conditions;
  - (v) operational issues, and health and safety. The positions of fixed and portable sports equipment and their floor sockets must be integrated within the design;
  - (vi) environmental sustainability; and
  - (vii) sports performance and testing.

## **E11.2 Walls**

### **E11.2.1 Internal walls**

Materials and finishes selected for internal walls must comply with *E8.2 Materials and Products*. Project Co must ensure that:

- (a) walls are selected to suit the performance requirements relevant to the application, including providing:
  - (i) fire and smoke separation and fire resistance ratings in accordance with relevant Quality Standards and Laws; and
  - (ii) acoustic performance in accordance with *G8: Acoustic Services*;

- (b) walls provide the required strength to support the applied linings, fixed Engineering Services and FF&E;
- (c) future flexibility is considered;
- (d) walls to high traffic areas including circulation routes must:
  - (i) be hard wearing and able to withstand impact;
  - (ii) not require regular maintenance or reapplication of finishes (inherent finishes are recommended); and
  - (iii) consider that plaster and plasterboard are generally not appropriate for these areas; and
- (e) walls to toilets and wet areas must be:
  - (i) hard wearing, durable and able to withstand impact; and
  - (ii) easy to clean and maintain.

### **E11.2.2 Partitions**

All partitions must:

- (a) have control joints spaced and installed as required by the relevant Quality Standards, and located with consideration for partitions that are subject to direct sunlight, including through high level windows;
- (b) withstand the service conditions expected for dry wall partitions in the environments where they are used;
- (c) provide sound fixing and support for door frames and openings to prevent sagging, vibration and rattles;
- (d) be resistant to moisture encountered under expected environmental conditions, including in all wet areas and aquatic recovery facilities;
- (e) be free from significant irregularities;
- (f) provide a suitable substrate for the nominated final finish;
- (g) avoid the use of back to back service plates and back to back access panels, where possible;
- (h) exclude the use of control joints in wet areas; and
- (i) have tolerances that are within flatness, twist, winding and bow of a maximum of 1.5mm deviation from a 1.5m straight edge placed in any position.

### **E11.3 Wall finishes**

Wall finishes must:

- (a) be scuff and abrasion resistant and selected to facilitate the removal of scuff marks;
- (b) be complementary and integral to the functions and interior environment quality requirements of the space; and

- (c) be appropriate for the Functional Area and Functional Unit, including suitability for exposure in hydrotherapy areas, ease of cleaning to facilitate infection control in Medical Rooms, medical centres and the requirements of food Preparation Areas.

### **E11.3.1 Hard wall plaster**

A face brick finish is preferred over hard wall plaster. Where hard wall plaster is used, Project Co must provide galvanised stopping beads and flushing angles at edges and corners.

### **E11.3.2 Glass finish cement render**

For durability and easy cleaning, glass finish cement render should be used in toilets and any other rooms which require intensive cleaning and a hard wearing finish.

### **E11.3.3 Tiles**

- (a) Tiled wall finishes should be laid in areas including:
  - (i) toilet splashbacks;
  - (ii) Kitchen splashbacks (though alternate splashback finishes may be considered);
  - (iii) showers; and
  - (iv) UAT splashbacks.
- (b) The selections must conform to all relevant Quality Standards including AS 1530 – Fire Test to Building Materials. Refer to the NCC for building classification.
- (c) Wall tiles must be ceramic gloss, in a format size of at least 100x100mm. If located in a sanitary facility, they must have a luminance contrast of 30% to the toilet seat.
- (d) Tiling grout for toilet areas must be selected that resists staining and odours, including from urine.
- (e) Refer to *E6: Ecologically Sustainable Design* for information relating to Green Star credits.

### **E11.3.4 Render**

- (a) It is strongly preferred that walls be constructed of materials with an inherent finish. Render must not be used for vulnerable corners or edges, or in locations where it is likely to be damaged (including along major circulation routes). Stainless steel stopping beads must be provided to all edges and corners to reduce the likelihood of chipping.
- (b) If render is selected, it is strongly preferred that render have an impregnated colour rather than paint finish. The finish must be able to withstand high pressure cleaning.

### **E11.3.5 Paint**

- (a) Paint is considered a high maintenance finish. Where possible, materials with inherent finishes are encouraged both internally and externally. Paint finishes must be avoided in locations exposed to weather.
- (b) Where a painted finish is unavoidable, the following finishes should be used:

- (i) internal plasterboard and plastered walls: low VOC 100% acrylic, low sheen, or select semi gloss for wet areas;
  - (ii) cement rendered walls: it is strongly recommended that the render have an impregnated colour rather a paint finish. Where unavoidable, use semi gloss acrylic paint;
  - (iii) plasterboard ceilings: flat acrylic, or semi gloss acrylic in wet areas;
  - (iv) doors, skirting, joinery and trims: low VOC gloss or satin. Dark colours are not to be used on exterior doors that are exposed to high levels of sunlight;
  - (v) natural timber: satin clear polyurethane;
  - (vi) internal structural steel (visible): low VOC gloss or satin; and
  - (vii) roof and sanitary plumbing (unless prefinished) including gutters, rain water pipes, vents, stacks and the like: gloss enamel.
- (c) All doorways must have a minimum luminance contrast of 30% provided between the:
- (i) door leaf and door jamb;
  - (ii) door leaf and adjacent wall;
  - (iii) architrave and wall;
  - (iv) door leaf and architrave; or
  - (v) door jamb and adjacent wall.
- (d) The minimum width of the area of luminance contrast must be 50mm.
- (e) The following must not be painted:
- (i) external hot dipped galvanised structural steel;
  - (ii) roof sheeting;
  - (iii) flashings;
  - (iv) dressed timber not exposed to view or weather;
  - (v) exposed galvanised purlins;
  - (vi) face brickwork;
  - (vii) galvanised steel downpipes; and
  - (viii) precast or tilt up concrete panels.

#### **E11.4 Metalwork finishes**

- (a) Project Co must provide all fabricated metalwork, including anchorages, fixings, finishes and trims that are suitably selected and installed for the conditions and performance requirements.
- (b) As a minimum, Project Co must provide metalwork that:

- (i) mitigates the effects of corrosion;
- (ii) is chemically and electrolytically compatible with adjacent materials and products;
- (iii) does not stain, contaminate, or cause visual or structural defects in adjacent materials and products;
- (iv) accommodates all permanent and temporary loads, individually and in combination, without failure, deflection, damage to adjacent or applied work, or risk to human safety;
- (v) ensures that trafficable surfaces are slip resistant;
- (vi) ensures that all visible fixings are evenly and neatly located and aligned, and has vandal resistant fixings in accessible areas; and
- (vii) is fabricated to a high standard fit and finish.

### **E11.5 Stainless steel**

Project Co must provide stainless steel finishes that:

- (a) mitigate the effects of corrosion and staining; and
- (b) are grade 316 in areas including:
  - (i) food preparation and handling areas; and
  - (ii) wet areas including bathrooms, shower rooms and toilets.

### **E11.6 Timberwork**

- (a) Project Co must provide all required framing, fit out and trimming carpentry, including timber, fixings and accessories, timber decking, seats, pergolas, screens and related timber landscaping and site work elements.
- (b) Project Co must ensure that timberwork:
  - (i) complies with the relevant Quality Standards including AS/NZS 2270;
  - (ii) where required, has received preservative treatment or water repellent treatment;
  - (iii) accommodates all permanent and temporary loads, individually and in combination, without failure, deflection, damage to adjacent or applied work, or risk to human safety;
  - (iv) accommodates all short and long term movements and deflections in the base structure, substrates, and within the work;
  - (v) has adequate dimensional stability for the ambient conditions, and must not change size or shape in a manner which detracts from appearance, performance and durability of the work;
  - (vi) if recycled, is selected to avoid visible defects, embedded nails and other metal objects, decay or termite attack;
  - (vii) does not contain lyctus susceptible sapwood;

- (viii) if used for framing, is straight, without twists, winds or bowing and made from seasoned, milled and dressed timber products:
  - (A) within 3% of the equilibrium moisture content appropriate to the timber and its intended conditions of use;
  - (B) with a 10-15% moisture content; and
  - (C) with no more than a 3% difference between any 2 pieces in any one group; and
- (ix) is provided with suitable corrosion resistant fixings as required to assemble and hold the work in place, and are selected for correct size and spacing.

### **E11.7 Timber veneers**

Project Co must:

- (a) use select grade timber veneers, veneer quality A as defined by the AS/NZS 2270, for visible surfaces to have a clear finish, stained finish or have no coated finish; and
- (b) use general purpose grade timber veneers, veneer quality B as defined by AS/NZS 2270, for other visible surfaces.

### **E11.8 Fixed furniture and cabinetwork**

- (a) Project Co must provide joinery, cabinetwork and fixed furniture items which are environmentally sustainable, safe, durable and cost effective. Additional requirements are that:
  - (i) joinery must be:
    - (A) Fit For Purpose for the location in which it is installed;
    - (B) of durable construction;
    - (C) capable of supporting the weight of equipment intended;
    - (D) capable of providing adequate ventilation for any equipment housed; and
    - (E) of suitable thickness and span to ensure no deflection;
  - (ii) joinery must be constructed from products that contain low formaldehyde emissions, or no formaldehyde. Refer to *E6: Ecologically Sustainable Design*;
  - (iii) cabinetwork is located in co-ordination with Engineering Services, for example to ensure that locations of cabinetwork don't conflict with locations of power outlets;
  - (iv) joinery must be installed after the installation of finished floor or wall coverings, including skirtings; and
  - (v) appropriate hardware type and finish must be incorporated for the functioning of the joinery or furniture.
- (b) Refer to *E13: Loose Furniture, Fittings and Equipment* for further detail on fixed furniture and cabinetwork.

## E12. SANITARY WARE

- (a) Project Co must provide suitable sanitary ware in a convenient location that is appropriate to the gender, number, age and disability needs of Users.
- (b) Project Co must provide all sanitary fixtures and fittings connected to service pipe work. The work includes all required anchorages, fixings, lugged elbows and the like as necessary for a robust, durable, impact resistant installation.
- (c) Project Co must supply and install sanitary fixtures and fittings that are:
  - (i) new, free from defects, damage, corrosion and surface blemishes;
  - (ii) durable, robust and high quality that mitigate the effects of vandalism;
  - (iii) chemically and electrolytically compatible with adjacent materials and products, substrates, and adjacent work. Adjacent materials and products, including adhesives and sealants, must not stain, contaminate, or cause visual or structural defects in adjacent materials;
  - (iv) of appropriate size and fixing height for their location and Users; and
  - (v) of a similar model and manufacture throughout the School Facility to achieve design coherence. Fixtures for later Stages must provide design continuity with the earlier Stage.

### E12.1 Toilets

- (a) Toilets must have anti-vandal fixings between the seat and pan. Cisterns should be located in a service duct to prevent vandalism, or compliant cistern-less systems with anti-vandal fixing accessories provided.
- (b) All female Staff Toilets must be fitted with sanitary disposal units. For female Student Toilets, sufficient sanitary disposal units throughout all School Facilities must be provided to cater for the needs of the Student population.
- (c) UATs and AATs must be provided as per the SOA, as detailed at *D5: Primary School Functional Areas*, *D6: Secondary School Functional Areas* and *I4: Specific Layout Drawings*. Toilets for Students must be separate from those for School Staff (including those for Students and School Staff with disabilities).
- (d) Toilets in the Kindergarten and Pre Primary School Classroom Block (Classroom Block 1) must have nappy disposal facilities.

### E12.2 Urinals

Urinals should have cisterns located in a service duct to prevent vandalism, or compliant cistern-less systems with anti-vandal fixing accessories provided.

### E12.3 Basins

Wash hand basins must be fixed to a solid structure, and support accidental damage by Users (including from sitting or leaning on the basin).

### E12.4 Tap fittings

- (a) Robust and tamper proof tap fittings must be provided and designed to meet ESD water saving requirements as detailed in *E6: Ecologically Sustainable Design*.

- (b) Cold water tapware must be coded 'blue' and hot water tapware must be coded 'red'. Cold water tapware must be fixed on the right hand side of the fixture and hot water tapware must be fixed on the left hand side.
- (c) Laboratory type tapware must be a swivel gooseneck type, and may be bench mounted or sink mounted. It must be acid resistant to suit the particular application.
- (d) Taps and troughs must be located in a manner which minimises damage or vandalism.

## **E12.5 Mirrors**

- (a) Mirrors must be provided behind all wash hand basins.
- (b) Mirrors must be provided at a height (measured from floor to bottom edge) appropriate for the Users.

## **E12.6 General purpose sinks**

Project Co must provide general purpose sinks as set out elsewhere in this Design Brief to suit the particular application. Sinks must have integral tap holes to suit specified tapware.

### **E12.6.1 Laboratory sinks**

Project Co must provide laboratory sinks as set out elsewhere in this Design Brief to suit the teaching and learning requirements and the number of Students. All laboratory sinks must be acid resistant.

### **E12.6.2 Showers**

- (a) Showers to Change Rooms must be self draining in accordance with relevant Quality Standards and Laws, and designed to facilitate privacy.
- (b) Project Co must employ conventional shower sets to suit particular requirements, with taps located clear of discharge from the rose outlet, other than in Education Support Learning Community UATs and AATs, which have specific requirements as set out elsewhere in this Design Brief.

### **E12.6.3 Floor waste gullies**

Project Co must provide floor waste gullies in all areas where floor wash down is required, including toilet areas, bathrooms, Change Rooms, cleaner's rooms, Kitchens and kitchenettes.

## **E12.7 Change Room facilities**

Change Room facilities must be provided in accordance with this Design Brief. Refer to *D5: Primary School Functional Areas*, *D6: Secondary School Functional Areas* and the SOA.

### **E12.7.1 Hand dryers**

Assemblies must be complete with concealed mounting hardware to suit the wall type. The unit must be mounted on vibration insulating rubber.

### **E12.7.2 Soap dispensers**

Fixed, tamper proof liquid soap dispensers must be provided in all toilets. They must be capable of being refillable by School Staff and School Employees only.



**E12.8 Drinking fountains**

- (a) Project Co must provide chilled drinking fountains as set out elsewhere in this Design Brief.
- (b) Refer to *Part F: Landscape Specifications* for further detail on drinking fountains.

## **E13. FURNITURE, FITTINGS AND EQUIPMENT**

### **E13.1 General**

- (a) The State takes the view that well designed and attractive furniture can enhance a space considerably, and create an image that reflects the teaching ethos of a School Facility. The FF&E must contribute to the creation of innovative and flexible learning spaces such that:
- (i) individual learning needs are supported by well resourced flexible spaces;
  - (ii) furniture is age appropriate, comfortable, adaptable, mobile and modular;
  - (iii) FF&E incorporate sound, colour and graphics to cater for different learning styles and intelligences;
  - (iv) the social needs of Students are accommodated in formal and informal spaces;
  - (v) teamwork is supported and spaces convert to suit different purposes;
  - (vi) the furniture is functional and suits the purpose of the Functional Area, Functional Unit and, where relevant, community activities;
  - (vii) a diverse range of equipment and resources are provided to support the learning program;
  - (viii) Learning Areas are equipped with loose furniture to support specialist ICT equipment including high end multimedia machines, presentation devices and specialist scientific devices;
  - (ix) all Learning Areas have the ability to accommodate technology provided by the State including interactive whiteboards, smart boards and data projectors; and
  - (x) storage facilities, presentation and display spaces are versatile and ensure that resources are accessible, secure and well maintained.
- (b) In addition, the State requires that all furniture, fittings and equipment:
- (i) be robust, good quality and Fit For Purpose;
  - (ii) be low formaldehyde and low VOC products which do not off gas;
  - (iii) be readily available and replaceable;
  - (iv) be of an aesthetic standard appropriate to the space it is located in; and
  - (v) comply with all relevant Quality Standards and Laws.

### **E13.2 FF&E groups**

- (a) Project Co's and the State's obligations for each group of FF&E in respect of each School Facility are described in Clauses 15 and 27 of the Deed and are summarised in the table below. Project Co will be required to consult with the State, and in some cases the Principal of a School Facility, for approval prior to purchasing any item or group of items of FF&E.

TABLE 2 – FF&E CATEGORIES

FF&E Category	Responsibility				
	Procure	Price Risk	Install	Maintain	Replace
<p><b>Group 1 FF&amp;E</b></p> <p>All FF&amp;E which is required by this Design Brief and can reasonably be anticipated to be required for School Activities of Each School Facility, for each Stage, excluding Group 2 and 3 FF&amp;E.</p> <p>Group 1 FF&amp;E items include:</p> <ul style="list-style-type: none"> <li>• white goods;</li> <li>• fixed machines including woodwork and metalwork machinery;</li> <li>• chairs;</li> <li>• tables;</li> <li>• workstations;</li> <li>• whiteboards; and</li> <li>• cabinetwork.</li> </ul>	Project Co	Project Co	Project Co	Project Co	Project Co
<p><b>Group 2 FF&amp;E</b></p> <p>Group 2 FF&amp;E items are, to the extent not Group 1 FF&amp;E items:</p> <ul style="list-style-type: none"> <li>• small appliances; and</li> <li>• small machinery components including drill bits.</li> </ul>	Project Co	Project Co	Project Co	State	State
<p><b>Group 3 FF&amp;E</b></p> <p>Group 3 FF&amp;E items are, to the extent not Group 1 FF&amp;E items:</p> <ul style="list-style-type: none"> <li>• consumables; and</li> </ul>	State	State	State	State	State

FF&E Category	Responsibility				
	Procure	Price Risk	Install	Maintain	Replace
<ul style="list-style-type: none"> <li>all plug-in ICT devices including servers, routers, computers, monitors, AV and telephony equipment.</li> </ul>					

- (b) In respect of Harrisdale Stage 1 Works, Project Co must provide all FF&E in accordance with the Design Requirements and Clauses 15 and 27 of the Deed, where they have not been provided within the Harrisdale Stage 1 Contract.
- (c) For Group 1 FF&E and Group 2 FF&E in respect of Harrisdale Stage 1, Project Co is to refer to the corresponding Room Data Sheet located in *I3: Room Data Sheets – Secondary Schools* for those Functional Units listed in the Harrisdale Stage 1 Schedule of Accommodation located in Schedule 23 (Schedule of Accommodation) of the Deed.

**E13.3 Common use arrangements**

- (a) The State has in place purchasing arrangements with a range of pre-qualified suppliers for the supply and delivery of furniture items. These are detailed within CUAs through the Department of Finance, Government Procurement. The following contract is available for use by Project Co. Products on this contract demonstrate the minimum standards acceptable to the Department :
  - (i) CUA FRN 2012A – Office and Classroom Furniture. Note the contract includes two supply arrangements for classroom furniture.
- (b) The scope of the CUA contract includes:
  - (i) seating;
  - (ii) classroom desks and tables;
  - (iii) soft furnishings;
  - (iv) storage;
  - (v) classroom furniture related accessories;
  - (vi) Library shelving;
  - (vii) sundry items; and
  - (viii) whiteboards.
- (c) Items not within the scope of the CUA contract include:
  - (i) outdoor furniture;
  - (ii) lighting;

- (iii) carpets;
  - (iv) window treatments;
  - (v) fridges; and
  - (vi) pin up boards.
- (d) All furniture must have a ten year warranty (with the exception of soft furnishings), and comply with the requirements of AS4210 or EN1729:2 where applicable.

#### **E13.4 Loose furniture**

- (a) Project Co must supply, install, maintain and replace items of loose furniture as required by their respective FF&E Category. Loose furniture is deemed to comprise furniture and other items that are not fixed into position and readily moveable to allow for flexibility of a space including:
- (i) classroom desks and tables;
  - (ii) classroom seating;
  - (iii) storage;
  - (iv) soft furnishings
  - (v) mobile whiteboards;
  - (vi) plastic trays;
  - (vii) Library book trolleys; and
  - (viii) waste paper bins, document trays and other standalone items.
- (b) Loose furniture, including classroom tables and chairs, must be provided appropriate to the age and height of the intended Students. Classroom tables may be height adjustable.
- (c) Refer to Schedule 20 (FF&E) and *I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools* for further detail on loose furniture requirements.

##### **E13.4.1 Seating**

Project Co must provide:

- (a) chairs in accordance with AS/NZS 4688.1;
- (b) height adjustable swivel chairs in accordance with AS/NZS 4438;
- (c) school chairs in accordance with AS/NZS 4610.2; and
- (d) retractable seating in the performing arts area.

##### **E13.4.2 Desks and Tables**

Project Co must provide:

- (a) school tables and storage furniture in accordance with AS/NZS 4610.3;

- (b) office desks in accordance with AS/NZS 4442; and
- (c) at least one height adjustable desk, that can be immediately adjusted for Universal Access, for every General Learning Area, unless otherwise specified in *I2: Room Data Sheets – Primary Schools* and *I3: Room Data Sheets – Secondary Schools*.

### **E13.4.3 Storage**

Project Co must provide:

- (a) lateral filing cabinets in accordance with AS 5079.1;
- (b) vertical filing cabinets in accordance with AS 5079.2; and
- (c) mobile pedestals in accordance with AS 5079.3.

### **E13.4.4 Shelving systems**

- (a) Project Co must provide shelving systems which are capable of carrying a minimum uniformly distributed load of 55 kg/m of span, without deflection exceeding 5mm. Project Co must provide all other accessories for the erection and service use of the shelving.
- (b) Steel shelving must conform to AS 2143.

#### **E13.4.4.1 Library Shelving Systems**

Project Co will provide steel shelving to conform to AS 2273 for all Library shelving systems.

#### **E13.4.4.2 Workshop shelving systems**

Project Co will provide heavy duty long span shelving, either contractor built or Dexion (or equal approved) to all material and equipment stores in depths as per the briefing documents.

#### **E13.4.4.3 Science shelving systems**

Project Co is to provide fixed shelving on walls to maximum height of 1800mm, to be constructed of chemical resistant plastic laminated and moisture resistant fibre board.

### **E13.4.5 Miscellaneous items**

Save to the extent otherwise specified in this Design Brief, Project Co must provide all FF&E items, as per Schedule 23 (FF&E) and *I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools*.

### **E13.5 Fixed furniture, fittings and equipment**

- (a) Project Co must supply, install, maintain and replace all fixed furniture, fittings and equipment items as required by their respective FF&E Category. Fixed furniture is deemed to comprise furniture and other items that are fixed into position and not readily moveable including:
  - (i) cupboards, work surfaces, work benches and shelving;
  - (ii) catering equipment (including that provided in the home economics area);
  - (iii) vanity units and toilet cubicle partitioning;

- (iv) display boards, whiteboards, noticeboards; and
  - (v) fume cupboards.
- (b) Project Co must provide all screws, nails, bolts, anchors, brackets, adhesives, and other fixing devices required for neat and secure fixing of equipment and associated fittings throughout the School Facilities. Fixings must be concealed from sight in the finished work.
- (c) Refer to Schedule 20 (FF&E) and *I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools* for further detail on fixed furniture, fittings and equipment.

### **E13.5.1 Science shelving**

Project Co must provide fixed shelving on walls to maximum height of 1800mm, to be constructed of chemical resistant plastic laminated and moisture resistant fibre board.

### **E13.5.2 Fixed benches**

- (a) Where fixed benches are scheduled (including in workshops and laboratories), Project Co must provide one adjustable height work bench for Students who may use wheelchairs and the like.
- (b) Fixed benches are generally to be powder coated steel framed, with a laminate bench top except where stated otherwise in this Design Brief.

#### **E13.5.2.1 Bench tops**

- (a) Additional requirements are that:
- (i) bench tops and shelving be adequately supported for their intended use or storage requirements;
  - (ii) bench tops must be able to withstand body weight at mid span; and
  - (iii) bench tops must be selected for long term durability. Timber and plywood are not be used in wet areas or where water damage is likely.
- (b) Refer to *E8: Building Structure and Fabric* and *E11: Internal and External Finishes* for further detail on bench top requirements.

#### **E13.5.2.2 Reception and Canteen counters**

- (a) Project Co must provide a Reception desk that forms a barrier between the Public Foyer and the administration areas. While the counter or hatch opening must have an area designated for wheelchair access, it must still be designed to prevent able bodied persons from gaining access to the clerical area.
- (b) All Canteen and other counters must facilitate use by visitors who may use wheelchairs, and these wheelchair accessible areas must be readily identifiable and easily accessible.

#### **E13.5.2.3 Computer work benches**

Project Co must provide laminate top computer benches that are powder coated steel framed and open under. Provision must be made for the supply and install of soft wiring, skirting ducts, cable ports and cable trays as required.

#### E13.5.2.4 Science and art benches

Project Co must provide chemical resistant plastic laminate bench tops to science and art areas.

#### E13.5.2.5 Woodwork, metalwork and composite workshop benches

- (a) Project Co must provide benches with a heavy duty steel tube frame with double layer MDF tops in Woodwork Workshops. A galvanised sheet must be fitted to double layer MDF bench tops in metalwork workshops. A combination of double layer MDF and double layer MDF with a galvanised sheet must be provided to composite workshops as set out elsewhere in this Design Brief. Vices must be fitted to allow for use by right or left handed Students.
- (b) Diagonal stretcher rails must be provided for storage.

#### E13.5.2.6 Welding bay benches

Project Co must provide benches with a heavy duty steel tube frame with a fire brick top to Oxy welding bays. A steel plate top must be provided for Arc/MIG/TIG welding bays.

### E13.5.3 Fixed furniture and cabinetwork

Refer to *E8: Building Structure and Fabric* and *E11: Internal and External Finishes* for further detail on fixed furniture and cabinetwork requirements.

### E13.5.4 Display Surfaces

#### E13.5.4.1 Pin up boards

- (a) Where identified in this Design Brief, Project Co must provide appropriate pin up boards. Innovative solutions for the displaying of work should be considered.
- (b) Pin up boards must:
  - (i) be of an appropriate thickness for their intended function;
  - (ii) confirm to AS/NZW 1859.4, when a fibre insulating board is used
  - (iii) be sufficiently supported and fixed to the wall or if demountable, fixings must be concealed;
  - (iv) be maximised along walls in learning spaces to provide areas for display; particularly in Primary Schools;
  - (v) be fixed to appropriate circulation areas;
  - (vi) be incorporated into integrated display areas (including entrance halls and other strategic locations); and
  - (vii) be integrated into building wall design and cladding, so as not to appear as an added element.
- (c) Magnetic boards or surfaces must be considered to provide areas for display and where Students are not allowed to handle pins. Whiteboards or chalk boards as magnetic display surfaces must be considered.



#### E13.5.4.2 Whiteboards

- (a) Project Co must provide whiteboards which contain a white seamless vitreous enamel surface, resistant to chipping and fracture when the base is slightly flexed. The panels must be attached to the building substrates to provide sufficient support.
- (b) The surface must be suitable for use with fast evaporation, dry erase pens. Pen rails must be fixed to the full width of the bottom edge of the board.
- (c) Project Co must make provision for all data, power and associated electrical services to accommodate interactive whiteboards and smart boards that the State may provide.
- (d) Mobile whiteboards must be of an appropriate height to accommodate use by seated and standing Users.

#### E13.5.4.3 Projection screens

- (a) Project Co must provide matt white projection screens and surfaces in areas where walls and whiteboards are not used as the projection surfaces (including in the Lecture Theatre or conference centre). The screen material and the method of which it is adhered, must be a flat, smooth surface.
- (b) Project Co must provide projection screens which must:
  - (i) be of a width no less than half the distance of the closest Student viewing it;
  - (ii) be designed for front projection;
  - (iii) be tractable from the ceiling;
  - (iv) be flame retardant and mildew resistant;
  - (v) present a plain surface when extended; and
  - (vi) provide a uniform distribution of projected light over a wide viewing angle.

#### E13.5.5 Ceiling mounted projectors

Project Co must make provision for all data, power and associated electrical services associated with the provision of ceiling mounted projectors.

#### E13.5.6 Display cabinets

- (a) Project Co must provide display cabinets for the display of Students work in main circulation areas and circulation areas associated with Learning Areas including arts, technologies, music and Library areas.
- (b) Project Co must make provision for spotlighting.

#### E13.5.7 Window treatments

- (a) School Facilities must be designed to avoid the use of blinds or other internal window treatments, and instead must be designed to allow for adequate natural light while avoiding or minimising any glare issues.
- (b) Generally, blinds and curtains are subject to damage and must be limited to School Staff and other specified areas. Where blinds or other internal windows treatment are required, they may be supplied under the loose furniture contract and must:

- (i) be environmentally sustainable, safe, durable and cost effective;
- (ii) comply with all relevant Quality Standards including AS 1530 – Fire Test to Building Materials;
- (iii) exclude unwanted heat externally to the building;
- (iv) provide for better daylight ingress and colour rendition;
- (v) reduce glare internally;
- (vi) minimise any impacts on views between spaces and externally;
- (vii) assist in the reduction of heat build up within the School Facility; and
- (viii) assist in meeting the ESD requirements of this Design Brief. Refer to *E6: Ecologically Sustainable Development*.

#### **E13.5.8 Fume cupboards**

Project Co must provide fume cupboards in accordance with relevant Quality Standards including AS 2243-1 and AS 1485. Refer to the Design Brief, *I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools* and *G5: Mechanical* for further detail on fume cupboard requirements.

#### **E13.5.9 Equipment**

- (a) Project Co must supply, install and maintain all equipment as per the RDSs, including to all specialist areas including Cafeterias and the Technologies Learning Area.
- (b) Refer to *I2: Room Data Sheets: Primary Schools* and *I3: Room Data Sheets: Secondary Schools* for detail on equipment requirements.

#### **E13.5.10 Sanitary ware**

Project Co must provide fixed sanitary ware in accordance with the requirements detailed in *E12: Sanitary Ware*.



Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and looking at the beaker. The student on the left is partially visible, also smiling. The background shows laboratory equipment and shelves.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## PART F

Landscape Specifications

September 2015

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## **F1. LANDSCAPE ARCHITECTURE**

### **F1.1 Scope**

This brief has been prepared to define the requirements for the design, construction, commissioning and completion of the landscape and irrigation works associated with the School Facilities in this Project. Landscape works must include:

- (a) hardscape;
- (b) softscape;
- (c) plant selection;
- (d) irrigation;
- (e) site drainage;
- (f) wayfinding and circulation;
- (g) external learning spaces and courtyards;
- (h) play spaces;
- (i) sports facilities;
- (j) landscape structures; and
- (k) Site interface including with any Surrounding Works which about the Site.

### **F1.2 General**

The landscape and irrigation works must:

- (a) provide external environments that stimulate interest, creativity and learning in Students;
- (b) promote social interaction;
- (c) provide good amenity for Users to engage with and enjoy the outdoor environment;
- (d) be welcoming, comfortable, safe and functional;
- (e) be robust and easy to maintain;
- (f) respond to the specific physical attributes of each Site, including the Site Conditions;
- (g) be distinctive and contribute to the culture and character of the School Facilities;
- (h) be ecologically and economically sustainable;
- (i) incorporate integrated Universal Access to all areas;
- (j) be well integrated with the architectural intent of the School Facilities;
- (k) integrate landscape treatments with the location of services;
- (l) be easy to navigate, and offer intuitive wayfinding;

- (m) integrate opportunities for outdoor learning;
- (n) mitigate climatic impacts; and
- (o) mitigate hazardous design elements through SID.

### **F1.2.1 Site and context**

The landscape design must:

- (a) integrate with existing and future local pedestrian, pathway and transport connections;
- (b) respond to and take advantage of the Site's physical features and significant environmental assets, including significant or rare trees and vegetation, or unique geological characteristics;
- (c) consider and respond sensitively to:
  - (i) views and sightlines to and from the Site;
  - (ii) barriers, boundaries and site interface conditions;
  - (iii) requirements for stormwater and sub-soil drainage; and
  - (iv) character and heritage, including any historical indigenous presence in the area; and
- (d) implement strategies to address the Site Conditions including for all existing vegetation, ground and surface water conditions, site drainage, topography, soils and the viability of trees to be retained.

### **F1.2.2 Functional and spatial planning**

The functional and spatial planning of the landscape design must:

- (a) create external spaces with functional opportunities and uses that interface well with the functions of adjacent buildings;
- (b) provide external spaces that have good relationships to other landscape areas;
- (c) provide circulation networks that are legible and encourage efficient movement with a clear sense of hierarchy and integrated wayfinding;
- (d) make provision for additional grassed area and a Transportable Unit Zone that may be required with increases in Student numbers;
- (e) avoid or manage public thoroughfare through the School Facilities;
- (f) ensure a good balance of hardscape, softscape and supporting amenity to maximise passive and active recreation at all times of the year;
- (g) provide areas that are conducive to outdoor learning activities and social interaction; and
- (h) be adaptable for active and passive recreational activities.

### **F1.2.3 Safety**

The landscape design must:

- (a) integrate CPTED and safety principles;
- (b) ensure good visual surveillance to enable easy supervision and control of access;
- (c) eliminate unauthorised access to roofs from ground level;
- (d) accommodate Ready Access for emergency services to all courtyards and school grounds; and
- (e) mitigate opportunities for non-approved skating activities.

### **F1.2.4 Environment**

The landscape design must engage initiatives to achieve excellent environmental performance, including:

- (a) utilising WSUD principles including:
  - (i) selecting low water use plants;
  - (ii) providing porous hard landscaping treatments where appropriate;
  - (iii) integrating infiltration and drainage strategies with landscape treatments;
  - (iv) providing sufficient mulch treatments;
  - (v) providing hydro-zone planting and irrigation strategies; and
  - (vi) subsurface drip line irrigation;
- (b) providing materials and construction techniques with minimal negative environmental impact;
- (c) providing opportunities for sustainable reuse of recycled materials;
- (d) selecting and designing constructed elements to allow for easy disassembly, relocation and reuse;
- (e) ensuring the protection of any listed species under the EPBC in accordance with the provisions and requirements of relevant Quality Standards and Laws; and
- (f) responding to prevailing winds, sun, shade and other relevant climatic studies, to ensure:
  - (i) temperature control through wind protection;
  - (ii) good cross ventilation;
  - (iii) appropriate levels of solar access;
  - (iv) appropriate extents of shading; and
  - (v) opportunities to exploit thermal mass of the ground and wall surfaces.

**F1.2.5 Levels and drainage**

- (a) Steep embankments must be avoided, with a preferred maximum gradient for grassed slopes of 1 in 6 and planted slopes of 1 in 3.
- (b) All areas must be sufficiently drained to allow stormwater to be contained on Site and connect to the civil drainage, or be localised in areas using soakwells, on Site detention ponds and swales. Sufficient stabilisation must be allowed for to mitigate erosion associated with water flows.
- (c) Levels must be designed to integrate with the existing terrain and topography.
- (d) Where possible, all surface water must be fed into soak wells or swales located on site to recharge the local aquifer. Sufficient drainage of grassed areas is required to prevent water-logging, which may necessitate piped drainage beneath the Sports Oval.

**F1.2.6 Service co-ordination**

- (a) The landscape design must be co-ordinated with all Engineering Services with external access requirements and exclusion zones.
- (b) The visual impact of Utility boxes and service pit lids must be minimised, and pit lids must be designed and installed flush with finished landscape levels and orientated to complement surface finishes.
- (c) Irrigation works must be designed and co-ordinated such that sprinklers are not placed in conflict with other infrastructure or physical structures. Irrigation water must be designed and managed to avoid staining of structures and material finishes.



## **F2. LANDSCAPING ELEMENTS**

### **F2.1 Public pedestrian spaces and entry forecourts**

- (a) The main entrance forecourt must include the letterbox, school signage and wayfinding elements. These elements may be integrated with the building design.
- (b) The main entrance area must present a high quality interface between the public and the School Facility. It must:
  - (i) address the street so that it is clearly legible to pedestrians and passing motorists;
  - (ii) be welcoming;
  - (iii) enable a clear visual link from the street to the School Facility's main entrance;
  - (iv) be secure against intrusion by unauthorised vehicles; and
  - (v) facilitate Universal Access from car parking to the Administration Block of the School Facilities.

### **F2.2 Paving and hard stand areas**

Paving and hard stand areas must:

- (a) be designed and specified to enable the easy movement of trolleys and wheelchairs between buildings;
- (b) meet all relevant Quality Standards for slip resistance;
- (c) minimise unnecessary glare, heat reflection or marking;
- (d) incorporate features that define different Functional Areas and assist with wayfinding;
- (e) include protective treatments to pavements and associated subgrades to mitigate damage by tree roots and Basidiomycetes fungi;
- (f) be designed to allow for sufficient spacing from tree trunks and include detailing that enables the growth in tree trunk diameter over time; and
- (g) be concrete only in veranda areas.

### **F2.3 Courtyards and external activity spaces**

Outdoor spaces between Classroom Blocks must be adaptable for a range of uses including outdoor learning. These areas must:

- (a) enable Direct Access to and surveillance from internal Learning Areas;
- (b) provide a balance and arrangement of hard and soft spaces that is clear and distinctive;
- (c) be able to accommodate class sizes in a variety of Pedagogical configurations; and
- (d) provide shelter, shade and amenity including seating, bins and drinking fountains.

## F2.4 Walls

- (a) The design and detailing of walls should be consistent with the architectural design intent of the School Facility.
- (b) Consideration should be given to walls that can provide informal seating.
- (c) External wall finishes should be selected that are robust and vandal resistant, and in accordance with the requirements detailed in *E8: Building Structure and Fabric*.

## F2.5 Walkways

A safe, functional and legible network of walkways and paths must provide:

- (a) access from car parks to buildings for Users, visitors and deliveries;
- (b) Universal Access to and around all buildings, including to each School Staff and Student accessible door throughout the School Facilities;
- (c) a maximum cross fall of 1 in 40 and a maximum gradient of 1 in 20;
- (d) pedestrian paths that are sized to traffic needs, with a minimum of 1500mm width;
- (e) Direct Access to building entrances including sufficient space for waiting;
- (f) walkways between all building entries must be covered for Secondary Schools; and
- (g) walkways between all building entries that are greater than 10m in distance, must be covered for Primary Schools.

## F2.6 Playing Fields and Courts

- (a) Generally, all playing fields and courts are to be designed and constructed in accordance with all relevant Quality Standards, including DSR guidelines.
- (b) Refer to *D5: Primary School Functional Areas* and *D6: Secondary School Functional Areas* for detail on functional requirements of playing fields and courts.

### F2.6.1 Sports Ovals

- (a) A flat, well drained, natural grass surface must be provided to allow for a variety of sporting activities, including AFL football, rugby and cricket.
- (b) All associated fixed elements, such as goal posts and cricket pitch, are to be provided by Project Co, in accordance with Quality Standards, including DSR Guidelines. All fixed elements must be suitably treated for outdoor environments, with all exposed steel elements being hot dipped galvanised with cold galvanised coating for welds, or alternative protective coating approved by the State.
- (c) Line markings for Sports Ovals must be in accordance with Quality Standards, including DSR Guidelines for football, rugby and cricket.
- (d) The playing field boundary dimensions for the Sports Ovals must be as follows:
  - (i) Primary Schools – 118m x 84m, or the equivalent of a DSR Youth Football field. A clear run-off perimeter of 5m beyond the playing field boundary must be provided; and

- (ii) Secondary Schools – 165m x 135m, or the equivalent of a DSR Seniors Football field. A clear run-off perimeter of 5m beyond the playing field boundary must be provided.
- (e) The Sports Oval size may be reduced for Sites that have constrained land areas, ensuring that the proposed Sport Oval size still complies with the DSR Football field size options, and has prior approval by the State.

### **F2.6.2 Cricket Practice Nets**

- (a) A flat, well drained, synthetic or approved alternative surface must be provided for the purpose of cricket practice.
- (b) Dimensions, in-ground stump holders and line markings for Cricket Practice Nets must be in accordance with Quality Standards, including DSR Guidelines for cricket pitches.
- (c) All associated fixed elements for the Cricket Practice Nets are to be provided by Project Co, as detailed in the *Primary School Brief* or the *Secondary School Planning Guide* contained in Schedule 6 (Information Documents) of the Deed and as required by Quality Standards, including DSR Guidelines. All fixed elements must be suitably treated for outdoor environments, with all exposed steel elements being hot dipped galvanised with cold galvanised coating for welds, or alternative protective coating approved by the State.

### **F2.6.3 Multipurpose Hardcourts**

- (a) A flat, well drained, suitable hard surface must be provided for the purpose of basketball, netball and tennis.
- (b) One Multipurpose Hard Court comprises the following:
  - (i) Two combined basketball/netball courts; and
  - (ii) Two tennis courts, overlaid at right-angles over the two combined basket/netball courts.
- (c) For clarity, the total number of playing courts provided for each Stage, is as follows:
  - (i) Primary Schools:
    - (A) Two combined basketball/netball courts; and
    - (B) Two tennis courts.
  - (ii) Secondary Schools:
    - (A) Four combined basketball/netball courts; and
    - (B) Four tennis courts.
- (d) Dimensions and line markings for Multipurpose Hard Court areas must be in accordance with Quality Standards, including DSR Guidelines.
- (e) Multipurpose Hard Courts must provide the required clear run-off, for each associated court, in accordance with Quality Standards, including DSR Guidelines.
- (f) Multipurpose Hard Courts must be typically orientated in a north-south direction for tennis courts, and east-west for basketball/netball courts. Orientation deviations are permissible in accordance with Quality Standards, including the DSR guidelines.

- (g) All fixed and removable court furniture, such as tennis posts, winders, sleeves and caps, netball goal posts and basketball goal posts and backboards are to be provided by Project Co, in accordance with Quality Standards, including DSR Guidelines. All fixed elements must be suitably treated for outdoor environments, with all exposed steel elements being hot dipped galvanised with cold galvanised coating for welds, or alternative protective coating approved by the State.
- (h) Multipurpose Hard Courts surfaces must be designed and constructed to prevent vegetation growth within the surface and tree root invasion from damaging the Multipurpose Hard Court surfaces and edges. Edges must be protected from degradation and tree root invasion.

#### **F2.6.4 Rectangular Playing Fields**

- (a) A flat, well drained, natural grass surface must be provided to allow for sporting activities, including soccer and hockey.
- (b) All associated fixed elements, such as goal, are to be provided by Project Co, in accordance with Quality Standards, including DSR Guidelines. All fixed elements must be suitably treated for outdoor environments, with all exposed steel elements being hot dipped galvanised with cold galvanised coating for welds, or alternative protective coating approved by the State.
- (c) Line markings for Rectangular Playing Fields must be in accordance with Quality Standards, including DSR Guidelines for soccer and hockey.
- (d) Dimension of the combined Rectangular Playing Field must be sized on the requirements of a hockey field (91.4m x 55m), in accordance with Quality Standards, including DSR guidelines.
- (e) The Rectangular Playing Field must provide the clear run-off, for each associated sporting field, in accordance with Quality Standards, including DSR guidelines.
- (f) For Sites that have constrained land areas, the Rectangular Playing Field may be substituted as a Transportable Unit Zone, in accordance with *C1.8: (Design Consideration and Constraints)* and *C4: (Future Development and Expansion)*.

#### **F2.7 Play spaces**

Playgrounds must provide organised and informal play opportunities in a safe and creative environment that is suited to the age range of the Students.

##### **F2.7.1 Nature play**

- (a) The design must consider opportunities for nature play within Primary Schools in a defined area that is easy to survey and supervise.
- (b) A nature play space may incorporate natural elements including landform, trees, boulders, planting and a variety of natural surfaces that challenge Students and promote curiosity and learning.
- (c) The use of water as a design element must be minimised and tightly controlled.

##### **F2.7.2 Kindergarten and Pre Primary areas**

- (a) A Kindergarten and Pre Primary School Play Area of at least 720m<sup>2</sup> must be provided per 100 Students exclusive of verandas.

- (b) Kindergarten and Pre Primary School areas must not include planting or garden beds.
- (c) Typically grass or rubber soft fall material must be used.

### F2.7.3 Play equipment

- (a) Playground equipment must be:
  - (i) compliant with relevant Quality Standards including AS 4422;
  - (ii) not more than 3m above grade level;
  - (iii) at least 2.5m away from any fences, buildings or other similar objects or building elements;
  - (iv) at least 2.5m between items of play equipment;
  - (v) designed with shading systems that offer sufficient UV protection; and
  - (vi) provided with an approved soft fall surface under all play equipment extending to at least 2.5m beyond the edge of any piece of play equipment.
- (b) The greatest vertical distance between a part of the play equipment that is intended for body support and the ground surface or part of the play equipment beneath must be no greater than the figures contained within *Table 1 – Maximum Free Height of Fall*.

TABLE 1 – MAXIMUM FREE HEIGHT OF FALL

Age (years)	Maximum free height of fall
0-3	1.0m
4-6	1.5m
6+	2.0m

## F2.8 Site Interface

### F2.8.1 Verge Works

- (a) Project Co must design, construct and maintain the road verge immediately adjoining the Site, including street embayments in accordance with the requirements set out in C2.3: *Verge Works* and C3: *TRAFFIC MANAGEMENT*.
- (b) There must be a continuous, Universally Accessible footpath at least 2.5m wide located against the Site boundary in all bounding road reserves. Pathways must conform to relevant Quality Standards including AS 1428 for DDA compliance.
- (c) The verge space between the Site boundary and the surrounding road kerb must consider high parking and traffic impact and be a functional setting with minimal grass, planting, irrigation or gravel treatments. Shade trees and generous, robust footpaths are encouraged.

- (d) All design, detailing, construction and materials must comply with relevant Quality Standards and laws including LGA guidelines and requirements.

### **F2.8.2 Car parking and drop off areas**

- (a) The design and arrangement of car parking and drop off areas must be in accordance with the requirements set out in *C3: TRAFFIC MANAGEMENT*, including:
  - (i) provide a welcoming and safe environment;
  - (ii) mitigate adverse localised climatic conditions;
  - (iii) provide natural shade solutions to benefit a minimum of 20% of all bays;
  - (iv) enable Direct Access to pedestrian pathways and Ready Access to strategic entry points of the School Facility;
  - (v) separate different Users, where required, into distinct parking areas that are clearly and discretely signed; and
  - (vi) be sensitive to the streetscape and the presentation of the School Facility to surrounding areas.

### **F2.8.3 Bus set down**

- (a) Bus set down areas must incorporate hardstand, seating and rain shelter in close proximity to accommodate waiting Students. A 3.5m path must run parallel to the bus parking to accommodate waiting Students and general circulation.
- (b) Refer to *C3: TRAFFIC MANAGEMENT* for further detail on bus bays requirements.

### **F2.8.4 Bin Enclosure**

- (a) A Bin Enclosure must be provided that is:
  - (i) adjacent to a car parking area and as close as possible to the street boundary;
  - (ii) visually screened;
  - (iii) able to accommodate all types of waste including rubbish and recycling; and
  - (iv) located and arranged to enable Ready Access by collection and service vehicles.
- (b) Refer to *D5: Primary School Functional Areas* and *D6: Secondary School Functional Areas* for further detail on bin enclosure requirements.

### **F2.8.5 Bicycle facilities**

- (a) Secure bicycle facilities must be integrated with the master plans of the School Facilities and be located to consider safe access, site entry points and opportunities for passive surveillance.
- (b) Project Co must provide bicycle facilities that are compliant with relevant Quality Standards including AS 2890.3 and:
  - (i) minimise conflict with the flow of pedestrian and vehicle traffic;

- (ii) are appropriate to the age and height of the intended Users; and
  - (iii) maintain good visibility and lighting.
- (c) Refer to *C3: TRAFFIC MANAGEMENT* for further detail on bicycle facility requirements.

## **F2.9 Landscape structures and FF&E**

### **F2.9.1 General requirements**

Landscape FF&E, including seating, bins, drink fountains, free-standing lighting, tree guards and grates, must be:

- (a) designed and specified to reflect a consistent design intent to ensure visual and functional compatibility and easy maintenance;
- (b) placed to ensure that paths of travel to and from the FF&E are surfaced in hard paved treatments. The FF&E must not be located in grassed areas or garden beds;
- (c) strategically located to improve amenity and not impede surveillance; and
- (d) robust, durable, easy to maintain and readily available when required for replacement.

### **F2.9.2 Site fencing**

- (a) Each School Facility must be secured by site perimeter fencing or buildings that form a barrier, in accordance with the following requirements:
  - (i) Primary Schools: the School Facilities must be locked down between buildings at the front entrance, and the remainder of the Site perimeter must be enclosed by a fence that is a minimum of 2100mm high.
  - (ii) Secondary Schools: the School Facilities must be locked down between buildings at the front entrance, and CCTV be provided to this area. The remainder of the Site must be locked down between buildings or by perimeter fencing, depending on the master planning arrangements. All site perimeter fencing must be a minimum of 2100mm high.
  - (iii) gates must be provided to Sports Ovals that are located on POS.
- (b) The extent of site perimeter fencing must not include the Sports Oval unless it is located wholly on the State's land. Where the Sports Ovals are a shared facility, they must be provided with a fence that is a minimum of 1200mm high with appropriate access gates.
- (c) The Hard Courts must be enclosed by chainmesh style fencing that is a minimum of 3600mm high.
- (d) Where the playing areas to the Kindergarten and Pre Primary School Classroom Block (Classroom Block 1) are not within the main fence extent, they must be contained by a fence that is a minimum of 1200mm high.
- (e) Site fencing must:
  - (i) be robust and have low maintenance finishes;
  - (ii) not be easy to climb;

- (iii) minimise adverse visual impacts without diminishing its integrity or effectiveness;
- (iv) permit vehicle sight lines to pedestrian crossings, including access gates;
- (v) avoid conflicts with irrigation infrastructure; and
- (vi) be sensitive to the streetscape and adjoining residential or community properties.

### **F2.9.3 Seating**

- (a) Both formal and informal outdoor seating must be provided.
- (b) Formal outdoor seating (including free standing seat furniture) must be provided at a minimum of 200mm length per Student.
- (c) Back rests must be provided to at least 50% of all formal seats.
- (d) Seating configurations must take into account factors including comfort, shade, age group and their benefit in terms of social development and interaction.
- (e) Architectural features including low planter boxes, retaining walls and stairs may be used to create informal seating.
- (f) Seating options must be provided for Students of different age ranges, including lower seating for Kindergarten and Pre Primary School areas.

### **F2.9.4 School letterbox**

The letterbox must be a secure, weatherproof and lockable facility that meets Australia Post standards and is configured to accommodate the expected volume and format of mail. Clear access must be provided to the letterbox for both the School Facility and postal service.

### **F2.9.5 Litter bins**

Outdoor litter bins must be provided at a minimum rate of 120L for every 30 Students, and strategically located with Ready Access to encourage their use and aid servicing.

### **F2.9.6 Drinking fountains**

- (a) Chilled water drinking fountains must be dispersed throughout the Site and near eating and sports areas.
- (b) As a minimum, one drinking fountain must be provided for each Classroom Block, Education Support Learning Community or Functional Area.
- (c) Drinking spigots must deliver water in an upward arcing jet (not vertical) to reduce risk of health-related issues.
- (d) Water bottle filling must be catered for.
- (e) Each unit must have a minimum of three drinking spigots, and one Universal Access spigot, being four in total.



### **F2.9.7 Flagpole**

Three freestanding flagpoles must be provided at each School Facility, along with the attachments needed to raise a flag. The flagpoles must be at least 6m in height, and be located in a civic area of the master plan appropriate for school functions.

### **F2.9.8 Shade and shelter**

- (a) A combination of built and natural external shade areas must be dispersed throughout the Site at a rate of 1m<sup>2</sup> of combined shade per Student.
- (b) Built shade structures must:
  - (i) withstand a variety of weather conditions and high winds;
  - (ii) have a UPF of 50 or higher;
  - (iii) have a minimum clearance of 3m in height;
  - (iv) not impede surveillance of Students;
  - (v) include supports that are clearly visible and placed to avoid harm to Users;
  - (vi) include vertical supports that are not scalable by Students and that do not make adjacent fences, structures or trees scalable;
  - (vii) reduce indirect UV radiation; and
  - (viii) be provided externally to cover the play equipment area for all Primary Schools, including Kindergarten and Pre Primary School areas.
- (c) Natural shade must:
  - (i) provide advanced specimen trees with tree guards at a minimum height of 3m, at a rate of greater than 10 per hectare of site;
  - (ii) include shade trees with broad canopies and dense foliage;
  - (iii) be provided by preserving all existing and suitable shade trees on site to meet the above requirement; and
  - (iv) be provided in areas including lunch and playground areas.

## **F3. SOFTSCAPE**

### **F3.1 Garden beds and shrub planting**

#### **F3.1.1 Garden bed arrangement**

- (a) Gardens may consist of single or multiple garden or planter beds arranged to provide welcoming spaces for sitting, discussion and social interaction.
- (b) The dimensions and locations of garden beds must be designed to permit access and circulation. Perimeter and internal paths or grass tracks must be incorporated that are sufficient to allow access and suitable gardening practices.
- (c) Garden beds must be strategically located so as to avoid major pedestrian traffic routes and trampling by pedestrians.
- (d) The interface between buildings and vegetation must be considered to mitigate vandalism, fire risk and security issues.
- (e) Student food gardens may be considered to facilitate teaching and learning.
- (f) Engineering Service infrastructure including fire hydrants can be located in garden beds and raised planter beds provided that suitable access for inspection, service and maintenance is provided in accordance with Quality Standards and Laws.

#### **F3.1.2 Planting**

- (a) The planting palette for garden beds must be varied, readily available and predominantly consist of local native plant species that are selected on the basis of safety, water requirements, habit and appropriateness to that of a school setting.
- (b) The following requirements must be addressed in order to achieve a sustainable design response and built outcome that satisfies the softscape objectives:
  - (i) the planting of water-wise, local indigenous species is encouraged. Where suitable microclimates exist, including in protected courtyards, 'speciality' plants like ferns or exotic species may be planted;
  - (ii) garden beds must be hydro-zoned to ensure that plants with similar watering requirements are grouped together. This must be co-ordinated with the irrigation system to ensure that the optimum mode of irrigation delivery provided for each garden bed;
  - (iii) the growth habits of individual plant species must be carefully considered in the planting design to ensure an optimal maintenance outcome. For example, garden beds must be designed so that species at the front do not out grow species behind and restrict irrigation flow or maintenance access;
  - (iv) poisonous, allergenic and hazardous plants must be avoided and must not be specified for Kindergarten and Pre Primary School areas. The placement and location of such plants relative to Student activities must be considered to minimise the adverse impact on the Users. Refer to *F5: Schedules* for a full list of poisonous plants and plants to be used with caution;
  - (v) plant densities must be designed to ensure optimal plant performance;

- (vi) shrub planting must not obscure windows. All shrub planting must be installed at least 600mm from buildings and not exceed 1000mm in height upon maturity;
- (vii) plants and irrigation infrastructure located in garden beds within reach of Student seating areas must be set back 1m to limit tampering from Students. A mulch strip between the seat and the plant or irrigation line is acceptable;
- (viii) garden edging or mowing strips must be installed around garden beds which are adjacent to lawn areas, to prevent the invasion of lawn runners and to contain mulch and soil;
- (ix) garden edges must be of robust, durable, cost effective and easily replaceable material; and
- (x) composts and mulches must be used in accordance with relevant Quality Standards and Laws.

### **F3.2 Trees**

- (a) The strategic use of mature, semi-mature and existing trees must consider maintenance, sustainability and safety. Trees must be specified that suit local climatic conditions, provide good shade coverage and enhance the sense of place, identity and amenity for the specific context.
- (b) Tree selection must comply with *F5: Schedule of Trees to Use with Caution*.
- (c) Tree selection, planting and retention must satisfy the following requirements:
  - (i) specified trees must:
    - (A) provide sufficient clearance beneath the canopy to allow access and provide a minimal clear height of 2m above footpaths;
    - (B) suit the soil type and climate of the local area;
    - (C) provide shade to gathering, seating areas and paved areas;
    - (D) provide interest and enhance the aesthetic quality of the landscape;
    - (E) be positioned or specified to allow light access to ground level in winter; and
    - (F) not be hazardous;
  - (ii) trees that are considered hazardous and must not be specified are those that:
    - (A) shed excessive amounts of bark, twigs, nuts, foliage and fruit;
    - (B) are poisonous or allergenic;
    - (C) attract bees, wasps or other dangerous Pests;
    - (D) possess spikes or thorns; or
    - (E) are known for shedding limbs or having invasive root systems;
  - (iii) trees must not be planted:

- (A) where at their mature height their canopy comes closer than 2m to a building;
  - (B) under power lines; or
  - (C) within 3m of septic tanks, sewerage lines or service pits and infrastructure;
- (iv) for trees located in grassed areas, a suitable mowing strip enclosure and infill material must be allowed for. Planting surrounds around trees must be no less than 2m in diameter and must be strategically integrated into the immediate context;
  - (v) trees must not be planted in areas of continuous concrete paving;
  - (vi) where trees are planted in paved areas, the paving should not be closer than 1m from the trunk; and
  - (vii) in car parking areas, planted islands and nibs must generally be avoided unless they are substantial enough to support the healthy growth of the trees to mature size with minimal disruption to car park infrastructure. Preferably, trees and planting must be setback from footpaths that service car bays.

### **F3.3 Grassed areas**

Grass selection must satisfy the following requirements:

- (a) all grass mixes used must:
  - (i) be drought tolerant;
  - (ii) maintain winter colour;
  - (iii) minimise the use of water and fertilisers;
  - (iv) be shade tolerant;
  - (v) minimise mowing requirements; and
  - (vi) avoid the inadvertent inclusion of any flowering species (including clover) to minimise the attraction of bees;
- (b) the State typically utilises instant turf and specifies 'kikuyu' (*Pennisetum clandestinum*) for all grassed areas;
- (c) soil for grassed areas must be properly prepared ensuring a debris free, free draining root zone to a minimum depth of 300mm;
- (d) playable Sports Oval surfaces must have a maximum grade of 1 in 50 if falling universally from the centre, or 1 in 100 if graded with a continuous cross fall;
- (e) the use of stabilised or reinforced grass for the purposes of emergency vehicle parking and overflow parking must be considered;
- (f) all areas of the Site not required for other purposes are encouraged to be specified as general grassed areas. Trees are encouraged to be planted through these areas to provide natural shade; and

- (g) where fences are located in grass areas, a concrete mowing edge or alternative approved treatment must be provided to the extent of the affected fence. The edge must extend 200mm beyond the centreline of the fence to minimise conflict with mowing equipment.

### **F3.4 Synthetic turf**

- (a) Synthetic turf may be considered in high-wear areas subject to its quality, materials and durability.
- (b) The provision of synthetic turf may be considered in small spaces where there are few suitable alternatives. Such spaces must be suitable for small groups to sit where grass is difficult to establish and maintain.
- (c) Synthetic turf areas must be positioned only in shaded, secure areas, which avoid becoming hot and are under frequent surveillance.
- (d) Synthetic turf must be of high quality specification, a minimum 19mm, certified lead free and installed to ensure high performance in a school setting.

#### **F3.4.1 Loose fill materials**

The provision of loose fill material may be considered in areas where grass and garden beds are difficult to establish and maintain. Loose fill material that is either too coarse or large such that it could be used as a weapon or otherwise be hazardous must not be used.

### **F3.5 Swales and bio-swales**

- (a) Where drainage is required on site, consideration must be given to the inclusion of swales and bio-swales to accommodate standing water.
- (b) Swales must mitigate fall risks, and not have grades steeper than 1 in 6 for grassed areas and 1 in 4 for bio-swales.
- (c) Swales differ from bio-swales in that swales are grassed to all surfaces, whilst bio-swales must incorporate planting sufficient for nutrient stripping and water purification.

### **F3.6 Nature areas, remnant vegetation and bush**

- (a) Remnant areas of natural vegetation must be retained, contained and improved if degraded, provided that they do not create an unsafe environment for Users and do not compromise School Activities.
- (b) Improvement of degraded vegetation requires the implementation of measures to achieve a consistent coverage of local native species free of exotic weeds.
- (c) Remnant vegetation must be contained with a maintenance edge from surrounding grass and garden beds, and perimeter control to manage safety risks including from snakes and access gates.

## **F4. IRRIGATION**

- (a) Project Co must design, construct, commission and complete an effective irrigation system to maintain the soft landscape works.
- (b) Project Co must engage the services of qualified irrigation designer who is a member of Irrigation Australia to design, document and oversee the implementation, management and maintenance of the irrigation system.

### **F4.1 Authorities and standards**

- (a) The State will use reasonable endeavours to obtain the groundwater extraction licences for all Sites and will undertake all necessary liaison and coordination with relevant Authorities.
- (b) Project Co must install one groundwater bore for each Site, with the exception of Harrisdale SS, in accordance with all relevant Approvals and Design Requirements. Refer to *F4.5: Groundwater Bores* for Design Requirements.

### **F4.2 Management of landscape and irrigation works program**

- (a) Where applicable, Project Co must ensure the early installation and commissioning of the bore and irrigation infrastructure and timely implementation and establishment of all softscape works to ensure that all areas are Fit For Purpose at and throughout the programmed time of occupancy of the Student population.
- (b) Refer to *C1: Master Planning Principles* and specific Site information for interface with relevant Authorities that may be providing bores for shared Sports Ovals.

### **F4.3 Quality**

- (a) The irrigation system must produce and distribute water of sufficient quantity and quality to maintain the softscape works in optimal levels hydration.
- (b) Irrigation water must:
  - (i) be safe for use in School Facilities;
  - (ii) be free of Contamination, including contaminants that are detrimental to the environment, landscape, building works and the general health of people;
  - (iii) contain suitable managed levels of iron, calcium and other elements to minimise the staining and corrosion of material finishes, and
  - (iv) contain optimal levels of salt.
- (c) To meet the above requirements, groundwater (where used) may require filtration (including mechanical, chemical and UV filters) in combination with bore and pumping equipment to ensure suitable water quality.

### **F4.4 Design**

- (a) The design of the irrigation system in its entirety must be compliant with all relevant Quality Standards and Laws, including the requirements of all relevant Authorities.
- (b) The irrigation system must incorporate water wise technologies and fittings, including rain sensors that can automatically adjust watering times to use the minimum required amount of water.

- (c) The irrigation system and associated softscape must be designed to incorporate Hydro-zoning principles, and generally specify low water use plants.
- (d) Opportunities for harvesting and reusing rainwater from roofs and surface run-off may be considered and incorporated where feasible.
- (e) The irrigation design must limit to an absolute minimum the extent of over-spray onto adjacent hardscape.
- (f) The irrigation system must utilise the Best Industry Practices available for the cost effective performance, operation and maintenance of the irrigation system.

#### **F4.5 Groundwater Bores**

- (a) Upon receipt of the groundwater extraction licenses from the State, Project Co must investigate the local groundwater supplies in the vicinity of the Site to determine the likelihood of obtaining a groundwater supply which is suitable in both quantity and quality.
- (b) Project Co must utilise a groundwater bore supply as the primary source of the irrigation water supply for the Project unless and to the extent a borehole for a Stage is omitted under clause 36A of the Project Deed.
- (c) The design, installation and location of all groundwater bores and associated auxiliary pumping systems must in their entirety be compliant with all relevant Quality Standards and Laws, including the requirements of all relevant Authorities and the *Minimum Construction Requirements for Water Bores in Australia (Edition 2)*.
- (d) Project Co must liaise with all relevant Authorities having jurisdiction over any part of the water supply and irrigation system for each School Facility, including determination of any restrictions and water treatment which may be applicable to a School Facility.
- (e) Project Co must manage the potential risk with obtaining groundwater supplies that have elevated levels of dissolved iron and avoid staining of building surfaces and paved surrounds, in accordance with *F4.3: Quality*.
- (f) Project Co must design the groundwater supply bore to be in accordance with Design Requirements and its own Site investigations, including the design guidelines contained in Table 2 - Groundwater Bore and Pump Design Guidelines.

TABLE 2 - GROUNDWATER BORE AND PUMP DESIGN GUIDELINES

<b>Consideration</b>	<b>Guideline</b>
Aquifer	In accordance with the requirements of the relevant Authorities.
Bore Depth	To the depth of the aquifer.
Bore diameter	To suit casing and/or screen diameter plus a minimum annulus required for gravel packing where required.

<b>Consideration</b>	<b>Guideline</b>
Surface Casing	Provide to nominal 12 metre depth if required to manage loose surface soil when drilling bore, or if required by the relevant Authorities.
Bore casing material	uPVC material, minimum pressure Class 12.
Bore casing diameter	To be installed within bore casing in accordance with the recommendations of the manufacturer of the pump motor.
Gravel Packing	As required to achieve water quality requirements.
Cement grouting	As required by the relevant Authorities.
Groundwater abstraction volume	In accordance with the relevant Authority's groundwater extraction licence.
Groundwater abstraction rate	In accordance with calculated water supply performance for direct pumping into the irrigation system or suitable water storage, and the relevant Authority's groundwater extraction licence.



## **F5. SCHEDULES**

The following schedules must be considered within the landscape design:

- (a) Trees to Use with Caution;
- (b) Poisonous Plants; and
- (c) Pesticides.

## F5.1 Trees to use with caution

Should there be the opportunity to establish new trees on a Site, advice and assistance with suitable selections can be sought from the Department's Environmental Service Officers in Strategic Asset Planning. As a guide, the following trees must be considered carefully when proposed for use and avoided when a suitable location cannot be designated for them.

<b>Limb Droppers</b>	<b>Poisonous Trees</b>
Eucalyptus botryoides (Bangalay) Eucalyptus camaldulensis (River Red Gum) Corymbia citriodora (Lemon Scented Gum) Eucalyptus cladocalyx (Sugar Gum) Eucalyptus mannifera (Brittle Gum) Eucalyptus rubida (Candle Bark) Eucalyptus viminalis (Manna Gum) Eucalyptus grandis (Rose Gum) Eucalyptus robusta (Swamp Mahogany) Corymbia maculata (Spotted Gum) Eucalyptus scoparia (Wallangarra White Gum) Eucalyptus victrix (Northern Coolibah) Angophora costata (Smooth Barked Apple Gum)	Aesculus hippocastanum (Horse Chestnut) Cassia fistula (Golden Shower) Castanospermum australe (Morton Bay Chestnut) Datura sanguinea (Angels Trumpet) Duranta repens (Duranta) Euonymus europaeus (Spindle Tree) Euphorbia pulcherrima (Poinsettia) Laburnum anagyroides (laburnum) Lagunaria patersonii (Pyramid Tree) Melia azederach (Cape Lilac) Nerium oleander (Oleander) Plumeria rubra (Frangipani) Rhus succedanea (Rhus Tree) Ricinus communis (Castor Oil Plant) Robinia pseudoacacia (Black Locust) Schinus molle (Pepper Tree) Schinus terebinthifolius (Japanese Pepper Tree)
<b>Troublesome Root Systems</b>	<b>Allergenic Trees</b>
Populus species (Poplars) Salix babilonica (Weeping Willow) Fraxinus species (Some Ashes) Ulmus procera (English Elm) Ficus species (Fig) Callistemon species (Most Bottlebrushes) Casuarina species (Eastern Sheoaks) Eucalyptus botryoides (Bangalay) Eucalyptus robusta (Swamp magohany) Robinia pseudoacacia (Black Locust)	Platanus X acerifolia (London Plane Tree) Platanus orientalis (Oriental Plane Tree)

(i)

## F5.2 Poisonous plants

Poisonous plants must be avoided in school environments. A brief guide to some of these plants has been provided below. Consideration should be given to other variables including the location of the plants and the Direct Access or contact that Students have to them.

Plant	Toxic Part
African Milk Bush <i>Synadenium grantii</i>	Sap is corrosive; all other parts are poisonous if ingested
Agapanthus <i>Agapanthus orientalis</i>	Leaves; acute skin irritation
Angels Trumpet <i>Brugmansia (Datura Candida)</i>	All parts (esp. fruits, seeds and flowers) are poisonous if ingested
Arum Lily <i>Santedeschia aethiopica</i>	All parts are poisonous if ingested; can cause skin irritation
Autumn Crocus <i>Colchicum autumnale</i>	All parts are poisonous if ingested
Azalea <i>Rhododendron</i>	All parts are poisonous if ingested
Bird of Paradise <i>Ceasalpinia gilliesii</i>	Seeds and green seed pods are toxic
Black Locust <i>Robinia psuedoacacia</i>	Seeds and other parts of plant are poisonous if ingested
Box <i>Buxus sempervirens</i>	All parts are poisonous if ingested
Cape Lilac <i>Melia azedarach</i>	Seeds are poisonous if ingested; Fruit
Castor-oil Plant <i>Ricinus communis</i>	Seeds; All parts poisonous if ingested
Cotoneaster	Fruit (red berries)
Daffodil & Jonquil <i>Narcissus pseudonarcissus &amp; Narcissus jonquilla</i>	Bulbs are poisonous if ingested
Daphne	Bark and Berries
Dumb-Cane <i>Dieffenbachia spp.</i>	All parts: particularly Sap and Berries
Duranta <i>repens</i>	Fruit and Berries
Foxglove <i>Digitalis purpurea</i>	All parts can cause irregular heart beat, digestive upset and dizziness if ingested.
Hemlock <i>Conium Maculatum</i>	All parts; however the seeds contain the greatest portion of poison.
Holly ( <i>Illex</i> )	Berries, spiked toxic leaves
Jessamine <i>Cestrum spp.</i>	All parts, but mainly unripe berries when ingested
Laburnum (Golden Chain Tree) <i>Laburnum anagyroides</i>	Poisoning by ingestion of All parts, especially seeds
Lantana <i>Lantana camara</i>	Green berries are poisonous if ingested. Skin or allergic reaction may occur when handling
Naked Lady <i>Euphorbia tirucalli</i>	All parts, especially milky sap on skin or in eyes
Nightshades <i>Solanum dulcamara or Solanum nigrum</i>	All parts, especially green fruit and berries

<b>Plant</b>	<b>Toxic Part</b>
Oleander Nerium oleander and Thevetia peruviana	All parts are highly toxic if ingested. Contact with the skin can cause irritation.
Poinsettia Euphorbia pulcherrima	Leaves, flowers and milky sap
Rhus Toxicodendron succedaneum	All parts can cause severe dermatitis and swelling if comes into contact with the skin; the sap causes the most severe reaction.
Rosary Pea Arbus precatorius	Seeds
Sweet pea Lathyrus odoratus.	Seeds
Toadstools and wild fungus Amanita spp.	All parts
Thorn Apple Datura stramonium and Jimson Weed	All parts: mainly seeds and leaves if ingested
Winter Sweet Carissa spectabilis	All parts
Yellow Oleander, Be-still Thevetia species	One seed can be lethal to infants
Yew Taxus baccata	Fruit, leaves and seeds
Zamia Palm Cycads, Macrozamia	Seed is poisonous if ingested

### F5.3 Pesticides

- (a) A pesticide is the general term for a group of chemicals which includes insecticides, herbicides, rodenticides and fungicides. Pesticides have the potential to harm non target objects including humans and other domestic and wild animals, and as such must be treated with care.
- (b) If the use of pesticides in School Facilities is deemed necessary, the pesticide with the least toxicity and able to perform effectively must be selected.
- (c) All pesticides are rated by a poison schedule set by the Commonwealth Government and adopted under the State Poisons legislation. Each product is labelled with a signal heading which reflects the level of hazard and associated poison schedule.
- (d) An example of these poison schedules is reflected in the table below. These ratings must not be confused with ‘dangerous goods’ symbols, illustrated on product labels in the form of diamonds.

Level of Hazard	Poison Schedule	Signal Heading
High to very high. Exceptionally poisonous	S7	<b>DANGEROUS POISON</b> KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING AND USING
Moderate to high. Poisonous	S6	<b>POISON</b> KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING AND USING
Low to moderate. Handle with care	S5	<b>CAUTION</b> KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING AND USING
Low	Unscheduled	<b>KEEP OUT OF REACH OF CHILDREN</b> READ SAFETY DIRECTIONS BEFORE OPENING AND USING

- (e) DANGEROUS POISON Schedule 7 [S7] is the most toxic. Pesticides labelled with this rating are prohibited from use by School Employees and School Staff.
- (f) Pesticides labelled POISON Schedule 6 [S6] are hazardous.
- (g) Should it be determined that a pesticide with a POISON Schedule 6 [S6] or 7 [S7] is required to be used, prior permission for the use on Sites must be obtained from the State. In all cases, both the State and the Principal must be notified at least five working days prior to application.



Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and holding a beaker. The student on the left is partially visible, also smiling. The background shows laboratory equipment and shelves.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## PART G

Engineering Specifications

September 2015

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## **G1. GENERAL**

- (a) The design and installation of Engineering Services and structure must be carried out in accordance with Best Industry Practices with emphasis on sustainability, adaptability, reliability and allowance for future expansion.
- (b) The Engineering Services must complement the delivery of School Activities.
- (c) All headworks charges and fees must be borne by Project Co.
- (d) The design and construction of Engineering Services must take into account the possibility that parts of the School Facilities may be used outside of Core Hours and School Terms. Areas which may be used outside of Core Hours and School Terms include the Sports Hall, Covered Assembly Block, Canteen, Cafeteria, Learning Areas, specialist rooms, associated corridors and any other area with the potential for School Third Party Use or Project Co Third Party Use.
- (e) Project Co must meter the consumption of Utilities for areas with the potential for School Third Party Use or Project Co Third Party Use, so that this consumption can be measured separately.

### **G1.1 Engineering Services principles**

The Engineering Services principles must:

- (a) utilise innovative design, technologies and analytical tools to optimise energy performance and minimise resource consumption where LCC analysis shows proven benefits;
- (b) ensure systems are flexible, efficient and economical to use;
- (c) ensure appropriate zoning of systems to optimise controllability, flexibility, and efficiency;
- (d) select systems on the basis of well understood service and local maintenance requirements;
- (e) ensure a high level of systems control, monitoring and metering where appropriate to Functional Units to enable identification of high demand areas for Utilities to assist ongoing optimisation of systems performance; and
- (f) ensure School Staff can easily operate controls without compromising overall system performance.

### **G1.2 Services co-ordination**

Engineering Services and extension of Utilities within the Site must be coordinated with the Utilities Infrastructure provided as part of the Surrounding Works with respect to design (including capacity) and construction to avoid clashes and to ensure compliance with the requirements set out in this Design Brief.

### **G1.3 Design Life and durability**

All Engineering Services must have adequate durability to achieve an industry standard Design Life as outlined in *11: Design Life Requirements*, without requiring a level of maintenance higher than the industry standard.

## G1.4 Maintainability

- (a) In designing the Engineering Services, Project Co must consider ease of access for the purposes of undertaking safe and efficient maintenance and replacement in accordance with relevant Quality Standards and Laws.
- (b) Access to roof mounted equipment must be provided via a safe method in accordance with the requirements for *Roof Safety Systems* in *E8: Building Structure and Fabric*.
- (c) Project Co must consider potential obsolescence in the selection of FF&E to avoid both partial or comprehensive replacement and operational down-time.

## G1.5 Flexibility and adaptability

- (a) The Engineering Services in each School Facility may be subject to an ongoing program of alteration or modernisation to suit teaching and technological change over the life of the School Facilities.
- (b) The Engineering Services must be designed to be flexible and readily adaptable, such that they allow change with minimal disruption to the operation of the School Facilities and at a minimum cost.
- (c) Project Co must incorporate the following features into the Engineering Services systems design:
  - (i) the design of Engineering Services must be based on the principle of maximised modularity to facilitate flexibility of use and ESD considerations;
  - (ii) Project Co must provide sufficient isolation on all piped Engineering Services to allow shutdown of individual part-floor zones for maintenance and upgrade works without requiring shutdown of whole floors or adjacent independently operational areas;
  - (iii) Project Co must design Engineering Services reticulation routes including service corridors and risers to allow Direct Access for future works to be carried out. Service reticulation zones within ceiling spaces must be designated on the plans and be accessible from access panels that allow full and proper access to all Engineering Services for maintenance, replacement or addition of Engineering Services;
  - (iv) any penetrations through fire or acoustic walls must be via fire rated cable ports that can be modified to accommodate temporary changes on the number of cables;
  - (v) Project Co must group service risers, cupboards and rooms requiring regular maintenance access into service zones on floors;
  - (vi) Project Co must ensure that Engineering Services systems can be zoned to minimise use and consumption of energy;
  - (vii) Project Co must ensure that the Engineering Services Plant is suitably located to accommodate the co-location of supplementary Plant associated with expansion, reconfiguration works or further development; and
  - (viii) Project Co must provide separate utility sub-metering for all Dental Therapy Centres (DTCs). Sub-meters shall be NMI approved with Class 1 accuracy. DTCs sub-meters are not required to be connected to the EWMS.

## G1.6 Services labelling

Project Co must:

- (a) provide a Site wide, consistent labelling and naming methodology, regardless of the system or discipline;
- (b) ensure comprehensive labelling is provided to all components and equipment indicating their function;
- (c) ensure labelling documentation is provided, which tracks all Engineering Services for fast fault finding and service tracking of all systems, including ductwork, pipework, power cabling and control cabling;
- (d) ensure scheduled tracked permanent labelling is provided to both ends of every linear service installed; and
- (e) ensure that the labelling of Engineering Services co-ordinates with building signage. Refer to *E4: wayfinding and Signage* for further detail on labelling requirements.

## G1.7 Redundancy, capacity and expansion

- (a) Project Co must provide sufficient spare space to accommodate peak enrolment and future expansion over the Design Life of the Project.
- (b) All Engineering Services reticulation routes must be provided with a spatial allowance for the distribution of future Engineering Services.
- (c) Project Co must provide the following:
  - (i) the capacity of all incoming and outgoing Engineering Services to the Site to accommodate peak enrolment student numbers detailed in *C4.1(f): Table 3 – Primary School Forecast Enrolment* and *C4.1(g): Table 4 – Secondary School Forecast Enrolment*;
  - (ii) all vertical and horizontal distribution including piping racks, trays, culverts and service corridors that have allowance for future expansion;
  - (iii) all switchboards and panels that incorporate capacity and spatial allowance for expansion within the same;
  - (iv) all Engineering Services risers that are accessible for their full height and have space for future Engineering Services;
  - (v) all Engineering Services cupboards for switchboards and panels that have space for future Engineering Services;
  - (vi) Plant that has spare capacity for future growth built into their sizing calculations; and
  - (vii) the design strategies to ensure adequate flexibility and adaptability must include intelligent spatial planning, good access to all Engineering Services, Plant redundancy and the provision of adequate means of isolating systems and parts of systems to carry out future Works.

## **G1.8 As-Built Information and Operation and Maintenance Manuals**

- (a) Full sets of As-Built Information and Operations and Maintenance Manuals must be provided at Commercial Acceptance for each Stage to assist the running and maintenance of the School Facilities on and from the Operational Commencement Date for each Stage.
- (b) The drawings for a School Facility must be provided in a CADD format compatible with the BMW CADD system and consistent with the *BMW CADD Documentation Procedures Manual* as amended from time to time.
- (c) This documentation and these manuals must cover all aspects of the School Facilities and must include as-built schematics of all piping, ducting (air side) and cabling systems.
- (d) All As-Built Information and Operation and Maintenance Manuals must be retained at each Site (as relevant) in hard copy and electronic (CADD and PDF) format and must be continuously updated by Project Co throughout the Term. These documents must be made available for review by the State on request.
- (e) As-Built Information must include:
  - (i) Plant layouts;
  - (ii) duct and equipment layouts;
  - (iii) pipework layouts and details with all valves clearly shown with asset register number;
  - (iv) control panel diagrams;
  - (v) wiring and control schematics;
  - (vi) piping and airside schematics;
  - (vii) civil and structural drawings;
  - (viii) lift drawings; and
  - (ix) fire rated penetrations.

### **G1.8.1 Operation and Maintenance Manuals**

- (a) A set of the Operation and Maintenance Manuals for the School Facilities must be maintained at each Site. The manuals must also be maintained in an electronic format that allows for easy reproduction.
- (b) Instructions for operating and maintaining all aspects of the School Facilities must include:
  - (i) scope of works;
  - (ii) descriptions of Engineering Services installed and their operation;
  - (iii) procedures for starting, stopping and operating Plant;
  - (iv) all essential Engineering Services Plant operation and testing requirements;

- (v) seasonal operation of Plant;
  - (vi) controlling set points;
  - (vii) design criteria;
  - (viii) asset register;
  - (ix) an inspection, testing and maintenance schedule;
  - (x) details of manufacturer's recommended maintenance on each Plant item;
  - (xi) manufacturer's literature;
  - (xii) full set of commissioning sheets and checklists; and
  - (xiii) listing of contact details for designers, contractors, subcontractors and suppliers.
- (c) Operation and Maintenance Manuals must separately highlight all maintenance and testing requirements for essential Engineering Services systems and include proforma checklists for use in all future essential Engineering Services testing.
- (d) Operation and Maintenance Manuals must be upgraded annually to comply with reporting and regulatory requirements.

### **G1.8.2 Building Users' Guide**

- (a) A Building Users' Guide for each School Facility must be provided and maintained at each Site.
- (b) The Building User's Guide must describe how to operate the School Facilities including the Engineering Services in accordance with the design intent and in an efficient manner to optimise building performance and sustainability initiatives. It is to be written in plain English such that it can be readily understood by an average person (as opposed to technical staff).
- (c) Refer to *E6: Ecologically Sustainable Design* for further details on Building Users' Guide requirements.

### **G1.8.3 Communications Manuals**

- (a) As part of the Operation and Maintenance Manuals, Communications Manuals must be provided for each system, including structured cabling, MATV, PA and electronic security. Project Co must provide all relevant information of the system equipment installed and must be part of the complete manual. The information to be provided by Project Co must include all information that may be required for the maintenance and operation of the system.
- (b) Project Co must co-ordinate the documentation and formation of the Communications Manuals for all of their systems installed by Project Co.
- (c) All documentation provided by Project Co relating to the systems must include all data in respect of the equipment and their interfaces. All data that relates to the configuration and programming of equipment provided must be in a manner that enables non-technical personnel to obtain an understanding of it.

- (d) The information to be provided by Project Co to form part of each Communications Manual includes:
  - (i) list of all equipment technical data sheets for items of equipment;
  - (ii) complete cable termination schedule;
  - (iii) plain English descriptions of all equipment configurations;
  - (iv) equipment list including all serial numbers for all items of equipment;
  - (v) details of all manufacturers and distributors of equipment;
  - (vi) individual technical manuals of all equipment; and
  - (vii) maintenance requirements and procedures of all equipment.
- (e) Project Co must include cabling infrastructure drawings in the Communications Manual.
- (f) The schedule must be inclusive of all cables installed by Project Co and include the following:
  - (i) fibre optic cabling infrastructure;
  - (ii) horizontal cabling;
  - (iii) patching records;
  - (iv) cable risers;
  - (v) cabling redundancy;
  - (vi) building and floor distributor rack layouts and rack elevations; and
  - (vii) server room's rack layouts and elevations.
- (g) The Communications Manual must be bound neatly, as a separate volume within the Operation and Maintenance Manuals, in a vinyl hard backed folder with the front cover stamped.

## **G2. CIVIL AND STORMWATER**

### **G2.1 General**

- (a) This Section sets out the requirements for the civil and stormwater works for the Project.
- (b) Civil and stormwater works must be carried out in accordance with Best Industry Practices with emphasis on reliability and allowance for future expansion.

### **G2.2 Scope**

The scope for the civil and stormwater works for each Stage includes the design, construction, commissioning and completion of the civil and stormwater components for the relevant Site. The civil and stormwater works include:

- (a) site surveying;
- (b) ground improvement works, where such works are required to support the proposed design for the Relevant Infrastructure;
- (c) earthworks;
- (d) retaining wall structures;
- (e) roads, pavements, paths and kerbs;
- (f) drainage, appropriate for the purpose of ensuring that Relevant Infrastructure are serviceable and not inundated with water;
- (g) the integration of civil works with existing conditions, and works to adjacent Sites; and
- (h) the treatment, storage or disposal of all Contaminated material that is excavated during construction.

### **G2.3 Authorisations**

Project Co must obtain and comply with all required Approvals and relevant Authority requirements associated with the civil works for the Project.

### **G2.4 Design information**

#### **G2.4.1 Background Site investigation reports**

The State has conducted some preliminary site investigations pertaining to each Site. These site investigation reports are contained within Schedule 6 (Information Documents) and are provided in order to assist Project Co with its own further due diligence of Site Conditions.

#### **G2.4.2 Survey data**

Project Co must verify the accuracy of any survey data, including the location and type of existing underground services, including Utilities.



### **G2.4.3 Further studies**

Project Co must undertake all further Site investigation as necessary for their proposed design.

### **G2.5 Quality Standards and Laws**

- (a) All civil and stormwater works in connection with the Relevant Infrastructure must comply with all relevant Quality Standards and Laws including:
- (i) the Western Australian Contaminated Sites Act and Contaminated Sites Regulations;
  - (ii) Australian Rainfall and Runoff (ARR) Volumes 1 and 2 published by Engineers Australia – National Committee for Water Engineering;
  - (iii) Stormwater Management Manual for Western Australia (DoW, 2004-07);
  - (iv) all relevant LGA guidelines and design standards;
  - (v) State Planning Policy 2.9, Water Resources (WAPC, 2006); and
  - (vi) Better Urban Water Management (WAPC, 2008)
  - (vii) all relevant Austroads Standards including:
    - (A) Austroads Guide to Road Design Part 1 to 8;
    - (B) Austroads Guide to Road Design Part 5: Drainage Set;
    - (C) Austroads Guide to Pavement Technology Part 1 to 10 and;
    - (D) AP-G88-11 – Cycling Aspects of Austroads Guides.
  - (viii) all relevant PTA standards and guidelines, including:
    - (A) A Practitioner’s Guide to Bus Movement and Priority;
    - (B) Public Transport Bus-Stop Site Layout Guidelines;
    - (C) Traffic Management and Control Devices;
    - (D) Maintenance and Constructability Guideline; and
    - (E) Disability Access and Inclusion Plan.
  - (ix) all relevant DoT guidelines, including:
    - (A) Planning and Designing for Pedestrians: Guidelines; and
    - (B) all relevant LGA and service Authority guidelines and design standards.
- (b) In the event of a conflict between any of these requirements, the more onerous requirement must apply, that being the requirement which calls for the highest standard.

## **G2.6 Performance requirements**

### **G2.6.1 Planned Design Life**

- (a) The Design Life for all civil and stormwater works, including pavements and civil structures, must meet or exceed 50 years unless otherwise noted in *11: Design Life Requirements*.
- (b) Project Co must ensure that the civil and stormwater works, including their materials and components, are capable of performing over their Design Life at the prescribed level of safety and serviceability. The civil and stormwater works must be capable of resisting all actions which they may reasonably be subjected to.
- (c) A chartered professional engineer with the appropriate skills and experience must undertake the design of the civil and stormwater works.
- (d) The various elements within the civil and stormwater works must be provided to ensure long term durability and to achieve the specified Design Life without requiring undue maintenance.

### **G2.6.2 Site Conditions**

- (a) Project Co must design and execute the civil and stormwater works taking into account the Site Conditions including the ground, climate and exposure conditions for each Site.
- (b) Site Conditions likely to be encountered are generally described within the site investigation reports and site summary tables contained in Schedule 6 (Information Documents).
- (c) Project Co must undertake all required investigations for each Site and areas adjacent to each Site and liaise with relevant Authorities as required for the purpose of undertaking the Development Phase Activities, at its expense.

### **G2.6.3 Earthworks**

Earthworks may be required depending on Project Co's design for the Relevant Infrastructure. In undertaking any earthworks, Project Co must:

- (a) provide an efficient and economical design that facilitates drainage and landscape development;
- (b) provide appropriate surfaces for School Activities and the safe passage of Users to and through the Site;
- (c) enhance the environmental character while maintaining the natural features of the Site; and
- (d) ensure minimal negative visual and environmental impact on adjoining properties and developments.

### **G2.6.4 Stormwater drainage**

- (a) Project Co must provide all stormwater drainage systems required to manage stormwater for the Relevant Infrastructure in accordance with relevant Quality Standards.

- (b) The stormwater drainage systems must interface seamlessly with all levels, stormwater systems, landscaping and structures on adjacent sites.
- (c) The stormwater drainage system must:
  - (i) ensure that, up to the 100 years ARI rainfall event, inundation of the School Facilities does not occur and the minimum freeboard is maintained;
  - (ii) ensure that the Site is able to withstand all storm events up to and including the 100 years ARI with no damage to buildings, facilities with minor damage to landscaping;
  - (iii) the Site must be designed with consideration to adjacent surface levels (including roads) and building levels so that overland flows do not affect safe access and amenity and meet the 'Safety Design Criteria' as outlined by Australian Rainfall and Runoff (ARR) Volumes 1 and 2;
  - (iv) the development of the Site must not result in the overland flow path causing flooding and damage to adjacent sites;
  - (v) the design of the overland flow path must ensure the safety of pedestrians including the maximum depth and velocity of the flow;
  - (vi) where overland flow paths cannot be created, an underground drainage system must be provided to cater for all flows;
  - (vii) for all overland flow paths:
    - (A) erosion control measures must be implemented including at outlets, cuttings, embankments and surface drains; and
    - (B) sediment control measures must be in place both during the Development Phase and for the final asset.
  - (viii) manage overland flows to provide convenient and safe access on all roads and paths within the Site for pedestrians and traffic, and to maintain serviceability of the Sports Oval, Hard Courts and courtyard areas; and
  - (ix) enable stormwater to be stored or infiltrated into the ground within the Site boundary.

#### **G2.6.5 Stormwater pits and grates**

- (a) Stormwater pits must be located at the low point on the pavement and landscaping areas to avoid water ponding.
- (b) Pits must not be located in front of the entry and exit to the buildings.
- (c) Pit covers and their specification including class and load rating must comply with all relevant Quality Standards.
- (d) Where grates are required within pathways and hard surfacing, they are slip resistant and have heel-guards.
- (e) Drainage grates in soft landscape should be located within garden beds in preference to location within turfed areas.

- (f) Pits and covers must be located so as to provide full access for servicing and maintenance.
- (g) Where grated pits or trench grates are provided, they must be flush with adjacent landscape treatments and comply with the requirements of all relevant Quality Standards and relevant Authorities.

#### **G2.6.6 Environmental issues**

- (a) Project Co must undertake independent investigation of environmental issues within and immediately adjacent to each Site in addition to information included within this Design Brief.
- (b) The design must meet the requirements of the *Contaminated Sites Act 2003*, and if there is any suspicion or knowledge that the Site may be Contaminated, all actions required by Law must be implemented.
- (c) Any excavated material that is not required on Site must be disposed of in compliance with all relevant Quality Standards and Laws.
- (d) Should acid sulphate soils be discovered within the Site boundary, Project Co must adhere to the guidelines published by the DER.

#### **G2.6.7 Pavements, roadways and pedestrian paths**

- (a) All pavements must be provided in accordance with relevant Quality Standards and Authority requirements. This includes pavements for all roads, embayments, paths and hardstand areas, including permanent vehicle parking areas and pedestrian assembly areas.
- (b) Project Co must design all pavements with appropriate materials, types, layer thicknesses and configurations to provide safe, all weather access.
- (c) Project Co must ensure that all pavements perform adequately in terms of structural capacity, and requires minimal maintenance under the anticipated traffic loading for the specified Design Life.
- (d) The design traffic must be calculated based on the Design Life specified for each pavement type in *11: Design Life Requirements*.
- (e) Design traffic must be calculated in equivalent standard axles, or standard axle repetitions for each pavement layer in the *AustRoads Mechanistic Pavement Design* procedure, for the applicable Design Life of the pavement. This must take into account present and predicted traffic volumes, axle loadings and configurations, traffic growth and street capacity.

#### **G2.6.8 Co-ordination with existing services**

- (a) Project Co must inform itself in relation to below ground services (including Utility services) within and immediately adjacent to the Site that may require diversion or alteration as a result of the proposed design.
- (b) Project Co must verify the position of surface or above ground features and services (including Utility services) that may be affected by the proposed design, to ensure all associated features and services (including Utility services) that may require diversion, alteration or relocation works are addressed in the proposed design.

### **G2.6.9 ESD**

- (a) ESD initiatives must be incorporated within the civil works for the Project. The design of the civil works must achieve the desired Project objectives for the least economic, social and environmental cost over its Design Life.
- (b) Project Co's civil and stormwater consultant and design team must work together to ensure that operational costs are optimised using the GBCA's Green Star – Education tool to benchmark the design's attributes.
- (c) Refer to *E6: Ecologically Sustainable Design* for further detail on ESD performance requirements.

### **G2.6.10 Maintainability**

Project Co must consider and minimise maintenance implications arising from:

- (a) the potential for vertical settlement, differential settlement, and lateral movements due to Site Conditions at the Site;
- (b) the selection of materials including bases, sub-bases and surface finishes;
- (c) the extent and type of drainage provided;
- (d) the type of construction used;
- (e) social considerations, including the potential for accidental and intentional damage;
- (f) the nature and effect of all vehicle and pedestrian traffic likely to be experienced over the Design Life of each component; and
- (g) the ground water levels, which can impact the sub-base for pavements, Engineering Services and underground structures and facilities.

### **G2.7 Construction**

- (a) Design and construction activities must be planned and executed so as to ensure the safety and stability of any excavations and structures during construction. Where required, temporary propping and shoring must be designed and inspected by an appropriately experienced chartered professional engineer prior to its being loaded, to ensure it is capable of safely supporting the required loads.
- (b) Safe work method statements and logistic plans must be undertaken for all civil and stormwater works.

### **G2.8 Existing infrastructure and services**

- (a) The design and construction activities for the proposed School Facilities must be planned and executed so as to ensure the structural safety and stability of any existing buildings, structures, infrastructure or services.
- (b) Project Co must determine the requirement for the surveying and monitoring of existing buildings, structures, infrastructure or services to validate any assessment of the impact of the works on these existing structures and services.

## **G3. STRUCTURAL ENGINEERING**

### **G3.1 General**

- (a) This Section sets out the requirements for the structural engineering aspects of the Project.
- (b) The structural works must be designed, constructed, commissioned and completed in accordance with Best Industry Practices with emphasis on sustainability, adaptability, reliability and allowance for future expansion.
- (c) The structural works must integrate seamlessly with all other elements of the School Facilities and Relevant Infrastructure, including the architecture, building interior and Engineering Services. They must continue to perform together as intended by the design and functional requirements over the Design Life of the Project.
- (d) Project Co must undertake independent investigation of Site Conditions within and immediately adjacent to each Site in addition to information included in the master plan reports, site investigation reports included in Schedule 6 (Information Documents).

### **G3.2 Scope**

The scope of the structural works for each Stage includes the design, construction, commissioning and completion of the structural components for all Relevant Infrastructure and includes:

- (a) piles, pile caps and footings;
- (b) columns and walls;
- (c) slabs and suspended slabs;
- (d) lift cores and stair shafts;
- (e) roof steelwork;
- (f) retaining walls;
- (g) precast concrete elements;
- (h) block walls;
- (i) platforms and plinths for Engineering Services Plant and Utilities;
- (j) access gantries; and
- (k) handrails and balustrades.

### **G3.3 Site Conditions**

- (a) The design and construction of the structural works must take into account all Site Conditions.
- (b) The design must be appropriate to the prevailing Site geotechnical conditions and comply with all recommendations of Project Co's geotechnical investigations.

### **G3.4 Authorisations**

Project Co must obtain and comply with all required Approvals and relevant Authority requirements associated with the structural works for the Project.

### **G3.5 Quality Standards and Laws**

- (a) Project Co must comply with all relevant Quality Standards and Laws, including:
- (i) all relevant Australian Standards, including:
    - (A) AS/NZS 1170.0 – General Principles;
    - (B) AS/NZS 1170.1 – Permanent, imposed and other actions;
    - (C) AS/NZS 1170.2 – Wind Action;
    - (D) AS/NZS 1170.4 – Earthquake actions in Australia;
    - (E) AS1657 – Fixed Platforms, walkways, stairways and ladders;
    - (F) AS 1720 – Timber Structures;
    - (G) AS 2312 – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings.
    - (H) AS 3600 – Concrete Structures;
    - (I) AS3735 – Concrete Structures Retaining Liquid;
    - (J) AS3959 – Construction of Buildings in Bushfire Prone Areas;
    - (K) AS 4100 – Steel Structures;
    - (L) AS 3700 – Masonry Structures;
    - (M) AS 4312 – Atmospheric corrosivity zones in Australia; and
    - (N) AS 4678 – Earth retaining structures; and
    - (O) AS/NZS4600 – Cold-formed steel structures.
  - (ii) other relevant standards, codes and guidelines, including:
    - (A) NCC;
    - (B) all relevant MRWA standards and specifications;
    - (C) all relevant PTA guidelines and standards; and
    - (D) all relevant Austroads Standards.
  - (iii) relevant Laws, including:
    - (A) OHS Laws; and
    - (B) Health (Public Buildings) Regulations 1992 (WA).

- (b) In the event of a conflict between any of the relevant Quality Standards and Law, the more onerous requirement must apply, that being the requirement which calls for the highest standard.

## **G3.6 Performance requirements**

### **G3.6.1 Planned Design Life**

- (a) The Design Life for all structural works must meet or exceed 50 years, in accordance with *I1: Design Life Requirements*.
- (b) Project Co must ensure that the structural works, including their materials and components, are capable of performing over their Design Life at the prescribed level of safety and serviceability. The structures must be capable of resisting all actions which they may reasonably be subjected to, with an adequate reserve of strength.
- (c) A chartered professional engineer with the appropriate skills and experience must assess the adequacy of all load-bearing elements in structures.
- (d) Particular attention must be given to the deterioration of elements which cannot be easily accessed for maintenance or repair. The design must ensure that any such element has sufficient durability to achieve the minimum Design Life applicable to the whole structure without maintenance.
- (e) The minimum exposure classifications for reinforced or prestressed concrete elements must be assessed in accordance with Table 4.3 of AS 3600, Table 4.1 of AS 3735 and AS 5100 (as applicable) with regard to the Site Conditions.
- (f) For steelwork:
  - (i) all exposed steel and steel built into cavity walls, must be hot dip galvanised. Refer to *E8: Building Structure and Fabric* for further detail on steel structure requirements.
  - (ii) the corrosion systems must be designed such that the coating life to the first major maintenance must be greater than 25 years, corresponding to the extra-long term range defined in Clause 1.6 of AS 2312.
  - (iii) the corrosion protection system must comply with all relevant Quality Standards including:
    - (A) AS 4312 – Atmospheric corrosivity zones in Australia; and
    - (B) AS 2312 – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings.
- (g) The climate and exposure conditions must be considered for each specific Site, and the exposure classification of each structural material must be determined in accordance with the relevant Quality Standards and as categorised in AS 4312. As a minimum, buildings within the Perth area are classified as the following:
  - (i) shoreline – 1km: ISO Category 4 (Severe Marine); and
  - (ii) 1 km – 20km: ISO Category 3 (Marine).
- (h) Notwithstanding paragraph (g), Alkimos Primary School must be designed for ISO Category 4 (Severe Marine) conditions.



- (i) Where buildings are located in areas at risk of bushfire, Project Co must design the structure in accordance with relevant Quality Standards including AS 3959.
- (j) Project Co must design footing systems to take into account the Site Conditions including ground, climate and exposure conditions.

### **G3.6.2 Building importance level**

In accordance with the Department's guidelines and the NCC, all buildings accommodating School Staff or Students must be designed with an importance level of 3 as a minimum requirement.

### **G3.6.3 ESD**

ESD initiatives must be incorporated within the design and construction of structural works for all Relevant Infrastructure. These may include:

- (a) the use of colouring oxides and polished finishes for precast concrete elements to reduce the need for painting and ongoing maintenance;
- (b) the use of sustainable concrete mixes, including those manufactured with reduced quantities of portland cement, or supplementary cementitious materials including fly ash, slag and amorphous silica;
- (c) the use of steel with an inherent high recycled content; and
- (d) the employment of optimal fabrication techniques, including utilising precast concrete and the pre-fabrication of steel reinforcement off site.

### **G3.6.4 Flexibility, reconfiguration and expansion**

- (a) Project Co must ensure that the design of the structural framing systems facilitates future flexibility, allowing the configuration to be altered or expanded without significant additional expense or structural works.
- (b) In addition to satisfying any functional requirements, the structural grid of new buildings and column placement must be chosen to maximise future flexibility.

### **G3.6.5 Maintainability and safe design**

The structural works must be designed to facilitate safe and efficient maintenance.

### **G3.6.6 Minimum design loads and actions**

- (a) Minimum design loads and actions must comply with requirements of relevant Quality Standards including AS 1170.
- (b) The structural design loads adopted and the relevant structural loading codes, must be recorded on the structural drawings.

### **G3.6.7 Serviceability requirements**

- (a) Project Co must determine appropriate deflection limits, taking into consideration the suggested serviceability limits as outlined in relevant Quality Standards including AS/NZS 1170.0 – Table C1, AS 3600 – Table 2.3.2 and AS 4100 – Appendix B.

- (b) As a minimum, for structural elements supporting operable walls, the cumulative incremental deflection (after installation of the operable wall) of the structural elements must not exceed 5mm under any load combination.

### **G3.6.8 Movements**

- (a) Movement joints must be provided as required to control expansion and contraction from thermal changes, and in areas of concrete construction to control shrinkage and creep.
- (b) These movement joints must be continuous through façade elements, floor and wall finishes and must facilitate the articulation of the structure for expected differential settlements and lateral movements.
- (c) Movement and control joints must be designed to integrate with the associated architectural elements and finishes. Refer to *E8: Building Structure and Fabric* for further details on movement and control joint requirements.

### **G3.6.9 Retaining structures**

A geotechnical investigation must be undertaken to determine geotechnical design parameters. Appropriate surcharge loading must be applied, including provision for traffic loads where traffic can pass close to a retaining wall.

### **G3.7 Construction**

- (a) The design and construction activities must be planned and executed so as to ensure the structural safety and stability of all buildings and structures during construction. Where required, temporary propping and shoring must be designed and inspected by an appropriately experienced chartered professional engineer prior to its being loaded, to ensure it is capable of safely supporting the required loads.
- (b) Safe work method statements, construction sequences, lifting and logistic plans must be undertaken for all structural works.
- (c) Construction loads must not exceed the design imposed loads.

### **G3.8 Existing structures and services**

- (a) The design and construction of the Relevant Infrastructure must ensure the structural safety and stability of any existing adjacent buildings, structures, infrastructure or Engineering Services.
- (b) Project Co must determine the requirement for the surveying and monitoring of existing buildings, structures, infrastructure or Engineering Services to validate any assessment of the impact of the works on these existing structures and Engineering Services.

## **G4. HYDRAULIC SERVICES**

### **G4.1 General**

- (a) This Section sets out the requirements for the hydraulic engineering aspects of the Project.
- (b) The hydraulic works for the Project must be carried out in accordance with Best Industry Practices with emphasis on sustainability, adaptability, reliability and allowance for future expansion.
- (c) The following forms the hydraulic services' scope of works for the Project and any hydraulic requirements are to be read in conjunction with *G7: Fire Services and Fire Engineering*.

### **G4.2 Scope**

The scope of the hydraulic services works for each Stage includes the design, construction, commissioning and completion of the hydraulic services components for all Relevant Infrastructure, and includes:

- (a) external site sewer drainage;
- (b) external site potable water services;
- (c) external site fire services;
- (d) external site natural gas services;
- (e) external industrial waste services;
- (f) building sanitary drainage services;
- (g) building hot and cold water services;
- (h) building stormwater services;
- (i) building natural gas services; and
- (j) building industrial waste services.

### **G4.3 Summary**

- (a) Sewer drains should be a gravity piped system, although localised pumping may be required where needed.
- (b) Industrial waste treatment is required to serve localised areas including Kitchens and laboratories in accordance with relevant Quality Standards and Best Industry Practice.
- (c) Subject to section G.4.5.3.1(f)(i) & (ii) of this Design Brief water services must be mains pressure fed, and generally consist of a ring main throughout the Site. Adequate isolating valves must be provided, and appropriate back flow prevention devices must be installed. Project Co must investigate and consider existing flow pressure and make reasonable allowances for the reduction of pressure.

- (d) Project Co must provide a water service terminated at an isolation valve at the boundary of the Transportable Unit Zone for all School Facilities, sized to service the maximum number of Transportable Units detailed in *C4: Future Development and Expansion*.
- (e) Sanitary fixtures and tapware must be WELS rated to conform to the equivalent requirements of a 4 Star Green Star Education V1 certified project. Refer to *E6: Ecologically Sustainable Design*. Hot water units must be point of use instantaneous type in order to meet the same requirements.
- (f) Stormwater must be contained on site and connect to the civil drainage, or be localised in areas by using soakwells. Stormwater may be recycled to be used in wet areas and/or landscape reticulation.
- (g) Natural gas services must be provided by a reticulated piped system to serve designated areas.

#### **G4.4 Quality Standards and Laws**

All Engineering Services must comply with all relevant Quality Standards and Laws including:

- (a) all relevant Australian Standards, including:
  - (i) AS 3500.2 – Plumbing and Drainage;
  - (ii) AS 1432 – Copper Tubes for Plumbing, Gasfitting and Drainage Applications; and
  - (iii) AS 5601 – Gas Installations.
- (b) the Water Services Licensing (Plumbing Licensing and Plumbing Standards) Regulations; and
- (c) requirements of the relevant Authority.

#### **G4.5 Design guidelines**

##### **G4.5.1 Site sanitary drainage**

###### **G4.5.1.1 Generally**

- (a) All Site sanitary drainage must be by a piped gravity system connecting to a boundary point(s) as supplied by the relevant Authority.
- (b) Project Co must provide a gravity fed sewer terminated or capped at a termination point at the boundary of the Transportable Unit Zone for all School Facilities, sized to service the maximum number of Transportable Units detailed in *C4: Future Development and Expansion*. Sewer lines must be installed at appropriate levels to avoid the use of pump pits.
- (c) Sanitary drainage piping and components must be uPVC except for industrial waste drains which must be HDPE.
- (d) Adequate allowance throughout the system must be made for maintenance purposes. This may be achieved by manholes, maintenance shafts, cleanouts in boxes or any combination of the same. Furthermore:
  - (i) all access points must be accessible from adjoining finished surface levels;

- (ii) clean out points inside buildings should be avoided; and
- (iii) where paragraph (ii) is not achievable, clean out points must be located in areas which cause minimal disruption to School Activities and have adequate access for drain cleaning equipment.

#### G4.5.1.2 Sewerage pumping station

Where private sewerage pumping stations are required to supplement the gravity system, the pumping station must include:

- (a) concrete or polyethylene tank construction suitable for the Site Conditions in which they are installed;
- (b) dual pumps, duty and standby;
- (c) a control panel that is weatherproof, suitable for external locations and be remotely monitored; and
- (d) a combined drainage system and pumping station with a three hour holding capacity in the case of a power failure.

### G4.5.2 Soil, waste and vent pipes

#### G4.5.2.1 Generally

- (a) Soil, waste and vent pipes must be uPVC, except for industrial waste discharges which must be:
  - (i) HDPE;
  - (ii) capable of receiving discharges at temperatures of 100C°; and
  - (iii) acid resistant for general laboratory use.
- (b) Fire rating integrity must be maintained throughout the structure.
- (c) Exposed fixture waste pipes in frequently maintained areas must be chromium plated copper with chromium plated copper traps and chromium plated flanges with disconnecter union.

#### G4.5.2.2 Industrial waste

- (a) Industrial waste discharges must be treated and comply with the current requirements of the relevant Authority. Areas requiring treatment include Kitchens, Canteens, Science Laboratories, technical workshops, photographic processing areas and any other special areas deemed necessary.
- (b) A drain/backwash point must be provided for Hydrotherapy Pools.

#### G4.5.2.3 Special requirements

- (a) Grease traps must be installed in all Kitchen, Canteen and Cafeteria areas.
- (b) Dilution pits must be installed in all Science Laboratories.
- (c) Connection to a dilution pit and grease trap from the Transportable Unit Zone must be provided for all secondary School Facilities, or a dedicated and separate dilution

pit and grease trap to service the Transportable Unit Zone, sized to service the maximum number of relevant Transportable Units detailed in *C4: Future Development and Expansion*. Project Co must provide and maintain permanent access to all dilution pits and grease traps for Services Requirements.

- (d) The State must be consulted to determine areas which discharge any toxic chemicals and toxic waste water. The industrial waste section of the relevant Authority must be consulted to determine specific discharge and treatment requirements.
- (e) Waste drains must be provided for all evaporative coolers.
- (f) Plaster traps and clay traps must be provided to all visual arts studios.
- (g) Practical troughs in all Primary Schools must be provided with removable primary strainers and fixed secondary strainers.

### **G4.5.3 Domestic cold water service**

#### **G4.5.3.1 Generally**

- (a) The domestic cold water service must consist of a ring main and branch lines to serve Functional Areas and Functional Units in accordance with the RDS.
- (b) Isolating valves must be provided for maintenance purposes to minimise disruption to School Activities and to facilitate maintenance in accordance with Schedule 27 (Services Specifications).
- (c) Domestic cold water services materials must be polyethylene PE100 PN12.5 (external services only), copper tube Type B, cross linked polyethylene (internal only), and or a combination of both.
- (d) Connection points must be at a designated location at the boundary, as supplied by the relevant Authority.
- (e) Potable water boundary connection pressure and flow tests must be undertaken and must allow for possible future pressure reductions and all service piping sized in accordance with relevant Authority requirements.
- (f) Project Co must:
  - (i) provide appropriate measures and/or equipment to maintain a minimum water pressure of 300kPa and to counteract any future loss of water pressure and flow from the Water Corporation supply that may affect equipment provided by Project Co as part of the School Facility at the following Sites:
    - (A) Landsdale PS;
    - (B) Lakelands SS; and
    - (C) Hammond Park SS.
  - (ii) for all other Sites, provide all the necessary capped infrastructure interface connection points, for the relevant Engineering Services, to a dedicated stand area, for the future provision of the necessary equipment by the State, in order to maintain a minimum pressure of 300kPa.

- (g) Backflow prevention devices must be provided in accordance with relevant Authority policies and regulations. The back flow prevention assembly for the domestic cold water service and the fire service must be located in the same boundary enclosure.

#### G4.5.3.2 Water metering

Submeters must be installed to Functional Areas or Functional Units which utilise a significant proportion of the overall water consumption for a School Facility. Refer to *E6: Ecologically Sustainable Design* for further detail on water metering requirements.

#### G4.5.3.3 Special requirements

- (a) Isolating valves and strainers must be provided adjacent to each building in accessible locations.
- (b) An isolating valve, designed and installed by a Hydrotherapy Pool specialist Subcontractor, must be provided for the Hydrotherapy Pool.
- (c) Mains pressure water must be provided to evaporative coolers.
- (d) Project Co must design for mains pressure watering if it is required for landscape reticulation.

#### G4.5.4 Domestic hot water service

- (a) Domestic hot water must be generated by localised point of use hot water units. Units may be electric instantaneous, gas or a combination of both and have an energy rating of not less than 4 Star on the energy rating labelling scheme.
- (b) Domestic hot water must be supplied to all School Staff Areas, showers and specialised Learning Areas as per the RDS. Unless specifically briefed otherwise, temperature must be regulated to:
  - (i) 50°C for School Staff Areas and those Kitchen areas accessible to Students;
  - (ii) 65°C cleaner's stores and other Kitchen areas; and
  - (iii) 45°C for all other areas.

#### G4.5.5 Sanitary fixtures and tapware

##### G4.5.5.1 Generally

All sanitary fixtures and tapware must be first quality, approved for use in Australia and be suitable for the purpose for which they are intended.

##### G4.5.5.2 Water efficiency

Sanitary fixtures and tapware must be WELS rated to conform to the equivalent requirements of a 4 Star Green Star Education V1 certified project.

#### G4.5.6 Stormwater, roof drainage, gutters and downpipes

##### G4.5.6.1 Generally

- (a) All stormwater drainage must be by a localised piped gravity system and stormwater must be contained on Site. Refer to *Part G2: Civil and Stormwater* and *Part F: Landscape Specifications* for further detail on stormwater drainage requirements.

- (b) Allowance must be made throughout the stormwater drainage system for maintenance purposes, including manholes, maintenance shafts, clean out points or any combination of the same. All access points must be assessable from finished surface levels.
- (c) All roof drainage, eaves gutters and downpipes must be designed for a minimum 50 year ARI storm event. Refer to *Part E8.5.3: Roof drainage, gutters and downpipes* for further detail on roof drainage requirements.
- (d) Box gutters, where used, must be designed for a minimum 100 year ARI storm event and located outside the building line. Gutters which are located over eaves linings must have overflow provisions that are provided through the eaves linings from the gutters.

#### G4.5.6.2 Recycled stormwater

Where the recycling of stormwater is an option, the quality of water must meet the requirements of the relevant Authority. Areas of use must be determined on a Site specific basis, but are generally to be restricted to reuse in wet areas and for landscape reticulations.

### G4.5.7 Gas service

#### G4.5.7.1 Natural gas service

- (a) The natural gas services within the Site must consist of a low pressure ring main and subsequent branch lines to serve each of the Functional Areas and Functional Units as set out in the RDS, and be directly fitted with a pressure proving system. The natural gas services must avoid the use of gas booster devices.
- (b) Project Co must provide a gas service terminated at an isolation valve at the boundary of the Transportable Unit Zone of Secondary Schools, sized to service the maximum number of relevant Transportable Units detailed in *C4: Future Development and Expansion*.
- (c) Adequate isolating valves must be provided for maintenance purposes.
- (d) Materials must be uPVC Class 100 (external services only), copper tube Type B, and or a combination of both.
- (e) The connection point must be at a designated location at the boundary as supplied by the relevant Authority. Adequate space must be allowed to install a master meter at the boundary.
- (f) Each Learning Area supplied with natural gas outlets must have its own pressure proving system complete with integral emergency gas knock out adjacent to the teaching position, with a second emergency gas knockout located elsewhere in the room. The pressure proving control unit must be key operated only and include isolation of the system that is student tamperproof. The test mode operation must be via the key system and must not require the operator to maintain pressure on a test button. The maximum test time of each system must be 35 seconds. Correct gas lighting procedure and gas warning signage must be provided in prominent positions for the attention of Teaching Staff and Students.
- (g) All underground gas service piping must be adequately protected from vehicular activity.



#### G4.5.7.2 Gas metering

Submeters must be installed to Functional Areas or Functional Units which utilise a significant proportion of the overall gas consumption for a School Facility. Refer to *E6: Ecologically Sustainable Design* for further detail on gas metering requirements.

#### G4.5.8 Hydrotherapy Pool

The Hydrotherapy Pool must include:

- (a) valved cold water make-up supply to the water treatment Plant room inclusive of back-flow prevention devices;
- (b) stainless steel safety shower and eyewash facilities to the chemical storage area;
- (c) hose cocks to the water treatment Plant room, chemical storage area and pool concourse;
- (d) general floor wastes to the water treatment Plant room, chemical storage area and pool concourse;
- (e) tundishes for the drainage of equipment;
- (f) the connection to waste of the balance tank overflow pipe;
- (g) waste water disposal to the sewer via an industrial waste sampling point; and
- (h) valved and regulated gas supply to the pool heater.

## **G5. MECHANICAL SERVICES**

### **G5.1 General**

- (a) Project Co must provide the mechanical services installations, including heating, ventilation, cooling and natural gas.
- (b) The design of the mechanical services must consider:
  - (i) the microclimate of each Site;
  - (ii) the building form and orientation of spaces;
  - (iii) the thermal performance characteristics of the buildings;
  - (iv) the occupancy trends;
  - (v) the requirements for ongoing maintenance; and
  - (vi) the restrictions on pollutant emissions.
- (c) Each Functional Unit must be capable of providing a comfortable internal environment without mechanical heating or cooling on mild days.
- (d) Project Co must provide mechanical services in accordance with the requirements of the RDS, local climatic conditions, Bushfire Attack Level as per AS 3959 and potential coastal corrosion conditions.
- (e) Project Co must provide mechanical services that:
  - (i) use Plant space effectively;
  - (ii) include effective and easy to use control systems;
  - (iii) are flexible and adaptive to both spatial function and integration of future technology;
  - (iv) are economical, both in terms of capital and operation cost;
  - (v) are easily and safely maintained;
  - (vi) demonstrate a good response to ESD considerations in accordance with E6: Ecologically Sustainable Design;
  - (vii) minimise noise;
  - (viii) have an appearance which integrates with the building aesthetics;
  - (ix) minimise interference with user events and occupancy usage;
  - (x) minimise mechanical services response times;
  - (xi) maximise vandal and damage resistance; and
  - (xii) integrate with Utilities submetering.
- (f) Project Co must consider energy efficient mechanical Plant design and construction strategies, including:

- (i) systems that incorporate economy cycles and the potential for night purging;
- (ii) alternative energy efficient heating and cooling systems, including geothermal or groundwater cooling;
- (iii) adequate signage must be installed to describe the type of heating and cooling and optimum room management;
- (iv) the use of heat-recovery systems; and
- (v) HVLS fans, which are strongly recommended in Covered Assembly Areas, Sports Halls and workshop areas.

## **G5.2 Scope**

The scope of the mechanical services works for the Project includes the design, construction, commissioning and completion of the mechanical services components for all Relevant Infrastructure, and include:

- (a) heating systems;
- (b) ceiling fans;
- (c) cooling systems;
- (d) air conditioning systems;
- (e) general ventilation systems;
- (f) dedicated industrial ventilation systems;
- (g) Cool Rooms and freezers;
- (h) natural gas fuel supplies;
- (i) Hydrotherapy Pool ventilation;
- (j) ductwork;
- (k) pipework; and
- (l) control systems.

## **G5.3 Quality Standards and Laws**

Project Co must comply with all relevant Quality Standards and Laws, including:

- (a) all relevant Australian Standards, including:
  - (i) AS 2913 – Evaporative Air Conditioning Equipment;
  - (ii) AS 3823 – Performance of Electrical Appliances;
  - (iii) AS 1668 – The Use of Air Conditioning in Buildings;
  - (iv) AS 2107 – Acoustics: Recommended Design Sound Levels and Reverberation Times for Building Interiors; and

- (v) AS 2243 – Safety in Laboratories.
- (b) all relevant Authority requirements;
- (c) the Dangerous Goods Act 1985 requirements for chemical and flammable stores;
- (d) the Australian Institute of Refrigeration, Air conditioning and Heating (AIRAH) Guidelines;
- (e) the American Society of Heating, Refrigerating and Air-Conditioning Engineers Guidelines; and
- (f) the Chartered Institution of Building Services Engineers Guidelines.

### **G5.3.1 Ambient design requirements**

- (a) Project Co must utilise the following minimum ambient design condition requirements for the sizing of any mechanical system equipment:
  - (i) Summer: 36.6°C DB/22.4°C WB; and
  - (ii) Winter: 7°C DB/100% RH.
- (b) The equipment must be capable of safe and stable control and operation within the limits of the following extreme conditions:
  - (i) Summer: 46°C DB/28°C WB; and
  - (ii) Winter: 0°C DB/100% RH.

### **G5.3.2 Internal design requirements**

- (a) Generally, and unless specified elsewhere in this Design Brief, Project Co must comply with the following indoor temperature requirements for areas serviced by reverse cycle airconditioning (summer) and areas serviced by reverse cycle or gas heating (winter):
  - (i) summer: 24°C DB/60% WB (+/- 2 °C DB); and
  - (ii) winter: minimum of 21°C DB.
- (b) In Learning Areas where evaporative cooling is provided, the maximum temperature must not exceed 28°C for more than four hours per day for ten days in any Academic Year.
- (c) Heating is not required in the following areas, and are exempt from complying with G5.3.2(a)(ii) above:
  - (i) Sports Halls;
  - (ii) Change Rooms;
  - (iii) Covered Assembly Areas;
  - (iv) Internal Activity Areas;
  - (v) Canteens;

- (vi) Metalwork Workshops;
- (vii) Machine Rooms;
- (viii) Senior Engineering Workshops;
- (ix) Senior Construction Workshops;
- (x) Enclosed Eating Areas; and
- (xi) Foyer and Queuing Areas.

## **G5.4 Heating**

- (a) The heating system must:
  - (i) minimise warm up time;
  - (ii) respond to Functional Unit occupancy patterns;
  - (iii) have effective control systems complete with thermostatic control;
  - (iv) maximise the efficiency of systems, particularly in part load circumstances;
  - (v) consider the proposed building fabric and compliance with NCC Part J requirements;
  - (vi) respond to solar gain and other passive design options, especially in north facing Functional Units; and
  - (vii) consider the efficient zoning of the buildings.
- (b) Heating systems must be designed to maintain an even temperature within the space and include the use of high efficiency sweep ceiling fans.

### **G5.4.1 Heating system requirements**

Project Co must provide heating systems that comply with the following requirements:

- (a) systems must be robust, durable, easy to clean, secure, and enable inspection for damage;
- (b) systems must be designed to be flexible and adaptive, both for spatial function and the integration of future technology;
- (c) redundancy must be designed into the systems to meet peak occupancy, and to ensure that the School Facility can function when minor failures of the system occur;
- (d) systems must be simple to operate, and have the capability to operate in zones to allow flexible use by School Staff, without loss of energy efficiency. Energy utilisation must be maximised for zonal out of hours use within the capacity of the heating Plant;
- (e) where applicable, central heating systems with re-circulating air or return-air must not be used in areas where dust, fumes or odours are generated;
- (f) Engineering Services for heating must be aesthetically integrated with the architecture;

- (g) Engineering Services for heating must minimise disruption to the School Activities in instances of minor failure or routine maintenance;
- (h) Engineering Services for heating must be accessible for maintenance and repair and must be available without major disruption to the building structure. Piped water or gas main service routes must avoid rooms or areas where leaks would cause considerable disruption and financial loss;
- (i) surface temperatures of heat, emitters and associated pipework must be safe and not cause injury;
- (j) excessive vertical temperature gradients must be avoided, and the temperature 2.0 metres AFL must not exceed a 3°C differential from floor level; and
- (k) zoned systems must be matched to occupancy areas and have variable temperature controls including individual thermostatic controls to each Functional Unit.

#### **G5.4.2 Ceiling fans**

- (a) Project Co must provide high efficiency ceiling sweep fans to all occupied Functional Units. The minimum height of the ceiling fans (as measured from the underside of the fan blades) must be 2.7 metres from the finished floor level.
- (b) Ceiling fans must be mounted clear of lights, and avoid a stroboscope effect through location or the specification of fans with clear blades.
- (c) In Sports Halls, full natural ventilation may be assisted by means of simple roof mounted extraction fans or the use of HVLS fans.
- (d) One robust control station per fan with a minimum three speed settings in forward and reverse direction must be provided.

#### **G5.4.3 Fuel source**

Project Co must:

- (a) use natural gas in preference to LPG and electricity; and
- (b) not use LPG when natural gas is available on Site.

#### **G5.4.4 Plant and equipment**

- (a) Project Co must comply with the following:
  - (i) all Plant and equipment must be energy efficient and have a minimum 4.8 star rating on the energy rating labelling scheme, or better if a star rating is available;
  - (ii) inside air must not be used for combustion and adequate ventilation must be provided in accordance with relevant Quality Standards and Laws;
  - (iii) gas fired Plant must not produce unacceptable nitrous oxide (N<sub>2</sub>O) pollution;
  - (iv) gas fired heating Plant must permit N<sub>2</sub>O at a rate no greater than 200mg/kWh of delivered energy;

- (v) individual Functional Unit heaters must be thermostatically controlled, power flued, forced convection console types;
  - (vi) where equipment is located externally at ground level, it must be complete with enclosures or protective screens and warning notifications that provide adequate protection from hot surfaces, moving parts and unauthorised access;
  - (vii) high efficiency condensing boilers should be considered where centralised systems are being proposed;
  - (viii) Plants are not to be oversized, or inefficient when operating at low capacity; and
  - (ix) gas Plants must have electronic ignition.
- (b) Project Co must provide the following features to Plant and equipment:
- (i) heat recovery modules in heated areas where there are high ventilation rates; or where lifecycle assessment determines this would be cost effective; and
  - (ii) local timer controls with temperature sensing to avoid overheating.

#### **G5.4.5 Heating system controls**

Project Co must comply with the following:

- (a) heating system controls must be located within a lockable control panel, complete with a run-on pre-programmed factory set timer, set for two hours;
- (b) the thermostat setting must be adjustable;
- (c) heating system controls must be reliable, robust and tamperproof. They must be accessible and easy to use by School Staff only; and
- (d) heating systems must safely shut-off during a power failure and ensure that the resetting of the system is a simple procedure.

#### **G5.5 Evaporative Cooling**

Where cooling is provided by evaporative means, Project Co must ensure that the following are complied with:

- (a) evaporative coolers must be of down or side discharge type, in accordance with relevant Quality Standards including AS 2913;
- (b) controllers must incorporate variable speed controls;
- (c) evaporative coolers must be located in areas that are the least visually obtrusive;
- (d) centrifugal fans should be provided in place of axial fans for acoustic reasons;
- (e) sump dump systems with adjustable time delays must be provided to minimise unwanted dumping between operating sessions;
- (f) vandal resistant drain valves must be installed immediately above the low level cold water supply isolating valve to each block;

- (g) engraved signage must be provided above each system controller stating that relevant openings must be maintained while systems are running;
- (h) electrical or gravity driven shut-off dampers, complete with spring return type damper motors, must be provided to shut the damper upon power failure. Consideration must be given as to use of appropriate damper material in down discharge units and bush fire prone areas;
- (i) evaporative coolers installed in areas deemed to be at risk of bushfire and ember attack must be fitted with ember guards;
- (j) supply air diffusers must be positioned to avoid excessive airflow over desks;
- (k) a two hour run-on timer switch for each room; and
- (l) indirect evaporative cooling is provided to the Information Resource Centre, including the Reception Area, Staff Common Rooms and Student Group Room, for each Secondary School, except Harrisdale Secondary School.

## **G5.6 Refrigerated Air conditioning**

Project Co must provide energy efficient, low maintenance air conditioning to Functional Units where required in the RDS.

### **G5.6.1 General requirements**

Air conditioning systems must comply with the following requirements:

- (a) units must be inverter driven reverse cycle;
- (b) units serving Learning Areas must be sized to maintain a room condition of 26°C when fully occupied at design ambient conditions, in accordance with the requirements of relevant Quality Standards including AS1668.2;
- (c) system operation must be push button control with adjustable two hour run-time;
- (d) there must be no pump condensate drains; and
- (e) outdoor units must be located to minimise visual impact, noise, potential for vandalism, and to optimise their function including for a clear intake and minimising air recycling.

### **G5.6.2 Communications Room**

The air conditioning to each Communications Room must be:

- (a) a standalone system;
- (b) a wall mounted air-conditioning unit or similar;
- (c) be sized to maintain a room condition of 24°C DB, at design heat loads, plus 20%;
- (d) operable 24 hours a day, 7 days per week;
- (e) a cooling only inverter drive type;
- (f) exclusive of pump condensate drains;



- (g) a unit that incorporates an auto re-start following power failure; and
- (h) installed with capacity to meet the design load plus 20% for future expansion.

## **G5.7 Ventilation**

- (a) While the majority of each School Facility must be naturally ventilated in accordance with the relevant Quality Standards and Laws, areas including internal toilets, specialist rooms, science rooms fume cupboards and other areas may require mechanical extraction to achieve the exhaust rates.
- (b) Project Co must provide as a minimum a 150% improvement to outdoor airflow rates, and natural ventilation air quantities in accordance with relevant Quality Standards.
- (c) The location of fresh air intakes must avoid:
  - (i) close proximity to obnoxious exhausts;
  - (ii) close proximity to loading areas;
  - (iii) close proximity to ground level or trafficable external spaces (intakes must be a minimum of 3 metres above these areas);
  - (iv) close proximity to exhaust and fume discharges; and
  - (v) the risk of air recirculation under prevailing wind conditions.
- (d) Project Co must comply with the following ventilation design requirements:
  - (i) supply rates must be in accordance with AS 1668.2;
  - (ii) extract rates must be based on appliance or canopy velocity. Air changes per hour as a design methodology must be avoided (excluding toilets);
  - (iii) all exhaust air system discharges must be located remote from air intakes and be in accordance with relevant Quality Standards;
  - (iv) make up air to all areas must be via natural means, assisted by the extraction system if necessary. Permanent vents must be provided that are independent of the window systems in all areas;
  - (v) all fans must be operated through variable speed controllers;
  - (vi) extract ventilation must be through wall or ceiling grilles and not through floor grilles or door transfer grilles;
  - (vii) systems must be localised with minimum ducting and local exhaust louvers. Ductwork from one Teaching Space or habitable room must not continue through adjacent Teaching Spaces and habitable rooms;
  - (viii) extract ventilation rates for toilet areas must be increased by 50% when drawn from an ambient source, or a minimum of 20% greater than that detailed in AS1668.2-1991 when drawn from a heated or conditioned space (unless additional is available to balance the required outside air supply ventilation). Treated mechanical supply air directly to toilet area is not an acceptable design solution;

- (ix) toilet extract fans must have duty and standby configuration;
- (x) acoustic linings and attenuators must be provided to meet the requirements of *G8: Acoustic Services*;
- (xi) mechanical ventilation for internal toilet areas must be controlled with the lighting switch and include an adjustable two hour run on timer. All toilets must have permanent natural ventilation in addition to any other ventilation. Ventilation control in toilet areas must be based on a minimum eight air changes per hour and may be based on presence detection in conjunction with lighting and urinal flushing controls;
- (xii) there must be no direct grilles or door grilles from toilets to an occupied space;
- (xiii) inbuilt ceiling extraction systems in food technology and School Staff Areas must be provided rather than individual hoods to each stove. The system must operate effectively in conjunction with air heating and cooling systems;
- (xiv) Kitchen exhaust ventilation including hoods must be provided to the Cafeteria and Canteen Kitchens and installed in accordance with relevant Quality Standards including AS 1668.2;
- (xv) In any other areas where cooktops are provided, exhaust hoods with integral fan and grease filters units must be provided for;
- (xvi) fume cupboards must be provided in accordance with the RDS. Fume cupboard extraction systems must be provided in accordance with relevant Quality Standards including AS 2243.8 and be integrated with the building design. Fume cupboard extract fans must not be located in Learning Areas;
- (xvii) stores and communications cupboards must have permanent natural ventilation; and
- (xviii) mechanical ventilation systems must be designed to provide a uniform distribution of ventilation and avoid the short circuiting of airflow delivery to all occupied spaces under all modes of operation.

### **G5.8 Dedicated industrial extraction systems**

- (a) Project Co must provide dedicated industrial extraction systems in accordance with all relevant Quality Standards and Laws, and includes:
  - (i) dust extraction;
  - (ii) low level exhaust system for benchtop working;
  - (iii) welding exhaust; and
  - (iv) spray booth exhaust.
- (b) Dust extraction system units must be a self contained, mechanical clean type, and provide acoustic performance, equipment security and serviceability. Each unit must include:
  - (i) a statically and dynamically balanced centrifugal mild steel fan, direct driven by a 415V, 3 phase totally enclosed, fan-cooled motor rated to a minimum of IP 54 (maximum fan speed 1440 rpm);

- (ii) woven fabric media with abrasive resistant properties, selected for optimal performance for operating cost, collection efficiency and Design Life;
- (iii) acoustic attenuation of the fan assembly and discharge ductwork;
- (iv) an electrical driven shaker assembly to clean filter media;
- (v) a bin type dust collector with robust sealing assembly; and
- (vi) an explosion relief vent with minimal ductwork and changes in direction to a safe discharge area.

### **G5.9 Cool rooms and freezers**

Cool rooms and freezers must:

- (a) be provided where indicated in the SOA and the RDS;
- (b) be of special purpose built up type, complete with integral lighting;
- (c) be openable from the inside;
- (d) have dedicated refrigerant Plant for each enclosure;
- (e) have alarms linked to dial out facilities; and
- (f) have digital temperature indication adjacent to the entry.

### **G5.10 Hydrotherapy Pool ventilation**

- (a) Project Co must provide supply and extract ventilation systems to the Hydrotherapy Pool enclosure, the pool Plant and the pool Chemical Store that:
  - (i) controls the temperature and humidity in the pool hall in relation to the pool water temperature, the comfort threshold for energy conservation and to limit water evaporation;
  - (ii) prevents condensation on the inner surface of the structure;
  - (iii) dilutes disinfectant fumes;
  - (iv) removes airborne pollutants;
  - (v) considers an appropriate duct arrangement to ensure that the space receives adequate air changes and consistent air quality throughout. This includes adequate air movement at the pool level to ensure acceptable air quality and mitigate chloramines inhalation issues;
  - (vi) maintains humidity levels at between 40-60%, to mitigate potential structural corrosion, mould and mildew growth; and
  - (vii) considers exhaust locations and the potential for corrosive extract air due to high levels of moisture which may contain high levels of chloramines compounds.
- (b) Project Co must co-ordinate the provision of mechanical services with the pool Subcontractor and associated electric and hydraulic services.

### **G5.11 Ductwork and air distribution**

- (a) Project Co must provide ductwork system design based on design parameters relating to pressure drop and velocity ranges in accordance with all relevant Quality Standards and Laws.
- (b) Balancing dampers must be provided for all take-off branch ductwork.

### **G5.12 Pipework reticulation systems**

- (a) Project Co must provide a pipework system based on design parameters relating to pressure drop and velocity ranges listed in the Australian Institute of Refrigeration, Air-conditioning and Heating guidelines.
- (b) Systems must be industry standard, Fit For Purpose and include isolation and balancing valves at each branch take-off and at each floor.
- (c) Project Co must provide a complete reticulated oxygen and acetylene system, including associated manifolds and gauges, where required for Welding Bays. One connection point must be provided for each Welding Bay nominated in Part I3: Room Data Sheets – Secondary Schools of this Design Brief, and Schedule 23 (Schedule of Accommodation) of the Deed.

### **G5.13 Flammable goods and chemical and dangerous goods storage**

Flammable, chemical and dangerous goods storage must be in accordance with all relevant Quality Standards and Laws.

### **G5.14 Noise and vibration**

The mechanical services must be designed to comply with the minimum requirements of relevant Quality Standards, including AS 2107. Refer also to *G8: Acoustic Services* for further detail on noise and vibration requirements.

### **G5.15 Refrigerants**

- (a) All Plant items using refrigerants must be selected for zero ODP and low hydrocarbon global warming potential.
- (b) Refrigerant leak detection systems should be provided, where required by Quality Standards and Laws.

### **G5.16 Thermal insulation**

All thermal insulation must avoid the use of ozone depleting substances in both its manufacture and composition, and be installed in accordance with all relevant Quality Standards and Laws.

### G5.17 Mechanical services allowance

- (a) Project Co must provide for future expansion within the School Facilities in accordance with Table 1 – *Mechanical services allowance*:

TABLE 1 – MECHANICAL SERVICES ALLOWANCE

System	Subdivision	Allowance for future expansion
Heating Plant	Installed capacity	The required capacity to satisfy Peak Enrolment student numbers: <ul style="list-style-type: none"> <li>• Primary school: 750 + 15%</li> <li>• Secondary school: 1800 + 15%</li> </ul>
	Spatials	As above
Natural Gas Supply	Capacity	As above
	Piping	As above
Fans	Capacity	As above
Evaporative Cooling Plant	Capacity	As above
Air Conditioning Plant	Capacity	As above

### G5.18 Energy and Water Management System

- (a) Where Project Co provides an Energy and Water Management System (EWMS), the system must enable Project Co to meet its Service Requirements in accordance with the Deed, including Schedule 27 (Services Specification), and as a minimum:
- (i) be a web-enabled monitoring system to enable remote (off-site) monitoring of the main electricity, water and gas metering devices and photovoltaic inverters for each building across all School Facilities, excluding the following:
    - (A) electrical meters at Primary School Dental Therapy Centres;
    - (B) photovoltaic inverters for Primary School Classroom Block 5; and
    - (C) any meters provided by Authorities;
  - (ii) be designed to monitor and manage electricity, water and gas consumption throughout an enterprise, whether within a single School Facility or across all School Facilities, to improve, measure and manage electricity, water and gas efficiency;
  - (iii) be a standard software product, with no custom programming required;

- (iv) provide multiple levels of user security;
- (v) provide the following key features:
  - (A) data acquisition for metering devices, sensors and other intelligent electric devices;
  - (B) power quality analysis (including harmonics, voltage sags/swells, transients and voltage and current sinusoids);
  - (C) power quality compliance reporting for international standards (IEC61000 4-30; EN50160);
  - (D) graphical displays of information;
  - (E) automated alarm notification via email and 'SMS';
  - (F) reporting tools with standard report templates;
  - (G) interactive historical data display and trending;
  - (H) real time data tables with standard views;
  - (I) interactive alarm analysis with standard views;
  - (J) electricity, water, gas, and photovoltaic inverter monitoring and reporting;
  - (K) power factor monitoring and reporting;
  - (L) interoperability with disparate devices and systems through OPC Client and OPC Server;
  - (M) third party device integration through Modbus RTU and Modbus TCP protocols;
  - (N) device support including factory testing;
  - (O) graphical monitoring and analysis application;
  - (P) development of simplified dashboard front pages in an application form suitable for interfacing with mobile tablets;
  - (Q) web-enabled applications, dashboards and real-time tables, graphs and pie charts per School Facility;
  - (R) web-enabled report generation; and
  - (S) event driven (automated) reporting.
- (vi) provide live and historical consumption and performance data as a read-only interface that may be used as a valuable teaching/learning tool by Users and Students, at all times;
- (vii) have battery / UPS backup to ensure continued operation in the event of a power outage;

- (viii) have the ability to monitor and trend energy consumption and peak loads, identify problematic areas including areas which have changed in usage, or areas where after hours consumption is high; and
- (b) Project Co must liaise with the Department's ICT representative to ensure that the EWMS system and relevant hardware meets all security and interface requirements on the Department's network for each School Facility.

## **G6. ELECTRICAL AND COMMUNICATION SERVICES**

### **G6.1 Electrical**

#### **G6.1.1 General**

- (a) The electrical services installation includes the electrical supply, electricity centre and main distribution, power distribution services, lighting services, infrastructure services and protective services.
- (b) In designing these services, Project Co must take into account the possibility that parts of the School Facilities will be used outside of Core Hours, and consider the provision of separate or 'smart metering' systems. The areas to be separately metered may include the Sports Hall, Covered Assembly Block, Canteen, Cafeteria, Learning Areas, specialist rooms, Hard Courts and Sports Ovals.
- (c) Project Co must provide an annual energy consumption impact assessment for each School Facility.
- (d) All School Facilities must be provided with a photovoltaic system that allows for return power to the Utilities Infrastructure grid, and includes the provision for future expansion of the system at each School Facility. Refer to section *G6.1.24 Photovoltaic Systems* for further system requirements.
- (e) The design and installation of all electrical services must be in accordance with Best Industry Practices, with an emphasis on sustainability, adaptability, reliability and allowance for future expansion.
- (f) The electrical services must be co-ordinated with the mechanical, hydraulic and irrigation consultants to incorporate cost effective automatic controls and switching systems for mechanical lighting, plumbing and irrigation systems.
- (g) Wherever possible, Project Co must use gas in preference to electricity as the heating source for water and space heating. Generally, reverse cycle air conditioning must be used to heat small spaces or where required by the Design Brief, and gas heating for larger spaces.
- (h) The design, construction, commissioning and completion of the electrical supply installations must meet the needs of the School Facilities so they are Fit For Purpose, including the requirements as set out in Schedule 23 (Schedules of Accommodation), *I2: Room Data Sheets – Primary Schools* and *I3: Room Data Sheets – Secondary Schools*.

#### **G6.1.2 Scope**

The scope of the electrical works for the Project includes the design, construction, commissioning and completion of the electrical engineering components for each of the Sites that comprise the Project, including:

- (a) consumers mains and submains;
- (b) main switchboards;
- (c) distribution boards;
- (d) energy monitoring system;



- (e) power factor correction;
- (f) lighting and general purpose power;
- (g) lighting system;
- (h) emergency and exit lighting;
- (i) underground pits and duct system;
- (j) lightning protection system;
- (k) cable ladder and tray system;
- (l) clock system;
- (m) earthing system; and
- (n) photovoltaic system.

### **G6.1.3 Quality Standards and Laws**

Electrical services must comply with all relevant Quality Standards and Laws including:

- (a) all relevant Australian Standards, including:
  - (i) AS 1158 – Lighting for Road and Public Spaces;
  - (ii) AS 1680 – Interior Lighting: Safe Movement;
  - (iii) AS 1768 – Lightning Protection.
  - (iv) AS 2053 – Conduits and Fittings for Electrical Installations;
  - (v) AS 2293 – Emergency Escape Lighting and Exit Signs for Buildings;
  - (vi) AS 3000 – Electrical Installations;
  - (vii) AS 3003 – Electrical Installations: Patient Areas;
  - (viii) AS 3008 – Electrical Installations: Selection of Cables;
  - (ix) AS 3439 – Low-voltage Switchgear and Controlgear Assemblies;
  - (x) AS 4024 – Safety of Machinery;
  - (xi) AS 4777 – Grid connection of energy systems via inverters; and
  - (xii) AS/NZS 5033 – Installation of photovoltaic (PV) arrays.
- (b) the Electricity Act;
- (c) the Fuel, Energy and Power Resources Act;
- (d) Occupational Safety and Health Act and Regulations;
- (e) the Department’s Primary School Electrical Template Drawings; and
- (f) Australian Communications Authority Regulations.

#### **G6.1.4 Incoming services**

- (a) The supply of electricity to the School Facilities will be from HV cabling reticulation through a step-down Utility Infrastructure substation / transformer located on or adjacent to the Site, as required by the relevant Authority. The incoming supply will be trenched underground as per the requirements of the relevant Authority.
- (b) The State will lodge the relevant application for the HV power connection or upgrade to each Site, including the required allocation and capacity, as determined by the State.
- (c) The State will liaise with the relevant power Authority to co-ordinate and construct the power Utility Infrastructure, including the substation/transformer to approximately but in any event no more than 2 metres from the Utility Infrastructure Connection Point.
- (d) Project Co must consider clearances between buildings and substations / transformers, in accordance with the relevant Authority requirements.
- (e) Project Co must provide incoming LV supply from the substation / transformer in accordance with the relevant Authority requirements including:
  - (i) the full design load must be in accordance with relevant Quality Standards including AS 3000;
  - (ii) electrical supply parameters must be in accordance with the relevant Authority regulations and requirements, generally 400/230V +10%/-6%;
  - (iii) the maximum THDi acceptable for the installation must not exceed 5%; and
  - (iv) the incoming mains from the substation to the main switchboard must be sized to the operational loads including the future provisions required for each School Facility..

#### **G6.1.5 Relevant Authority metering**

Project Co must provide statutory relevant Authority metering at the LV entry into a Site, in a location in accordance with the requirements of the relevant Authority.

#### **G6.1.6 Site main switchboard**

- (a) The Site main switchboard must be located contiguous to the substation or within a suitable distance.
- (b) Project Co must ensure the Site main switchboard is designed, constructed and installed in accordance with Best Industry Practices, and complies with the current and relevant Australian and Quality Standards.
- (c) The main switchboard must provide LV supplies connected to a dedicated relevant Authority transformer.
- (d) The switchboards must be designed with minimum 30% spare space capacity for future expansion.
- (e) The main switchboard must be a Form 4 modular construction design, complete with escutcheon hinged lockable doors.

- (f) Project Co must ensure that suitably sized ACB main switches are held as critical spares, and that one critical spare ACB main switch is available at all times for:
  - (i) in respect of the School Facilities in the Northern metropolitan area, 1 spare ACB main switch for the Primary Schools and Secondary Schools; and
  - (ii) in respect of the School Facilities in the Southern metropolitan area, 1 spare ACB main switch for the Primary Schools and Secondary Schools,to ensure that Project Co meets its Service Requirements in accordance with the Deed, including Schedule 27 (Services Specifications);
- (g) The main switchboard must facilitate the connection of an external alternate energy source, such as a mobile diesel generator or similar, and be located with sufficient space to accommodate the temporary external alternate energy source.
- (h) Project Co must ensure that:
  - (i) IP is provided to suit the location of the Site main switchboard;
  - (ii) fault monitoring is incorporated;
  - (iii) spare parts are provided to maintain high operational availability;
  - (iv) the busbar chambers accommodate active, neutral and earth bars. Full size earth and neutral bars must be installed;
  - (v) fire rated cabling is installed for all essential services submains; and
  - (vi) surge protection is provided to all main switchboards.

#### **G6.1.7 Building main switchboards**

- (a) The building main switchboards must have Ready Access from circulation spaces including corridors, activity areas or external spaces. Switchboards must not be accessed from occupied spaces including Learning Areas, Sports Halls or School Staff Areas.
- (b) The building main switchboards must be housed in a dedicated room or purpose built cupboard that is located on the ground floor in association with an external wall, and has internal access. The space must be located so that it does not present difficulties for services distribution from adjoining Plant spaces or rooms, and must be located to provide for economic distribution of services.
- (c) The building main switchboards must be of a metal clad cubicle design to approved standards and regulations. Each switchgear assembly must have a minimum 30% spare capacity for future use. Electronic surge protection must be provided on incoming mains.
- (d) The building main switchboards and sectional switchboards must be appropriate in items of all electrical and mechanical criteria. Main switch rooms must be two hour fire rated and contain smoke detectors (but not sprinklers).
- (e) Project Co must provide the following:
  - (i) building main switchboards that are a minimum of Form 3B type, and IP to suit installation;

- (ii) building main switchboards that are sized to the full rated capacity of transformers, preferably ground mounted on a concrete plinth;
- (iii) load arranged to suit the different load types within the complex;
- (iv) building main switchboards that are lockable with an approved lock, keyed in accordance with E8.6: Keying. A vandal resistant reinforced security clear type viewing meter window must be provided, and all fixings must prevent the window from being forced into the switchboard;
- (v) type test certificates for each form rating;
- (vi) full discrimination curves from the relevant Authority protective device to the final subcircuit protection;
- (vii) full sized neutral and earth bars in all compartments;
- (viii) neutral bars that are located within the same compartment as the active bars;
- (ix) separate energy meters located on all major loads, including lighting, power and mechanical services. Energy meters must be whole current meters for loads up to 100Amps, and CT type digital multi-functional meters must be used for loads exceeding 100Amps;
- (x) energy meters for mechanical loads to record active and reactive energy, phase to phase and phase to neutral voltage, phase and neutral current, current demand, maximum demand, power factor, maximum demand power and total harmonics;
- (xi) allowance for additional CT metering to be added to the main switchboard for future expansion;
- (xii) LV main switchboards that are each fitted with a master energy meter;
- (xiii) meters that have networking capability for connection to an energy monitoring system;
- (xiv) building main switchboards that are separated from an adjoining switchboard;
- (xv) secondary layers of insulation to all busbars passing through insulation barriers;
- (xvi) building main switchboards that are located in the room to allow 1m switchboard extensions at each end;
- (xvii) a main switch room that is equipped with a full size laminated power distribution board schematic and associated site plan where applicable;
- (xviii) building main switchboards that are fitted with front and rear access panels, or doors to suit;
- (xix) spares to each circuit breaker protective fuse and light indicator type within the main switchboard enclosure;
- (xx) space must be provided to accommodate future meters including CTs for metering;

- (xxi) circuit diagrams of the distribution systems, installed in the switch room within laminated enclosures.
- (xxii) escutcheon panels that are hinged;
- (xxiii) localised energy metering and monitoring;
- (xxiv) all main switch positions must be provided and monitored by the EWMS and automatically notifies the relevant School Facility Caretaker in the event of a power outage;
- (xxv) durable labels to all equipment, including clearly marked details of the equipment's function and designation;
- (xxvi) switchgear that is capable of being padlocked in the 'off' position;
- (xxvii) panels to the switchboards that are via lift off hinges or knurled or crowned nuts, to enable ready removal by inspection; and
- (xxviii) power factor correction that is consistent with Best Industry Practice energy conservation aims throughout the contract period.

#### **G6.1.8 Distribution boards**

Project Co must provide the following:

- (a) distribution boards that are Form 2 (greater than 200 Amps);
- (b) distribution boards that are Form 1 (less than 200 Amps);
- (c) digital electronic meters to each distribution board;
- (d) separately metered chassis for lighting and power (to enable Students to monitor power usage) to each distribution board;
- (e) distribution boards that are sized for the full number of outlets required (10% spare fitted, 25% spare being 35% total);
- (f) circuit breakers to all outgoing circuits from the distribution boards (minor control circuits can be fuses);
- (g) fault current control, achieved by the use of appropriately sized circuit breakers;
- (h) distribution boards that are located in appropriately sized, centrally located cupboards within each building or compartment served. They are not to protrude into circulation spaces, and no other Engineering Services are to be located in or cross over the electrical distribution board cupboards;
- (i) lockable doors covering all control and protection devices with hinged escutcheon cover to all distribution boards;
- (j) distribution boards that are located within the building being served with separate distribution boards provided for each building;
- (k) dedicated distribution boards to serve separate specialised load equipment (Canteens, food technology, materials technology);
- (l) separate enclosed chassis for alternative load types to all distribution boards;

- (m) RCD circuit breakers to all power and lighting subcircuits in accordance with AS 3000. RCDs must be Type II, 30mA rated with trip times in accordance with AS 3190, except in areas of increased risk where 10ma rated RCDs must be used;
- (n) at least one distribution board per fire rated compartment;
- (o) a minimum circuit breaker bus bar rating of 250 Amps;
- (p) a minimum fault interrupting capacity of 6 kA;
- (q) distribution boards and mechanical services switchboards that are labelled with the incoming submain number, rating of the circuit protective devices and the size of the incoming submains;
- (r) full detailed legends inside the distribution board, including a sachet for all lighting and power plans applicable for the distribution board;
- (s) a label on the switchboard door indicating MSB numbers, main circuit breaker size and size and description of submain;
- (t) labelling that is traffolyte and securely fixed to the doors. Sticky labels are not acceptable;
- (u) localised surge protection at each distribution board;
- (v) switchgear in all distribution boards including the MSB that is of common manufacture supply for ease of maintenance and adequacy for circuit discrimination;
- (w) balance the loads on the distribution switchboards as required under WADCM;
- (x) dog tags on critical circuits which are not to be accidentally turned off;
- (y) a distribution panel in each technology rich Functional Area. In technology rich Functional Units, no more than four stations (twelve sockets) are to be powered per RCD with appropriate MCB protection and must eliminate the risk of nuisance tripping; and
- (z) a dedicated distribution panel to all data communication centres.

#### **G6.1.9 Earthing and bonding**

- (a) The electrical installation must be earthed in accordance with relevant Quality Standards including AS 3000.
- (b) Project Co must provide earthing systems that meet the following requirements:
  - (i) separate LV earthing systems must be employed, and cross coupling of these is subject to the relevant Authority agreed earthing system;
  - (ii) separate earthing conductors must be provided with all submains and subcircuits;
  - (iii) earth impedance must be provided with test results provided on completion;
  - (iv) the earthing system must provide the ability to connect an additional 20% earthing medium anywhere in the network;

- (v) all metallic wall framing systems that support GPOs or electrical cabling must be bonded to the electrical earth system to provide equipotential bonded to earth;
- (vi) all electrical cable support systems must be electrically earthed;
- (vii) a communications earthing system associated with the data block cabling system must be provided;
- (viii) the main earth must be labelled accordingly, with securely fixed brass labels reading 'Danger Main Earth Do Not Disconnect'; and
- (ix) the reference earth bar must be pre-drilled to accommodate outgoing cabling.

#### **G6.1.10 Power factor correction**

Project Co must provide power factor correction that:

- (a) is provided on all main switchboards covering all load groups;
- (b) is a minimum power factor of 0.98 lagging, in accordance with relevant Authority requirements;
- (c) is located in the main switch room;
- (d) connects power in 25% steps, and is fully automatic;
- (e) provides tap changes, capacitors, inductors and other relevant components;
- (f) accommodates the full load current of the component connected;
- (g) is modular in design;
- (h) uses standard stepped components;
- (i) incorporates multi-functional digital meters;
- (j) is a separate enclosure to the main switchboard; and
- (k) is implemented to avoid resonance in the design.

#### **G6.1.11 Energy monitoring**

Project Co must provide the following:

- (a) power factor meters with leading and lagging indicators;
- (b) energy meters to all power sections of all distribution boards for each block;
- (c) energy meters to all lighting sections of all distribution boards for each block;
- (d) energy meters to all mechanical services sections of all switchboard and distribution boards for each block;
- (e) an additional and separate energy meter to the power supply servicing the Dental Therapy Centre Functional Area, which is not required to be connected to the

- EWMS, and is identifiable and easily accessible by School Staff to enable the meter to be read visually at the meter location;
- (f) a common kWh meter to record light, power and mechanical services usage within each building to enable Students to monitor power usage;
  - (g) electronic multifunctional meters that provide volt, amp, maximum demand power factor, voltage and current harmonic distortion and kWh functions;
  - (h) software configured to provide results on a monthly basis;
  - (i) meters that are rated at commercial metering;
  - (j) CT metering for all loads in excess of 100 Amps;
  - (k) CT units and protection devices that must be readily removable for maintenance; and
  - (l) meters that are high level interfaced.

#### **G6.1.12 Underground pits and conduit system**

Project Co must meet requirements for underground pits and conduits to allow for cable pathways between buildings, including:

- (a) all conduits must be a minimum of 100mm diameter, and of the orange rigid heavy duty PVC type suitable to carry incoming power cabling and submain cabling to all relevant Quality Standards including AS 2053, AS 3000 and as required by the relevant Authority;
- (b) dedicated conduits and pits for the PA system, distributed MATV, ICT and security system in accordance with relevant Quality Standards including AS 2053 and AS/AC 009;
- (c) all conduit joins must be glued in place to prevent the ingress of water into the conduits;
- (d) all conduits must be buried and must not be surface mounted to concrete floor slabs;
- (e) the conduit system must link all buildings;
- (f) all spare conduits must be capped to prevent the ingress of water, debris and Pests;
- (g) the conduit must be provided with the relevant markings along the length of the conduit;
- (h) all conduit sections must have a minimum of two draw ropes, installed within the conduit;
- (i) pre-manufactured bends must be used. 90° bends must not be used;
- (j) a minimum of one pit every 50m must be provided for straight runs, or as required to easily install submain cabling at a later stage;
- (k) all underground reticulations systems must include termite treatment;



- (l) lockable metal pits lids, clearly marked 'Electrical Services' or 'Communications Services' must be provided;
- (m) pit lids must be locked, vandal proof and not allow the dropping of debris into the pit;
- (n) all underground pits must be of the heavy duty and trafficable type;
- (o) generally, pits must be located out of grassed areas. If located in grassed areas, pits should be complete with 100 x 100 concrete collars to help prevent the sides of the pit from breaking away;
- (p) all major conduit and pit systems must be co-ordinated and installed adjacent to communications services underground pipe and pits systems; and
- (q) all underground conduits must be clearly identified above ground with acceptable cable markers in accordance with relevant Quality Standards including AS 2648.

### **G6.1.13 Cable reticulation**

- (a) The distribution system between the main switchboard and distribution boards must be concealed and accessible for its entire length without disturbing the building fabric. Galvanised cable trays, cable ducts or conduits must be used to carry electrical distribution cables or final subcircuit cabling. Cable reticulation system in high corrosion environments must be treated to provide the adequate level of protection.
- (b) Project Co must meet the following requirements:
  - (i) all cabling must be in accordance with relevant Quality Standards including AS/NZS 3008.1
  - (ii) the maximum volt drop acceptable from the point of supply to the final outlet is a maximum of 7% where a substation will be installed on site, otherwise a maximum of 5%. The design must consider only the entire circuit length of the cable from substation to the final device;
  - (iii) submain cabling must be fully supported on cable ladder systems;
  - (iv) fire rated Engineering Services must be supported with cable ladder systems in accordance with relevant Quality Standards including AS 3013;
  - (v) all cables with their origin and destination within the same building must be run internally;
  - (vi) submain cables from the main switchboards must be sized in accordance with the maximum demand calculation;
  - (vii) submain cables must incorporate neutral sized cables the same size as the active conductors or the maximum current generated by the harmonics, whichever is the greater;
  - (viii) take off boxes must be provided to indicate circuit protection device capacity and rating. Circuit breakers must contain adjustable current capacity;
  - (ix) cable reticulation must be positioned to achieve the required clearances between separate systems and to avoid crosstalk to other cabling systems;

- (x) high capacity power cables must be located and configured to avoid emitting high levels of electromagnetic interference;
- (xi) submain distribution systems must use copper only conductors. Aluminium conductors are not to be used;
- (xii) an electrical earthing bar must be provided adjacent to each switchboard;
- (xiii) a minimum sized lighting sub circuit 16A with a minimum cable size of 2.5mm<sup>2</sup> sized in accordance with AS 3008 must be provided;
- (xiv) a minimum sized power sub circuit 20A with a minimum cable size of 2.5mm<sup>2</sup> sized in accordance with relevant Quality Standards including AS 3008 must be provided;
- (xv) all outgoing submains must be tagged at the original and at the local point with the submain number and cable size and the originating MSB;
- (xvi) white TPS cables for lighting and power circuits must be provided;
- (xvii) black TPS cables for ELV circuits and controls must be provided;
- (xviii) all cabling systems must be fully supported over the cable route length via either cable ladders, ladder trays and catenaries. Cable ladders and trays must be designed and sized for all submain cabling and cable supported, plus 30% spare capacity, and appropriately segregated in accordance with all Quality Standards and Laws;
- (xix) cabling must not be laid on ceiling support systems;
- (xx) submain cables to lifts must be to be fire rated and designed to the maximum demand requirements as indicated in relevant Quality Standards including AS 3000, with the neutral cable sized as the active conductor;
- (xxi) submain cables to mechanical services equipment must be designed to the full connected load of the mechanical services equipment with the neutral cable sized as the active conductor;
- (xxii) fire rated cabling must be WS53W AS3013 and full sized neutral. ESR cabling must not be used; and
- (xxiii) all cabling types must be fully segregated and located on separate support facilities for all lighting, power, fire, mechanical services submains and mechanical central systems.

#### **G6.1.14 Isolating switches**

- (a) Project Co must provide isolating switches for each item of permanently connected equipment. Isolating switches must be:
  - (i) rated at not less than the circuit protective device;
  - (ii) mounted adjacent to each item of equipment; and
  - (iii) flush mounted for internal installations and surface mounted IP 56 weatherproof for external and damp installations.

- (b) Project Co must provide emergency stop (off) push buttons for Functional Units including technology workshops and Science Laboratories on the Teaching Staff's demonstration bench. Push buttons must trip off all power circuits within the Functional Unit.

### **G6.1.15 Power circuits**

Project Co must provide the following:

- (a) suitable RCD protection against electric shock and circuit overload for all socket outlets;
- (b) suitable LPD protection to relevant Quality Standards including AS 3003 in body protected patient areas including the dental therapy clinic;
- (c) weatherproof GPOs in all plumbing service ducts;
- (d) weatherproof GPOs at all drinking fountain points;
- (e) lockable type weatherproof GPOs adjacent to all hose cocks;
- (f) high impact type GPOs in service ducts, Plant rooms and roof spaces;
- (g) GPOs for all gas heaters;
- (h) power circuits that minimise interference to computers caused by electrical faults or failures;
- (i) the appropriate number and distribution of GPOs to suit the intended functionality of each area, with others required for general maintenance;
- (j) GPOs that are located safely, away from potential dangers;
- (k) power circuits that meet the requirement for a minimum sized power subcircuit 20A with a minimum size of 2.5mm<sup>2</sup> multi-stranded copper sized cable in accordance with AS 3008;
- (l) white TPS cables for power circuits;
- (m) GPO positions that are co-ordinated to suit room furniture, pinup and whiteboard positions;
- (n) GPOs that are mounted on wall mounted skirting ducts or pedestals as required in specialist rooms;
- (o) provides power distribution services that are installed in skirting duct mounted above fixed benches in computer rooms;
- (p) GPOs in Learning Areas at the front and back of the room that are mounted 300mm above the finished floor level. One double GPO must be provided per photocopier area and per corridor area;
- (q) GPOs and fixed outlets that are positioned at 800AFL or nearest coursing height where there is face brick above floor level, with variance to suit bench layouts or other equipment requirements, except in the following areas:
  - (i) office areas which have permanent desktop computers, where the minimum height may be 500mm; and

- (ii) store areas where the height may be 1200mm.
- (r) GPOs and associated Engineering Services in the Sports Halls that are flush mounted and of high impact material;
- (s) GPOs and isolators located in Change Rooms for water heaters, water boiling units and the like that are suitably rated and switched with neon indicators. Seven day time clock control must be provided with push button overrides form boiling and chilled water units, in accordance with the NCC Part J6;
- (t) hand dryers to all toilet areas and wash basin areas as detailed in the RDS;
- (u) power shut down buttons to all technologies and high current draw areas. The system must isolate all power within these areas. The power shutdown button must be of the 'latched on' type and require unlatching on completion;
- (v) power for fridges and freezers on a separate circuit;
- (w) Clipsal C2000 series flushplates or State approved alternatives throughout the School Facility, except for Canteen, Cafeteria and laboratory areas where standard type flushplates with neon indicators and removable surrounds must be utilised;
- (x) cleaners' outlets that are clearly labelled and visible internally within the buildings. Outlets must be located to suit a maximum 30m extension lead and in a position where they would not be used for computers and the like;
- (y) fume cupboards that incorporate a double GPO on the external top or side of the unit;
- (z) electrical connection only, with local on/off control at the door for local room exhaust fans;
- (aa) connection for LV fans through the local room lighting circuit;
- (bb) toilet exhaust fans that are controlled by motion detectors;
- (cc) controls and power to electrically operated vents;
- (dd) power supply to skylights, conduits and wallbox provisions for the supply, installation and commissioning of skylight dimmer controls and switching by the skylight installer;
- (ee) electric insect killers to the Cafeteria through a GPO adjacent to the unit and control by a switch adjacent to the room light switch; and
- (ff) power, PA, communications and security provided to a designated accessible connection point within the Transportable Unit Zone.

## **G6.1.16 Lighting**

### **G6.1.16.1 General**

Project Co must provide the following:

- (a) minimum sized lighting subcircuit 20A with a minimum size of 2.5mm<sup>2</sup> multi-stranded copper sized cable in accordance with relevant Quality Standards including AS 3008;
- (b) flushplates must be Clipsal 2000 series or State approved alternative. Flushplates to be white throughout for all switches, unless selection is to match an architectural

- requirement. In Cafeteria, Canteen and laboratory areas, standard type flushplates (without clip-on surround) must be utilised;
- (c) IP 56 type switches and flushplates where exposed to the weather or in damp environments;
  - (d) high impact plastic type switches of minimum 10A rating in service ducts and Plant rooms; and
  - (e) red neon indicator lamps incorporated in flushplates where switches are located outside the rooms.

#### G6.1.16.2 Lighting systems

Project Co must meet the following requirements:

- (a) luminaires must be sourced from proven production runs with demonstrated performance levels, of good quality and easily maintained. All areas including Plant rooms must be supplied with artificial lighting;
- (b) the lighting design consideration must be based on an optical system to suit the environment where the luminaire is installed, and maintain the performance of the luminaire throughout its life;
- (c) appropriate illumination levels to each space must be in accordance with relevant Quality Standards including AS 1680 and to suit the functionality of each room;
- (d) the specific lighting must suit the task being performed and comply with the control of light fitting glare in accordance with relevant Quality Standards including AS 1680 and OHS Laws;
- (e) appropriate illumination levels to car parking areas and other external areas must be in accordance with relevant Quality Standards including AS 1158;
- (f) external lighting design must comply with relevant Quality Standards including AS 4282;
- (g) the lighting and general appearance of the light fittings must suit the space illuminated;
- (h) where rooms require specialist lighting, refer to the RDS for specialist requirements;
- (i) all light fittings must include high frequency electronic control gear;
- (j) custom made luminaires must be avoided;
- (k) luminaires must be positioned to suit the ceiling arrangement, work area requirements and locations of ceiling fans, sky lights and air ducts. The strobing effect caused by ceiling fans must be avoided;
- (l) suspended luminaires must be securely fixed to prevent movement;
- (m) the standardisation and minimisation of lamp types is preferred;
- (n) a minimum of 2% spare lamps must be kept at each School Facility at all times;
- (o) all external luminaires must be vandal resistant and appropriately IP 54 rated;

- (p) daylight control devices must be integrated wherever possible, to reduce illumination when daylight is present;
- (q) controls and switches must be of robust construction;
- (r) occupancy sensors must be provided to detect space usage;
- (s) circuit loading must be designed in accordance with the sizing of the control system circuit protective devices and spare capacities;
- (t) mercury vapour/sodium vapour and incandescent lamps are not to be used internally within buildings;
- (u) electronic low loss control gear that incorporates high frequency ballasts must be used in preference to iron core devices;
- (v) lamp selection must be based upon the highest available energy performance to suit the application, with efficient lumen output and lumen maintenance;
- (w) tungsten and incandescent lamps must not be used;
- (x) linear fluorescent or LED light fittings in Learning Areas, circulation areas and Science Laboratories must be of the prismatic diffuser type, with ultra low brightness diffusers to be installed in all computer based areas. Light fittings in the Sports Halls must be 'ball proof' and complete with wire guard;
- (y) feature lighting for notice boards, display cabinets and other specialist display Areas must be provided as indicated in the RDSs and *Part D: Functional Brief*;
- (z) LED fittings or compact fluorescent fittings must be provided for the Reception and General Office, Conference Room, Interview Room and other associated non-School Staff Areas and administration areas;
- (aa) shower areas must be provided with appropriate lighting outside the shower areas and in the common circulation space;
- (bb) internal security lighting must be provided at building entries, changes of direction to external pathways and stairs in corridors; and
- (cc) external security lighting to the perimeter of all buildings must be provided to ensure safe access. As a minimum, the lighting of pathways and roads within the School Facility must be provided to allow the safe passage of all Users.

#### G6.1.16.3 Luminaires

Project Co must select and provide luminaires in accordance with the following requirements:

- (a) fluorescent or solid state luminaires for interior lighting;
- (b) good quality reflecting surfaces that do not deteriorate over time or after cleaning;
- (c) where luminaires need to complement an architectural requirement:
  - (i) suspended fluorescent tubular or linear LED luminaires for Learning Areas, Libraries, Information Resource Centres, School Staff Areas and administration areas with a raked or high ceiling;

- (ii) recessed mounted sealed luminaires for Canteens, Cafeterias, Learning Areas, Libraries, Information Resource Centres, School Staff Areas and other areas with ceilings 3 metres above finished floor levels; and
  - (iii) surface mounted luminaires elsewhere to suit functionality.
- (d) prismatic diffusers on all luminaires unless there are overriding considerations;
  - (e) lay in type diffusers are not acceptable;
  - (f) fluorescent lamps that are white in colour within the specified colour 2 (4000 deg k) in accordance with the requirements of relevant Quality Standards including AS 4024.1;
  - (g) fluorescent, LED or metal halide vandal resistant IP rated luminaires for lighting to the Covered Assembly Block;
  - (h) pole mounted LED luminaires in car parking areas and entries to car parks. Bollard and in-ground uplighting are not acceptable;
  - (i) LED luminaires must have the ability to enable the interchange of LED light sources made by different manufacturers; and
  - (j) poles above 6000mm in height must be break-type (see-saw) poles.

#### G6.1.16.4 Lighting switching systems

- (a) Project Co must provide a lighting control system to ensure that all lighting is only operational when required. Switching systems must:
  - (i) be clearly labelled to indicate which lights they serve where multiple switches are provided;
  - (ii) in Learning Areas, be based on manual on/off switching, presence detectors and daylight sensing, so that the light fittings will be switched manually on entering and then switched off 20 minutes after the last presence detection (or dimmed automatically, depending on signalling from automatic controls). The lighting must be zoned to take account of the various daylight influences;
  - (iii) have switching groups that do not exceed a floor area greater than 100m<sup>2</sup>;
  - (iv) in Learning Areas, be arranged so that any natural daylight is maximised and individual rows serving areas where daylight is available can be separately controlled;
  - (v) have two-way switching at both doors for larger rooms with two entry points and be labelled accordingly;
  - (vi) provide manual override facilities to any automatic lighting controls;
  - (vii) be of high impact polycarbonate rocker flush mounted type, and located adjacent to the closing side of the door. Light switches must not be able to be 'pushed in' from the front of the switch;
  - (viii) be controlled by separate timing devices and photo cells with manual overrides for external lighting and security lighting;

- (ix) be interfaced with security systems such that the keypad automatically de-energises lighting in associated areas when armed and energises lighting when disarmed, in alarm or when entry delay reed switch is operated;
  - (x) shutdown mechanical services; and
  - (xi) suit the function of the School Facility to meet all Design Requirements.
- (b) Project Co may consider a centrally programmable control system with distributed intelligence linked to preset control panel time clocks, occupancy sensors and daylight control facilities.

#### **G6.1.17 Ceiling fans**

Project Co must provide ceiling fans throughout occupied areas of all buildings. Refer to *G5: Mechanical Services* for further detail on ventilation and air cooling requirements.

#### **G6.1.18 Daylighting**

Project Co must provide automatic control of light fittings to maximise energy saving through dimming.

#### **G6.1.19 Emergency and exit lighting**

- (a) Emergency lighting must be provided to ensure safe evacuation in an emergency or in the event of mains failure, and be integrated with escape routes and doors.
- (b) Emergency lighting must comply with the requirements of all relevant Quality Standards and Laws including AS 2293 and Part E of the NCC.
- (c) Project Co must satisfy the following:
  - (i) luminaries must be sourced from proven production runs with demonstrated performance levels;
  - (ii) systems must contain either a powerline, cable or WIFI based communication network;
  - (iii) systems must be attractive in appearance to suit the architectural intent (use pictograms on thin Perspex backing material);
  - (iv) system must be capable of accommodating additional luminaries anywhere within the systems network;
  - (v) non-maintained tubes for the emergency lighting function are preferred;
  - (vi) emergency and exit luminaries must contain a localised battery source of a minimum 10 year life;
  - (vii) battery and control circuitry must be modular in design to enable quick replacement techniques;
  - (viii) exit signs must contain 'low energy' lamp sources comprising cold cathodes or LED sources; and
  - (ix) systems must be designed to enable alterations and additions at any point in the network.



### **G6.1.20 Lightning protection**

Project Co must carry out a lightning risk assessment in accordance with AS 1768, and provide a compliant lightning protection system.

### **G6.1.21 Clock installation**

Project Co must provide clocks that are:

- (a) sourced from proven production runs with demonstrated performance levels;
- (b) provided nominally in Functional Areas and Functional Units including the Administration Block, Library and staff block, Information Resource Centres and Learning Areas;
- (c) of the centrally controlled type, with all clocks corrected from this point; and
- (d) connected to a 230 volt supply via a clock point.

### **G6.1.22 Hydrotherapy Pool**

- (a) The Hydrotherapy Pool must include:
  - (i) electrical services from the site main switchboard to the water treatment switchboard; and
  - (ii) single phase GPOs around the pool concourse for pool cleaning equipment.
- (b) Project Co must equipotentially earth bond the following pool structures and objects:
  - (i) all metallic objects with a dimension greater than 100mm;
  - (ii) pool concourse reinforcing;
  - (iii) deck sockets and the like; and
  - (iv) stanchions that are within 3 metres of the pool or within any area of the concourse that is likely to be wet during the pool's normal operation.

### **G6.1.23 Transportable Unit Zone**

Project Co must provide underground power to a termination point within the Transportable Unit Zone of all School Facilities that provides the required capacity of power for the maximum number of Transportable Units detailed in *C4: Future Development and Expansion*.

### **G6.1.24 Photovoltaic Systems**

- (a) Project Co must provide photovoltaic systems at each School Facility, with the following minimum provisions:
  - (i) Primary Schools are to be provided with 65KW peak systems comprising of numerous panels;
  - (ii) Stage 1 Secondary Schools are to be provided with 320KW peak systems comprising numerous panels;

- (iii) Stage 2 Secondary Schools are to be provided with 180KW peak systems comprising numerous panels, to achieve a combined total of 500KW peak systems for both Stage 1 and Stage 2; and
  - (iv) Harrisdale SS Stage 2 is to be provided with 480KW peak system comprising numerous panels.
- (b) Project Co must include for all liaison and meetings with the relevant Authority, submission of all enquiry forms and applications and payments of all associated fees.
- (c) Project Co must provide and install all equipment necessary to generate the required electricity provisions for each School Facility, and to export excess electricity back into the Utilities Infrastructure grid in accordance with Quality Standards and Laws, and the relevant Authority's requirements, including:
- (v) monocrystalline or equivalent PV cells/modules;
  - (vi) DC power cabling;
  - (vii) DC surge arresters;
  - (viii) AC power cabling;
  - (ix) inverters for grid connection;
  - (x) inverter enclosures;
  - (xi) current transformers;
  - (xii) junction boxes;
  - (xiii) switchboards;
  - (xiv) earthing;
  - (xv) labelling;
  - (xvi) PV cells mounting frames;
  - (xvii) connection to the EWMS for all required reporting and alarm notifications;
  - (xviii) assisting with obtaining Renewable Energy Certificates; and
  - (xix) assisting with obtaining rebates, where required.

## **G6.2 Communications**

### **G6.2.1 General**

- (a) The State will liaise with the communication network service provider to co-ordinate and construct the communications Utility Infrastructure to approximately but in any event no more than 2 metres from the Utility Infrastructure Connection Point.
- (b) Project Co must co-ordinate and provide a lead-in pit and conduit pathway, including draw-wires, (Lead-in Works) from the Site boundary to the main distribution frame, within each School Facility's distributor. The Lead-in Works must be installed and sized in accordance with the communications network provider's requirements, Best

Industry Practices and the Department's ICT Directorate Data Cabling Standards and Specifications current at the time of installation, with emphasis on sustainability, adaptability, reliability and allowance for future expansion.

- (c) The State will liaise with the communication network service provider to extend the communications lead-in cable from the relevant State Utility Infrastructure Connection Point to the communications panel in the relevant School Facility, provided that Project Co has first complied with its obligations in Part G6.2.1(b).

### **G6.2.2 Scope**

The scope of the communications works for the Project includes the design, construction, commissioning and completion of the communications engineering components for each of the Sites that comprise the Project, and includes:

- (a) lead in services;
- (b) backbone cabling infrastructure;
- (c) communications services distribution systems;
- (d) horizontal cabling systems;
- (e) underground pits and duct systems;
- (f) building and floor distributors;
- (g) equipment racks;
- (h) wireless network systems;
- (i) MATV systems;
- (j) PA systems; and
- (k) assistance call systems.

### **G6.2.3 Structured cabling systems**

- (a) Project Co must provide one single structured cabling system (and associated infrastructure) that is designed to allow for economical expansion. The design of the ICT Infrastructure must be integrated into the overall design of School Facilities.
- (b) Project Co must provide a copper and optical fibre structured cabling system that is in accordance with relevant Quality Standards and Laws. The system must support data, voice, video, security and other Engineering Services systems.
- (c) Project Co must liaise with the relevant telecommunications service provider for the preferred location of the lead-in conduit from the Site boundary.
- (d) Project Co must implement the cabling infrastructure in accordance with the latest revision of AS/NZS 3080, and must utilise the highest ratified cabling standard available at the time of installation.
- (e) Project Co must make reasonable allowances for advancement in technology infrastructure.

- (f) Consideration needs to be given to the flexible use of ICT across the entire School Facility and an increase in the number of end user devices.
- (g) Project Co must provide underground fibre optic cable to a designated accessible connection point within the Transportable Unit Zone for all School Facilities.

#### **G6.2.4 Quality Standards and references**

Communications services must comply with all relevant Quality Standards and Laws including:

- (a) all relevant Australian Standards including:
  - (i) AS 2834:Computer Room Accommodation;
  - (ii) AS/NZS 3080: Telecommunications Installations – Cabling Systems for Commercial Premises;
  - (iii) AS/NZS 3084:Telecommunications Installations – Telecommunications Pathways and Spaces for Commercial Buildings;
  - (iv) AS/NZS 3085.1:Telecommunications Installations – Administration of Communications Cabling Systems Part 1: Basic Requirements; and
  - (v) AS/NZS 3087.1: Testing of balanced communication cabling.
- (b) AS/CA S008: ACIF technical standard on 'Requirements For Authorised Cabling Products';
- (c) AS/CA S009: ACIF technical standard on 'Installation Requirements For Customer Cabling (Wiring Rules)'; and
- (d) SAA Communications Cabling Manual.

#### **G6.2.5 Services distribution**

- (a) Project Co must provide a structured cabling system (and associated infrastructure) that consists of a main distribution frame, campus distributor, building distributor and floor distributor, horizontal cabling and telecommunication outlets.
- (b) Project Co must provide backbone redundancy through extra capacity and alternative pathways, and all reasonable single points of failure should be mitigated.
- (c) Project Co must provide telecommunications services to all buildings and locations for Transportable Units within the Site. The campus distributor must include the local building distributor and the main distribution frame.
- (d) Project Co must provide:
  - (i) optical fibre and UTP between the campus distributor and the building distributors;
  - (ii) optical fibre and UTP between the building distributor and the floor distributors; and
  - (iii) horizontal cabling and telecommunication outlets to all Functional Units to meet Design Requirements. The distribution systems must be sized to provide a minimum of 50% expansion.

### G6.2.6 Horizontal cabling

- (a) Project Co must make reasonable allowances for advancement in technology infrastructure. Project Co must provide:
  - (i) structured cabling (currently CAT 6E) from the distribution points to the telecommunication outlets;
  - (ii) cable pathways in the ceilings, walls and floors of Learning Areas, presentation spaces and other Functional Units to allow for the future provision of cabling for wireless access points, AV services, wall plates and data services as required;
  - (iii) telecommunication outlets that are correctly IP rated and damage resistant for their installed area and application. The telecommunication outlets must be Fit For Purpose and at an appropriate height for the Users of the room; and
  - (iv) data outlets for devices including data projectors, printers, cashless catering, wireless access points, access control gates and CCTV.
- (b) The numbering and labelling scheme of the telecommunication outlets must be agreed with the State.

### G6.2.7 Pits and conduit system

- (a) Project Co must provide a pit and conduit system between all buildings. All conduits that are installed in a location that has a concrete slab must be installed in the slab, directly to the equipment rack or frame that they supply.
- (b) Project Co must provide a vandal resistant solution.
- (c) Pit lids must be located as per the requirements of *F1.2.6: Services Co-ordination*.

### G6.2.8 Server room

- (a) The server room must be designed in accordance with relevant Quality Standards including AS 3084, and be air conditioned and insulated in accordance with *G5: Mechanical Services*. Project Co must consider environmental and security conditions, and locate the server room away from direct light sources. The server room must house:
  - (i) the campus distributor;
  - (ii) the main distribution frame;
  - (iii) the main Administration Block building distributor; and
  - (iv) the ICT/LAN active equipment.
- (b) The design of the server room must meet incoming voice and data needs, provide sufficient space to accommodate all State provided equipment, and allow the carrier's staff to work on the equipment in accordance with health and safety guidelines.

### **G6.2.9 Building/floor distributors**

- (a) Project Co must provide a dedicated telecommunication room or cupboard for the building distributor and the floor distributor. The space must be sized such that all electronic services for the building or floor can be installed within this space.
- (b) Project Co must provide a building distributor for each additional building on the Site. The building distributor must be a dedicated room or cupboard and be sized accordingly. Where a building has more than one floor, additional floor distributors must be provided. Where telecommunication outlets for a floor or area cannot be served from the building distributor or floor distributor, an additional floor distributor must be provided.
- (c) Project Co must provide cable routing and layout management to minimise congestion at entry and exit points to the floor distributor and building distributor. Cabling to all equipment racks and all wall mounted swing racks must be concealed.

### **G6.2.10 Equipment racks**

- (a) Project Co must provide:
  - (i) racks that are key lockable;
  - (ii) 19 inch internal mounting brackets; and
  - (iii) expansion space available for an additional 50% cable capacity and additional 18 rack unit for active equipment.
- (b) The State must have access to all equipment racks at all times.

### **G6.2.11 Patch leads and fly leads**

The State will provide all patch leads and fly leads.

### **G6.2.12 Wireless networking**

Project Co must provide a wireless survey for each School Facility, and telecommunication outlets to allow Site wide networking at each School Facility.

### **G6.2.13 Internet Protocol telephony**

The State will provide an internet protocol telephony PBX VoIP solution that integrates with Project Co's infrastructure.

### **G6.2.14 MATV system**

#### **G6.2.14.1 Overview**

Project Co must provide cabling infrastructure that supports all Engineering Services being delivered and the active MATV system head end equipment.

#### **G6.2.14.2 Quality Standards and references**

The MATV system design, commissioning, installation and operation must comply with all relevant Quality Standards and Laws including:

- (a) AS 1367 – Coaxial cabling Systems for the Distribution of Television and Sound Signals in Single and Multiple Unit Installations;

- (b) AS 1417 – Receiving Antennas;
- (c) EN50083 Cable Distribution Systems;
- (d) IEC – 728 Measurement Procedures for Cabled Distribution Systems; and
- (e) CCIR Recommendation 500 – 1 (KYOTO, 1978, Vol. X1).

#### G6.2.14.3 Functional requirements

- (a) Project Co must provide an MATV system that consolidates, switches, and distributes free-to-air television and radio signals.
- (b) Project Co must provide television services to the television points as required by the Design Brief. As a minimum, Project Co must provide four MATV outlets within the Library. The design must be able to facilitate economical expansion for future buildings on the Site.
- (c) The State will provide all patch leads and fly leads.

### G6.2.15 PA system

#### G6.2.15.1 General

- (a) Project Co must provide a PA system.
- (b) Project Co must provide cabling infrastructure that supports all PA services being delivered and the active PA system equipment.

#### G6.2.15.2 Quality Standards and Laws

The PA system design, commissioning, installation and operation must comply with all relevant Quality Standards and Laws including:

- (a) AS 60849 – Sound Systems for Emergency Purposes;
- (b) AS 1670.4 – Fire Detection Warning Control;
- (c) AS 2220 – Emergency Warning & Intercom Systems; and
- (d) EPA Noise Control Guidelines.

#### G6.2.15.3 Functional requirements

- (a) Project Co must provide a digital zoned PA system suitable for announcements and media information. The PA system must be capable of directing messages to selected zones, without these messages being heard in other zones. Zones must be determined in consultation with the State.
- (b) Separate zones must be provided to each Functional Area, selectable at the PA main control system or Reception and General Office microphone location as determined in consultation with the State.
- (c) Project Co must provide all necessary cabling to a termination point at the boundary or within the Transportable Unit Zone for all School Facilities.
- (d) Due to highly variable timing signals in Secondary Schools, a 24 hour event timer and a minimum 50 event tone generator is required.

- (e) The PA controls must enable the selection and de-selection of zones in a simple and quick manner.
- (f) The PA system must include:
  - (i) speakers to Learning Areas, circulation and external areas;
  - (ii) audio induction loops and amplifiers to Lecture Theatres, to relevant Quality Standards including AS 1428.2;
  - (iii) amplifiers and zone selector panels;
  - (iv) digital AM/FM radio;
  - (v) USB input;
  - (vi) microphone and leads;
  - (vii) radio microphone;
  - (viii) microphone input from the Administration Block;
  - (ix) programmable period system and sound (tone) generator interfaced to siren and evacuation system;
  - (x) speakers that are a minimum of 30W with in built crossover and separate high and low frequency drivers; and
  - (xi) external speaker with weather resistant ratings and protective wirecages.
- (g) The PA system must have the following functionality:
  - (i) local PA to assembly areas for amplified and broadcast announcements;
  - (ii) public broadcasts of routine, situational and important announcements;
  - (iii) simultaneous broadcasting of different calls to different locations;
  - (iv) broadcasting background music (tones) to all or selected locations; and
  - (v) an automatic announcement facility for making routine, situational and emergency announcements.
- (h) All of the main functions must be provided by the system. The system must be simple and logical to operate, and provide a means to give customised indications for the selection buttons of the call stations. The system must store at least the last 200 fault messages in the memory of the network controller.
- (i) The PA system must only allow one microphone to announce a message and must mute other audio inputs, except for the Covered Assembly Block system which must enable the mixing of all audio inputs with all call override still enabled from the School Facility main system.

#### G6.2.15.4 Siren

- (a) Project Co must provide a minimum of two sirens per Site. The sirens may be combined as part of the PA system, and must be interfaced with the PA system,



controlled from the Administration Block and activated via a momentary action push button.

- (b) The location of sirens must consider:
  - (i) weather protection;
  - (ii) obstructions which may interfere with sound transmission;
  - (iii) height, to minimise vandalism; and
  - (iv) impact on staff in nearby offices, or neighbouring residential properties.

### **G6.2.16 Assistance call system**

#### **G6.2.16.1 General**

Project Co must provide an assistance call system for all UATs and AATs.

#### **G6.2.16.2 Functional requirements**

The assistance call system must include:

- (a) a remote assistance call alarm panel, nominally located in the Administration Block;
- (b) flush wall mounted mushroom head latching call point buttons;
- (c) local reassurance light and audible buzzer to illuminate upon activation of call points; and
- (d) clearly labelled 'PRESS FOR ASSISTANCE' splash proof call points.

### **G6.2.17 Information and communications technology**

#### **G6.2.17.1 General**

There is no requirement for Project Co to provide any active network LAN/CAN/WAN equipment.

#### **G6.2.17.2 AV systems**

- (a) Project Co must provide cable pathways for AV systems in areas including Learning Areas, Conference Rooms, meeting rooms, Foyers and circulation areas. The cable pathway system must allow for easy post construction installation and for cabling to be run in concealed, continuous lengths. The AV systems must include provision for projectors, powered speakers and an AV wall plate.
- (b) Project Co must provide cabling for digital signage technology in circulation and Foyer areas.
- (c) Project Co must provide structure suitable for the mounting of technology to Teaching Walls, including Interactive Whiteboards, large format touch screens and conduit and draw wires for drawing cabling through by others to install. All AV cabling and outlets must allow for HDMI, VGA and USB services.

## **G6.3 Security technology**

### **G6.3.1 General**

Project Co must provide a monitored electronic security system that includes intruder detection and access control. Project Co must undertake a security risk and threat assessment, and the extent of the final design of the security services must take into consideration the risk of crime, vandalism and level of physical security being provided for each Site.

### **G6.3.2 Scope**

The scope of the security services works for the Project includes the design, construction, commissioning and completion of the security engineering components for each of the Sites, including:

- (a) intruder detection systems;
- (b) access control systems; and
- (c) CCTV systems.

### **G6.3.3 Quality Standards and Laws**

The security services must comply with all relevant Quality Standards and Laws, including:

- (a) AS 2201 –Intruder Alarm Systems Parts 1, 2, 3, 4, & 5;
- (b) AS 3548 – Electromagnetic Interference;
- (c) AS 4252 – Electromagnetic Compatibility;
- (d) AS 4806.1 – Closed Circuit Television (CCTV) – Parts 1, 2 & 3;
- (e) the Department’s School Security Policy.

### **G6.3.4 Functional requirements**

- (a) Project Co must provide an intruder detection system design to operate independently and which is able to accommodate access control facilities. Intruder detection devices must be individual alarm ‘points’ but must be programmed into groups or zones. The system must be based on a current microprocessor based system.
- (b) The entire security system must be configured to enable School Staff and Project Co Staff to perform all necessary operational parameter changes and interpret alarms and events following minimal training.
- (c) At a minimum, the systems must include:
  - (i) topology to provide simultaneous support for direct wire operation, LAN (Ethernet), WAN operation or remote operation via modem;
  - (ii) a flexible and modular design to provide ease of installation, robustness, reliability and expansion;

- (iii) a distributed architecture that allows field controllers to operate independently of the host. All key access decisions, event/action processing and alarm monitoring functions must be performed within the relevant controller; and
  - (iv) manual or automatic arming of alarm points must be performed by time of day and day of week. Disarming must only be performed via manual control.
- (d) The security system must be partitioned and Site specific to provide operable alarms system areas. The following partitions are indicative only and must be based on the layout of the School Facilities:
- (i) Administration Block;
  - (ii) all Classroom Blocks;
  - (iii) Library and staff room block or Information Resource Centre;
  - (iv) Canteen or Cafeteria;
  - (v) Music Room, sports store, Uniform Store and cleaner's store;
  - (vi) Gardener's Workshop and stores;
  - (vii) Dental Therapy Centre Facility;
  - (viii) Arts Learning Area;
  - (ix) Performing Arts Learning Area;
  - (x) Technologies Learning Area;
  - (xi) Education Support Learning Community; and
  - (xii) the Transportable Unit Zone.
- (e) Each area must have an independent arming station for arming and disarming, programming and diagnostics for that area. The master arming station for arming and disarming all areas is generally to be located in the Administration Block, but must be located appropriately as determined on a site specific basis.
- (f) Project Co must provide all necessary security cabling to a designated accessible connection point within the Transportable Unit Zone for all School Facilities.
- (g) The intruder detection system must have the ability to be monitored externally.

### **G6.3.5 Intruder detection system**

- (a) Project Co must provide standard passive infrared intruder detectors, magnetic reed switches, break glass detectors, smoke detectors and silent duress alarms, having regard for the security risk and threat assessment and that meets the Design Requirements. Internal noisemakers, external sirens and strobe lights are only to be installed with the approval of the State. Dual technology equipment must only be used in specified harsh environments.
- (b) Glass break detectors must be installed, where required by the State, and operate on activation of that detector.

- (c) Wireless detection devices may be installed.
- (d) Where automatic night purge ventilation systems are installed, Project Co must consider the position and type of intruder detection devices.
- (e) Project Co must provide reed switches to programmed doors for entry and exit, storerooms and roller doors.
- (f) Where reed switches are located to windows for the purpose of reverse cycle air conditioning operation and not intruder detection, the reverse cycle air conditioning systems must be inoperable whenever the window is in an open position. These reed switches do not form part of the intruder detection system.

### **G6.3.6 Smoke detectors**

- (a) Smoke detectors must be installed in areas including:
  - (i) Administration Block: Foyers, passageways, Reprographics Rooms, Staff Rooms, Communications Rooms and stores;
  - (ii) Library and staff block: all areas;
  - (iii) Classroom Blocks: all Learning Areas;
  - (iv) Covered Assembly Block: Uniform Store, Music Room and Canteen offices;
  - (v) Arts Learning Area;
  - (vi) Performing Arts Learning Area;
  - (vii) Cafeteria; and
  - (viii) Education Support Learning Community.
- (b) Thermal detectors are typically to be installed in the following areas:
  - (i) Canteen or Cafeteria;
  - (ii) Technologies Learning Areas (including workshops), and
  - (iii) areas of the School Facilities where there are cooking facilities.
- (c) Data gathering panels including zone expansion devices must generally be located in areas indicated within the Design Brief.

### **G6.3.7 Access control system**

- (a) Project Co must provide access control to the Administration Block main entry.
- (b) The access control system must include as a minimum:
  - (i) electric strike to main entry door;
  - (ii) ELV power supply;
  - (iii) a door release push button, labelled accordingly; and

- (iv) a time module to enable the door to remain unlocked for a pre-determined time.

### **G6.3.8 Card/token technology**

Where Project Co elects to use card/token technology, Project Co must provide and maintain appropriate quantities of proximity access cards to support all School Activities. The access card readers must be an open 26-bit wiegand format. The proximity cards must be able to integrate other potential uses including student ID, cashless catering and Library resources.

### **G6.3.9 Closed circuit television**

Where Project Co elects to provide CCTV, it must be in accordance with relevant Quality Standards and Laws including:

- (a) the Department's *School Security Policy*;
- (b) the State *CCTV Strategic Plan* (to be released 2015);
- (c) the *Surveillance Devices Act 1998*; and
- (d) the *Freedom of Information Act 1992*.

## **G7. FIRE SERVICES AND FIRE ENGINEERING**

### **G7.1 General**

- (a) Project Co must provide fire safety systems that comply with all relevant Quality Standards and Laws.
- (b) Project Co must refer to the Bushfire Zone Register held by the State as to whether the requirements of AS 3959 are applicable and if so, to what Bushfire Attack Level. Refer also to the Department's document *The Principal's Guide to Bushfire*.
- (c) The design and installation of the services must be in accordance with Best Industry Practices with emphasis on sustainability, adaptability, reliability and allowance for future expansion.
- (d) Upon completion of the works and as a condition to achieving Commercial Acceptance, Project Co is required to provide one or more fire test certificates confirming that the installation of the fire safety systems is commissioned and tested in accordance with the requirements of the relevant codes, and any requirements that alternative solutions impose.

### **G7.2 Scope**

The scope of the fire services works for each Stage includes the design, construction, commissioning and completion of the fire services engineering components for each of the Sites, and includes:

- (a) hydrant systems;
- (b) fire sprinkler systems;
- (c) fire hose reel systems;
- (d) fire detection and building occupant warning systems; and
- (e) portable fire extinguishers.

### **G7.3 Performance requirements**

- (a) The following performance description relates to the provision required for the fire systems and proposed objectives.
- (b) The performance requirements of the NCC can be met by producing a deemed-to-satisfy design. If this methodology is followed, the following systems are required subject to the building design:
  - (i) fire sprinkler system;
  - (ii) fire hydrant system; and
  - (iii) smoke detection and alarm system.
- (c) Project Co must refer to the NCC to assess building specific requirements. The installed systems may be altered if the performance requirements of the NCC can be met by way of an alternative solution, as permitted under the NCC.

- (d) The elements of any building subject to the control of relevant Quality Standards including AS 3959 must adhere to the requirements of that relevant Quality Standard.
- (e) Learning Areas and associated corridors are excluded from the requirement for fire hose reels under the NCC.
- (f) Fire hydrant coverage must be provided to all buildings, including buildings which are less than 500 square metres in area, to meet the State's requirements for property protection.
- (g) The State does not require that FIPs be monitored by DFES, except where required by the Quality Standards and Laws.

#### **G7.4 Quality Standards and Laws**

- (a) The fire systems for the building must be installed to meet the performance requirements of the NCC, all relevant Quality Standards and Laws and advice received from DFES in their capacity as an advisory body.
- (b) Project Co must comply with relevant Quality Standards and Laws including:
  - (i) all relevant Australian Standards including:
    - (A) AS 1851 – Maintenance of Fire Protection Systems and Equipment
    - (B) AS 2118.1 – Automatic Fire Sprinkler Systems – General Requirements;
    - (C) AS 2419.1 – Fire Hydrant Installations – System Design, Installation, Commissioning, including Admt 1;
    - (D) AS 2441 – Installation of Fire Hose Reels, including Admt 1;
    - (E) AS 1668.1 – The Use of Ventilation and Air Conditioning in Buildings: Fire and Smoke Control in Multi-compartment Buildings;
    - (F) AS 1670.1 – Fire Detection, Warning, Control and Intercom Systems – Systems Design, Installation and Commissioning; and
    - (G) AS 2444 – Portable Fire Extinguishers and Fire Blankets – Selection and Location.
  - (ii) the Department's Principals Guide to Schools in Bushfire zones;
  - (iii) the Department's WA Requirements for Portable Fire Equipment in Schools; and
  - (iv) appliance specifications GL11, DFES (WA).
- (c) If Project Co proposes an alternative solution, it may be the case that the performance requirements of the NCC can be met without necessarily complying with the above standards in their entirety.

### **G7.5 Maintainability**

- (a) Project Co must design fire safety systems such that they allow maintenance activity to be undertaken on all equipment. This requirement is of particular importance for concealed space equipment, particularly point type smoke detectors.
- (b) A sprinkler system, if required, must have isolation/drainage valves installed on a floor by floor basis to allow for compartmentalised areas of fire protection to be disabled during maintenance and refurbishment.
- (c) A regime must be employed to maintain all fire safety systems to relevant Quality Standards, including AS 1851, or to the requirements of any performance based alternative solutions relied upon to achieve compliance with the NCC.

### **G7.6 Flexibility**

Project Co must construct fire systems that are flexible to allow for future expansion and refurbishment.

### **G7.7 Sustainability**

- (a) Project Co must design the fire systems to minimise water usage during testing procedures. The test water from the fire pumps and sprinkler valve set must discharge back into the fire tanks to minimise water loss.
- (b) All other test discharge must be re-routed back into the fire tank where practicable.

### **G7.8 Alternative solutions**

- (a) Project Co may utilise alternative solutions as part of a building solution to achieve compliance with the NCC.
- (b) Project Co must ensure that any alternative solution does not unduly affect the future operation of the School Facility or any individual building, including its effects on future renovations and extensions.

### **G7.9 Water supply**

- (a) The water supply to the School Facility for fire services must be in accordance with relevant Quality Standards including AS2118 Part 1, AS2419 Part 1 and 3, the Water Corporation and the relevant Authority's requirements.
- (b) The fire service boundary connection must incorporate a double check valve device and be installed above ground within a service enclosure.
- (c) Project Co must incorporate a backflow prevention device in accordance with the requirements of relevant Quality Standards including AS3500.1, the regulatory plumbing authority and the Water Corporation.
- (d) Each School Facility must have Fire services connected to the Water Corporation supplies with the provision of water storage tanks and pumps to meet the requirements of AS2419.1 and DFES, for water pressure and flow for both the hydrant and sprinkler systems operating simultaneously (where required by the NCC). Project Co will note that Fire Services water storage tanks and pumps are already proposed for Harrisdale Stage 1 and must allow to undertake any modifications to this installation should this be required.



- (e) Project Co must provide enclosures for the sprinkler control valves and pumps in accordance with the NCC.

### **G7.10 Fire sprinkler system**

- (a) Where a fire sprinkler system is required by the NCC or a performance based alternative solution, it must be designed in accordance with relevant Quality Standards including AS 2118.
- (b) External sprinkler heads must be provided to protect all openings that are within the limits of an adjoining fire source feature.
- (c) The sprinkler system must be designed with flow switches and monitored isolation valves for each level, where the School Facility has more than one level. The flow switches must be equipped with remote test valves and relevant drain connections such that the flow switches can be tested from the FIP.
- (d) Consideration should be given to the installation of a combined hydrant/sprinkler system.

### **G7.11 Fire hydrant system**

- (a) Project Co must provide a fire hydrant system to protect all covered areas of the building. This is a specific requirement of the State, over and above the coverage requirements required by the NCC.
- (b) The hydrant system must comply with relevant Quality Standards including the NCC and AS 2419.1. The fire hydrant system may feature a combination of internal and external hydrants, or external hydrants only.
- (c) Project Co must provide a fire brigade booster suction assembly and hardstand, located at the main entry to the Site in a location acceptable to DFES. The connections to the brigade booster and suction assembly must accommodate the types of appliance DFES may despatch to a fire event.
- (d) To prevent fire hydrants being misused, tamper proof hydrant covers must be installed over hydrant heads. The design of the tamper proof hydrant covers must be acceptable to DFES to ensure accessibility in the event of a fire.
- (e) Consideration should be given to the installation of a combined hydrant/sprinkler system.

### **G7.12 Fire hose reel system**

- (a) Under the NCC, Learning Areas and associated corridors within a Primary School or Secondary School are not required to be served by a fire hose reel system. This extends to other minor use areas of the building on the same storey, as long as they do not account for more than ten per cent of the area of the Learning Areas and associated hallways.
- (b) The NCC requires that fire extinguishers capable of covering Class A fire risks be provided in lieu of fire hose reels.
- (c) Project Co must obtain an alternative solution if it proposes to remove required fire hose reels from areas of the School Facility requiring fire hose reel coverage, and replace them with fire extinguishers of a suitable type and capacity.

- (d) Where an alternative solution cannot be obtained, fire hose reels must be installed as per the requirements of relevant Quality Standards including the NCC and AS 2441.

### **G7.13 Fire detection system**

- (a) Addressable smoke detection systems must be designed in accordance with relevant Quality Standards including AS 1670.1, and where air handling systems requiring AS 1668 shutdown are installed, in accordance with the requirements of relevant Quality Standards including AS 1668 to the satisfaction of the relevant Authority.
- (b) The fire alarm system must consist of the following equipment:
  - (i) addressable smoke detectors connected to the security system, installed throughout the buildings and within specific air handling Plant as required by relevant Quality Standards and Laws including AS 1668;
  - (ii) detectors within the air handling equipment of an addressable smoke probe type. The detection system must activate the smoke control system and be installed in accordance with NCC specification E2.2a;
  - (iii) sprinkler system flow switches and isolation valve monitoring throughout the buildings;
  - (iv) fire pumps and water tank level status conditions monitoring; and
  - (v) a fire fan control panel incorporating all AS 1668 fan controls, integrated within the FIP.
- (c) If an AS 1670 or AS 1668 detection system is present, the fire detection system must interface with the security system to provide notification of a smoke detection event.

### **G7.14 Building occupant warning system**

Where required by the NCC, an emergency warning system in accordance with relevant Quality Standards including AS 1670.1 must be installed throughout the buildings and include:

- (a) master emergency control panel located within the FIP;
- (b) 100mm round flush mount speakers for all ceiling areas and horn speakers for Plant rooms; and
- (c) visual amber and red strobe warning lights to provide alert and evacuation signals in areas of high background noise, including Plant rooms.

### **G7.15 Portable fire extinguishers**

- (a) Project Co must provide portable fire extinguishers selected and located in accordance with relevant Quality Standards including the NCC and the Department's *WA Requirements for Portable Fire Equipment in Schools*.
- (b) The alternative solution to remove fire hose reels may specify additional portable fire extinguishers. Project Co must comply fully with these additional requirements.

- (c) Fire blankets must be placed in a conspicuous and readily accessible location which complies with relevant Quality Standards including AS 2444. Where practicable, extinguishers and blankets must be located along normal paths of travel and near exits.

### **G7.16 Bushfire Attack Level**

Relevant Quality Standards, including AS 3959, may impose requirements above those required by the NCC and the Department. Project Co must comply fully with these additional requirements.

## G8. ACOUSTIC SERVICES

### G8.1 General

- (a) This Section sets out the requirements and targets for the acoustic performance of the School Facilities and its Functional Areas and Functional Units.
- (b) Acoustic works must be carried out in accordance with Best Industry Practices.

#### G8.1.1 Scope

The scope for the acoustic services for the Project includes:

- (a) environmental noise;
- (b) background noise levels;
- (c) acoustic isolation;
- (d) speech privacy;
- (e) room acoustics;
- (f) vibration control; and
- (g) noise control in Engineering Services.

### G8.2 Quality Standards and references

- (a) Unless otherwise required, Project Co must execute all work undertaken in accordance with the relevant Quality Standards and Laws, including:

TABLE 2 – ACOUSTIC SERVICES QUALITY STANDARDS AND LAWS

Standard/Regulation	Reference Used in this Technical Brief
Environmental Protection (Noise) Regulations 1997, as amended	Environmental Noise Regulations
State Planning Policy 5.4 'Road and Rail Transport Noise and Freight Considerations in Land Use Planning'	State Planning Policy 5.4
Australian Standard AS/NZS 2107:2000 Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors	AS 2107
Australian Standard AS2822. Acoustics – Method of Assessing and Predicting Speech Privacy and Speech Intelligibility	AS 2822
Australian Standard AS 2021:2000 Acoustics-	AS 2021

Aircraft noise intrusion – Building siting and construction	
Australian Standard AS1191 Acoustics-Method for laboratory measurement of airborne sound insulation of building elements	AS 1191
Australian Standard AS/NZS ISO 717 Acoustics-Rating of sound insulation in building element. Part 1: Airborne sound insulation Part 2: Impact Sound Insulation	AS/ISO 717.1 AS/ISO 717.2
Australian Standard AS/NZS ISO 140.7:2006 Acoustics-Measurement of sound insulation in buildings and of building elements. Part 7: Field measurement of sound insulation of floors	AS 140-7
Australian Standard AS2670 Evaluation of human exposure to whole-body vibration. Part 2: continuous and shock induced vibration in buildings	AS 2670.2

### **G8.3 Environmental noise – emission**

Environmental noise must be assessed in terms of:

- (a) noise emission from the School Facilities, and
- (b) intrusion of external environmental noise.

#### **G8.3.1 General requirements**

- (a) All noise emissions from the School Facilities must be in full compliance with the requirements of the Environmental Protection (Noise) Regulations 1997. All noise generated by School Activities must meet the assigned levels at neighbouring premises, as determined by those Regulations.
- (b) Noise generating activities to be assessed include:
  - (i) mechanical Plant, including HVAC, exhaust systems, dust extraction and the like;
  - (ii) breakout from Technologies Workshops, and associated external work areas;
  - (iii) breakout from performance and music practice areas; and
  - (iv) noise emissions from dedicated playground areas, particularly the Kindergarten and Pre Primary School Play Area.
- (c) While allowances are made in the Environmental Noise Regulations regarding noise emissions from educational facilities (Schedule 2 Community Noise), every effort

should be made to minimise noise emissions from all School Activities to neighbouring premises. Site planning should avoid locating noise generating activities in close proximity to residential neighbours.

### **G8.3.2 Noise within School Facility grounds**

- (a) The acoustic amenity of external areas within School Facility grounds is not addressed by any codes, standards or regulations. However, to maintain general amenity and support functional requirements, external areas including outdoor learning environments must be protected from undue noise.
- (b) Noise from Engineering Services installations must not exceed  $L_{Aeq}$  50dB. This limit must be achieved in any external area likely to be used for curriculum based activities.
- (c) The noise limit for transitory spaces including walkways and paths must not exceed  $L_{Aeq}$  55dB.

## **G8.4 Environment noise – intrusion**

### **G8.4.1 Environmental noise assessment**

Each Site must be assessed to determine the existence of environmental noise sources including traffic and aircraft noise, as well as other nearby noise sources including noise emission from adjoining facilities.

### **G8.4.2 Noise from transport infrastructure**

- (a) Potential for noise impacts due to road and rail infrastructure must be assessed in accordance with the State Planning Policy 5.4 *Road and Rail Transport Noise and Freight Considerations in Land Use Planning*. Initially this must include a screening assessment for each Site. Where a screening assessment identifies that the outdoor noise levels warrant further attention, then a detailed assessment must be conducted.
- (b) Potential for noise impacts due to aircraft noise must be assessed in accordance with relevant Quality Standards including AS 2021. In accordance with this standard, the noise intrusion from individual aircraft movements must not exceed the  $L_{A \max}$  indoor design sound levels established within Table 3.3. of AS 2021. The assessment of aircraft noise intrusion must take into account any ventilation paths through the building envelope.

### **G8.4.3 Steady state noise**

- (a) Building envelopes must be designed to control environmental noise intrusion. Steady state and quasi steady state environmental noise intrusion must be controlled to meet the recommended design sound levels set in relevant Quality Standards including AS/NZS 2107.
- (b) Table 12 sets out the recommended criteria as per AS 2107. Noise levels must be measured in terms of 'weighted equivalent weighted sound pressure level'  $L_{Aeq}$  as set out in AS 2017. Recommended reverberation times are also included in Table 3.

## **G8.5 Background noise**

- (a) The background noise levels must meet the requirements of relevant Quality Standards including AS 2107. The background noise sources must be considered in terms of the specified design sound levels and include:

- (i) Engineering Services:
    - (A) noise intrusion from Plant rooms and rooftop compounds;
    - (B) ventilation and air conditioning systems;
    - (C) hydraulic systems; and
    - (D) lighting;
  - (ii) external noise intrusion:
    - (A) traffic noise; and
    - (B) room-to-room activity generated noise transfer in accordance with *G8.6: Acoustic isolation – design requirements*.
- (b) The recommended design sound levels based on AS 2107 are outlined in Table 3.
- (c) When considering the criteria set out below:
- (i)  $L_{Aeq}$  is the A-weighted equivalent continuous sound pressure level;
  - (ii) the criteria apply to finished but unoccupied spaces;
  - (iii) noise should not have tonal or intermittent characteristics; and
  - (iv) the criteria apply to all Engineering Services operating normally and concurrently, including lighting.

TABLE 3 – RECOMMENDED DESIGN SOUND LEVELS AND REVERBERATION TIMES

Type of Occupancy or Activity	Recommended design sound level ( $L_{Aeq}$ dB)		Recommended reverberation time (T), seconds
	Satisfactory	Maximum	
Art and Craft Classroom and art studios	40	45	0.6 to 0.8
assembly halls up to 250 seats	30	40	See Note 1
assembly halls over 250 seats	30	35	0.6 to 0.8
AV areas (including Seminar Rooms)	35	40	0.6 to 0.8
Canteens and Cafeterias	45	50	See Note 3
computer rooms			
Teaching	40	45	0.4 to 0.6
Laboratory	45	50	0.4 to 0.6

Type of Occupancy or Activity	Recommended design sound level ( $L_{Aeq}$ dB)		Recommended reverberation time (T), seconds
	Satisfactory	Maximum	
Conference Rooms	35	40	0.6 to 0.7
corridors and lobbies	45	50	0.6 to 0.8
Technologies workshops			
Woodwork Workshop	50	60	See Note 3
Metalwork Workshop	50	60	See Note 3
Senior Engineering Workshop	50	60	See Note 3
Drama and Dance Studios	35	40	See Note 2
Reprographics Rooms/stores	45	50	0.6 to 0.8
Food Preparation – Learning Areas	40	55	See Note 3
Sports Hall	45	55	See Note 2
Interview/counselling rooms	40	45	0.3 to 0.6
Laboratories			
teaching	35	45	0.5 to 0.7
working	40	50	0.6 to 0.8
Lecture rooms up to 50 seats	30	35	See Note 1
Lecture Theatres			
without speech reinforcement	30	35	See Note 1
with speech reinforcement	35	45	See Note 1
Libraries			
general areas	40	50	0.4 to 0.6



Type of Occupancy or Activity	Recommended design sound level ( $L_{Aeq}$ dB)		Recommended reverberation time (T), seconds
	Satisfactory	Maximum	
reading areas	40	45	0.4 to 0.6
stack areas	45	50	See Note 3
Technologies Planning Rooms	40	45	0.4 to 0.6
Medical/Treatment Rooms	40	45	0.6 to 0.8
Music Practice Room	40	45	0.7 to 0.9
Music Ensemble Room	30	35	See Note 1
Office Areas (General)	40	45	0.4 to 0.6
Professional Office (single occupant)	35	40	0.6 to 0.8
Learning Areas			
Primary School	35	45	0.4 to 0.5 see Note 4
Secondary School	35	45	0.5 to 0.6 See Note 4
Staff Common Rooms	40	45	0.4 to 0.6
Swimming Pools	50	55	<1.5
Toilet/Change/Shower	45	55	n/a
Film/TV/Audio Studio	30	35	0.3 to 0.5
Reception, Foyers and Waiting Areas	40	45	0.4 to 0.7

(d) Table 3 – Notes:

- (1) Criteria is dependent on room volume – refer to Appendix A of AS 2107.
- (2) Recommended reverberation time is 10-20% higher than Curve 1 of AS 2107 Appendix A.

- (3) Reverberation time must be minimised as far as is practical for noise control. Health/hygiene regulations may preclude provision of traditional acoustic ceiling treatments in food Preparation Areas.
- (4) Certain Learning Areas, including those intended for Students with learning difficulties and Students with English as a second language, must have reverberation times at the lower end of the specified range.

### **G8.5.1 Building services noise**

Refer to *G8.13: Engineering Services noise control* for details of background noise requirements associated with building services.

### **G8.5.2 Rain noise**

- (a) Project Co must develop and incorporate design solutions regarding noise intrusion due to rain on roofing and other building elements. The objective is to ensure an appropriate indoor ambient noise level, relative to the acoustic sensitivity of the proposed activity.
- (b) In spaces having 'Very Low' Noise Tolerance (refer to Table 5 – *Sound Reduction Design Parameters*), rain noise intrusion must be controlled such that it does not exceed the design sound levels set out in relevant Quality Standards, including AS 2107, unless otherwise specified in Table 3 – *Recommended Design Sound Levels and Reverberation Times*.
- (c) In spaces having 'Low' Noise Tolerance, rain noise intrusion must be controlled such that it does not exceed the maximum design sound levels set out in Table 3 – *Recommended Design Sound Levels and Reverberation Times* by more than 5dB. Exceptions to this are:
  - (i) Professional Offices (single occupant), where the upper limit for rain noise is the maximum design sound level +10 dB (i.e. 50 dB(A)).
  - (ii) Conference Rooms where the upper limit for rain noise is the maximum design sound level +10 dB (i.e. 50 dB(A)).
  - (iii) Library Reading Areas where the upper limit for rain noise is the maximum design sound level +10 dB (i.e. 55 dB(A)).
- (d) In spaces having either 'Medium' or 'High' Noise Tolerance, the rain noise level must not exceed the maximum design sound levels set out in Table 3 – *Recommended Design Sound Levels and Reverberation Times* by more than 10 dB, up to a limit of 65 dB(A), whichever is lower.
- (e) These criteria are relevant to rainfall of 15 mm per hour.
- (f) Where required, the method of rain noise control must be compatible with all other aspects of the room acoustic design, such as reverberation control.

### **G8.6 Acoustic isolation – design requirements**

- (a) The objective of acoustic isolation is to control unwanted room-to-room noise transfer from normal activities within the School Facilities. The noise sources to be considered in terms of noise isolation include:

- (i) activity noise in adjoining spaces, including corridors;
  - (ii) structure borne noise sources; and
  - (iii) internal noise sources from Plant and equipment.
- (b) Careful planning is critical to achieve the acoustic objectives in terms of acoustic isolation between spaces. Wherever practical, Noise Sensitive Spaces are not to be located adjoining high noise areas. Where high noise areas accommodating music or other amplified noise sources are located directly adjacent to Noise Sensitive Spaces, higher levels of acoustic isolation than suggested by the assessment methods described below may be warranted. In technologies areas, visual connection may be considered to take precedence over acoustic separation.
- (c) Careful detailing of walls, windows, doors, floors, and ceilings must ensure that the field performance of the construction is not excessively downgraded due to acoustic leakage or flanking transmission. Similarly, mechanical system installations, natural ventilation plenums, ductwork and other Engineering Services including cable trays must not compromise the acoustic performance of the walls, floors or ceilings that are acting as an acoustic barrier.

**G8.6.1 Design performance requirements**

- (a) The design Sound Reduction (weighted Sound Reduction –  $R_w$ ) requirement for a particular scenario is determined by assessing the magnitude of activity noise in the source room and the noise tolerance for the receiving room. The minimum Sound Reduction requirement is assessed between a pair of rooms in each direction (A to B and B to A), using the activity noise in the source room and noise tolerance in the receiving room. The higher of the two ratings is used for the separating construction.
- (b) Table 4 below sets out the acoustic isolation design performance requirements between adjoining spaces.
- (c) **TABLE 4 – DESIGN PERFORMANCE FOR AIRBORNE SOUND INSULATION BETWEEN ROOMS**

Noise Tolerance in Receiving Room	Activity Noise in Source Room			
	Low	Average	High	Very High
High	Rw 35	Rw 40	Rw 45	Rw 50
Medium	Rw 40	Rw 45	Rw 50	Rw 55
Low	Rw 45	Rw 50	Rw 55	Rw 60
Very Low	Rw 50	Rw 55	Rw 60	Rw 65

- (d) Notes:
- (i) Source to receiver assessments must be conducted in both directions, and the higher of the two design ratings applied.

- (ii) Where constructions greater than  $R_w$  55 are required, it is advisable to consider replanning or to separate the spaces with a corridor or other interstitial space.
- (iii) Due consideration must be given to the inherent reduction in field performance expected when systems with design ratings ( $R_w$ ) are constructed on site. Flanking paths and acoustic weaknesses due to doors and glazing must be taken into account, such that the overall construction system achieves an appropriate field performance. It is common to expect at least a 5dB drop in performance in the field due to flanking paths (measured as  $D_{ntw}$ ), as compared to laboratory tested design ratings ( $R_w$ ).

### **G8.6.2 Sound reduction design parameters**

- (a) The minimum acoustic Sound Reduction requirements for walls and other construction elements that separate adjacent spaces are dependent on the level of activity noise and the noise tolerance of the adjoining spaces. The Sound Reduction design parameters for the major spaces are set out in Table 5.

(b) TABLE 5 – SOUND REDUCTION DESIGN PARAMETERS

Room Type	Activity Noise	Noise Tolerance	Impact insulation rating (LnTw)
Art and Craft Classroom, and art studios	Average	Medium	60
assembly halls up to 250 seats	High	Low	60
assembly halls over 250 seats	High	Low	60
AV areas (including Seminar Rooms)	High	Low	60
Cafeterias and Canteens	High	High	60
computer rooms:	Average	Medium	60
Conference Rooms	Average	Low	55
corridors and lobbies	Average	High	65
Drama and Dance studios	High	Very Low	55
Reprographics Rooms/stores	Low	High	65
Senior Engineering Workshops	Very High	High	65
Sports Hall	High	Medium	65
Interview/counselling rooms	Average	Low	55
Laboratories:			
Teaching	Average	Medium	60
Working/Prep Areas	Average	Medium	65
Lecture rooms up to 50 seats	Average	Low	60
Lecture theatres			
Without speech reinforcement	Average	Very Low	55
With speech reinforcement	Average	Low	55

Room Type	Activity Noise	Noise Tolerance	Impact insulation rating (LnTw)
Libraries:			
General Areas	Low	Low	55
Reading Areas	Low	Low	55
Stack Areas	Average	Medium	65
Technologies workshops	High	Medium	65
Technologies Planning Rooms	Average	Medium	65
Medical Rooms/Treatment Rooms	Average	Medium	60
Music Practice Room	Very High	Low	55
Music Ensemble rooms	Very High	Low	55
Office Areas (General)	Average	Medium	60
Principal/Professional Office	Average	Low	60
Learning Areas (including incidental):			
Primary School	Average	Medium	55
Secondary School	Average	Medium	55
Staff Common Rooms	Average	Medium	65
Swimming Pools	High	High	na
Toilet/Change/Shower	High	High	na
Film/TV/Audio Studio	High	Very Low	55
Reception, Foyers and Waiting Areas	Average	Medium	60

### G8.6.3 Flanking transmission

- (a) Flanking sound transmission via ceilings and other paths must be addressed to ensure that the required acoustic isolation is achieved in the field.

- (b) Careful detailing of building elements including walls, windows, doors, floors and ceilings must ensure that the performance of the construction is not downgraded due to flanking transmission. A ceiling system may provide both acoustic absorption and room-to-room Sound Reduction.
- (c) The wall, floor and ceiling construction systems must be designed to adequately control all acoustic leakage and flanking sound transmission paths. Issues to be addressed include:
  - (i) floor and ceiling junctions;
  - (ii) flanking sound transmission over ceiling;
  - (iii) corner detailing of walls and glazing systems;
  - (iv) connection of internal walls to external façades; and
  - (v) flanking transmission through window frame on external wall.
- (d) Where flanking transmission via metal roofs is unavoidable between adjoining rooms that require a moderately high wall performance of  $R_w45$ , and both rooms have perforated ceilings, an additional flanking reduction of a maximum 2 dB may be expected. This does not affect  $R_w40$  walls or below.

#### **G8.6.4 Wet areas adjoining occupied areas**

- (a) Where toilets, basins, tap fittings or other structure borne noise sources including hand dryers or paper dispensers back onto Noise Sensitive Space, the potential for hydraulic/impact noise transmission into the adjoining space must be addressed by means of a separate discontinuous wall lining on the wet area side of the wall. All pipes and fixtures are then to be fixed to this lining and must not touch the acoustic rated construction. Generally the discontinuous wall lining needs only to extend to the underside of the ceiling.
- (b) Doors to the toilet cubicles and toilet areas must have rubber stops to minimise impact noise. Toilet seats are also to have rubber stops to minimise impact noise.

#### **G8.6.5 Operable walls**

- (a) Acoustic operable walls must be a panel or folding type, consisting of top supported, manually operated panels that can be linked together to form a sound retardant closure. The manufacturer must guarantee that the operable walls have like construction to those tested in accordance with relevant Quality Standards including AS 1191 and rated in accordance with relevant Quality Standards including AS/ISO 717.1 by an Australian acoustic laboratory, to achieve the acoustic rating values specified.
- (b) Unless noted otherwise, operable walls must be specified to have a laboratory tested  $R_w$  rating that at least matches the required Sound Reduction rating of the partition that they are replacing. Project Co must be aware that the performance of operable walls in the field is significantly less than the laboratory tested performance. Operable walls are not to be used where a high level of acoustic isolation is critical, or in locations where the design performance value established via Table 14 is greater than  $R_w 50$ , unless there are overriding functional requirements (including between Drama and Dance Studios).
- (c) Minimum acceptable operable wall  $R_w$  ratings for specific planning arrangements include:

- (i) between Learning Areas:  $R_w$  45;
- (ii) between School Staff Areas and adjacent Conference Rooms:  $R_w$  45;
- (iii) between Primary School Music Classrooms and the Covered Assembly Area:  $R_w$  52; and
- (iv) between drama and Dance Studio spaces, where the combined space forms a school auditorium:  $R_w$  52.

### **G8.6.6 Plant rooms**

Noise from Plant rooms must be assessed to ensure that adjacent spaces, including above and below, comply with the recommended design sound levels as set out in relevant Quality Standards including AS 2107. See Table 12.

## **G8.7 Acoustic isolation – doors**

### **G8.7.1 Planning**

- (a) In designing to achieve appropriate airborne sound insulation between a corridor and adjacent space or interconnected spaces, consideration must be given to the limiting performance of doors and vision glazing.
- (b) In planning the location of doorways, consideration must be given to their acoustic weakness. Wherever possible, the distance between doors to neighbouring spaces must be maximised, rather than directly side-by-side. Similarly, doors along corridors must be offset, to avoid situations where one door is directly opposite another. Planning arrangements must be such that doors to spaces requiring confidential speech privacy (refer to G8.9), do not open directly onto waiting areas or to workstations in close proximity to the door.

### **G8.7.2 Doors in walls to transitory spaces**

- (a) Where doors are provided in walls to transitory spaces, the overall acoustic performance of the wall to that space can be reduced. A reduction in the order of  $R_w$  5dB is acceptable for walls where the required design performance is less than or equal to  $R_w$  45, and a reduction of  $R_w$  8 dB where the wall design performance is between  $R_w$  45 and 55. Walls with design performance of greater than  $R_w$  55 generally require access via lobbies or other arrangement, unless there are compelling reasons to the contrary.
- (b) This adjustment to the wall rating is applied prior to determining the relevant Sound Reduction rating for internal glazing. Refer to G8.7.4: *Internal glazing* for further details on transitory spaces requirements.

### **G8.7.3 Acoustic rated doors**

- (a) The minimum weighted Sound Reduction index for doors in various scenarios are set out below.
- (b) Project Co must provide a  $R_w$  30 door system to:
  - (i) Learning Areas to corridors;
  - (ii) offices and meeting rooms;
  - (iii) Interview Rooms to transitory or corridor space; and



- (iv) Principal's Office to transitory or corridor space.
- (c) Project Co must provide a  $R_w$  30 door system to:
  - (i) both points of entry to an acoustic lobby provided to spaces that accommodate music; and
  - (ii) both points of entry to an acoustic lobby provided to film/TV/audio studios.
- (d) Sliding panel doors represent a larger weakness in an acoustic rated wall systems than traditional single or double door systems. The minimum design rating for a sliding panel door opening from a Learning Area to circulation or corridor space is a minimum of  $R_w$  33.
- (e) The above assumes that planning principles set out in *G8.7.1: planning* have been adhered to, and that speech privacy will not be compromised by the unsuitable location of doors.

#### **G8.7.4 Internal glazing**

- (a) Internal glazing represents an acoustic weakness in an acoustic rated wall system. Internal glazing is not to be used where acoustic separation is a high priority, unless there are other compelling functional requirements for visual access. Where glazing must be provided to noise sensitive or noise generating spaces, the overall area should be minimised as far as is practical to meet the required functional objective.
- (b) The recommended minimum Sound Reduction values for internal glazing in various scenarios are set out below:
  - (i) in walls rated  $R_w$  40 to 45 to corridors or transitory spaces (that also accommodate a door), use at least  $R_w$  33 rated glazing;
  - (ii) in walls between related work spaces in Technologies areas (that also accommodate a door), use at least  $R_w$  33 rated glazing;
  - (iii) in walls rated  $R_w$  45 to 50 without a door, use  $R_w$  45 rated acoustic double glazing; and
  - (iv) avoid internal glazing in walls rated greater than or equal to  $R_w$  50. If essential, minimise the area and use  $R_w$  45 rated acoustic double glazing.
- (c) The design Sound Reduction values discusses above are for the combined frame and glazing system.

### **G8.8 Acoustic isolation – floors**

#### **G8.8.1 Airborne noise**

- (a) The airborne Sound Reduction requirement for a suspended floor/ceiling system below Plant rooms or occupied space is a minimum  $R_w + Ctr$  50. Particular attention is to be focussed on the control of flanking transmission though the façade of the building, particularly in areas with curtain walling.
- (b) Generally, spaces accommodating music or dance should not be located immediately above or below other habitable spaces. Where this is unavoidable, the airborne criteria is  $R_w + Ctr$  55.

**G8.8.2 Impact noise**

- (a) Sources of impact noise should be controlled at the source wherever possible. The objective is to attenuate impact sound (including footsteps and furniture movement) being transmitted into the adjacent space via the floor. As far as is practical, planning should ensure that sources of impact noise are separated from Noise Sensitive Spaces.
- (b) Impact noise isolation design criteria are set out in Table 14, where  $L_nT_w$  is the weighted standardised impact sound pressure level. These criteria are relevant to the control of normal footfall and furniture movement. Dance Studios, Technologies Workshops and areas which accommodate heavy impact are not suited to location on suspended slabs. Special consideration of impact isolation of all spaces accommodating heavy impact is required (including ground floors), to prevent undue noise intrusion to adjacent spaces. This may include the use of structurally isolated slabs.

**G8.9 Speech privacy**

In addition to acoustic isolation to address general activity noise established in accordance with Table 13 and 14, specific acoustic design is required for areas that require speech privacy. Where spaces require speech privacy, the assessment for both acoustic isolation and speech privacy must be undertaken. The higher level of acoustic separation required to adequately address these issues as assessed by the two methods must be used in the design.

**G8.9.1 Design for speech privacy**

- (a) Spaces requiring speech privacy must be designed in accordance with relevant Quality Standards including *AS 2822 Acoustics – Method of Assessing and Predicting Speech Privacy and Speech Intelligibility*.
- (b) The design for speech privacy must consider the following factors:
  - (i) vocal effort: normal, raised, stage or shouting voice level;
  - (ii) privacy requirement: normal or confidential privacy;
  - (iii) background noise level in the receiving space;
  - (iv) size of intervening partition;
  - (v) size and acoustic absorption in the source room; and
  - (vi) size and acoustic absorption in the receiving room.

**G8.9.2 Definitions**

(a) TABLE 6 – VOCAL EFFORT

Vocal Effort	Sound level at 1 metre	Description
Normal	60 dB(A)	Speaking in normal office
Raised	66 dB(A)	Speaking in a Conference Room.

		Interjecting in small office or a loud voiced person
Loud	72 dB(A)	Addressing a medium sized group Disagreement between persons
Shouting	78 dB(A)	Distraught person

(b) The definitions for speech privacy levels are:

- (i) normal speech privacy: speech that is, although partly intelligible, not intrusive. It assumes a noise-to-speech ratio of 9 dB and corresponds to an articulation index of approximately 0.10.
- (ii) confidential speech privacy: speech that is not intelligible, except when a person concentrates on hearing. It assumes a noise-to-speech ratio of 15 dB and corresponds to an articulation index of approximately 0.05.

(c) The speech privacy requirements established in terms of the vocal effort and speech privacy level for relevant spaces are set out in Table 7 below.

(d) TABLE 7 – SPEECH PRIVACY REQUIREMENTS

Room Type	Vocal Effort	Speech Privacy Level
administrative offices	Normal	Normal
Interview Rooms	Normal	Confidential
offices – single occupant	Normal	Confidential
Principal's Office	Raised	Confidential
offices – counsellor/psychologist	Raised	Confidential

### G8.9.3 Design parameters

- (a) Background noise: It is essential that in the assessment of speech privacy requirements, a realistic assessment of occupancy noise and the expected background noise due to the mechanical system be undertaken. For example, low ambient sound levels that often occur at the ends of duct runs can result in noticeable reduction in masking, which can be detrimental to speech privacy. The satisfactory design sound level as set out in relevant Quality Standards, including AS 2107, must be used as the reference background noise in the design for speech privacy.
- (b) Design  $R_w$ : The design weighted Sound Reduction index is the performance of the partition as determined in an acoustic laboratory. The design process must allow for the expected reduction in achieved performance in the field, due to flanking sound transmission paths (normally a factor of 5 dB).

## **G8.10 Room acoustic design**

### **G8.10.1 General requirements**

- (a) The room acoustic design of all habitable spaces must be considered to ensure the acoustic environment is Fit For Purpose.
- (b) The room acoustic design must consider:
  - (i) reverberation;
  - (ii) pattern of acoustic reflections;
  - (iii) location of acoustic absorption;
  - (iv) location of various noise sources; and
  - (v) background noise level.
- (c) Detailed room acoustic design must be carried out for specialist spaces including Lecture Theatres, performing arts spaces, and Sports Halls.

### **G8.10.2 Reverberation**

- (a) The control of reverberation in spaces is normally carried out either for noise reduction within a room, or to create a specific acoustic environment. All habitable spaces must be designed to meet the reverberation times recommended by Quality Standards, including AS 2107.
- (b) Reverberation control required in large complex spaces, including Lecture Theatres and performing arts spaces, must be assessed to take into account the three dimensional arrangement of the space and the distribution of acoustically absorbent materials. This may be via ray trace predictive modelling.

### **G8.10.3 Acoustic diffusion**

- (a) Parallel room surfaces within music and drama spaces must be avoided as they can result in problematic acoustic effects including flutter echoes and standing waves. Acoustic diffusion including angled walls or diffuser panels must be provided.

### **G8.10.4 Design for passive acoustics**

As far as is practical, Lecture Theatres and drama studios must be designed to maximise the ability to rely on 'natural speech' (un-amplified speech). This requires consideration and design of:

- (a) acoustically absorbent surfaces for general reverberation control, and to control delayed or other problematic acoustic reflections; and
- (b) appropriately angled walls and ceilings adjacent to and above the 'stage' end of the space, to address problematic reflections and project sound energy towards the 'audience' area.

## **G8.11 Vibration**

All equipment and associated pipework and ducts must be vibration isolated from the structure, as per the requirements of relevant Quality Standards, including AS 2670.2.

Surface vibration in habitable spaces must not be perceptible. Structure-borne noise must be controlled to comply with relevant Quality Standards including AS 2107.

## **G8.12 Specific acoustic design requirements**

### **G8.12.1 External covered areas**

- (a) External covered areas used for assemblies, sporting activities or teaching must be provided with an acoustically absorbent surface to the underside of the roof to control reverberation. The selected acoustically absorbent lining must achieve a minimum Noise Reduction Coefficient of 0.7.
- (b) Where areas where sporting activities are undertaken, the selected ceiling or lining system must be resistant to damage associate with ball impacts.

### **G8.12.2 Performing Arts spaces**

#### **G8.12.2.1 General**

Spaces used for music and drama must incorporate appropriate levels of acoustic isolation as well as room acoustic design features to provide adequate diffusion and reverberation control, to suit the intended activities and remain Fit For Purpose.

#### **G8.12.2.2 Acoustic isolation of spaces accommodating music**

- (a) The effects of music noise intrusion must be mitigated. Wherever practical, planning should be used to separate spaces accommodating music practice, performance or other amplified music from adjacent Learning Areas. An acoustic lobby arrangement must be provided to separate spaces accommodating music from the general circulation.
- (b) In addition, the Sound Reduction ratings determined in accordance with Table 13 and Table 14 must be adjusted to include the Ctr correction for low frequency noise, where the adjacent habitable space does not also accommodate musical activity.

#### **G8.12.2.3 Acoustic diffusion**

- (a) Angled walls or wall panels must be provided within music and drama spaces such that the walls are out-of-parallel. Where acoustically reflective ceilings are used in music and drama spaces, they must be angled, sloped, or incorporate other diffusing shapes to ensure there are no detrimental acoustic reflections between the ceiling and floor surfaces.
- (b) Within the 'stage' area of a performance space, the acoustic diffusion elements must assist in reflecting sound energy away from the stage, and towards the audience. Strategies include:
  - (i) acoustically reflective ceiling or suspended panels above the stage which are angled/raked to reflect sound energy towards the audience area; and
  - (ii) acoustically reflective walls or panels on the sides of the stage at low level (less than 2800mm AFL), that are angled to reflect sound energy towards the audience area.

#### **G8.12.2.4 Reverberation control**

Acoustically absorbent ceiling and/or wall surfaces must be provided such that the reverberation time complies with the criteria in Table 3.

### G8.12.2.5 External noise break-out

- (a) Consideration must be given to controlling noise break-out from the performing arts areas and other spaces that accommodate music. Noise break-out to surrounding Facility buildings must be controlled to comply with relevant Quality Standards including AS 2107.
- (b) The noise emissions to surrounding residences must be controlled to comply with the Environmental Protection Regulations.

### G8.12.2.6 Rain noise control

Refer to *G8.5.2: Rain noise* for further details on rain noise acoustic treatment for Performing Arts areas.

## G8.12.3 Materials Technology Workshops

- (a) All workshop spaces must be provided with acoustically absorbent ceilings or roof lining to control reverberation. The acoustically absorbent lining must achieve a minimum Noise Reduction Coefficient of 0.75.
- (b) The structure-borne noise transmission from workshop benches and workshop equipment must be controlled to minimise impact on adjacent habitable spaces and meet the design sound levels set out in the relevant Quality Standards.
- (c) Consideration must be given to controlling noise break-out from the workshops and associated external activity areas. Noise emission to surrounding School Facility buildings must be controlled to comply with relevant Quality Standards including AS 2107. The noise emissions to neighbouring premises must be controlled to comply with the Environmental Protection Regulations.
- (d) It is acknowledged that the need to provide visual connection between various spaces within the technologies teaching block may take precedence over acoustic separation. Where the Sound Reduction values, as per *G8.6:Acoustic isolation – design requirements*, cannot be met due to the required extent of internal vision glass, Project Co must identify the relevant planning arrangement for review and comment by the State.

## G8.13 Engineering Services noise control

### G8.13.1 Mechanical services

#### G8.13.1.1 Environmental noise emissions

All noise emissions from mechanical equipment must be in full compliance with the requirements of the Environmental Protection Regulations, and meet the acoustic amenity criteria for School Facility grounds as per *G8.3: Environmental noise – emission*.

#### G8.13.1.2 Background noise

- (a) Noise emissions must be controlled to ensure that the background noise level in occupied spaces meets the requirements of relevant Quality Standards including AS 2107. The noise of equipment must be free of tonality and intermittency as outlined in the Australian Standard.
- (b) Duct attenuation systems must be designed to ensure noise breakout from ducts together with duct borne noise and regenerated noise at air grills meets the

recommended design sound levels when measured in accordance with relevant Quality Standards including AS 2107.

- (c) Project Co must be aware that background noise levels below the satisfactory level established in AS 2107 can result in loss of acoustic privacy. Where it is determined that constant background noise levels due to HVAC are likely to drop below the satisfactory level in spaces that require confidential speech privacy, steps must be taken to either increase the acoustic isolation of the space, or introduce sound masking to generate appropriate constant background noise.

### G8.13.1.3 Acoustic isolation

Many spaces within educational projects have significant requirements in terms of acoustic isolation. Where mechanical systems penetrate wall, floors or ceiling systems, the design Sound Reduction performance of the wall or ceiling system must not be compromised. The acoustic compromise caused by door grilles must be carefully considered to ensure undue noise transfer does not occur. Door grilles are generally not suitable for doors to habitable spaces.

## G8.13.2 Hydraulic services

### G8.13.2.1 Planning

Careful planning of wet areas is critical for achieving the acoustic objectives of the Design Brief. Wet areas must be planned in order to minimise structure-borne noise transmission from the hydraulic services to Noise Sensitive Spaces. Project Co must:

- (a) wherever practical, avoid locating wet areas above or adjacent to Noise Sensitive Spaces including general learning areas and offices; and
- (b) avoid placing cisterns, basins and troughs on walls that are common to Noise Sensitive Spaces.

### G8.13.2.2 Design requirements

- (a) All hydraulic systems must be designed to be free of water hammer and to minimise hydraulic system noise. Operating pressures and flow at fixtures must be controlled to minimise operating noise.
- (b) Noise intrusion from the hydraulic systems in use must comply with the maximum design sound levels set out in relevant Quality Standards including AS 2107 and Table 12. The noise must be assessed based on the level of intrusion into any habitable space, determined by the maximum level measured using slow time weighting;  $L_{A \max(\text{slow})}$ . The criteria are relevant to water supply fixtures, pipe systems, as well as waste water systems and stormwater.
- (c) Noise emission from fire pumps must comply with the Environmental Protection Regulations, including when operated for regular maintenance. Noise emission from fire pumps into adjacent School Facility buildings must not exceed the design sound levels set out in Table 12 by more than 5 dB.

## G8.13.3 Electrical services

### G8.13.3.1 Ambient noise levels

All electrical equipment and systems must be installed to ensure compliance with relevant Quality Standards including AS 2107 and Table 12.

### G8.13.3.2 Electrical services/conduits within the walls and ceilings

Any electrical services within the walls and ceilings, including switch boxes, conduits, light fittings and the like, must not downgrade the Sound Reduction performance of the building element.

### G8.13.3.3 Lifts

Where possible, lift shafts must not be located adjacent Noise Sensitive Spaces. If this is unavoidable, the lift wall must be acoustically lined with discontinuous construction designed to ensure lift noise measured as a  $L_{A \max (slow)}$  does not exceed the maximum design sound level as established in Table 12.





Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and holding a beaker. The student on the left is partially visible, also smiling. The background shows laboratory equipment and shelves.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## PART H

### Glossary

### September 2015

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## H1 GLOSSARY

- (a) Defined terms in Clause 1 of the Project Deed apply in this Schedule 26 (Design Brief) unless the context requires otherwise or the relevant term is otherwise defined in this glossary.
- (b) Functional Areas and Functional Units capitalised in this Design Brief correspond to those described in Schedule 23 (Schedule of Accommodation).

Term	Meaning	Discipline
AAT	Assisted Access Toilets (AATs) are intended for use predominantly by Students with an Education Assistant. The requirements for the facilities exceed the requirements of AS1428, the NCC, and the Access to Premises Standards and are in accordance with dimensions and floor areas specific to the Department's requirements.	
Academic Year	Academic Year has the meaning given to it in Clause 1 of the Deed.	
ACB	Air Circuit Breaker.	Electrical
AFL	Above Floor Level.	
Approval	Approval has the meaning given to it in Clause 1 of the Deed.	
ARI	Average Recurrence Interval.	Stormwater
Art Coordinator	The consultant Subcontractor engaged by Project Co to manage the procurement and delivery of Public Art in accordance with the requirements of the Percent for Art Scheme, including as described in Section B5 Public Art (Percent For Art) of this Design Brief.	
Artwork Selection Committee	A committee formed as part of the Public Art procurement process for the tendering, evaluation and selection of Public Art commissions that includes representatives from the Department, Strategic Projects (Department of Treasury), OGA, Users, Project Co and the Art Coordinator.	

Term	Meaning	Discipline
As-Built Information	means the consolidated building information comprising all drawings and specifications comprising the For Construction Documentation and the For Fabrication Documentation, as updated following completion of the Works for a Stage, to reflect all changes that have been made to those drawings and specifications during construction, including Modifications, and showing the exact dimensions, geometry and location of all elements of the completed Works, to be provided by Project Co to the State at Commercial Acceptance, for further use and updating by Project Co to facilitate maintenance in connection with the Services and record Modifications during the Term.	
ASD	Air Sampling Detection.	Fire
Australian Standards or AS****	The relevant and current Australian Standards for a process, design or product, published by Standards Australia.	
Australian Curriculum	The Australian Curriculum sets consistent national standards to improve learning outcomes for all Australian school Students.	
Authority	Authority has the meaning given to it in Clause 1 of the Deed.	
AV	Audio visual.	
A-weighted Sound Pressure Level (LA)	The level of frequency-weighted sound pressure, as determined by an integrating-averaging sound level meter complying with AS 1259.2 or a time-weighting sound level meter complying with AS 1259.1.	Acoustics
Best D&C Practices	Best D&C Practices has the meaning given to it in Clause 1 of the Deed.	
Best Industry Practices	Best Industry Practices has the meaning given to it in Clause 1 of the Deed.	
BIM	Building Information Modelling (BIM) is a process involving the generation and managing of digital representations of the physical and functional characteristics of a facility providing a shared knowledge resource for information about the facility forming a basis for decisions during its lifecycle.	
BMW	The Building Management and Works business unit of the Department of Finance in Western Australia.	

Term	Meaning	Discipline
Building Tuning	The period of time (>12 months) after building occupation to review system operation in various tenant and ambient conditions to ensure systems are operating as intended, especially in terms of energy consumption and thermal comfort.	
Building Users' Guide	An operations manual that describes how to operate the School Facilities including the Engineering Services in accordance with the design intent and in an efficient manner to optimise building performance and sustainability initiatives. It is to be written in plain English such that it can be readily understood by an average person (as opposed to technical staff).	
Bush Forever Site	Those specific localities identified as such in the former Bush Forever policy (2000) and State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region (2010), which are regionally significant bushland and are recommended for protection, as endorsed by Cabinet (Government of Western Australia, 2000).	
Bushfire Attack Level or BAL	A means of measuring a building's potential exposure to ember attack, radiant heat and direct flame contact in a bushfire event as defined under AS 3959.	
Business Manager	School Registrar.	
CABE	The former Commission for Architecture and the Built Environment (CABE) now incorporated within the Design Council (UK), whose role was to advise the UK government on how to achieve, assess and review good design in public buildings, landscape and urban design.	
CAD or CADD	Computer-aided design (CAD) or computer-aided design and drafting (CADD) is the use of computer systems to assist in the production of drawings and the creation, modification, analysis or optimisation of a design.	
CAM	Computer-aided manufacture. See CAD.	
CAN	Controller area network.	Electrical
Carbon Emissions	Method of comparing the green house gas emissions intensity between options, generally accepted as referring to the equivalent in kilograms of Carbon Dioxide emitted to the atmosphere.	ESD
CCTV	Closed-circuit television.	Electrical

Term	Meaning	Discipline
Churn	A term used to describe the changing use and population of a Facility. Churn generally refers to costs including additional training or retraining, modification of facilities and lost knowledge attached to staff departure.	
Clean Fill	Has the meaning given in the Department of Environment and Conservation Guideline 'Landfill Waste Classification and Waste Definitions 1996' (as amended December 2009).	Civil
Communications Manuals	The manual to be prepared by Project Co which forms part of the Operations and Maintenance Manual, including as described in Clause G1.8.3 of this Design Brief.	
Conservation Category Wetland	Conservation category wetlands (also known as C Category) are wetlands with high conservation value for both natural and human use. Refer to the WAPC for further information.	
Contamination	Contamination has meaning the given to it in Clause 1 of the Deed.	
Core Hours	Core Hours has the meaning given to it in Clause 1 of the Deed.	
Core School Areas	Those Functional Areas and Functional Units which are integral to the conduct of the School Activities and generally not associated with community use or public access. This includes Classroom Blocks, Teaching Staff areas, Science Learning Areas, Cafeterias and Information Resource Centres, and excludes areas such as the physical education Learning Area and Performing Arts Learning Area.	
CPTED	Crime Prevention Through Environmental Design (CPTED) means the urban design principles established to ensure safety in urban design including as described in the Designing out Crime Planning Guidelines published by the WA Planning Commission and the Australian Institute of Criminology and Parts C, E F and G of this Design Brief.	
CT	Current transformers (CT) are used extensively for measuring current and monitoring the operation of a power grid.	Electrical
Ctr	Low frequency sound correction factor.	Acoustic
CUA	Common use arrangement.	FF&E
DC	Direct current	Electrical

Term	Meaning	Discipline
DCA	The Department of Culture and the Arts in Western Australia – responsible for guiding the delivery of culture and arts for Western Australia through the provision of policy development, coordination and support services to the Culture and Arts portfolio in Western Australia.	
DDA	Disability Discrimination Act 1992 (Cth).	
Department	Department has the meaning given to it in Clause 1 of the Deed.	
DER	The Department of Environment Regulation , formed from the Department of Environment and Conservation (DEC). DER is responsible for works approvals and licensing, compliance and response, enforcement and other major environmental initiatives within Western Australia.	
Design Brief	Means this Schedule 26.	
Design Deliverables	Design Deliverables has the meaning given to it in Clause 1 of the Deed.	
Design Development Process	Design Development Process has the meaning given to it in Clause 1 of the Deed.	
Design Development Program	A program to manage the Design Development of the Project, including the dates for the issue of drawings and documents, Design Review meetings, the procurement of FF&E and User group meetings for each Design Phase, prepared by Project Co in accordance with the requirements set out in Schedule 10 (Programming Requirements).	
Design Life	<p>Means the life expectancy of a building, landscape or Engineering Services system, element or component of the School Facilities and Off-Site Infrastructure with regular and proper maintenance, refurbishment and repair (including replacement of wear-out parts) in accordance with Best Operating Practices, being the period of time during which the system, element or component is expected by Project Co to function in a manner which is Fit For Purpose, measured from the Date of Commercial Acceptance.</p> <p>Refer to <i>I1: Design Life Requirements</i> for further details.</p>	
Design Quality Benchmarking	Means quality benchmarking of design including as described in Clause <i>B7.3: Design Quality Benchmarking</i> of this Design Brief.	

Term	Meaning	Discipline
Design Review	Means a design review including as described in Clause B7.2: <i>Design Review</i> of this Design Brief.	
Design Sound Level	The level of noise that has been found to be acceptable by most people for the environment in question and also to not be intrusive.	Acoustics
Design Phase	Design Phase has the meaning given to it in Schedule 9 (Design Development) of the Deed.	
Development Phase Activities	Development Phase Activities has the meaning given to it in Clause 1 of the Deed.	
DFES	The Department of Fire and Emergency Services (DFES) being the Government Agency responsible for performing a critical role coordinating emergency services for a range of natural disasters and emergency incidents threatening life and property.	
Direct Access	Co-located with rapid access.	
DoC	The Department of Commerce in Western Australia.	
DoF	The Department of Finance in Western Australia.	
DoT	The Department of Transport in Western Australia.	
DSR	The Department of Sport and Recreation in Western Australia.	
DTWD	The Department of Training and Workforce Development in Western Australia.	
EACS	Electronic Access control System.	
Easy Access	Convenient and timely access, which may be achieved through the use of Vertical Transportation, stairs or a ramp.	
Education Support Learning Community	A learning community provided at designated Facilities as per the SOA to support Students with high needs, including intellectual disabilities, physical disabilities, autism spectrum disorder or a multiple disability.	



Term	Meaning	Discipline
ELV	Extra Low Voltage.	Electrical
End of Trip Facilities	End of trip facilities are designated places that support cyclists, joggers and walkers in using alternative ways to travel to and from the School Facilities.	
Engineering Services	means the integrated building services and systems incorporating environmental control and safety provisions for the safety, comfort, wellbeing and enjoyment of Users, which includes all irrigation systems, stormwater systems (including rainwater harvesting systems), ground and structure monitoring systems, motorised or operable structural elements, acoustic treatments, fire engineering and life safety systems, fire protection and detection systems, hydraulic services (including gas reticulation systems), mechanical services (including refrigeration equipment for cold rooms and freezers), electrical services (including the EMS, backup power supply units and generators), lighting systems, ICT systems, AV systems, security systems (including the SMS), vertical transportation, EWMS, any integrated extra low voltage systems or other similar systems, including as described in <i>Part G: Engineering Specifications</i> of this Design Brief.	
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth).</i>	
ESA	Environmentally sensitive area.	
ESD	Ecologically sustainable development.	
ESR (cabling)	Earth sheath return cabling.	Electrical
EWMS	Energy and Water Management System (EWMS) is a web enabled monitoring system that that monitors the performance and consumption of electricity, water, gas and photovoltaic inverters across all School Facilities, in accordance with the requirements set-out in section G5.18.	Electrical Hydraulic
FECA	Fully enclosed covered area (FECA).	
FF&E	FF&E has the meaning given to it in Clause 1 of the Deed.	
FF&E Category	FF&E Category means the relevant category under <i>Table 2: FF&amp;E Categories</i> in this Design Brief.	
FFP Warranty	FFP Warranty has the meaning given to it in Clause 1 of the Deed.	

Term	Meaning	Discipline
Fire Indicator Panel or FIP	A fire indicator panel is the controlling component of a fire alarm system.	Fire
Fit For Purpose	Fit For Purpose has the meaning given to it in Clause 1 of the Deed.	
Functional Area	A grouping of related Functional Units, including as described in the Schedules of Accommodation (SOA) and <i>Part D: Functional Brief</i> of this Design Brief.	
Functional Unit	Any room or area of the School Facilities designed, constructed, commissioned and completed to accommodate a specific function or activity, including as described in the Schedules of Accommodation (SOA) and <i>Part D: Functional Brief</i> of this Design Brief and each Transportable Unit and each Contingency Transportable Unit.	
GBCA	The Green Building Council of Australia (GBCA) is a not for profit, non-government organisation which develops and administers the Green Star rating system, amongst other activities including education and lobbying for sustainable design.	
GPO	General power outlet	Electrical
Green Star	The design assessment tool run and administered by the GBCA. For the purposes of this report Green Star typically refers to the Green Star Education V1 – Design tool.	
Hazardous Areas	International standards define three levels of Hazardous Area Classifications – Zone 0, Zone 1 and Zone 2. See also Zone 1 Hazardous Area.	
HDPE	High-density polyethylene.	
HVAC	Heating, ventilating and air conditioning.	Mechanical
HV	High voltage.	Electrical
HVLS	High volume low speed (HVLS) fans are large diameter fans that can move large amounts of air at low rotational speed.	
Hydro-zoning	The practice of grouping plant species in garden beds that have similar irrigation requirements. This method allows for efficient and effective watering strategies to be developed and tailored to the needs of the plants.	
ICT	ICT has the meaning given to it in Clause 1 of the Deed.	

Term	Meaning	Discipline
IEQ	Indoor environment quality (IEQ) is a category of design assessment within the Green Star tools which deals with occupant comfort in terms of air quality, outlook, thermal comfort, noise and general amenity.	ESD
IP	Internet Protocol.	
Kindergarten	Kindergarten has the meaning given by Section A3.1: <i>Primary Schools</i> .	
LA max (slow)	The maximum level with A-weighted frequency response and slow time constant.	Acoustics
LAeq	Equivalent sound level.	Acoustics
LAN	Local area network.	Electrical
Laws	Laws has the meaning given to it in Clause 1 of the Deed.	
LCC	Lifecycle cost (LCC) refers to the total cost of ownership over the life of an asset. See also LCC Analysis and WOL.	
LCC Analysis	An LCC analysis is a tool to determine and evaluate the most cost-effective option among different competing alternatives to purchase, own, operate, maintain and dispose of an object or process, when each is equally appropriate to be implemented.	
Learning Areas	Encompasses Functional Units where teaching and learning activities occur, including General Learning Areas, Incidental Learning Areas, classrooms and Internal Activity Areas.	
LED	Light emitting diode, method of light generation which can be more efficient than fluorescent with substantially longer life times for bulbs.	Electrical
LGA	Local government Authority.	
LPD	Load protection devices.	Electrical
LV	Low voltage.	Electrical
LWP	LWP Property Group.	
MATV	Master antenna television.	

Term	Meaning	Discipline
MCB	Miniature circuit breaker.	Electrical
MDF	Medium density fibreboard.	
MOU	A Memorandum of Understanding (MOU) describes a bilateral or multilateral agreement between two or more parties.	
MRWA	Main Roads Western Australia.	
MSB	Main switchboard.	Electrical
NCC	The National Construction Code Series published by the Australian Building Codes Board, as updated from time to time.	
Noise Reduction Coefficient	A laboratory rating of a material's sound absorption quality.	Acoustics
Noise Sensitive Space	Any space that is assigned a Noise Tolerance rating of 'Very Low', 'Low' or 'Medium', as defined in Table 5 in Section G8.6.2(b).	Acoustics
ODP	Ozone depletion potential. A measure of how much damage a particular substance can and will do to the ozone layer if released. The damage is considered against Tri-Chlorofluoromethane (R-11/CFC-11) is used as the reference and is set at an ODP of 1.	Mechanical
Off-Site Infrastructure	Off-Site Infrastructure has the meaning given to it in Clause 1 of the Deed.	
Other Off-Site Infrastructure	Other Off-Site Infrastructure has the meaning given to it in Clause 1 of the Deed.	
OGA	The Office of the Government Architect in Western Australia.	
OHS Laws	OHS Laws has the meaning given to it in Clause 1 of the Deed.	

Term	Meaning	Discipline
Operation and Maintenance Manuals	Operation and Maintenance Manuals provide descriptions, diagrams, technical details, operating and maintenance instructions and schedules, commissioning records, log books, catalogues, principles of operation, methods of operation and other information that will enable the ongoing operation and maintenance of the School Facilities, including all Engineering Services systems, plant and equipment.	
PA	A public address (PA) system is an electronic sound amplification and distribution system used to allow a person to address a large public.	Electrical
PDF	Portable document format.	
PEC	Priority ecological community.	
Pedagogy	The theory and principles of education.  Pedagogical has a corresponding meaning.	
Pest	Pest has the meaning given to it in Annexure H – Glossary of Schedule 27 (Services Specifications)	
PLC	Programmable logic controller.	
PMV	The predicted mean vote (PMV) is a number ranging from +3 (too hot) to -3 (too cold) using the ASHRAE thermal comfort scale; (+2 warm, +1 slightly warm, 0 neutral, -1 slightly cool, -2 cool). It considers a number of inputs, including temperature, air movement, clothing, activity level, radiant temperature and humidity.	Mechanical
POS	Public open space (POS) is owned by the LGA, and where it adjoins a Department Site may have the potential for community partnerships to be developed through an MOU between the LGA and the Department.	
PPE	Personal protective equipment.	
PPP	Public private partnership.	
Primary School	Primary School has the meaning given to it in Clause 1 of the Deed.	
Principal	Principal has the meaning given to it in Clause 1 of the Deed.	

Term	Meaning	Discipline
Project	Project has the meaning given to it in Clause 1 of the Deed.	
Project Co	Project Co has the meaning given to it in Clause 1 of the Deed.	
PSB	The Primary School Brief included in Schedule 6 (Information Documents) of the Deed.	
PTA	The Public Transport Authority of Western Australia.	
Public Art	Artworks installed at each School Facility in accordance with the requirements of the Percent for Art Scheme using a professional Art Coordinator familiar with the Percent for Art Scheme.	
Public Art Strategy	A strategy which identifies the areas and opportunities for Public Art within the School Facilities in accordance with the Percent for Art Scheme.	
PV Cells	Photo voltaic (PV) cells are a method of generating electrical power by converting solar radiation into direct current electricity using semiconductors that exhibit the photovoltaic effect.	Electrical
PVC	Polyvinyl chloride.	
Quality Standards	<p>Quality Standards means all standards, codes, specifications, guidelines, policies and other requirements to be complied with in accordance with, and subject to, the terms of the Deed including:</p> <p>(a) the standards, codes, specifications, guidelines, policies, instructions and other requirements set out in, or otherwise expressly referred to in the Output Specifications;</p> <p>(b) all Approvals (including any requirements under them) and any requirements of Authorities having jurisdiction over, the Project Activities, the School Facilities and the Verge Works and Verge Infrastructure (or any of them);</p> <p>(c) the National Construction Code;</p> <p>(d) the Disability (Access to Premises – Buildings) Standards (2010) under the <i>Disability Discrimination Act 1992</i> (Cth);</p> <p>(e) all relevant national and State policies;</p> <p>(f) all relevant standards, codes and guides of Standards Australia and Standards New Zealand (with the</p>	

Term	Meaning	Discipline
	<p>year of the standards, codes, and guides to be as referenced by the National Construction Code, unless noted otherwise in the Output Specifications or otherwise approved by the State), and, where an Australian Standard or a New Zealand Standard does not exist, the relevant British Standard or International Standard;</p> <p>(g) all relevant standards, codes, and guides published by WorkCover Corporation of Western Australia and WorkSafe WA;</p> <p>(h) to the extent they do not conflict with the standards, codes or guides published by WorkSafe WA, the standards, codes and guides published by the National Occupational Health and Safety Commission and Safe Work Australia;</p> <p>(i) National Environment Protection (Assessment of Site Contamination) Measure 1999 (Cth);</p> <p>(j) all Education Policies; and</p> <p>(k) all other standards, codes, specifications, guidelines, policies and requirements relevant to the Works, the Services, the School Facilities and the Verge Infrastructure (or any of them),</p> <p>as amended, updated or replaced from time to time.</p>	
RCD	Residual current devices.	Electrical
RDS	See Room Data Sheets.	
Ready Access	Within close proximity but not co-located.	
Reverberation Time	Reverberation time is the time required, in seconds, for the average sound in a room to decrease by 60 decibels after a source stops generating sound.	Acoustics
Room Data Sheets	Room Data Sheets (RDS) describe the function, content and characteristics of each room or space and provide a minimum specification of finishes, fittings and environmental requirements. Refer to <i>I2: Room Data Sheets – Primary Schools</i> and <i>I3: Room Data Sheets – Secondary Schools</i> in the Design Brief for further details.	
R <sub>w</sub>	See Weighted Sound Reduction.	Acoustics

Term	Meaning	Discipline
Safety In Design	The design process to be implemented by Project Co which focuses on minimising or eliminating hazards identified during the Design Development Phase that may pose a risk of injury or death throughout the Service Life of the School Facilities, including as described in Section <i>B5: Safety In Design of this Design Brief</i> .	
Safety in Design Review Report	The Design Deliverable to be prepared by Project Co and submitted to the State in accordance with Schedule 12 (Review Procedures) at the completion of the Safety In Design process, including in accordance with Clause <i>B5.2: Safety in Design Review Report</i> of this Design Brief and Schedule 9 (Design Development) of the Deed.	
Schedules of Accommodation	Schedules of Accommodation (SOA) means the schedules provided by the Department to describe the spatial requirements and functional room relationships for schools, and includes the Generic SOAs for primary schools and secondary schools in WA and individual SOAs for each School Facility as set out in Schedule 23 (Schedule of Accommodation).	
School Activities	School Activities has the meaning given to it in Clause 1 of the Deed.	
School Facility	School Facility has the meaning given to it in Clause 1 of the Deed.	
School Staff	School Staff has the meaning given to it in Clause 1 of the Deed.	
School Staff Areas	Encompasses Functional Units that are for the primary use of School Staff, including Staff Studies, staff rooms, Staff Common Rooms and Offices.	
Secondary School	Secondary School has the meaning given to it in Clause 1 of the Deed.	
Section J	Refers to a Section within the NCC which deals with sustainable design requirements in terms of reducing ongoing Carbon Emissions. The general contents of each Section is summarised below: J1 – Building Fabric; J2 – Building Glazing; J3 – Building Sealing; J4 – Not in Use; J5 – Mechanical; J6 - Electrical; J7 – Hydraulic and Pools; and J8 – Maintenance.	



Term	Meaning	Discipline
Service Life	means the estimated lifecycle or expected period of use of an asset for its intended purpose according to Best Industry Practices and Law.	
SID	Safety in design.	
Site	Site has the meaning given to it in Clause 1 of the Deed.	
Site Information Reports	Site Information Reports has the meaning given in Clause A10.1(c) of this Design Brief.	
SMS	Security management system.	Electrical
SOA	See Schedules of Accommodation.	
Sound Reduction	See Weighted Sound Reduction.	Acoustics
SSISEP	Sound System and Intercom System for Emergency Purposes.	Fire
SSPG	The Secondary School Planning Guide included in Schedule 6 (Information Documents) of the Deed.	
Student	Student has the meaning given to it in Clause 1 of the Deed.	
Subcontractor	Subcontractor has the meaning given to it in Clause 1 of the Deed.	
Teaching Staff	Those School Employees involved in the provision of those School Activities which directly relate to educating Students, including the provision of all curriculum, teaching and pastoral support, career guidance, extra curricular, remedial, training, vocational, scholastic and educational activities provided for the benefit of children of compulsory school age.	
Term	Term has the meaning given to it in Clause 1 of the Deed.	
THDi	Total harmonic distortion of current.	Electrical
TPS (cabling)	Thermoplastic sheathed cabling.	Electrical

Term	Meaning	Discipline
Transportable Unit Zone	An allocated zone for the future provision of Transportable Units that is generally flat with compacted Clean Fill, is able to accommodate the access requirements for the delivery and removal of Transportable Units by a semi-rigid vehicle and has all required Utilities provided to a designated accessible connection point within the zone, including as described in Section C4.1 of this Design Brief.	
Transportable Units	Transportable Units has the meaning given to it in Clause 1 of the Deed.	
UAT	Universally Accessible Toilets (UATs) are predominantly intended for use by Users with disabilities. The requirements for the facilities exceed the requirements of relevant Quality Standards including the Disability (Access to Premises – Buildings) Standards (2010) under the <i>Disability Discrimination Act 1992</i> (Cth), AS1428 and the NCC, and are in accordance with dimensions and floor areas specific to the Department’s requirements as set out in this Design Brief.	
Universal Access	<p>Universal Access means access to buildings, products and environments that:</p> <p>(a) as a minimum, comply with relevant Quality Standards and Laws, including the Disability (Access to Premises – Buildings) Standards (2010) under the Disability Discrimination Act 1992 (Cth), AS1428 and the Disability Discrimination Act 1992 (Cth);</p> <p>(b) comply with all higher Department standards as set out in this Design Brief; and</p> <p>(c) are inherently accessible to older people, Users without disabilities and Users with disability, including as a consequence of impairment that may be physical, cognitive, mental, sensory, emotional, developmental, or some combination of these.</p> <p>Universally Accessible has a corresponding meaning.</p>	
UFA	Usable Floor Area	
UPS	Uninterrupted Power Supply.	Electrical
Users	Users has the meaning given to it in Clause 1 of the Deed.	
Utility	Utility has the meaning given to it in Clause 1 of the Deed.	

Term	Meaning	Discipline
Utility Company	Any public Authority or public or private body that provides a Utility.	
Utility Infrastructure	Utility Infrastructure has the meaning given to it in Clause 1 of the Deed.	
UTP (cabling)	Unshielded twisted pair. A type of cabling used in telecommunications and computer networks.	Electrical
Verge Infrastructure	Verge Infrastructure has meaning given to it in Clause 1 of the Deed.	
Verge Works	Verge Works has meaning given to it in Clause 1 of the Deed.	
VET	Vocational education and training.	
VOC	Volatile organic compound.	
WA	Western Australia.	
WADCM	Western Australian Distribution Connections Manual.	Electrical
WAN	Wide area network.	Electrical
WAPC	The Western Australian Planning Commission.	
Weighted Sound Reduction	The weighted sound reduction index ( $R_w$ ) is a number used to rate the effectiveness of a soundproofing system or material.	Acoustics
WELS	Water Efficiency Labelling and Standards (WELS) scheme.	Hydraulics
WOL	'Whole of life'. See also LCC.	
WOL Cost	The total cost of ownership (including capital and operating costs) over the WOL of an asset.	
Works	Works has the meaning given to it in Clause 1 of the Deed.	
WSUD	Water sensitive urban design (WSUD) refers to the planning and design of urban environments that ensures that urban water management is sensitive to natural hydrological and ecological cycles and integrates urban planning with the management, protection and conservation of the urban water cycle.	Stormwater

<b>Term</b>	<b>Meaning</b>	<b>Discipline</b>
Zone 1 Hazardous Area	An area in which an explosive atmosphere is likely to occur periodically in normal operation. Refer also to Hazardous Areas.	



Department of Education

Department of Treasury

A photograph of three students in a chemistry laboratory. They are wearing white lab coats and safety goggles. The student in the center is smiling and looking down at a beaker. The student on the right is also smiling and holding a beaker. The student on the left is partially visible, also smiling. The background shows laboratory equipment and shelves.

# WA SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT

## PART I

### Appendices

### September 2015

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## **I1. MINIMUM COMPLETION TESTS**

### **I1.1 Scope**

This Appendix describes the minimum tests Project Co must successfully complete to achieve Commercial Acceptance (the **Minimum Completion Tests**).

### **I1.2 General requirements**

- (a) Without limiting this Appendix I1 and Schedule 11 (Commercial Acceptance Criteria) of the Deed, Project Co must conduct all necessary testing, commissioning and other practices to demonstrate that the School Facilities:
  - (i) are constructed in accordance with the requirements of the Deed;
  - (ii) meet the Design Requirements; and
  - (iii) are Fit For Purpose.
- (b) All testing and commissioning must be undertaken in accordance with the Deed. Project Co must undertake all inspection, testing and commissioning (including these Minimum Completion Tests) in accordance with:
  - (i) Best D&C Practices;
  - (ii) manufacturer requirements;
  - (iii) relevant Quality Standards and Laws; and
  - (iv) the requirements of all relevant Authorities and Government Agencies, including:
    - (A) the relevant local government Authority for a Stage;
    - (B) the DFES;
    - (C) Utility Companies; and
    - (D) other relevant Authorities, including as required by this Design Brief.
- (c) (**Testing personnel**) Project Co must ensure that all testing is undertaken by experienced commissioning personnel of the Subcontractor that installed the relevant Engineering Service, system, item of plant or Project Co FF&E and that such personnel:
  - (i) are correctly certified for the particular test applicable; and
  - (ii) have valid experience in the particular field applicable. Without limiting paragraph (a), where required, Project Co must ensure that testing is conducted under the supervision of an accredited person of the manufacturer or supplier of the particular Engineering Service, system, item of plant or Project Co FF&E.
- (d) Where required in this Design Brief, Project Co must engage a Chartered Professional Engineer or other Accredited Professional (or Practitioner) to complete testing or authorise test results.
- (e) (**Subcontractors**) Project Co must ensure that all relevant Subcontractors:

- (i) are available for each inspection and test; and
- (ii) provide the staff and resources required to:
  - (A) carry out each inspection and test; and
  - (B) rectify any Defects including programming faults found during inspections and testing.
- (f) **(Testing instruments)** Project Co must:
  - (i) supply or otherwise provide all instruments and appliances necessary to conduct all inspection, testing and commissioning (including these Minimum Completion Tests);
  - (ii) ensure all test instruments have been checked and calibrated for accuracy by the manufacturer;
  - (iii) only use test instruments if they have been designed for the specific task for which they are used; and
  - (iv) provide a copy of calibration showing the degree of accuracy of each of the testing instruments to the Independent Certifier if requested by the State or the Independent Certifier.
- (g) **(Programming of works)** Project Co must incorporate all inspection, testing and commissioning (including these Minimum Completion Tests) in the DBFM Works Program, including duration, interdependencies, sequence and notice for witnessing attendance.

### **I1.3 ITP requirements**

For each Stage:

- (a) Project Co must prepare an Inspection and Test Plan (**ITP**) for each project element, Engineering Services system or trade included in Sections I1.4.1 to I1.4.16 inclusive of these Minimum Completion Tests.
- (b) Project Co must prepare an ITP, checklist and test sheet in accordance with the general requirements set out in Section I1.2 (General Requirements).
- (c) Each ITP must set out Project Co's methodology for inspecting and testing the relevant project element, Engineering Services system or trade, including:
  - (i) the relevant Quality Standards and Laws;
  - (ii) the relevant Authority and Authorisation (and relevant Government Agencies consulted, including DFES);
  - (iii) a schedule of the project elements, Engineering Services or trades that will be inspected or tested under the ITP;
  - (iv) details of any construction hold points for inspection or testing to occur;
  - (v) required inspection(s);
  - (vi) planned inspection date(s);
  - (vii) the inspection entity;



- (viii) required tests, addressing the following:
    - (A) static tests, including for example pipe tests (pressure, welding integrity), cable tests (continuity, resistance, earthing integrity) and ductwork tests (leak tests);
    - (B) dynamic tests, including for example for water and air balancing, motors, switching and capacity testing;
    - (C) system tests for testing operation of whole systems, including for example testing of mechanical services systems, lighting systems, fire protection systems; and
    - (D) integration tests for testing the operation of integrated services, including for example fire mode testing, power fail mode testing and event and incident scenarios;
    - (E) energy efficiency tests, including automatic deactivation, time control, etc. required to demonstrate compliance with the energy efficiency modelling undertaken.
  - (ix) methodology for testing (including details of testing equipment);
  - (x) testing criteria;
  - (xi) planned test date(s);
  - (xii) planned test location, for off-site or factory based tests;
  - (xiii) the testing entity;
  - (xiv) methodology for operational readiness simulations (where relevant);
  - (xv) safety implications regarding the test (including preparation of a safe work method statement (**SWMS**) as required);
  - (xvi) details of any required involvement of the State, relevant Authorities and relevant third parties (or any of them); and
  - (xvii) details of any required independent witness or certification (including the design engineer(s) or consultant(s) (where relevant)).
- (d) Project Co must prepare each ITP to reflect that witnessing by the Independent Certifier and the State should typically take place only once a predetermined level of testing or preparation has been demonstrated by submission of successful pre-test results.
- (e) ITPs must be prepared, as required, to support demonstration of rectification of Defects. These tests may replicate existing ITPs or new plans may be required. All ITPs must be provided in a consistent format and layout.
- (f) Each ITP must also be provided with a suite of reference documentation, including as appropriate:
- (i) validation master plan;
  - (ii) User requirements specification(s);
  - (iii) control drawings;

- (iv) equipment installation instructions; and
- (v) site specific standard operating procedures (**SOPs**).

## **11.4 Inspection and testing requirements**

Project Co must inspect and test each element of the Works for each Stage in accordance with Section 11.2 (General Requirements) and any relevant ITPs, including inspection and testing of the elements set out in Sections 1.4.1 to 1.4.17 inclusive.

### **11.4.1 External works**

- (a) Project Co must inspect and test each element of the external works including:
  - (i) surface water drainage;
  - (ii) communications, including incoming ducts;
  - (iii) landscaping, including play equipment;
  - (iv) irrigation systems;
  - (v) fire main and hydrant;
  - (vi) natural gas supply;
  - (vii) water supply and sewerage;
  - (viii) general external lighting;
  - (ix) decorative external lighting features, including to public art and façades;
  - (x) signage;
  - (xi) external finishes including hard and soft landscaping (including consolidation);
  - (xii) Public Art (including any required Engineering Services infrastructure);
  - (xiii) lightning protection;
  - (xiv) external structures such as covered walkways, landscaping features, and buildings;
  - (xv) HV and LV power supplies; and
  - (xvi) IP Network and EWMS connections, as applicable.
- (b) Project Co must carry out testing to demonstrate the full functionality of the complete irrigation system.
- (c) Project Co must provide a record of all plants provided at Commercial Acceptance and a report by a landscape consultant to certify the proper establishment of all plants and soft landscaping.

### **11.4.2 Building works**

- (a) Project Co must inspect and test each element of the building works including:
  - (i) waterproofing membranes (including tanking and roof membranes);

- (ii) structure;
  - (iii) building envelope (including façade and roof);
  - (iv) internal partitions;
  - (v) ceilings;
  - (vi) door hardware (including closers, hinges, locks and similar);
  - (vii) flooring;
  - (viii) drainage of wet areas in accordance with relevant Quality Standards and Laws;
  - (ix) paint and other surface finishes;
  - (x) joinery (including permeability, seals, hardware and similar);
  - (xi) fire, smoke and acoustic stopping;
  - (xii) insulation and barriers;
  - (xiii) signage; and
  - (xiv) Public Art (including where mechanically, electrically or hydraulically operated).
- (b) Project Co must carry out testing to certify that all areas of each School Facility where day lighting requirements are specified are in accordance with the Design Brief.

#### **11.4.3 Civil works**

- (a) Project Co must inspect and test each element of the civil works including:
- (i) downpipes of buildings to demonstrate all downpipes are free of leaks and meet the acoustic isolation requirements;
  - (ii) Site stormwater drains, drains within and under buildings and main internal drains must be free of leaks when subjected to the tests specified in the AS3500.3;
  - (iii) rising mains must be free of leaks when subjected to the tests specified in the AS3500.3;
  - (iv) stormwater pumps, pump wells and control panels;
  - (v) storm water pit location, size, type of cover and class of cover;
  - (vi) inspection openings;
  - (vii) steps within pits;
  - (viii) surface levels and grades including for pedestrian areas, road pavement, drop-off areas and carpark areas;
  - (ix) subgrade of pavement prior to placing fill material; and

- (x) fill material and compaction for all layers of filling for pavement.
- (b) Project Co must:
  - (i) **(ponding)** demonstrate that no water ponds on any hard or soft surfaces;
  - (ii) (stormwater)
    - (A) test all stormwater management systems in accordance with applicable discharge requirements; and
    - (B) prior to Commercial Acceptance undertake camera test inspections of all storm water drainage lines.

#### 11.4.4 Acoustics

- (a) Project Co must acoustically inspect and test elements of the Works including as set out in Clauses (b) to (g) below.

Physical testing must demonstrate compliance with the acoustic performance criteria specified in this Design Brief.

All acoustic testing must be conducted by member firm of the Association of Australian Acoustical Consultants, by a suitably experienced acoustical consultant, holding at least Member Grade (M.A.A.S) of the Australian Acoustical Society.

In the event that the test results for outdoors or indoors noise levels or reverberation times exceed the relevant acoustic performance criteria specified in this Design Brief, Project Co must rectify any installation deficiencies or provide other noise control as required.

In the event that the test results for airborne sound isolation or impact sound isolation fail to meet the relevant acoustic performance criteria specified in this Design Brief, Project Co must undertake additional tests of comparable construction system situations, to ensure the deficiency is not systemic. Project Co must rectify all occurrences of the deficiency, and retest the upgraded construction to ensure the relevant acoustic performance criteria are met.

- (b) **(Outdoors sound levels – environmental)**
  - (i) The measurement of outdoors sound levels must be undertaken in accordance with AS1055, or an approved equivalent standard which provides an accurate and objective comparison using a time period representative of the noise under assessment.
  - (ii) Sound level meters must comply with all relevant specification standards for Type 1 integrating sound measurement equipment and be within a valid laboratory-calibration period at the time of survey. The meter must also satisfy all relevant Quality Standards for acoustic measurement devices, including schedule 4 of the *Environmental Protection (Noise) Regulations 1997* (WA).
  - (iii) All measurements of sound levels must be taken in accordance with the relevant Quality Standards including AS1055.1-1997 Acoustics – Description and Measurement of Environmental Noise, Part 1: General Procedures.
  - (iv) Testing is to be conducted at relevant external learning environments, to demonstrate noise emissions from Engineering Services operating in representative mode comply with the ‘Noise within school grounds’ criteria

set out in Part G, Section G8 (Acoustic Services) of this Schedule 26 (Design Brief).

- (v) Testing is to be conducted at relevant property boundaries or other suitable locations, to demonstrate environmental noise emissions from Engineering Services, including HVAC, dust extraction and compressed air systems, comply with the *Environmental Protection (Noise) Regulations 1997 (WA)* when operating under full load capacity.

(c) **(Indoors sound levels)**

- (i) The measurement of indoors sound levels must be undertaken in accordance with relevant Quality Standards including AS/NZS 2107:2000, or an approved equivalent standard which provides an accurate and objective comparison, using a time period representative of the noise under assessment.
- (ii) Sound level meters must comply with all relevant specification standards for Type 1 integrating sound measurement equipment and be within a valid laboratory-calibration period at the time of the field measurements.
- (iii) To be compliant, Engineering Services noise is to be free of noticeable tonal characteristics, when assessed in accordance with relevant Quality Standards including AS/NZS 2107.
- (iv) Hydraulic services noise level tests position to be no more than 2.0 metres from the subject test wall.
- (v) Testing to be conducted in finished spaces (ready for occupancy) as nominated in *Table 1: Schedule of acoustic testing requirements (for each Stage)* below, with Engineering Services under assessment, operating during time of day representative of typical external traffic conditions relevant to school occupancy hours.

(d) **(Reverberation times)**

- (i) The measurement of reverberation times must be in accordance with the methodologies prescribed in relevant Quality Standards including AS/NZS 2460:2002.
- (ii) Reverberation times must be assessed against the design criteria based on the arithmetic average of octave bands with centre frequencies 500Hz and 1kHz (excluding the octave bands with centre frequencies less than 125Hz or greater than 4kHz). However, reporting is to include both the octave band data from 125Hz to 4kHz, as well as the mid frequency average.
- (iii) Testing to be conducted in finished spaces (ready for occupancy) as nominated in *Table 1: Schedule of acoustic testing requirements (for each Stage)* below. The extent of room fitout/furnishing and occupancy must be reported.

(e) **(Airborne sound isolation)**

- (i) Physical testing of airborne sound isolation must be conducted in accordance with relevant Quality Standards including Part 4 of AS/ISO 140, Acoustics – measurement of sound insulation in buildings and of building elements.

- (ii) The results of testing of airborne sound isolation should be recorded in terms of third octave band results including the range of full octaves with centre frequencies 63 to 4,000Hz, and as appropriate single value ratings using the methodology outlined in relevant Quality Standards including AS/ISO 717.
  - (iii) Field measured weighted sound level difference values (Dw) should be reported against the specified design values (Rw), allowing for a 5dB field factor adjustment/tolerance. (i.e.  $Dw + 5dB \geq Rw$  design criteria).
  - (iv) The arrangement of physical testing of airborne sound isolation must be representative of final installation, to the satisfaction of the State. Where rooms are ‘unfurnished’ it is acceptable to measure and report Dntw results which are standardised to a reverberation time of 0.5 seconds, in lieu of Dw results. However, reporting must include both the Dw and Dntw results, and comment on the extent of furnishing/fitout present during the test.
  - (v) Testing to be conducted in spaces as nominated in Table 1: Schedule of acoustic testing requirements (for each Stage) below.
- (f) **(Impact sound isolation)**
- (i) Physical testing of impact sound isolation must be conducted in accordance with relevant Quality Standards including Part 7 of AS/ISO 140, Acoustics – measurement of sound insulation in buildings and of building elements.
  - (ii) The results of testing of impact sound isolation should be recorded in terms of third octave band results including the range of full octaves with centre frequencies 63 to 4,000Hz, and as appropriate single value ratings using the methodology outlined in relevant Quality Standards including AS/ISO 717.
  - (iii) Field measured values for weighted standardised impact sound pressure levels (Lntw) should be reported against the specified design values.
  - (iv) The arrangement of physical testing of impact sound isolation must be representative of final installation, to the satisfaction of the State. Testing to be conducted in spaces as nominated in *Table 1: Schedule of acoustic testing requirements (for each Stage)* below.
- (g) **(Schedule of acoustic testing requirements)**
- (i) The following table summarises the minimum extent to which physical testing must be carried out in accordance with Clause I1.2 to demonstrate compliance with the requirements set out in Schedule 26 Part G, Section G8 (Acoustic Services).

**Table 10: Schedule of acoustic testing requirements (for each Stage)**

Functional Unit	Acoustic test required	Extent/comments
Learning Environments	Outdoors Sound Levels	Test areas likely to be most affected by Engineering Services noise emissions.
All habitable spaces	Indoors Sound Levels	Test all

Functional Unit	Acoustic test required	Extent/comments
General Learning Areas, laboratories, workshops and studios	Indoors Sound Levels	Test all
	Reverberation Times	All Source and Receiver Rooms that are tested for Airborne or Impact Sound Isolation (see below)
	Airborne Sound Isolation	<p>Select at least 2 representative 'Source Rooms' in each Functional Area or Classroom Block and test to all adjacent occupiable spaces (Receiver Rooms), including corridors and toilets (not stores or cleaners). Where possible, choose room arrangements with different planning configurations. Learning Area to corridor tests are primarily to check for acoustic flanking/leakage.</p> <p>Where construction systems vary within a Functional Area or Classroom Block, increase the number of Source Room tests to include all typical construction systems with design ratings of Rw 45 or above.</p> <p>In the Technologies Learning Area that has workshops bounded predominantly by corridors and stores (non-habitable spaces), test from at least one workshop 'across' the non-habitable spaces to the nearest adjacent Learning Area, laboratory or studio.</p> <p>In each Functional Area or Classroom Block test at least 50% of operable walls (at least one) that separate Learning Areas, studios, laboratories or workshops. If one wall fails, test all remaining operable walls between the Functional Units.</p> <p>In multi-level Functional Areas or buildings, test the relevant Source Room to Receiver Room spaces above/below the separating floor construction.</p>

Functional Unit	Acoustic test required	Extent/comments
	Impact Isolation      Sound	For suspended slabs over habitable spaces test at least one example of each floor type/construction arrangement.
Internal Activity and Incidental Learning Areas	Indoors Levels      Sound	Test all
	Reverberation Times	Test at least 50% of spaces
	Airborne Isolation      Sound	Nil – sufficient results should be obtained via the Learning Area, workshop, laboratory or studio tests.
	Impact Isolation      Sound (multi-level buildings only)	If different to other Learning Areas, workshops, laboratories or studios, suspended slab floor construction systems, test at least one example of each floor type/construction arrangement.
Corridors	Indoors Levels      Sound	Test at least 3 spatially different locations in each building block
	Reverberation Times	Test at least 3 spatially different locations in each building block.
	Airborne Isolation      Sound	Nil – sufficient results should be obtained via the Learning Area, workshop, laboratory or studio tests.
	Impact Isolation      Sound	For corridors with suspended slabs over habitable spaces, test at least one example of each floor type/construction arrangement.
Music Classroom	Indoors Levels      Sound	Test all
	Reverberation Times	Test one room representative of this type.



Functional Unit	Acoustic test required	Extent/comments
	Airborne Isolation Sound	<p>Test one representative Music Classroom to all adjacent occupiable spaces (including Covered Assembly Area in 'closed' mode').</p> <p>In multi-level building blocks, test the relevant Source Room to Receiver Room spaces above/below the separating floor construction.</p>
	Impact Isolation Sound	<p>If different to other Learning Area, workshop, laboratory or studio suspended slab floor construction systems, test at least one example of each floor type/construction arrangement.</p>
Library/Resource Area	Indoors Levels Sound	<p>Test in the Resource Area, Student Group Room, Conference Room and School Staff Areas</p>
	Reverberation Times	<p>Test in the Resource Area, Student Group Room, Conference Room and School Staff Areas</p>
	Airborne Isolation Sound	<p>Test one scenario of Resource Area to adjacent Learning Area or School Staff Area, where the separating wall is rated at least Rw 45. Test across non habitable spaces where these form the separating construction.</p> <p>Test all operable walls.</p> <p>In multi-level building blocks, test the Resource Area to 1x relevant habitable space above/below the separating floor construction.</p>
	Impact Isolation Sound	<p>If different to other Teaching Space suspended slab floor construction systems, test at least one example of each floor type/construction arrangement.</p>
School Areas	Indoors Levels Sound	<p>Test all</p>

Functional Unit	Acoustic test required	Extent/comments
	Reverberation Times	Test all
	Airborne Sound Isolation	Test one representative School Staff Area to an adjacent habitable space, where the design rating is at least Rw 45.  Test all operable walls.
	Impact Sound Isolation	If different to the other Learning Area, workshop, laboratory or studio suspended slab floor construction system, test at least one example of each floor type/construction arrangement.
Principal's Office, Deputies' Offices, Student Services/Medical Centre Offices (excluding the Nurse's Office), Interview Rooms and Conference Rooms (5 types)	Indoors Levels Sound	Test all
	Reverberation Times	In each Functional Area or Classroom Block test one example of each type of space. Increase number of test of the same type of space where warranted due to variation in comparable size/volume and acoustic treatment.
	Airborne Sound Isolation	In each Functional Area or Classroom Block test one example of each type of space to all adjacent spaces.
	Impact Sound Isolation	Test Impact intrusion to the same Source Rooms selected for Airborne Sound Isolation testing only if the suspended floor above is of a different construction type compared to Learning Areas, workshops, laboratories and studios found to

Functional Unit	Acoustic test required	Extent/comments
		comply elsewhere.
Offices, Business Manager's Office, Nurse's Office (3 types)	Indoors Sound Levels	Test all
	Reverberation Times	In each Functional Area or Classroom Block test one example of each type of space.
	Airborne Isolation Sound	In each building block test one example of each type of space to all adjacent spaces.
	Impact Isolation Sound	Test Impact intrusion to the same Source Rooms selected for Airborne Sound Isolation testing only if the suspended floor above is of a different construction type compared to Learning Areas, workshops, laboratories and studios found to comply elsewhere.
Music Ensemble Rooms/Practice Rooms	Indoors Sound Levels	Test all
	Reverberation Times	Type test one of each size/volume provided they have the same extent of acoustic treatment. Where volumes or acoustic treatments vary, test all.
	Airborne Isolation Sound	<p>Test one Music Ensemble Room and one smaller Music Practice Room to all adjacent spaces, including via lobby to corridor.</p> <p>In multi-level buildings, test the Music Ensemble Room and one Music Practice Room to a relevant habitable space above/below the separating floor construction.</p>
	Impact Isolation Sound	If different to Learning Area, workshop, laboratory or studio suspended slab floor construction systems, test at least one example of each floor type/construction

Functional Unit	Acoustic test required	Extent/comments
		arrangement.
Film/TV/Audio Recording Studio	Indoors Sound Levels	Test all
	Reverberation Times	Type test one of each size/volume provided they have the same extent of acoustic treatment. Where volumes or acoustic treatments vary, test all.
	Airborne Isolation Sound	<p>Test one Film/TV/Audio Studio to all adjacent spaces, including to Control Room and via entry lobby to adjacent occupiable space.</p> <p>In multi-level building blocks, test one studio to a relevant habitable space above/below the separating floor construction.</p>
	Impact Isolation Sound	For suspended slabs over studio spaces test at least one example of each floor type/construction arrangement.
Lecture Theatre	Indoors Sound Levels	Test all
	Reverberation Times	Test all
	Airborne Isolation Sound	Test to all adjacent occupiable spaces (Receiver Rooms), including corridor.
	Impact Isolation Sound	For suspended slabs over a Lecture Theatre space test at least one example of each floor type/construction arrangement.
Drama/Dance Auditorium (Teaching Spaces 1 and 2)	Indoors Sound Levels	Test all

Functional Unit	Acoustic test required	Extent/comments
	Reverberation Times	Test all
	Airborne Isolation Sound	Test to all adjacent occupiable spaces (Receiver Rooms) not including stores, including wet areas and corridor.
	Impact Isolation Sound	For suspended slabs over a Drama/Dance Auditorium test at least one example of each floor type/construction arrangement.
Dance Studio	Indoors Levels Sound	Test all
	Reverberation Times	Test all
	Airborne Isolation Sound	Test to all adjacent occupiable spaces (Receiver Rooms) not including stores, including corridor.
	Impact Isolation Sound	For suspended slabs over a Dance Studio test at least one example of each floor type/construction arrangement.
Sports Hall	Indoors Levels Sound	Test all
	Reverberation Times	Test all
	Airborne Isolation Sound	Test to adjacent habitable spaces where the wall design rating is at least Rw 45.
	Impact Isolation Sound (Planning should avoid this arrangement)	For a Sports Hall with a suspended slab over habitable spaces, test at least one example of each floor type/construction arrangement. To include any 'gym' type space that accommodates activities involving fitness equipment, weights or aerobic

Functional Unit	Acoustic test required	Extent/comments
		activity.
Hydrotherapy Pool	Indoors Sound Levels	Test all
	Reverberation Times	Test all
Wet Areas with common wall to a habitable space - with fittings on the common wall.	Indoors Sound Levels  <i>See Part G, Section G4 (Hydraulic Services) of this Schedule 26 (Design Brief). Test to be based on operation of a fitting located on the separating wall.</i>	For one representative scenario in each Functional Area or building, separately test the level of hydraulic noise intrusion to an adjacent Learning Area, studio or laboratory resulting from i) water supply pipe flow and ii) cistern flush/fill cycle. (Test to an alternative habitable room where no Learning Area, studio or laboratory is available, but not to stores, corridors or other wet/services areas).
	Airborne Isolation Sound	Where relevant, test the dividing wall applicable to the tests scenario above.
Wet areas above habitable spaces (in multi-level buildings)	Indoors Sound Levels  <i>See Part G, Section G4 (Hydraulic Services) of this Schedule 26 (Design Brief)</i>	For one representative scenario in each Functional Area or building, separately test the level of hydraulic noise intrusion to a Teaching or Activity Area below, resulting from i) water supply pipe flow and ii) waste water discharge from cistern flush/fill cycle. (Test to an alternative habitable room where no Learning Area, studio or laboratory is available, but not to stores, corridors or other wet/services areas).
	Airborne Isolation Sound	Where relevant, test the dividing floor construction applicable to the test scenario above.
	Impact Isolation Sound	For wet areas located over habitable spaces, test at least one example of each floor type/construction arrangement.

### 11.4.5 Electrical services

- (a) Project Co must inspect and test each element of the electrical services works including:
- (i) electrical primary voltage system;
  - (ii) emergency mode operation for safety services;
  - (iii) LV switchboards;
  - (iv) LV distribution boards;
  - (v) ELV distribution cabling;
  - (vi) LV distribution cabling;
  - (vii) DC system and associated cabling;
  - (viii) LV earthing system;
  - (ix) LV earthing system;
  - (x) mechanical services, hydraulic services and Vertical Transportation switchboards;
  - (xi) general lighting system and controls;
  - (xii) emergency lighting systems;
  - (xiii) transient voltage surge suppressors;
  - (xiv) incoming power supply quality;
  - (xv) variable speed drives;
  - (xvi) grounding and ground fault systems;
  - (xvii) residual current and other protection devices;
  - (xviii) LV bus-way;
  - (xix) local devices (including switches and outlets);
  - (xx) lightning protection;
  - (xxi) EMS including all metering and monitoring points;
  - (xxii) MATV system;
  - (xxiii) power factor correction unit;
  - (xxiv) UPS system;
  - (xxv) automatic operation under fire evacuation mode;
  - (xxvi) testing of all override control systems; and
  - (xxvii) testing of all photovoltaic equipment, including inverters.

- (b) Project Co must:
- (i) (LV distribution system)
    - (A) test the main switchboard and all distribution boards to demonstrate operational functionality;
    - (B) test safety switches and RCDs;
    - (C) test earth loop impedance on every circuit;
    - (D) check that all interlock circuits function correctly;
    - (E) carry out insulation tests;
    - (F) check that all circuit breakers function correctly;
    - (G) check that spare fuse cartridges and other spare parts have been supplied and are fitted in racks provided;
    - (H) check that all operating handles and other loose items have been supplied and are in the correct storage positions;
    - (I) touch up cabinet scratches and polish off any dirty marks; and
    - (J) vacuum out all switchboard and control panel cabinets and refit removed covers;
  - (ii) (LV distribution system thermo-graphic scan)
    - (A) provide a thermo-graphic scan of the entire electrical (power) installation including interiors of switchboards as carried out by qualified personnel. Two scans must be carried out at a time to be mutually agreed with the State (test 1 within 4 weeks of Commercial Acceptance); and
    - (B) provide a comprehensive report is to be submitted within 2 weeks following the completion of each scan;
  - (iii) (lighting system)
    - (A) demonstrate correct operation of all control circuits for all switching for day and night mode;
    - (B) check time settings on all control circuits are correctly programmed;
    - (C) demonstrate coverage and operation of control devices such as occupancy sensors; and
    - (D) demonstrate that recorded lighting levels measured and recorded are in accordance with AS1680 or AS1158 as applicable; and
  - (iv) (**energy management system**) including all metering and monitoring systems
    - (A) demonstrate calibration of all meters by comparison to independent, calibrated meter over a minimum 48 hour period.



- (B) demonstrate calibration and connection of EMS and remote reading system by comparison of readings over a period of no less than 2 weeks, including no less than 4 simultaneous readings. Errors must be less than the specified error rating of the meter at each reading and shall be no more than 2% of the total read value.

#### 11.4.6 Fire safety systems

- (a) Project Co must inspect and test each element of the fire safety systems works including:
  - (i) fire hydrant system with water supply;
  - (ii) fire brigade boosting facilities;
  - (iii) fire detection and alarm systems;
  - (iv) control and indicating equipment;
  - (v) pump set systems (if installed);
  - (vi) portable fire equipment;
  - (vii) general egress (including panic hardware and door release);
  - (viii) SSISEP;
  - (ix) fire and smoke door sets;
  - (x) passive fire protection (including fire collars, joint sealing, intumescent coatings and fire barrier installations);
  - (xi) interface testing between the fire detection system and others (including mechanical services and Security Systems);
  - (xii) connection to the direct brigade alarm; and
  - (xiii) system interconnections and interfaces.
- (b) Project Co must submit to the State, a statement from an accredited fire engineer who:
  - (i) holds accreditation as a Fire Engineer Registered Building Practitioner under a State based accreditation system for fire engineers (together with a Bachelor of Engineering and Graduate Diploma (or higher) in Fire Safety Engineering); or
  - (ii) from a person listed on the National Professional Engineers Register (**NPER**) specifically in the field of fire engineering;

that the requirements of the fire safety system documented in the Fire Engineering Report, have been met.

- (c) Project Co must submit to the State a statement from a building certifier accredited by the Western Australian Building Commission, stating that the completed Works for the relevant Stage complies with all relevant Quality Standards and Laws, including the NCC. Where appropriate reliance can be made on the fire safety engineer's certificate required under the previous paragraph.

### 11.4.7 Hydraulic services

- (a) Project Co must inspect and test each element of the hydraulic services works including:
- (b) **(hydraulic services external works)**
  - (i) fire service main and fire hydrants;
  - (ii) potable water service main;
  - (iii) natural gas supply;
  - (iv) building stormwater drains (interface with civil);
  - (v) sewerage reticulation main;
  - (vi) sewerage pumping stations;
  - (vii) sanitary waste and sewage systems;
  - (viii) fire pumps;
  - (ix) potable water pumps and
  - (x) backflow prevention devices.
- (c) **(hydraulic services internal works)**
  - (i) sanitary fittings (including showers, baths, basins and sinks); and
  - (ii) toilet flushing, storage and pumping.
- (d) Commissioning and testing of hydraulic services must include:
  - (A) water testing of all sewer drainage and trade waste drainage systems;
  - (B) water testing of all sanitary plumbing systems;
  - (C) water testing of all downpipes systems for leaks;
  - (D) pressure testing of all cold and heated water pipe lines;
  - (E) testing of temperature control at all hot water outlets;
  - (F) operation of all fixtures, taps and points of demand;
  - (G) testing of flow rates all fixtures fittings and points of demand;
  - (H) operation of all water pumps;
  - (I) operation of all sewerage pumps;
  - (J) operation of all rainwater pumps;
  - (K) operation and testing of control panels;
  - (L) testing of thermostatic mixing valves;

- (M) testing of pressure reducing valves;
  - (N) operation and testing of temperature settings of hot water generation systems;
  - (O) operation and testing of rainwater tanks (including leak, lining and similar);
  - (P) operation and testing of potable cold water tanks (including leak and lining and similar); and
  - (Q) testing of all valves, backflow devices, pressure devices temperature and controls and systems under operational conditions;
- (e) All testing must be carried out in accordance with relevant Quality Standards including AS3500 all parts, AS2419 and AS5601 respectively.

#### **11.4.8 Mechanical services**

- (a) Project Co must inspect and test each element of the mechanical services works including:
- (i) ducted air handling systems (supply and exhaust);
  - (ii) other air conditioning plant including direct expansion (DX) systems and multi-split systems;
  - (iii) boilers and other hot water generating plant;
  - (iv) gas heaters;
  - (v) auto temperature control system, thermometers and gauges;
  - (vi) vibration isolation;
  - (vii) duct silencers;
  - (viii) heating systems;
  - (ix) chemical water treatment systems;
  - (x) smoke control systems, fire and smoke/fire dampers;
  - (xi) automatic operation of mechanical services under fire mode;
  - (xii) variable speed drives;
  - (xiii) pumps;
  - (xiv) cold rooms and freezers;
  - (xv) mechanical ventilation systems;
  - (xvi) evaporative cooling systems;
  - (xvii) ceiling fans;
  - (xviii) natural ventilation systems;

- (xix) air conditioning systems;
  - (xx) kitchen exhaust systems;
  - (xxi) dishwasher exhaust systems;
  - (xxii) industrial dust extraction systems;
  - (xxiii) general exhaust systems;
  - (xxiv) air balancing of all air handling systems, grilles and diffusers;
  - (xxv) air pressurisation in all areas where a designated amount of air pressurisation is required or where a pressure gradient is required from one area to another;
  - (xxvi) water balancing of all water circulation systems;
  - (xxvii) systems flow and pressure testing;
  - (xxviii) high-efficiency particulate air filter and housing testing and filter and housing fumigation testing;
  - (xxix) room temperature logging and testing;
  - (xxx) room air quality logging and testing;
  - (xxxi) fire and life safety system and components testing and other essential services testing;
  - (xxxii) controls testing;
  - (xxxiii) fail safe systems testing;
  - (xxxiv) chemical treatment testing;
  - (xxxv) test pressures and flow at all gas outlets;
  - (xxxvi) testing of all safety controls to gas systems;
  - (xxxvii) metering and sub-metering testing;
  - (xxxviii) central plant performance on each major plant item in order to verify manufacturers' performance data; and
  - (xxxix) IP Network and EWMS communication, where applicable.
- (b) The mechanical services installation must achieve full operational modes and zoning control and performance requirements as a pre-requisite to Commercial Acceptance. Evidence must be presented to the State for all installed mechanical services systems to demonstrate compliance with this requirement. All commissioning must be undertaken in accordance with the requirements of either the CIBSE Commissioning Codes or the ASHRAE Guideline 1 and Standard 111 (whichever imposes the higher or greater standard or requirement).
- (c) **(Acceptance testing)** Project Co must:
- (i) commission, test and balance each of the mechanical services installed;

- (ii) ensure testing and balancing is carried out under the supervision of an accredited representative of the manufacturer or supplier of the particular item of Project Co FF&E;
- (iii) ensure that commissioning personnel:
  - (A) are correctly certified;
  - (B) have valid experience in the particular field applicable; and
  - (C) have verified the results in accordance with the Design Requirements.
- (d) **(Pipework)** Project Co must ensure that:
  - (i) **(pressure pipework)** as pipework proceeds, and before pipes are hidden or lagged, testing of the various systems hydrostatically to twice the maximum working pressure, as set out in AS 4041, is undertaken;
  - (ii) **(other piping)** as pipework proceeds and before pipes are hidden or tagged, testing of the various systems hydrostatically at 1.5 times the working pressure or 1 MPa (whichever is the greater) for at least 24 hours continuously;
  - (iii) test pressures are maintained for not less than 4 hours prior to inspecting all joints; and
  - (iv) equivalent tests are carried out on each system when all pipework has been completed.
- (e) **(Water quantities)** Project Co must conduct water balancing tests and submit results, regulate and adjust the volume control valves on all piping systems to achieve the water quantities nominated and to the satisfaction of the State.
- (f) **(Authorities)** Project Co must:
  - (i) perform, at appropriate times during the Development Phase, all tests required by Authorities who may from time to time have jurisdiction over the work, and obtain the necessary certificates of approval; and
  - (ii) lodge all these certificates of approval to the State and Independent Certifier.
- (g) **(Automatic controls)** Project Co must effect and maintain the setting and calibration and labelling of all automatic controls, to achieve correct operation of the systems.
- (h) **(Independent commissioning review)** Project Co should consider the engagement of an independent NATA-certified commissioning agent to review and sign off all commissioning results for all mechanical services works. Commissioning checks may not be independently signed off by the installation Subcontractor.

#### 11.4.9 Structural works

- (a) Project Co must inspect and test each element of the structural works including:
  - (i) piles, including ultimate and serviceability testing must be in accordance with AS2159;
  - (ii) pile caps and footings;

- (iii) columns and walls;
  - (iv) floor slabs – reinforcement and concrete;
  - (v) lift cores, stair shafts and other vertical and horizontal structural elements;
  - (vi) steelwork;
  - (vii) precast concrete elements;
  - (viii) block walls and other masonry elements; and
  - (ix) timber elements.
- (b) Project Co must provide:
- (i) evidence of inspections by a Chartered Professional Engineer to confirm compliance with the Design Requirements;
  - (ii) evidence that the materials used and construction undertaken comply with the Design Requirements; and
  - (iii) evidence that all variations and alterations made to the certified Design Documentation have been evaluated and approved.

#### **11.4.10 Vertical transportation services**

- (a) Project Co must inspect and test each element of the vertical transportation services works including:
- (i) lift cars and doors, including door dwell times, safety tests;
  - (ii) lift motor room equipment;
  - (iii) lift controls (including priority recall);
  - (iv) lift car security systems, including EACS interfaces;
  - (v) escalators;
  - (vi) test of trailing cables, including those for use by other trades of State;
  - (vii) operational speeds;
  - (viii) ride quality;
  - (ix) emergency mode;
  - (x) automatic operation under mains failure;
  - (xi) trapped person alarm;
  - (xii) security key access testing;
  - (xiii) IP Network and EWMS communication;
  - (xiv) external monitoring;
  - (xv) emergency intercommunications; and

- (xvi) demonstration of compliance with NCC requirements, including voice announcements.
- (b) Project Co must provide:
  - (i) 'safe to operate' self-certification;
  - (ii) evidence of registration with WorkSafe WA for each lift and escalator; and
  - (iii) a statement of compliance for each lift and escalator with the traffic study submitted during the Design Phases.

#### 11.4.11 ICT systems

- (a) Project Co must inspect and test each element of the ICT systems including:
  - (i) structured cabling system (copper and fibre optic), including link, continuity, light and power and ODTR testing, pressure testing where blown fibre used;
  - (ii) wired networking;
  - (iii) all network equipment such as switches and routers;
  - (iv) all storage area network equipment including data storage and backup tapes;
  - (v) all ICT active equipment provided by Project Co;
  - (vi) public address system;
  - (vii) intercommunications systems, including tone all functional tests;
  - (viii) master clock system;
  - (ix) EWMS interface;
  - (x) provision of full documentation of all manufacturer tests or independent testing, such as testing of pre-terminated cabling and hardware factory tests; and
  - (xi) testing of any other ICT hardware, software, applications, systems and other components to be demonstrated and tested.
- (b) Project Co must demonstrate that each ICT system delivered as part of the Works is correctly functioning and otherwise meets the Design Requirements.
- (c) **(Structured cabling system)** Project Co must:
  - (i) ensure the ICT systems commissioning process is closely coordinated with the ICT Subcontractor, those State associates installing the ICT related State FF&E and the Engineering Services commissioning. ICT systems commissioning stages must include:
    - (A) programming;
    - (B) factory acceptance testing, including integration testing with other Engineering services;
    - (C) deployment of hardware;

- (D) on-site testing;
  - (E) testing of carrier interfaces, local area networks and wide area networks links;
  - (F) patching;
  - (G) wireless network testing and configuration; and
  - (H) user acceptance testing.
- (ii) during ICT systems testing and commissioning, demonstrate that the Design Requirements and the other requirements of the Deed have been met, including;
- (A) conducting performance testing of all terminations and outlets in accordance with AS/NZS 3080, AS/NZS 3087, the system manufacturer's requirements, and compliance with Class-E;
  - (B) performing testing as per the vendor's requirement; and
  - (C) providing copies of the test result and the vendor's certification.
- (d) **(Communications testing personnel)** Project Co must:
- (i) ensure that the ICT Subcontractor provides all specialist testing personnel for testing ICT equipment and systems; and
  - (ii) closely coordinate with Department representatives to ensure that all ICT occupancy issues are coordinated with the ICT services commissioning and relevant ITPs.
- (e) **(PA system)** Project Co must:
- (i) demonstrate functionality and control;
  - (ii) demonstrate clear output and no hum, cross-talk and noise;
  - (iii) demonstrate correct PA system zoning;
- (f) **(Communications contractor manual)** Project Co must:
- (i) include in the draft Commercial Acceptance Report a manual prepared by the ICT Subcontractor including:
    - (A) all relevant data relating to the ICT systems and their interfaces;
    - (B) details of the configuration and programming of equipment, including where electronic records are stored;
    - (C) information on operation and maintenance of the ICT systems; and
    - (D) cabling infrastructure drawings (including all cables installed by Project Co) including the following details:
      - (1) fibre optic cabling infrastructure;
      - (2) horizontal cabling;



- (3) patching records;
  - (4) cable risers;
  - (5) building distributor rack layouts and rack elevations; and
  - (6) rack layouts and elevations; and
- (ii) ensure that the manual is in plain English and able to be understood by non-technical personnel.

#### **11.4.12 Energy and Water Management System**

Where a EWMS is installed, Project Co must inspect and test all functions, connections, interfaces and control mechanisms supported by the EWMS including:

- (a) field equipment (sensors, valves, actuators, analogue points etc.) input and output testing;
- (b) cable testing;
- (c) automatic controls hardware, if applicable;
- (d) all software/software points;
- (e) all communication between subsystems;
- (f) hardware power up and self-diagnostic checks;
- (g) power down checks;
- (h) point-to-point communication testing;
- (i) testing of control strategies;
- (j) calibration testing;
- (k) monitoring of all electricity, gas and water metering and photovoltaic inverters;
- (l) alarming to EWMS front end, email and 'SMS';
- (m) front end graphics;
- (n) high level interfaces;
- (o) supplied mobile devices;
- (p) testing of trending capabilities and accreditation capabilities (to meet the ESD Requirements, KPIs and other accreditation requirements).
- (q) factory acceptance testing of central equipment, including servers, and storage, including failover of redundant components and links, of links, power supplies, servers, load testing/soak testing, coordinated with ICT Systems testing;
- (r) functional demonstrations, including alarm and event management, report generation, scenarios and automation, operator control and interface;
- (s) integration testing, including full testing and demonstration of all functions; and

- (t) failure mode testing, including failure of single components, simultaneous failures and failures of single subsystems (multiple failure scenario).

#### **11.4.13 Security systems**

- (a) Project Co must inspect and test each element of the security systems including
  - (i) all elements of the security systems, equipment and devices in accordance with the manufacturers' recommended test procedures;
  - (ii) factory acceptance testing of security systems central equipment, including servers, storage links, power supplies, servers, load testing and soak testing, coordinated with ICT systems testing;
  - (iii) function and operation of each and every point and device;
  - (iv) alarm response and annunciation of each point and device;
  - (v) logging and recording of activity for each alarm point and device;
  - (vi) required interfaces with other systems for each alarm point and devices including off site dial out;
  - (vii) systems to ensure and otherwise demonstrate:
    - (A) each element of the security systems is time synchronised; and
    - (B) all interlocking doors function as required, including all override commands;
  - (viii) with respect to the security systems, conduct all testing necessary to ensure and otherwise demonstrate:
    - (A) that all high and low level interfaces within the security systems are functional and interface correctly with the all systems;
    - (B) testing the security reporting interface and exportability;
    - (C) testing of all high and low level interfaces within the security command and control system to ensure that they function and interface correctly, including:
      - (1) EACS;
      - (2) intruder detection system;
      - (3) CCTV system;
      - (4) fire detection and alarm system; and
      - (5) lifts (if installed).
  - (ix) with respect to the EACS, conduct all testing necessary to ensure and otherwise demonstrate:
    - (A) control for the monitoring of all door functions and alarms;
    - (B) the functionality of each component associated with a door;

- (C) the ability of the EACS to allow an operator to acknowledge an event and review all associated data, including external systems;
  - (D) the ability of the EACS to control User access based on the stated restrictions;
  - (E) the ability of the EACS to remain fully operational in the case of a loss of communication to the master panel;
  - (F) the ability of Project Co Staff to create and program access control cards; and
  - (G) testing that audit trails and system event logs record all system event history;
- (x) with respect to the intruder detection system, conduct all testing necessary to ensure and otherwise demonstrate:
- (A) control for the monitoring of all alarms and off site dial out functionality;
  - (B) the functionality of each component associated with an alarm;
  - (C) the ability of the intruder detection system to allow an operator to acknowledge an event and review all associated data, including external systems;
  - (D) the ability of the intruder detection system to control Users based on the stated restrictions; and
  - (E) the ability of the intruder detection system to remain fully operational in the case of a loss of communication to the master panel; and
- (xi) with respect to the CCTV system, conduct all testing necessary to ensure and otherwise demonstrate:
- (A) the CCTV system architecture allows all cameras to be controlled, monitored and recorded simultaneously without any slowing of the system;
  - (B) each camera has been adjusted and commissioned in the environment it is installed;
  - (C) each camera achieves the view required and can perform its to its requirements under all conditions;
  - (D) the recording system can provide footage of the quality, speed and time periods requested;
  - (E) the recording system is capable of providing redundant storage as specified;
  - (F) the monitors utilised provide an accurate reproduction of the camera outputs;
  - (G) all CCTV cameras are accessible from the GUI and offsite accessibility via secured protocol;

- (H) flat panel display screens are configured and numbered correctly, adjusted to similar brightness and contrast settings;
  - (I) recordings are stored at resolution and frame rate for evidentiary purposes, watermarked for certification;
  - (J) the command and control operator(s) can perform all functions; and
  - (K) all audit trails and system event logs record all system event history.
- (b) Project Co must:
- (i) test the security systems on a component by component basis and as a complete system to demonstrate compliance with the requirements set out in Schedule 26 (Design Brief) of the Deed; and
  - (ii) test the security systems to demonstrate that all elements of the security systems, including equipment, are fully functioning, configured correctly and interface correctly with other systems in accordance with the requirements set out in Schedule 26 (Design Specifications) of the Deed.

#### **11.4.14 Project Co FF&E**

Project Co must inspect and test all Project Co FF&E and must ensure that each item of Project Co FF&E, including loose Project Co FF&E, is:

- (a) correctly located;
- (b) unpackaged and clean;
- (c) new;
- (d) not damaged and not showing any signs of wear and tear;
- (e) functioning as intended; and
- (f) otherwise in accordance with the Design Requirements and satisfies the FFP Warranty.

#### **11.4.15 Specialty works**

Project Co must inspect and test all specialty works including:

- (a) all pools, hydrotherapy pools and other aquatic systems, including any interfaces with the EWMS, where applicable, and compliance with relevant Quality Standards and Laws, including the *Health (Public Buildings) Regulations 1992 (WA)*; and
- (b) all areas designated for storage of hazardous substances for compliance with relevant Laws, including the *Dangerous Goods Safety Act 2004 (WA)* and the associated *Dangerous Goods Safety Regulations 2007 (WA)*.

#### **11.4.16 Integrated systems testing**

- (a) Project Co must carry out integrated systems testing, spanning across all Engineering Services, architecture, acoustics and other disciplines, including:
  - (i) power fail testing demonstrating the correct fail over operation, functionality and interfaces functionality of all systems;

- (ii) emergency and fire mode testing demonstrating:
  - (iii) the correct operation, functionality and interfaces of all systems in each emergency and fire mode;
  - (iv) compliance with all emergency egress requirements; and
  - (v) integrated monitoring and control systems, including automated scenarios and controls.
- (b) **(Integrated Testing)** Without limiting paragraph (a), Project Co must carry out integrated systems testing, at a minimum, in respect of:
- (i) critical operational tests of installations including computer rooms, control rooms, emergency generators, back-up system operation and alarming, essential services systems; and
  - (ii) performance testing of systems or situations that cover more than a single discipline, including energy testing, load tests on mechanical services and boiler systems, failure simulation tests, running of services systems over the unoccupied testing period and integrated AV Systems testing with lighting systems, mechanical services and other systems.
- (c) **(Systems are operational)** Integrated systems testing must demonstrate that all systems and interfaces between systems are operating correctly, ensuring the operation of the system as a whole is successful.
- (d) **(Phases)** Project Co must carry out integrated systems testing in phases to be agreed with the State.
- (e) **(Artificial loads)** Project Co must provide any artificial loads (including heat and electrical) required for a full load testing.
- (f) **(Completed systems)** Integrated systems testing must only be carried out on completed systems.
- (g) **(Engineering systems)** During integrated systems testing, the running of engineering systems must be logged and reportable by EWMS.

#### 11.4.17 Other requirements

- (a) **(Re-inspection)** Any plant rooms commissioned for construction must undergo a second inspection prior to Commercial Acceptance. Any lifts commissioned as construction lifts must undergo a subsequent lift inspection prior to Commercial Acceptance.
- (b) **(Software and firmware)** Unless otherwise approved by the State, Project Co must demonstrate that all software and firmware used on all systems is the latest version available, with all manufacturer's updates fully installed.
- (c) **(Alarms)** During the commissioning period, Project Co must undertake a review of alarm logs for all systems to check for and then rectify any re-occurring alarms or high false alarms.

## 12. ROOM DATA SHEETS – PRIMARY SCHOOLS

- (a) Whilst every care has been taken to populate Schedule 20 (FF&E) Schedule 23 (Schedule of Accommodation) and *Appendix 12: Room Data Sheets* as comprehensively as possible, these have been compiled in the absence of a design for the new School Facilities and there may be additional requirements that go beyond those noted in this Section.
- (b) The onus is on Project Co to provide the quantities and types of FF&E in accordance with the RDS, Schedule 20 (FF&E), Schedule 26 (Design Brief) and the Deed to ensure that the School Facilities are Fit for Purpose.

### 12.1 Administration Block

PS-ADM-01	Foyer and Waiting / Reception and General Office
PS-ADM-02	Business Manager's Office
PS-ADM-03	Principal's Office
PS-ADM-04	Deputies Offices
PS-ADM-05	Interview Room
PS-ADM-06	Staff Office
PS-ADM-07	Staff Common Room
PS-ADM-08	Conference Room
PS-ADM-09	Medical Room
PS-ADM-10	Reprographics Room
PS-ADM-11	Secure Store
PS-ADM-12	Cleaners Bulk Store
PS-ADM-13	Communications Room
PS-ADM-14	Electrical Cupboard
PS-ADM-15	Female Staff Toilets
PS-ADM-16	Male Staff Toilets
PS-ADM-17	Universal Access Toilet Type 0

<b>FOYER AND WAITING / RECEPTION AND GENERAL OFFICE</b>		<b>PS-ADM-01</b>
<b>Dimensions</b>		<b>Floor Area:</b> 36 m <sup>2</sup> (21 m <sup>2</sup> Waiting, 15 m <sup>2</sup> Reception)
<b>Signage</b>	External to Administration Block: 350mm high black anodised sign Helvetica Medium Lettering 250mm high In upper case. Room Names	
<b>Function</b>	Student and visitors reception area with secured entry from public side.	
<b>Occupancy</b>	Visitors, School Staff, students and parents	
<b>Locality</b>	+ Direct Access from Business Manager's office.	
<b>Relationship</b>	Ready Access to Principal's Office	
<b>Comments</b>	Foyer and waiting require security isolation from the rest of the building. Refer to Accommodation Brief if extra area for ESC Business Manager (9 m <sup>2</sup> ) if required	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with plasterboard - Painted	
<b>Ceiling</b>	Raking Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Main entrance: Double doors, latched with lever handle. Outward opening, fully glazed aluminium panel doors. Student entrance: Inward opening, fully glazed aluminium panel single door with sidelight School Staff entrance: Single 1/2 glazed solid core timber door, Electronic Door Release Required.	
<b>Windows</b>	Openable Sliding sashes and fixed panels Fixed treatments	
<b>FIXED FURNITURE</b>		
	1	BOA01 Pin-Up Board
	1	DES01 Reception Desk -PS
<b>EQUIPMENT AND FIXTURES</b>		
		N/A
<b>LOOSE FURNITURE</b>		
	1	MIS19 Waste Bin
	2	MIS01 Chair Mat
	4	CHA13 Waiting Area Chair
	2	CHA03 Task Chair
	3	STO05 Filing Cabinet - 4 Drawer
	2	MIS22 Footrest
	1	STO02 Pamphlet Stand
	2	TAB09 Coffee Table
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Mechanical ridge venting / rotary venting	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4	Double GPO to waiting
	9	Double GPO reception
<b>Conditioning</b>	2	Ceiling Fans
<b>Lighting</b>		Suspended tubular luminaire
<b>Data and Communications</b>	3	Waiting Area Data Outlet(s)
	6	Data Outlet(s) (Reception)

	2	Telephone
<b>Other</b>		
	1	UAT / Alarm panel
	1	Siren Switch (Reception)
	1	PA consult
	1	Clock
	1	Motorised ridge vent control switch
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Intruder detection, duress alarm
<b>Smoke</b>		Smoke detector connected to intruder, duress alarm.
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		Portable Fire Extinguishers and Fire Blankets within 40 (m) from the most remote risk area
<b>MECHANICAL</b>		
<b>A/C</b>		Reverse Cycle. Refer to G5: Mechanical Services
<b>HYDRAULIC &amp; GAS</b>		
		N/A



<b>BUSINESS MANAGER'S OFFICE</b>		<b>PS-ADM-02</b>
<b>Dimensions</b>		<b>Floor Area: 12 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Business Manager's Office	
<b>Occupancy</b>	Business Manager	
<b>Locality</b>	+ Direct Access to Reception and General Office.	
<b>Relationship</b>		
<b>Comments</b>	Must be securable. Maximise vision into Reception and General Office area Safe on reinforced shelf and secured to structure	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel stud with plasterboard- painted	
<b>Ceiling</b>	Mineral Fibre ceiling tile Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, ½ glazed solid core timber door. Solid core to Safe Cupboard	
<b>Windows</b>	Fixed one-way venetian strip mirrored glass to be installed to allow vision from the Business Manager's office to Reception. External Openable Fixed treatments	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-up Boards	
	1 FF16 Overhead Shelf Unit	
	1 FF20 Secure Cupboard and Key Cabinet	
	1 EQ23 Wall Safe	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	1 MIS01 Chair Mat	
	1 CHA04 Office Chair	
	3 STO05 Filing Cabinet - 4 Drawer	
	1 DES03 Office Workstation	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Mechanical ridge venting / rotary venting	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4 Double GPO	
<b>Conditioning</b>		
	1 Ceiling Fans	
<b>Lighting</b>		
	Recessed Lighting	
<b>Data and Communications</b>		
	4 Data outlet(s)	
	1 Telephone	
	1 Facsimile	
	1 Emergency Line	
	1 Answering Machine	
<b>Other</b>		
	N/A	

<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Intruder detection, duress alarm
<b>Smoke</b>	Smoke detector connected to intruder, duress alarm.
<b>MECHANICAL</b>	
A/C	Reverse Cycle. Refer to G5: Mechanical Services
<b>HYDRAULIC &amp; GAS</b>	
	N/A

<b>PRINCIPAL'S OFFICE</b>		<b>PS-ADM-03</b>
<b>Dimensions</b>		<b>Floor Area: 18 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Principal's Office	
<b>Occupancy</b>	Principal	
<b>Locality +</b>	Ready Access to Business Manager's Office, Deputies' Office, Reception and General Office.	
<b>Relationship</b>	The layout should provide security and separation from arriving visitors.	
<b>Floor</b>	Carpet	
<b>Walls</b>	Hard Wall Plaster. Extend walls full height and seal to u/side of roof with insulation to achieve acoustic separation to adjacent rooms. Refer to specialist acoustic consultant.	
<b>Ceiling</b>	Raking Metal Strip Acoustic	
<b>Skirting</b>	Painted MDF Skirting	
<b>Doors</b>	Inward opening solid core timber door.	
<b>Windows</b>	Openable. Fixed treatments	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-up Boards	
	1 BOA02 Whiteboards	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	2 STO09 Storage Cabinet	
	1 MIS01 Chair Mat	
	1 CHA04 Office Chair	
	2 CHA14 Meeting Chairs	
	1 DES02 Office Desk	
	1 DES02b Office Desk Return	
	2 MIS23 File tray	
	1 MIS21 Desk Mat	
	1 STO05 Filing Cabinet - 4 Drawer	
	1 TAB04 Interview Table - 900	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4 Double GPO; located to suit office desk at 500mm AFL	
<b>Conditioning</b>	1 Ceiling Fans	
<b>Lighting</b>	Surface Luminaire	
<b>Data and Communications</b>	2 Data outlet(s)	
	1 Telephone	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection, duress alarm	
<b>Smoke</b>	Smoke detector connected to intruder, duress alarm.	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>DEPUTIES' OFFICES</b>		<b>PS-ADM-04</b>
<b>Dimensions</b>		<b>Floor Area: 24 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Deputies' Office	
<b>Occupancy</b>	Deputies	
<b>Locality +</b>	Ready Access to the Principal's Office, Business Manager's Office, Reception and General Office.	
<b>Relationship</b>	The layout should provide security and separation from arriving visitors.	
<b>Floor</b>	Carpet	
<b>Walls</b>	Extend walls full height and seal to u/side of roof with insulation to achieve acoustic separation to adjacent rooms. Refer to specialist acoustic consultant.	
<b>Ceiling</b>	Mineral Fibre ceiling tile Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Internal: Inward opening, solid core timber door. External: Inward opening, fully glazed aluminium panel door with sidelight.	
<b>Windows</b>	Window to Deputies: Fixed One-way venetian strip mirrored glass to be installed to allow vision from the Deputies' room to the Medical Room. External, Openable, Fixed treatments	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-up Boards	
	1 BOA02 Whiteboards	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	2 MIS19 Waste Bin	
	2 STO09 Storage Cabinet	
	2 MIS01 Chair Mat	
	2 CH04 Office Chair	
	2 CHA14 Meeting Chairs	
	2 DES02 Office Desk	
	2 MIS21 Desk Mat	
	4 MIS23 File tray	
	2 STO05 Filing Cabinet - 4 Drawer	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	7 Double GPOs; 3 per Deputy, at 500mm AFL to suit each office desk AFL	
<b>Conditioning</b>		
	Ceiling Fans	
<b>Lighting</b>	Recessed Lighting	
<b>Data and Communications</b>		
	4 Data outlet(s)	
	2 Telephone	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection, duress alarm	
<b>Smoke</b>	Smoke detector connected to intruder, duress alarm.	
<b>MECHANICAL</b>		
A/C	Reverse Cycle. Refer to G5: Mechanical Services	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>INTERVIEW ROOM</b>		<b>PS-ADM-05</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Interview Room	
<b>Occupancy</b>	School Staff, Parents.	
<b>Locality +</b>	Direct Access to the Foyer and Waiting Area.	
<b>Relationship</b>	May have Direct Access to the Staff office via an acoustically rated operable wall.	
<b>Comments</b>		
<b>Floor</b>	Carpet	
<b>Walls</b>	Extend walls full height and seal to u/side of roof with insulation to achieve acoustic separation to adjacent rooms. Refer to specialist acoustic consultant.	
<b>Ceiling</b>	Mineral Fibre ceiling tile Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber door opening onto Reception / Waiting Area. Optional: Operable wall to adjacent Staff Office	
<b>Partitions</b>	May have operable wall Between Interview Room and Staff Office.	
<b>Windows</b>	External, Openable, Curtains Internal to Reception , Fixed treatments	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-up Boards	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	4 CHA14 Meeting Chairs	
	1 TAB02 Interview Table - 1200	
	2 MIS19 Waste Bin	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4 Double GPO at 500mm AFL	
<b>Conditioning</b>	1 Ceiling Fans	
<b>Lighting</b>	Recessed Lighting	
<b>Data and Communications</b>	2 Data outlet(s) 1 Telephone	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection, duress alarm	
<b>Smoke</b>	Smoke detector connected to intruder, duress alarm.	
<b>MECHANICAL</b>		
A/C	Reverse Cycle. Refer to G5: Mechanical Services	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>STAFF OFFICE</b>		<b>PS-ADM-06</b>
<b>Dimensions</b>		<b>Floor Area: 12 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Office	
<b>Occupancy</b>	School Staff	
<b>Locality +</b>	Ready Access to other administrative areas.	
<b>Relationship</b>	May have Direct Access to the Interview Room via an acoustically rated operable wall.	
<b>Floor</b>	Carpet	
<b>Walls</b>	Extend walls full height and seal to u/side of roof with insulation to achieve acoustic separation to adjacent rooms. Refer to specialist acoustic consultant.	
<b>Ceiling</b>	Mineral Fibre ceiling tile Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber door. Optional: Operable wall to adjacent Interview Room	
<b>Windows</b>	Openable Fixed treatments	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-up Boards	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	1 MIS01 Chair Mat	
	1 CHA04 Office Chair	
	1 CHA14 Meeting Chair	
	1 STO05 Filing Cabinet - 4 Drawer	
	1 DES03 Office Workstation	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4 Double GPO(s)	
<b>Conditioning</b>		
	Ceiling Fans	
<b>Lighting</b>		
	Recessed Lighting	
<b>Data and Communications</b>		
	2 Data outlet(s)	
	1 Telephone outlet(s)	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection, duress alarm	
<b>Smoke</b>	Smoke detector connected to intruder, duress alarm.	
<b>MECHANICAL</b>		
A/C	Reverse Cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
Fire-fighting equipment	Portable Fire Extinguishers and Fire Blankets	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>STAFF COMMON ROOM</b>		<b>PS-ADM-07</b>
<b>Dimensions</b>		<b>Floor Area: 83 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	School Staff Room Facilities	
<b>Occupancy</b>	School Staff	
<b>Locality +</b>	Direct Access to the Conference Room via an operable wall	
<b>Relationship</b>		
<b>Comments</b>	May be located in either the Administration or the Library Block	
<b>Floor</b>		
	Carpet	
<b>Walls</b>		
	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>		
	Mineral Fibre Ceiling Tile Acoustic	
<b>Skirting</b>		
	Vinyl Skirting	
<b>Doors</b>		
	Inward opening, fully glazed aluminium panel single door.	
<b>Partitions</b>		
	Acoustic, Stacking Operable Wall	
	White board to end panel	
<b>Windows</b>		
	Blinds	
	Openable	
<b>FIXED FURNITURE</b>		
	1 BOA02 Whiteboards	
	1 BOA01 Pin-up Boards	
	4 BOA03 Term Planner Whiteboards (2400L x 1200H)	
	1 FF18 Pigeon Hole Unit	
	1 FF04 Bench Cupboard Unit	
	1 FF14 Overhead Cupboard	
<b>EQUIPMENT AND FIXTURES</b>		
	Inset Sink, S/Steel, 1500L, Double bowl with 2 drainers	
	Standard Taps	
	1 EQ16 Boiling/Chilled Water Unit, install provision for another	
	Instantaneous gas water heater (in duct)	
	Hot Water Unit – Located in duct between Male & Female Toilets	
<b>LOOSE FURNITURE</b>		
	44 CHA14 Meeting Chairs	
	10 TAB02 Interview Tables	
	1 MIS20 Flip Top Bin	
	1 APP08 Refrigerator 380L	
	1 APP13 Microwave	
	1 APP03 Dishwasher	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Roof ventilators	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	12 Double GPOs (3 located to suit appliances)	
	2 15A Outlet for BWU	
	1 15A Outlet for Dishwasher	
<b>Conditioning</b>		
	Ceiling Fans	
<b>Lighting</b>		
	Recessed Lighting	
	Emergency Lighting and Exit Signs	

**Data and Communications**

- 6 Computer Outlet above bench  
Typically 800mm AFL
- 1 Telephone Outlet 800mm AFL
- 1 Data on wall suit wireless Typically 2000mm AFL
- 1 PA Speaker and Controller
- 1 TV Aerial Outlet

**Other**

Toilet Exhaust Fans Control Station – motion sensor operated.

**SECURITY & DETECTION**

**Intruder** Intruder detection

**Smoke****MECHANICAL**

**A/C** Reverse Cycle. Refer to G5: Mechanical Services

**FIRE SERVICES**

**Fire-fighting equipment** Portable Fire Extinguishers and Fire Blankets

**HYDRAULIC & GAS****Waste**

Sewerage

**Gas Supply**

Hot Water System

**Water Supply**

Hot and Cold Water

Cold water to Dishwasher



<b>CONFERENCE ROOM</b>		<b>PS-ADM-08</b>
<b>Dimensions</b>		<b>Floor Area:</b> 39 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Meeting Room	
<b>Occupancy</b>	School Staff, Visitors	
<b>Locality</b>	+ Located in the Administration Block	
<b>Relationship</b>	Direct Access to the Staff Common Room via an operable wall	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling TileAcoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, fully glazed aluminium panel single door.	
<b>Partitions</b>	Acoustic, Stacking Operable Wall	
<b>Windows</b>	White board to end panel Blinds. Openable	
<b>FIXED FURNITURE</b>		
	1 BOA02 Whiteboards	
	1 BOA04 Whiteboard	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	16 CHA14 Meeting Chair	
	6 TAB03 Conference Table – Components	
	1 MIS19 Waste Bin	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Roof ventilators	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	3 GPO	
	1 Ridge vent controller	
	1 PA with adjustable volume control	
	1 GPO on wall suit phoneTypically 1400mm AFL	
<b>Conditioning</b>	Ceiling Fans	
<b>Lighting</b>	Recessed Lighting Emergency Lighting and Exit Signs	
<b>Data and Communications</b>	2115AFL DGPO & blank plate, 2385AFL DGPO & AV plate centred above interactive whiteboard, 500AFL AV plate, blank plate, Double data outlet & DGPO for IWB. Blank Plates for USB/PC Audio connection	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection	
<b>Smoke</b>	Smoke detector connected to intruder.	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services Roof ventilators	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		

<b>Gas Supply</b>	N/A
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<b>MEDICALROOM</b>		<b>PS-ADM-09</b>
<b>Dimensions</b>		<b>Floor Area: 14 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Medical Room	
<b>Occupancy</b>	Primary School Students, Pre-Primary School Students, School Staff	
<b>Locality</b>	+ Ready Access to Deputies' Office.	
<b>Relationship</b>	One-way vision from Deputies' Office to Medical Room required.	
<b>Comments</b>	Glazing to Medical Room with vision to/from passageway required.	
<b>Floor</b>	Sheet Vinyl	
<b>Walls</b>	Steel Stud with Plasterboard – Painted, Impervious, Tiled Splash Back. Extend walls full height and seal to u/side of roof with insulation to achieve acoustic separation to adjacent rooms. Refer to specialist acoustic consultant.	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Internal: Inward opening solid core timber door. External: Inward opening, fully glazed, aluminium panel door with sidelight window. Frosted film to glazing of door. Venetian blinds to sidelight window internal.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Window to passageway: Fixed two-way glazing with venetian blinds to internal. Window to Medical Room: Fixed One-way venetian strip mirrored glass to be installed to allow vision from the Deputies' room to the Medical Room, with venetian blinds to Medical Room internal. External, Openable, Fixed treatments	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-Up Boards	
	1 FF04 Bench Cupboard Unit	
	1 FF14 Overhead Cupboard	
<b>EQUIPMENT AND FIXTURES</b>		
	Inset Sink, S/Steel Single 1200L	
	Standard Taps	
	Instantaneous Electric Water Heater – under bench	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	2 MED08 Blanket	
	2 MED09 Pillow	
	1 CHA14 Meeting Chair	
	2 MED10 Pillow Slip	
	1 APP06 Under Bench Fridge	
	1 MED01 Single Bed	
	1 MED02 Fold Up Bed	
	1 MED11 Single mattress	
	2 MED12 Single mattress cover	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Mechanical exhaust fan	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	2 Double GPO	
<b>Additional Power</b>		
	1 Exhaust fan switch	
<b>Conditioning</b>		

<b>Lighting</b>	Ceiling Fans
	Recessed Lighting, 2-Way Switches
<b>Other</b>	Provide power to instantaneous hot water unit.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Intruder detection
<b>Smoke</b>	
<b>MECHANICAL</b>	
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services
<b>Extraction</b>	Mechanical Ventilation
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Supply</b>	
	Hot and Cold Water
<b>Waste</b>	
	Sewerage

<b>REPROGRAPHICS ROOM</b>		<b>PS-ADM-10</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Reprographics Room	
<b>Occupancy</b>	Staff	
<b>Locality + Relationship</b>	Ready Access to other Functional Units within the Administration Block	
<b>Comments</b>	Mechanical Ventilation Required.	
<b>Floor</b>	Sheet Vinyl	
<b>Walls</b>	Steel Stud with Plasterboard, Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile - Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber door.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Openable, Fixed treatments	
<b>FIXED FURNITURE</b>		
	1	BOA01 Pin-Up Boards
	1	FF03 Bench – Open
	1	FF15 Overhead Pigeon Hole Unit
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical Ventilation Required	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	5	Double GPO(s)
<b>Exhaust Fan Switch</b>		Adjacent to Light Switch
<b>Conditioning</b>	None	
<b>Siren</b>	1	Timer and manual switch
<b>Lighting</b>	2	Recessed Lighting
<b>Data and Communications</b>	1	Data outlet at 500mm AFL on bare wall to suit photocopier
	2	Data outlet(s) above bench; typically 800mm AFL
	1	PA System Paging Console Outlet
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Exhaust fan	
<b>FIRE SERVICES</b>		
<b>Fire-fighting</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Supply</b>	N/A	

<b>SECURE STORE</b>		<b>PS-ADM-11</b>
<b>Dimensions</b>		<b>Floor Area: 30 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Secure Store Room	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Ready Access to other Functional Units within the Administration Block	
<b>Comments</b>		
<b>Floor</b>	Sheet Vinyl	
<b>Walls</b>	Steel Studs with Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard with security mesh above	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber door.	
<b>Partitions</b>	N/A	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-Up Boards	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV01 Compactus	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Refer to G5: Mechanical Services	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	5 Double GPO(s)	
<b>Exhaust Fan Switch</b>		
	N/A	
<b>Conditioning</b>		
	N/A	
<b>Lighting</b>		
	Surface Luminaire	
	Motion sensor lighting	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection	
<b>Smoke</b>	Smoke detector connected to intruder.	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Supply</b>	N/A	

<b>CLEANER'S BULK STORE</b>		<b>PS-ADM-12</b>
<b>Dimensions</b>		<b>Floor Area: 10 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Cleaner's bulk store.	
<b>Occupancy</b>	Cleaner	
<b>Locality</b>	+ External Access Required.	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono-Concrete (Sealed)	
<b>Walls</b>	Steel Stud with MR Plasterboard – Painted. Tiled splashback behind cleaners sink	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening, solid core timber door. Low grille.	
<b>Partitions</b>	N/A	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-Up Boards	
	2 SHV04 Overhead Shelving	
	1 MIS04 Broom and Spade Rack	
	2 MIS05 Vacuum Cleaner Hose Hangers	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	1 MIS02 Floor Scrubber	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Adequate ventilation in case of chemical spillage	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO	
<b>Additional Power</b>	Dedicated GPO for Security Equipment	
	1 Provide power for instantaneous electric water heater.	
<b>Conditioning</b>	N/A	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection	
<b>Smoke</b>	Smoke detector connected to intruder.	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grilles connected to a roof mounted, wind operated rotary ventilator and door grille for inlet of air. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Controls</b>		

<b>Fixtures</b>	1x potable cold and hot water wall set.
	1x non-potable cold water hose tap with threaded outlet
<b>Waste</b>	Cleaner's Sink Nom. 600 x 500
	1x Wall mounted safety eye wash with retractable hose fixed to AS4775.
<b>Water Supply</b>	Floor Waste Gully
	Sewerage
<b>Equipment</b>	Hot and Cold Water
	Instantaneous Electric Water Heater
<b>Other</b>	1x Double check valve assembly on wall



<b>COMMUNICATION ROOM</b>		<b>PS-ADM-13</b>
<b>Dimensions</b>	Min 3m width	<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	School Computing Equipment Location	
<b>Occupancy</b>		
<b>Locality</b>	+	
<b>Relationship</b>		
<b>Comments</b>	Air-conditioned	
<b>Floor</b>		
	Mono-Concrete (Sealed)	
<b>Walls</b>		
	Steel Stud with Plasterboard- Painted	
<b>Ceiling</b>		
	Mineral Fibre Ceiling Tile - Acoustic	
<b>Skirting</b>		
	Vinyl Skirting	
<b>Doors</b>		
	Inward opening solid core timber door.	
<b>Windows</b>		
	N/A	
<b>Signage</b>		
	Room Name	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Equipment Racks – key lockable with 19 inch internal mounting brackets.	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	Air-conditioned	
<b>Lighting</b>	Recessed Lighting	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4	Double GPO
	2	Single GPOs
	2	DGPO with neon
<b>Additional Power</b>		
	1	15 amp Outlet for Communications Rack At ceiling directly over rack
	1	MATV Equipment
<b>Data &amp; Communication</b>		
	4	Telstra / telephone
	2	Single data outlets
	2	GPOs & telephone connection for security equipment Refer to Electrical Brief: 'Data Communication Cabling: Standards and Specifications' (Version 4 at June 2008)
<b>Other</b>	Cable trays at high level and down walls.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection	
<b>Smoke</b>	Smoke detector connected to intruder.	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>ELECTRICAL CUPBOARD</b>		<b>PS-ADM-14</b>
<b>Dimensions</b>		<b>Floor Area: 0.90 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality</b>	+	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>		
	Mono-Concrete	
<b>Walls</b>		
	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>		
	No Ceiling	
<b>Skirting</b>		
	None	
<b>Doors</b>		
	External opening, solid core double timber doors with 180° hinges. Allow for 1800 clear opening.	
<b>Partitions</b>		
	N/A	
<b>Windows</b>		
	N/A	
<b>Signage</b>		
	Room Name	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
	N/A	
<b>Extraction</b>		
	N/A	
<b>Lighting</b>		
	N/A	
<b>Acoustics</b>		
	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO
<b>Lighting</b>		
	None	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>		
	N/A	
<b>Extraction</b>		
	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		
	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Supply</b>		
	N/A	

<b>FEMALE STAFF TOILETS</b>		<b>PS-ADM-15</b>
<b>Dimensions</b>		<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	Room Name Signage required to compartments for people with ambulant disabilities as per AS1428.1	
<b>Function</b>	Female Staff Toilet Facility	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	5WCs; School Staff and UATs may be located in the Administration Block. Include one facility with a sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR Plasterboard, Painted	
<b>Ceiling</b>	Painted Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening solid core timber door. Low Level Grille	
<b>Partitions</b>	Rynat or similar approved.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	2 Semi recessed Vanity Basin, Vitreous China Standard Taps	
	5 Vitreous China WC, Pan, Cistern in duct	
	2 Glass Mirror 1200H x 1500W	
	1 Full Height Glass Mirror	
	2 Soap Dispenser	
	1 Electric Hand Dryer	
	5 Toilet Paper Holder Hot Water Unit in Plumbing Duct	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Single GPO	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Alarm	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical Ventilation	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Gully Sewerage	

<b>Water Supply</b>	Hot and Cold Water Flow Controls
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<b>MALE STAFF TOILETS</b>		<b>PS-ADM-16</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Room Name Signage required to compartments for people with ambulant disabilities as per AS1428.1	
<b>Function</b>	Male School Staff Toilet Facility	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	3WCs; School Staff and UATs may be located in the Administration Block. Include one facility with a sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR Plasterboard, Painted	
<b>Ceiling</b>	Painted Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening solid core timber door. Low Level Grille	
<b>Partitions</b>	Rynat or a similar approved.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Hand Dryer	
	3 Toilet Paper Holder	
	Hot Water Unit in Plumbing Duct	
	2 Semi recessed Vanity Basin, Vitreous China	
	Standard Taps	
	3 WC, Vitreous China, pans, cistern in duct.	
	2 Glass Mirror 1200H x 1500W	
	2 Soap Dispenser	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1 Single GPO	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Alarm	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical Ventilation	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Gully Sewerage	
<b>Water Supply</b>	Hot and Cold Water Flow Controls	

<b>UNIVERSAL ACCESS TOILET TYPE 0</b>		<b>PS-ADM-17</b>
<b>Dimensions</b>	Max 2.6m (L) x Min.2.3m (W)	<b>Floor Area: 6 m<sup>2</sup></b>
<b>Signage</b>	AS 1428.1 (2009) required symbols with Braille signage below	
<b>Function</b>	Universal Access Toilet for adults with physical disabilities.	
<b>Occupancy</b>	School Staff, Adults with physical disabilities.	
<b>Locality + Relationship</b>	As per relevant schedule of accommodation. The pan to be located in one corner.	
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. This UAT provides space for a School Staff member or other adult in a wheelchair.	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tiled	
<b>Doors</b>	Outward opening, solid core timber door. Low Grille. 350H SS kickplate to both sides of door. Keyed door lock.	
<b>Partitions</b>	N/A	
<b>Windows</b>	None	
<b>Signage</b>	AS 1428.1 (2009) required symbols With Braille signage below	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Above hand basin, in accordance with AS1428.1 (2009)	
<b>Handrails</b>	Stainless steel as per AS1428.1 (2009). Handrail to have toilet roll holder.	
<b>Hand Basin</b>	Vitreous China, wall mounted. Free access underneath.	
<b>Toilet pan</b>	Vitreous China pan, suspended from wall. Braille indicated dual flush buttons.	
<b>Soap Dispenser</b>	900mm above finished floor level	
<b>Tap Appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Toilet Roll Holder</b>	Attached to interior of handrail.	
<b>Hand Dryer</b>	In accordance with AS1428.1 (2009)	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive & Active	
<b>Extraction</b>	Exhaust fan.	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO with large switches	
<b>Lighting</b>		

<b>Alarms</b>	Surface luminaire, large light switch. Motion sensor lighting
	Push button alarm linked to Admin at 750mm AFL near handrail.
<b>SECURITY &amp; DETECTION</b>	
	N/A
<b>MECHANICAL</b>	
<b>A/C</b>	N/A
<b>Extraction</b>	Exhaust fan
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Sewerage
<b>Water Supply</b>	Flow controls Cold Water Tempered Hot Water – 45deg C max.

## **I2.2 Classroom Block 1**

PS-CB1-01	Pre Primary Classroom 1
PS-CB1-02	Pre Primary Classroom 2
PS-CB1-03	Pre Primary Classroom 3
PS-CB1-04	Kindergarten Classroom 1
PS-CB1-05	Kindergarten Classroom 2
PS-CB1-06	Teacher's Preparation
PS-CB1-07	Internal Store 1
PS-CB1-08	Internal Store 2
PS-CB1-09	Internal Store 3
PS-CB1-10	External Store 1
PS-CB1-11	External Store 2
PS-CB1-12	Cleaner's Store
PS-CB1-13	Kitchen 1
PS-CB1-14	Kitchen 2
PS-CB1-15	Kitchen 3
PS-CB1-16	Communications Cupboard
PS-CB1-17	Electrical Cupboard
PS-CB1-18	Toilets (Staff) & Toilets 1 (Unisex)
PS-CB1-19	Toilets 2 (Unisex))
PS-CB1-20	Toilets 3 (Unisex)
PS-CB1-21	Assisted Access Toilet Type 2a
PS-CB1-22	Universal Access Toilet Type 0



<b>PRE PRIMARY CLASSROOM 1</b>		<b>PS-CB1-01</b>
<b>Dimensions</b>		<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b>	+ Direct Access to Toilets, Kitchen, Store and External Play Area	
<b>Relationship</b>		
<b>Comments</b>	Ceilings on rake to a maximum of 4.5m. Veranda width to gutter line 3.6m Provision to be made for future Interactive Whiteboards	
<b>Floor</b>	vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External (to Internal Activity Area & Veranda): Inward opening, fully glazed aluminium panel double doors. Inside turn snib door lock to external door to veranda. Refer to Hardware Schedule	
<b>Windows</b>	Openable	
<b>Partitions</b>	None	
<b>FIXED FURNITURE</b>		
	8	BOA01 Pinup Boards
	1	BOA02 Whiteboard
	1	STO18 Mobile Bag Unit
<b>EQUIPMENT AND FIXTURES</b>		
	1	1200mm Stainless Steel Prac Trough, 3 bib taps
	3	Bib Taps
		Heater(s)
	3	Cable wires at 2300AFL
<b>LOOSE FURNITURE</b>		
	2	MIS20 Flip Top Bin
	2	MIS19 Waste Bin
	1	STO09 Storage Cabinet
	1	PPK01 Carpenters Bench on Wheels
	2	PPK13 Carpet square
	2	CHA03 Task Chair
	1	PPK02 Cheval Mirror
	1	DES04 Teachers Desk
	1	PPK14 Dolls Pram
	2	PPK15 Door Mat
	2	MIS09 Primary Easel
	1	APP17 Electric fry pan
	1	PPK03 Folding bookcase
	1	PPK04 Jumping mattress
	1	PPK12 Play Kitchenette
	2	PPK16 Modular Box, Type A
	2	PPK17 Modular Box, Type B
	18	PPK18 Paint Pots and Lids
	2	PPK05 Paint Stand
	2	PPK06 Plastic Barrels
	1	PPK07 Play Wardrobe
	1	PPK08 Playbed with Mattress
	1	PPK09 Play Stove
	1	APP15 Portable cooker
	1	APP06 Under Bench Refrigerator 140L
	1	PPK10 Scramble Net
	1	MIS07 Acoustic Screen

Fit for Purpose	SHV07 Store room Shelving
	3 STO04 Display Shelving - 1 Shelf
	3 STO03 Display Shelving - 2 Shelf
	1 PPK19 Sisal rope
	1 MIS03 Step ladder
	25 CHA01 Classroom Chair (of a height suitable for users)
	1 TAB06 Occasional Table
	6 TAB15 Trapezoidal Table
	1 TAB14 Circular Table 750 diameter
	1 STO15 Storage Trolley
	1 PPK11 Water trolley
	1 TAB16 Work table 1500 x 900
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b>	Natural by operable windows
<b>Extraction</b>	Exhaust grilles
<b>Lighting</b>	
<b>Acoustics</b>	Refer to G8: Acoustic Services.
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
	8 Double GPO(s) GPO(s) for heater(s)
	1 Roof Vent Operator
	1 Single GPO
<b>Conditioning</b>	
	Ceiling Fans
<b>Lighting</b>	
	Suspended tubular luminaire
<b>Data and Communications</b>	
	8 Computer outlet(s) @ 800mm AFL in 2 channel duct min.800mm apart
	1 PA Speakers with volume adjustment
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Intruder Detection (PIR)
<b>Smoke</b>	Smoke detector
<b>MECHANICAL</b>	
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services.
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Sewerage
<b>Gas Service</b>	Heaters
<b>Water Supply</b>	Cold Water

<b>PRE PRIMARY CLASSROOM 2</b>		<b>PS-CB1-02</b>
<b>Dimensions</b>		<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b>	+ Direct Access to Toilets, Kitchen, Store and External Play Area	
<b>Relationship</b>		
<b>Comments</b>	Ceilings on rake to a maximum of 4.5m. Veranda width to gutter line 3.6m Provision to be made for future Interactive Whiteboards	
<b>Floor</b>	vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External (to Internal Activity Area & Veranda): Inward opening, fully glazed aluminium panel double doors. Inside turn snib door lock to external door to veranda.	
<b>Windows</b>	Openable	
<b>Partitions</b>	Operable walls between Teaching Areas with pin-up material maximised on both sides and a nominated section of whiteboard	
<b>FIXED FURNITURE</b>		
	4 BOA01 Pinup Boards	
	1 BOA02 Whiteboard on operable wall	
	1 STO18 Mobile Bag Unit	
<b>EQUIPMENT AND FIXTURES</b>		
	1 1200mm Stainless Steel Prac Trough	
	3 Bib Taps	
	Heater(s)	
	3 Cable wires at 2300AFL	
<b>LOOSE FURNITURE</b>		
	2 MIS20 Flip Top Bin	
	2 MIS19 Waste Bin	
	1 STO09 Storage Cabinet	
	1 PPK01 Carpenter's Bench on Wheels	
	2 PPK13 Carpet square	
	2 CHA03 Task Chair	
	1 PPK02 Cheval mirror	
	1 DES04 Teachers Desk	
	1 PPK14 Dolls pram	
	2 PPK15 Door mat	
	2 MIS09 Primary Easel	
	1 APP17 Electric fry pan	
	1 PPK03 Folding Bookcase	
	1 PPK04 Jumping Mattress	
	1 PPK12 Play Kitchenette	
	2 PPK16 Modular Box, Type A	
	2 PPK17 Modular Box, Type B	
	18 PPK18 Paint Pots and Lids	
	2 PPK05 Paint Stand	
	2 PPK06 Plastic Barrels	
	1 PPK07 Play Wardrobe	
	1 PPK08 Playbed with Mattress	
	1 PPK09 Playstove	
	1 APP15 Portable cooker	
	1 APP06 Under Bench Fridge 140L	
	1 PPK10 Scramble Net	

	1	MIS07 Acoustic Screen
Fit for Purpose		SHV07 Storeroom Shelving
	3	STO04 Display Shelving - 1 Shelf
	3	STO03 Display Shelving - 2 Shelf
	1	PPK19 Sisal rope
	1	MIS03 Step ladder
	25	CHA01 Classroom Chair (of a height suitable for users)
	1	TAB06 Occasional Table
	6	TAB15 Trapezoidal Table
	1	TAB14 Circular Table 750 diameter
	1	STO15 Storage Trolley
	1	PPK11 Water trolley
	1	TAB16 Work table 1500 x 900
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		Natural by operable windows
<b>Extraction</b>		Exhaust grilles
<b>Lighting</b>		
<b>Acoustics</b>		Refer to G8: Acoustic Services.
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	8	Double GPO(s) GPO(s) for heater(s) Roof Vent Operator
	1	Single GPO
<b>Conditioning</b>		
		Ceiling Fans
<b>Lighting</b>		
		Suspended tubular luminaire
<b>Data and Communications</b>		
	8	Computer outlet(s) @ 800mm AFL in 2 channel duct min.800mm apart
	1	PA Speakers with volume adjustment
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Intruder Detection (PIR)
<b>Smoke</b>		Smoke detector
<b>MECHANICAL</b>		
<b>A/C</b>		Evaporative. Refer to G5: Mechanical Services.
<b>Other</b>		Roof ventilators
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		Sewerage
<b>Gas Service</b>		Heaters
<b>Water Supply</b>		Cold Water

<b>PRE PRIMARY CLASSROOM 3</b>		<b>PS-CB1-03</b>
<b>Dimensions</b>		<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b>	+ Direct Access to Toilets, Kitchen, Store and External Play Area	
<b>Relationship</b>		
<b>Comments</b>	Ceilings on rake to a maximum of 4.5m. Veranda width to gutter line 3.6m Provision to be made for future Interactive Whiteboards	
<b>Floor</b>	vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External (to Internal Activity Area & Veranda): Inward opening, fully glazed aluminium panel double doors. Inside turn snib door lock to external door to veranda.	
<b>Windows</b>	Openable	
<b>Partitions</b>	Operable walls between Teaching Areas with pin-up material maximised on both sides and a nominated section of whiteboard	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pinup Boards	
	1 BOA02 Whiteboard on operable wall	
	1 STO18 Mobile Bag Unit	
<b>EQUIPMENT AND FIXTURES</b>		
	1 1200mm Stainless Steel Prac Trough	
	3 Bib Taps	
	Heater(s)	
	3 Cable wires at 2300AFL	
<b>LOOSE FURNITURE</b>		
	2 MIS20 Flip Top Bin	
	2 MIS19 Waste Bin	
	1 STO09 Storage Cabinet	
	1 PPK01 Carpenter's Bench on Wheels	
	2 PPK13 Carpet square	
	2 CHA03 Task Chair	
	1 PPK02 Cheval mirror	
	1 DES04 Teachers Desk	
	1 PPK14 Dolls pram	
	2 PPK15 Door mat	
	2 MIS09 Primary Easel	
	1 APP17 Electric fry pan	
	1 Folding bookcase	
	1 PPK03 Folding Bookcase	
	1 PPK04 Jumping Mattress	
	2 PPK16 Modular Box, Type A	
	2 PPK17 Modular Box, Type B	
	18 PPK18 Paint Pots and Lids	
	2 PPK05 Paint Stand	
	2 PPK06 Plastic Barrels	
	1 PPK07 Play Wardrobe	
	1 PPK08 Playbed with Mattress	
	1 PPK09 Playstove	
	1 APP15 Portable cooker	
	1 APP06 Under Bench Fridge 140L	

	1	PPK10 Scramble Net
	1	MIS07 Acoustic Screen
Fit for Purpose		SHV07 Storeroom Shelving
	3	STO04 Display Shelving - 1 Shelf
	3	STO03 Display Shelving - 2 Shelf
	1	PPK19 Sisal rope
	1	MIS03 Step ladder
	25	CHA01 Classroom Chair (of a height suitable for users)
	1	TAB06 Occasional Table
	6	TAB15 Trapezoidal Table
	1	TAB14 Circular Table 750 diameter
	1	STO15 Storage Trolley
	1	PPK11 Water trolley
	1	TAB16 Work table 1500 x 900

**ENVIRONMENTAL**

**Ventilation** Natural by operable windows

**Extraction** Exhaust grilles

**Lighting** Natural and artificial

**Acoustics** Refer to G8: Acoustic Services.

**ELECTRICAL & COMMUNICATIONS**

**Power**

- 8 Double GPO(s)  
GPO(s) for heater(s)  
Roof Vent Operator
- 1 Single GPO

**Conditioning**

Ceiling Fans

**Lighting**

Suspended tubular luminaire

**Data and Communications**

- 8 Computer outlet(s) @ 800mm AFL in 2 channel duct min.800mm apart
- 1 PA Speakers with volume adjustment

**SECURITY & DETECTION**

**Intruder** Intruder Detection (PIR)

**Smoke** Smoke detector

**MECHANICAL**

**A/C** Evaporative. Refer to G5: Mechanical Services.

**Other** Roof ventilators

**FIRE SERVICES**

**Fire-fighting equipment** N/A

**HYDRAULIC & GAS**

**Waste** Sewerage

**Gas Service** Heaters

**Water Supply** Cold Water

<b>KINDERGARTEN CLASSROOM 1</b>		<b>PS-CB1-04</b>
<b>Dimensions</b>		<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b>	+ Direct Access to Toilets, Kitchen, Store and External Play Area	
<b>Relationship</b>		
<b>Comments</b>	Ceilings on rake to a maximum of 4.5m. Veranda width to gutter line 3.6m Provision to be made for future Interactive Whiteboards	
<b>Floor</b>	vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External: Inward opening fully glazed aluminium panel double doors to veranda with inside turn snib door lock. External (diagonally opposite): Inward opening fully glazed aluminium panel door with inside turn snib door lock.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Openable	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	8 BOA01 Pinup Boards	
	1 BOA02 Whiteboard on operable wall	
	2 ST18 Mobile Bag Unit	
<b>EQUIPMENT AND FIXTURES</b>		
	1 1200mm Stainless Steel Prac Trough	
	3 Bib Taps Heater(s)	
	3 Cable wires at 2300AFL	
<b>LOOSE FURNITURE</b>		
	2 MIS20 Flip Top Bin	
	2 MIS19 Waste Bin	
	1 STO09 Storage Cabinet	
	1 PPK01 Carpenter's Bench on Wheels	
	2 PPK13 Carpet square	
	2 CHA03 Task Chair	
	1 PPK02 Cheval mirror	
	1 DES04 Teachers Desk	
	1 PPK14 Dolls pram	
	2 PPK15 Door mat	
	2 MIS09 Primary Easel	
	1 APP17 Electric fry pan	
	1 Folding bookcase	
	1 PPK03 Folding Bookcase	
	1 PPK04 Jumping Mattress	
	2 PPK16 Modular Box, Type A	
	2 PPK17 Modular Box, Type B	
	18 PPK18 Paint Pots and Lids	
	2 PPK05 Paint Stand	
	2 PPK06 Plastic Barrels	
	1 PPK07 Play Wardrobe	
	1 PPK08 Playbed with Mattress	
	1 PPK09 Playstove	
	1 APP15 Portable cooker	

	1	APP06 Under Bench Fridge 140L
	1	PPK10 Scramble Net
	1	MIS07 Acoustic Screen
Fit for Purpose		SHV07 Storeroom Shelving
	3	STO04 Display Shelving - 1 Shelf
	3	STO03 Display Shelving - 2 Shelf
	1	PPK19 Sisal rope
	1	MIS03 Step ladder
	25	CHA01 Classroom Chair (of a height suitable for users)
	1	TAB06 Occasional Table
	6	TAB15 Trapezoidal Table
	1	TAB14 Circular Table 750 diameter
	1	STO15 Storage Trolley
	1	PPK11 Water trolley
	1	TAB16 Work table 1500 x 900
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		Natural by operable windows
<b>Extraction</b>		Exhaust grilles
<b>Lighting</b>		Natural and artificial
<b>Acoustics</b>		Refer to G8: Acoustic Services.
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
		2 Channel Skirting Duct to one wall
	8	Double GPO(s)
	1	Roof Vent Operator GPO(s) for heater(s)
<b>Conditioning</b>		
		Ceiling Fan(s)
<b>Lighting</b>		
		Suspended Tubular Luminaire
<b>Data and Communications</b>		
	7	Computer outlet(s) @ 800mm AFL in 2 channel duct min.800mm apart PA Speakers with volume adjustment
<b>Other</b>		
		N/A
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Intruder Detection (PIR)
<b>Smoke</b>		Smoke detector
<b>MECHANICAL</b>		
<b>A/C</b>		Evaporative. Refer to G5: Mechanical Services.
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		Sewerage
<b>Gas Service</b>		Heaters
<b>Water Supply</b>		Cold Water



<b>KINDERGARTEN CLASSROOM 2</b>		<b>PS-CB1-05</b>
<b>Dimensions</b>		<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b>	+ Direct Access to Toilets, Kitchen, Store and External Play Area	
<b>Relationship</b>		
<b>Comments</b>	Ceilings on rake to a maximum of 4.5m. Veranda width to gutter line 3.6m Provision to be made for future Interactive Whiteboards	
<b>Floor</b>	vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External: Inward opening fully glazed aluminium panel double doors to veranda with inside turn snib door lock. External (diagonally opposite): Inward opening fully glazed aluminium panel door with inside turn snib door lock.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Openable	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	8 BOA01 Pinup Boards	
	1 BOA02 Whiteboard on operable wall	
	1 ST18 Mobile Bag Unit	
<b>EQUIPMENT AND FIXTURES</b>		
	1 1200mm Stainless Steel Prac Trough	
	3 Bib Taps Heater(s)	
	3 Cable wires at 2300AFL	
<b>LOOSE FURNITURE</b>		
	2 MIS20 Flip Top Bin	
	2 MIS19 Waste Bin	
	1 STO09 Storage Cabinet	
	1 PPK01 Carpenter's Bench on Wheels	
	2 PPK13 Carpet square	
	2 CHA03 Task Chair	
	1 PPK02 Cheval mirror	
	1 DES04 Teachers Desk	
	1 PPK14 Dolls pram	
	2 PPK15 Door mat	
	2 MIS09 Primary Easel	
	1 APP17 Electric fry pan	
	1 Folding bookcase	
	1 PPK03 Folding Bookcase	
	1 PPK04 Jumping Mattress	
	2 PPK16 Modular Box, Type A	
	2 PPK17 Modular Box, Type B	
	18 PPK18 Paint Pots and Lids	
	2 PPK05 Paint Stand	
	2 PPK06 Plastic Barrels	
	1 PPK07 Play Wardrobe	
	1 PPK08 Playbed with Mattress	
	1 PPK09 Playstove	
	1 APP15 Portable cooker	

	1	APP06 Under Bench Fridge 140L
	1	PPK10 Scramble Net
	1	MIS07 Acoustic Screen
Fit for Purpose		SHV07 Storeroom Shelving
	3	STO04 Display Shelving - 1 Shelf
	3	STO03 Display Shelving - 2 Shelf
	1	PPK19 Sisal rope
	1	MIS03 Step ladder
	25	CHA01 Classroom Chair (of a height suitable for users)
	1	TAB06 Occasional Table
	6	TAB15 Trapezoidal Table
	1	TAB14 Circular Table 750 diameter
	1	STO15 Storage Trolley
	1	PPK11 Water trolley
	1	TAB16 Work table 1500 x 900
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		Natural by operable windows
<b>Extraction</b>		Exhaust grilles
<b>Lighting</b>		Natural and artificial
<b>Acoustics</b>		Refer to G8: Acoustic Services.
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
		2 Channel Skirting Duct to one wall
	8	Double GPO(s)
	1	Roof Vent Operator
		GPO(s) for heater(s)
<b>Conditioning</b>		
		Ceiling Fans
<b>Lighting</b>		
		Suspended Tubular Luminaire
<b>Data and Communications</b>		
	7	Computer outlet(s) @ 800mm AFL in 2 channel duct min.800mm apart
		PA Speakers with volume adjustment
<b>Other</b>		
		N/A
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Intruder Detection (PIR)
<b>Smoke</b>		Smoke detector
<b>MECHANICAL</b>		
<b>A/C</b>		Evaporative. Refer to G5: Mechanical Services.
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		Sewerage
<b>Gas Service</b>		Heaters
<b>Water Supply</b>		Cold Water

<b>TEACHER'S PREPARATION</b>		<b>PS-CB1-06</b>
<b>Dimensions</b>		<b>Floor Area: 27 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Duties other than teaching	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Ready Access to Learning Areas	
<b>Comments</b>		
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Raking Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, ½ glazed solid core timber door.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Openable Fixed treatments	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	3 BOA01 Pinup Boards	
	1 FF16 Overhead Shelving Unit	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	4 CHA14 Meeting Chairs	
	4 TAB02 Interview Table - 1200	
	3 STO05 Filing Cabinet - 4 drawer	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>		
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	3 Double GPO(s)	
<b>Conditioning</b>	Ceiling Fan	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting.	
<b>Data and Communications</b>		
	1 Computer outlet	
	1 Telephone	
	1 PA with volume control	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (PIR)	
<b>Smoke</b>	Smoke detector connected to intruder.	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>INTERNAL STORE 1</b>		<b>PS-CB1-07</b>
<b>Dimensions</b>		<b>Floor Area: 18 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Shared Store for Pre Primary Activity Areas	
<b>Occupancy</b>	School Staff, Pre Primary Students	
<b>Locality + Relationship</b>	Direct Access to Kindergarten Learning Areas	
<b>Comments</b>		
<b>Floor</b>	Vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber doors.	
<b>Partitions</b>	N/A	
<b>Windows</b>	N/A	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO(s)
<b>Conditioning</b>		
	N/A	
<b>Lighting</b>		
	Recessed Lighting Motion sensor lighting.	
<b>Data and Communications</b>		
	N/A	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	
<b>Water Supply</b>	N/A	

<b>INTERNAL STORE 2</b>		<b>PS-CB1-08</b>
<b>Dimensions</b>		<b>Floor Area: 18 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Shared Store for Pre Primary Activity Areas	
<b>Occupancy</b>	School Staff, Pre Primary Students	
<b>Locality + Relationship</b>	Direct Access to Pre Primary & Kindergarten Learning Areas	
<b>Comments</b>		
<b>Floor</b>	Vinyl (R9)	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber doors.	
<b>Partitions</b>	N/A	
<b>Windows</b>	N/A	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Conditioning</b>	N/A	
<b>Lighting</b>	Recessed LightingMotion sensor lighting.	
<b>Data and Communications</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	
<b>Water Supply</b>	N/A	

<b>INTERNAL STORE 3</b>		<b>PS-CB1-09</b>
<b>Dimensions</b>		<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Pre Primary play equipment	
<b>Occupancy</b>	School Staff, Pre Primary Students	
<b>Locality + Relationship</b>	Direct Access to Pre Primary Classroom 3	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Painted	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber doors.	
<b>Partitions</b>	N/A	
<b>Windows</b>	N/A	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Conditioning</b>	N/A	
<b>Lighting</b>	Recessed LightingMotion sensor lighting.	
<b>Data and Communications</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	
<b>Water Supply</b>	N/A	

<b>EXTERNAL STORE 1</b>		<b>PS-CB1-10</b>
<b>Dimensions</b>		<b>Floor Area: 40 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Pre Primary external play equipment	
<b>Occupancy</b>	School Staff	
<b>Locality</b> +	Ready Access to Learning Areas.	
<b>Relationship</b>	Direct Access to External Play Area.	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard– Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Roller door with reinforced bottom & sides. Inward opening, solid core timber door.	
<b>Partitions</b>	N/A	
<b>Windows</b>	N/A	
<b>Signage</b>	Room Name	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV06 Sports Store Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Conditioning</b>	N/A	
<b>Lighting</b>	Recessed LightingMotion sensor lighting.	
<b>Data and Communications</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (Reed Switch on personnel door) Roller Shutter Reed Switch on roller door	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>EXTERNAL STORE 2</b>		<b>PS-CB1-11</b>
<b>Dimensions</b>		<b>Floor Area:</b> 56 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Pre Primary external play equipment	
<b>Occupancy</b>	School Staff	
<b>Locality</b> +	Ready Access to Learning Areas and Staff Preparation.	
<b>Relationship</b>	Direct Access to External Play Area.	
<b>Floor</b> Mono concrete, Sealed		
<b>Walls</b> Steel Stud with Plasterboard– Painted		
<b>Ceiling</b> Mineral Fibre Ceiling Tile		
<b>Skirting</b> Vinyl Skirting		
<b>Doors</b> Roller door with reinforced bottom & sides. Inward opening, solid core timber door.		
<b>Partitions</b> N/A		
<b>Windows</b> N/A		
<b>Signage</b> Room Name		
<b>FIXED FURNITURE</b>		
N/A		
<b>EQUIPMENT AND FIXTURES</b>		
N/A		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV06 Sports Store Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Conditioning</b>	N/A	
<b>Lighting</b>	Recessed LightingMotion sensor lighting.	
<b>Data and Communications</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (Reed Switch on personnel door) Roller Shutter Reed Switch on roller door	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	



<b>CLEANER'S STORE</b>		<b>PS-CB1-12</b>
<b>Dimensions</b>		<b>Floor Area: 7 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Cleaners store	
<b>Occupancy</b>	Cleaner	
<b>Locality</b>	+	
<b>Relationship</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with MR Plasterboard - Painted. Tiled splashback behind cleaners sink	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening, solid core timber door. Low grille.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	1	MIS04 Broom and Spade Rack
	1	SHV04 Overhead Shelving
	2	MIS05 Vacuum Cleaner Hose Hanger
<b>EQUIPMENT AND FIXTURES</b>		
		Instantaneous Electric Water Heater
<b>LOOSE FURNITURE</b>		
		N/A
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Adequate ventilation in case of chemical spillage	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO(s)
	1	Power to hot water unit
<b>Conditioning</b>	N/A	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting.	
<b>Data and Communications</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (Reed Switch on door)	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grilles connected to a roof mounted, wind operated rotary ventilator and door grille for inlet of air. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Controls</b>	1x potable cold and hot water wall set 1 x non-potable cold water hose tap with threaded outlet	
<b>Other</b>	1x Double check valve assembly on wall	
<b>Fixtures</b>	1x Cleaner's Sink Nom. 600 x 500 1x Wall mounted safety eye wash with retractable hose fixed to AS4775.	
<b>Water Supply</b>	Hot (60°) and Cold Water	
<b>Waste</b>	Floor waste gully Sewerage	

<b>KITCHEN 1</b>		<b>PS-CB1-13</b>
<b>Dimensions</b>		<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	None	
<b>Function</b>	Kitchen Associated with Kindergarten area	
<b>Occupancy</b>	School Staff, Parents	
<b>Locality</b>	+ Direct Access to Kindergarten Learning areas	
<b>Relationship</b>		
<b>Comments</b>	Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with Plasterboard - Painted Tile splashback	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	No doors, frame only.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	2	FF04 Bench Cupboard Unit
	1	FF04 Cupboard Unit
	2	FF06 Bench Drawer Unit
	4	FF14 Overhead Cupboard
<b>EQUIPMENT AND FIXTURES</b>		
	1	Double Bowl Inset Sink, Stainless Steel, 1500mm
	1	Instantaneous Electric Water Heater
<b>LOOSE FURNITURE</b>		
	1	APP08 Refrigerator 380L - frost free
	1	APP13 Microwave
	1	MIS20 Flip Top Bin
	1	EQ11 Fry Pan
	1	APP04 Stove - Electric
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Refer to Building Acoustics & Ventilation Brief 5.14	
<b>Extraction</b>	Require extraction above cooktops	
<b>Lighting</b>	Natural/Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4	Double GPO(s) at work level
	1	Double GPO for refrigerator
<b>Additional Power</b>		
	1	A/GPO to Hot Water Unit
	1	Power to hot water unit
	1	Power to stove
	1	Power to future rangehood
<b>Lighting</b>		
	Surface Luminaire	
<b>Data and Communications</b>		
	Telephone	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (PIR)	
<b>Smoke</b>	N/A	

<b>MECHANICAL</b>	
<b>A/C</b>	N/A
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	Standard Taps Backflow Valves to cold water taps Tempered hot water 45 degrees max
<b>Water Supply</b>	Hot (45°) and Cold Water
<b>Waste</b>	Sewerage

<b>KITCHEN 2</b>		<b>PS-CB1-14</b>
<b>Dimensions</b>		<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	None	
<b>Function</b>	Kitchen Associated with Pre Primary area	
<b>Occupancy</b>	School Staff, Parents	
<b>Locality</b>	+ Direct Access to Pre Primary Learning Areas	
<b>Relationship</b>		
<b>Comments</b>	Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with Plasterboard - Painted Tile splashback	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, ½ glazed solid core timber door. Low grille.	
<b>Partitions</b>	N/A	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	2 FF04 Bench Cupboard Unit	
	1 FF04 Cupboard Unit	
	2 FF06 Bench Drawer Unit	
	4 FF14 Overhead Cupboard	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Double Bowl Inset Sink, Stainless Steel, 1500mm	
	1 Instantaneous Electric Water Heater	
<b>LOOSE FURNITURE</b>		
	1 APP08 Refrigerator 380L - frost free	
	1 APP13 Microwave	
	1 MIS20 Flip Top Bin	
	1 EQ11 Fry Pan	
	1 APP04 Stove - Electric	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Refer to Building Acoustics & Ventilation Brief 5.14	
<b>Extraction</b>	Require extraction above cooktops	
<b>Lighting</b>	Natural/Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4 Double GPO(s) at work level	
	1 Double GPO for refrigerator	
<b>Additional Power</b>		
	1 A/GPO to Hot Water Unit	
	1 Power to hot water unit	
	1 Power to stove	
	1 Power to future rangehood	
<b>Lighting</b>		
	Surface Luminaire	
<b>Data and Communications</b>		
	Telephone	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (PIR)	
<b>Smoke</b>	N/A	

<b>MECHANICAL</b>	
<b>A/C</b>	N/A
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	Standard Taps Backflow Valves to cold water taps Tempered hot water 45 degrees max
<b>Water Supply</b>	Hot (45°) and Cold Water
<b>Waste</b>	Sewerage

<b>KITCHEN 3</b>		<b>PS-CB1-15</b>
<b>Dimensions</b>		<b>Floor Area: 11 m<sup>2</sup></b>
<b>Signage</b>	None	
<b>Function</b>	Kitchen Associated with Pre Primary Learning Area 3	
<b>Occupancy</b>	School Staff, Parents	
<b>Locality</b>	+ Direct Access to Pre Primary Learning Area 3	
<b>Relationship</b>		
<b>Comments</b>	Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with Plasterboard. Tile splashback	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	N/A	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	1	FF04 Bench Cupboard Unit
	1	FF04 Cupboard Unit
	1	FF06 Bench Drawer Unit
	2	FF14 Overhead Cupboard
<b>EQUIPMENT AND FIXTURES</b>		
	1	Double Bowl Inset Sink, Stainless Steel, 1500mm
	1	Instantaneous Electric Water Heater
<b>LOOSE FURNITURE</b>		
	1	APP08 Refrigerator 380L - frost free
	1	APP13 Microwave
	1	MIS20 Flip Top Bin
	1	EQ11 Fry Pan
	1	APP04 Stove - Electric
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Refer to Building Acoustics & Ventilation Brief 5.14	
<b>Extraction</b>	Require extraction above cooktops	
<b>Lighting</b>	Natural/Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4	Double GPO(s) at work level
	1	Double GPO for refrigerator
<b>Additional Power</b>		
	1	Power to hot water unit
	1	Power to stove
	1	Power to future rangehood
<b>Lighting</b>		
	Surface Luminaire	
<b>Data and Communications</b>		
	Telephone	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (PIR)	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		

<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	Standard Taps Backflow Valves to cold water taps
<b>Water Supply</b>	Hot (45°) and Cold Water
<b>Waste</b>	Sewerage

<b>COMMUNICATIONS CUPBOARD</b>		<b>PS-CB1-16</b>
<b>Dimensions</b>	Minimum internal dimension 1000w x 900d	<b>Floor Area:</b> 0.90 m <sup>2</sup>
<b>Signage</b>	None	
<b>Function</b>	Communications duct	
<b>Occupancy</b>		
<b>Locality</b>	+ Direct Access from within Store 2	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>		
	Mono concrete, Sealed	
<b>Walls</b>		
	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>		
	Mineral Fibre Ceiling Tile	
<b>Skirting</b>		
	Vinyl Skirting	
<b>Doors</b>		
	Outward opening solid core timber double doors. High & low grilles.	
<b>Partitions</b>		
	N/A	
<b>Windows</b>		
	None	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Equipment Racks – key lockable with 19 inch internal mounting brackets.	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive - Door Grilles	
<b>Extraction</b>	Provide a GPO at a high level to allow a thermostatically controlled exhaust fan to be installed in the future.	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	<ul style="list-style-type: none"> <li>1 GPO for Intruder Alarm System DPG</li> <li>1 GPO at high level to accommodate a future thermostatically controlled exhaust fan</li> <li>1 15A socket for communications</li> <li>1 DGPO for PA</li> </ul>	
<b>Lighting</b>	Recessed Lighting	
<b>Data and Communications</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Alarm System DPG	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	



<b>ELECTRICAL CUPBOARD</b>		<b>PS-CB1-17</b>
<b>Dimensions</b>		<b>Floor Area: 1.50 m<sup>2</sup></b>
<b>Signage</b>	None	
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality + Relationship</b>		
<b>Comments</b>		
<b>Floor</b>		
	Mono concrete, Sealed	
<b>Walls</b>		
	Steel Stud With Plasterboard – Painted	
<b>Ceiling</b>		
	Mineral Fibre Ceiling Tile	
<b>Skirting</b>		
	None	
<b>Doors</b>		
	Outward opening solid core double doors. 180° hinge to one leaf to ensure 1800 clear opening.	
<b>Partitions</b>		
	N/A	
<b>Windows</b>		
	None	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
	Passive - Door Grilles	
<b>Extraction</b>		
	N/A	
<b>Lighting</b>		
	Artificial	
<b>Acoustics</b>		
	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO
<b>Lighting</b>		
	N/A	
<b>Data and Communications</b>		
	N/A	
<b>Other</b>		
	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
	N/A	
<b>Smoke</b>		
	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>		
	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		
	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>		
	N/A	

<b>TOILETS (STAFF) &amp; TOILETS 1 (UNISEX)</b>		<b>PS-CB1-18</b>
<b>Dimensions</b>		<b>Floor Area:</b> Included in 12m <sup>2</sup> of Toilets 2
<b>Signage</b>	Room Name. Additional signage required for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Toilet Associated with Toilets 1 Fit out compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, ½ glazed solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>FIXED FURNITURE</b>		
	1 FF23 Vanity Unit	
	2 CHA08 Bench Seating	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Semi Recessed Vanity Basin, Vitreous China Standard Taps	
	5 WC(s), Vitreous China, Close Coupled	
	1 Soap Dispenser	
	1 Toilet Paper Holder	
	1 Electric Hand Dryer	
	1 Mirror	
	1 1200L ablution trough	
	3 Lever Time Flow Bib Taps Instantaneous Hot Water Unit	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural and artificial	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>Data</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	Mechanical Exhaust	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	
<b>Water Supply</b>	Hot (45°) & Cold Water	
<b>Waste</b>	Sewerage	

<b>TOILETS 2 (UNISEX)</b>		<b>PS-CB1-19</b>
<b>Dimensions</b>		<b>Floor Area: 12m<sup>2</sup></b>
<b>Signage</b>	Room Name. Additional signage required for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>	Toilets Associated with Pre Primary Area Staff Toilet	
<b>Occupancy</b>	Students accompanied by School Staff or Parents	
<b>Locality + Relationship</b>	Adjacent Store	
<b>Comments</b>	Light switches to be automated. Include a sanitary compartment for people with ambulant disabilities to AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, ½ glazed solid core timber door. Low grille.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State. 1350mm High	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Trough, Stainless Steel, 1200mm	
	3 Lever Time Flow Bib taps	
	2 WC(s), Vitreous China, close coupled	
	1 Soap Dispenser	
	2 Toilet Paper Holder	
	1 Electric Hand Dryer	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural and artificial	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>Data</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	Mechanical Exhaust	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	
<b>Water Supply</b>	Cold Water	
<b>Waste</b>	Sewerage	

<b>TOILET3 (UNISEX)</b>		<b>PS-CB1-20</b>
<b>Dimensions</b>		<b>Floor Area: 17m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Toilets Associated with Pre Primary Area	
<b>Occupancy</b>	Students accompanied by School Staff or Parents	
<b>Locality + Relationship</b>	Direct Access to Pre Primary Learning Areas	
<b>Comments</b>	Light switches to be automated. Fit out compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, ½ glazed solid core timber door. Low grille.	
<b>Partitions</b>	Rynat 1350mm High	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Signage</b>	Room Name. Additional signage required for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>FIXED FURNITURE</b>		
	1	CHA08 Bench Seating - Aluminium
<b>EQUIPMENT AND FIXTURES</b>		
	1	Trough, Stainless Steel, 1200mm Lever Time Flow Bib taps
	4	WC(s), Vitreous China (Std size)
	2	Soap Dispenser
	4	Toilet Paper Holder
	1	Electric Hand Dryer
<b>LOOSE FURNITURE</b>		
		N/A
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural and artificial	
<b>Extraction</b>	Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>Data &amp; Communications</b>	N/A	
<b>Other</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	Mechanical Exhaust	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	
<b>Water Supply</b>	Cold Water	
<b>Waste</b>	Sewerage	

<b>ASSISTED ACCESS TOILET TYPE 2A</b>		<b>PS-CB1-21</b>
<b>Dimensions</b>	3540 x 3700	<b>Floor Area:</b> 13.1 m <sup>2</sup>
<b>Signage</b>	Room Name. AS1428.1 (2009) required symbols with Braille signage below.	
<b>Function</b>	Shower & AAT	
<b>Occupancy</b>	Pre Toilet Trained, Students with a disability with School Staff Assistance, Adults.	
<b>Locality</b>	+ Ready Access to Staff Preparation Area	
<b>Relationship</b>		
<b>Comments</b>	Pan to be located in peninsula layout Shower facility located in one corner. This is above AS 1428.1 (2009) requirements.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with MR-Plasterboard – Painted Tile splashback	
<b>Ceiling</b>	Plasterboard	
<b>Skirting &amp; Wet Area</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening solid core timber door. Low grille, 350h SS kick plate to both sides of door.	
<b>Partitions</b>	N/A	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
	Outward lockable cupboard to Std. Dtl. FD.61, 150x400 shelf, back rest & coat hooks to AS 1428.1 (2009) Flushing rim cistern located in brickwork over.	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Hand Basin</b>	Vitreous China, Accessible by wheelchair Shared hot water	
<b>Toilet</b>	Vitreous China pan Braille indicated dual flush buttons.	
<b>Handrails</b>	Drop down stainless steel handrails on either side of pan. Handrail to have interior toilet roll holder. Grab rail fixed to side of shower recess.	
<b>Mirror</b>	Above hand basin.	
<b>Hand Dryer</b>	In accordance with AS1428.1 (2009)	
<b>Soap Dispenser</b>	900mm above FFL.	
<b>Curtain Rail</b>	Around shower area With opaque shower curtain	
<b>Tap Appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Shower</b>	Detachable hand held shower nozzle on soft bend hosing with attached shower arm. Flick switch mixer with handle for easy grip.	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Artificial	
<b>Extraction</b>	Ceiling Exhaust Fan	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO, minimum 500mm from hand basin with large switches 1 Double GPO at 500AFL for hoist and change table Exhaust Fan	
<b>Lighting</b>	Motion sensor lighting	
<b>Alarms</b>	Push button alarm linked to Admin at 750mm AFL near handrail.	
<b>Other</b>		

	N/A
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	N/A
<b>Smoke</b>	N/A
<b>MECHANICAL</b>	
<b>A/C</b>	Split System reverse cycle
<b>Other</b>	N/A
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	N/A
<b>Water Supply</b>	Flow controls Cold Water & Tempered Hot Water – 45deg C max.
<b>Waste</b>	Sewerage Floor flushing rim

<b>UNIVERSAL ACCESS TOILET TYPE 0</b>		<b>PS-CB1-22</b>
<b>Dimensions</b>	Max 3.3(L) x Max 1.9m (W)	<b>Floor Area:</b> 6m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Universal Access Toilet for adults with physical disabilities.	
<b>Occupancy</b>	School Staff, Adults with physical disabilities.	
<b>Locality</b>	+ As per relevant schedule of accommodation. The pan to be located in one corner.	
<b>Relationship</b>		
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. This UAT provides space for a School Staff member or other adult in a wheelchair.	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Outward opening, solid core timber door. Low Grille. 350H SS kickplate to both sides of door. Keyed door lock.	
<b>Partitions</b>	N/A	
<b>Windows</b>	None	
<b>Signage</b>	AS 1428.1 (2009) required symbols With Braille signage below	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Above hand basin, in accordance with AS1428.1 (2009)	
<b>Handrails</b>	Stainless steel as per AS1428.1 (2009). Handrail to have toilet roll holder.	
<b>Hand Basin</b>	Vitreous China, wall mounted. Free access underneath. Instantaneous Hot Water Unit	
<b>Toilet pan</b>	Vitreous China pan, suspended from wall. Braille indicated dual flush buttons	
<b>Soap Dispenser</b>	900mm above finished floor level	
<b>Tap Appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Toilet Roll Holder</b>	Attached to interior of handrail.	
<b>Hand Dryer</b>	In accordance with AS1428.1 (2009)	
<b>Door Locks</b>	Refer to 8.4 Hardware Schedule	
<b>Other</b>	Backrest, Shelf, Coat hook in accordance with AS1428.1 (2009)	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive & Active	
<b>Extraction</b>	Exhaust fan.	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO with large switches Exhaust Fan	
<b>Lighting</b>	Surface luminaire, large light switch. Motion sensor lighting	
<b>Alarms</b>		
<b>Other</b>	Push button alarm linked to Admin at 750mm AFL near handrail.	
	N/A	

<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	N/A
<b>Smoke</b>	N/A
<b>MECHANICAL</b>	
<b>A/C</b>	N/A
<b>Other</b>	Exhaust fan
<b>FIRE SERVICES</b>	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	N/A
<b>Water Supply</b>	Cold Water Flow controls Tempered Hot Water – 45deg C max.
<b>Waste</b>	Sewerage



### **I2.3 Classroom Blocks 2, 3 and 5**

PS-CB2/3-01	Classrooms: 1 to 4
PS-CB2/3-02	Internal Activity Area
PS-CB2/3-03	Teacher's Preparation
PS-CB2/3-04	Activity Area Store
PS-CB2/3-05	Technology & Enterprise Store
PS-CB2/3-06	Cleaner's Store
PS-CB2/3-07	Communication Cupboard
PS-CB2/3-08	Electrical Cupboard
PS-CB2/3-09	Female Student Toilets
PS-CB2/3-10	Male Student Toilets
PS-CB2/3-11	Assisted Access Toilet Type 1

<b>CLASSROOMS 1-4</b>		<b>PS-CB2/3 &amp; 5-01</b>
<b>Dimensions</b>		<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b> +		
<b>Relationship</b>	Direct Access and vision to Internal Activity Area.	
<b>Comments</b>	Learning Areas are mirror images of each other, arranged in pairs with operable wall between Ceilings on rake to a maximum of 4.5m. Normal whiteboards in lieu of Interactive Whiteboards (IWB) IWB to have built in short throw projector and speakers	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External (to Internal Activity Area): Inward opening fully glazed aluminium panel double doors. External (to Veranda): Inward opening fully glazed aluminium panel door with inside turn snib door lock.	
<b>Windows</b>	Openable	
<b>Partitions</b>	Operable walls between Teaching Areas with pin-up material maximised on both sides and a nominated section of whiteboard	
<b>FIXED FURNITURE</b>		
	8 BOA01 Pin-Up Boards	
	1 BOA05 Pivot Whiteboard	
	3 BOA02 Whiteboard	
	1 FF21 Tall Cupboard Unit (Lockable)	
<b>EQUIPMENT AND FIXTURES</b>		
	Heater(s)	
	2 Cable Wires @ 2300 AFL	
<b>LOOSE FURNITURE</b>		
	2 TAB12 Mobile Computer Desk	
	1 MIS19 Waste Bin	
	1 CHA03 Task Chair	
	2 TAB11 Computer Desk	
	36 MIS26 Desk Tray	
	1 DES04 Teacher's Desk	
	18 TAB17 Classroom Desk (Double)	
	3 STO03 Display Shelving – 2 Shelf	
	36 CHA01 Classroom Chair	
	1 TAB06 Occasional Table,	
	1 TAB19 Nature Study Table	
	3 STO14 Tote Trolley	
	1 TAB10 Laptop Table (on castors, 720mm H or 900mm H, depending on application)	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Rated Operable Walls. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 Double GPOs	
	1 Roof Vent Operator	
	GPO(s) for heater(s)	
<b>Conditioning</b>		

	Ceiling fan(s)
<b>Lighting</b>	Suspended Tubular Luminaire
<b>Data and Communications</b>	
	9 Computer outlet(s) 2115AFL DGPO & blank plate, 2385AFL DGPO & AV plate, centred above interactive WB, 500AFL AV plate, double data outlets & DGPO for IWB located adjacent teachers' desk. Blank plates for USB/PC audio connection.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Security Detector required
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm
<b>MECHANICAL</b>	
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services
<b>Other</b>	Gas heater
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	Heaters

<b>INTERNAL ACTIVITY AREA</b>		<b>PS-CB2/3 &amp; 5-02</b>
<b>Dimensions</b>	Min ceiling height 2.4m	<b>Floor Area:</b> 60 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Activity Area for Block	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality</b>	+ Direct Access and vision to Learning Areas	
<b>Relationship</b>	Direct Access to Teacher's Preparation and Activity Store	
<b>Comments</b>	Ceilings on rake to a maximum of 4.5m. Fixed benches to be 700mm high	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening fully glazed double doors to External Activity Area with inside turn snib door lock.	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	1 FF04 Bench Cupboard Unit	
	2 FF06 Bench Drawer Unit	
	1 FF04 Bench, Fixed Work	
<b>EQUIPMENT AND FIXTURES</b>		
	1 APP04 Stove (Electric)	
	1 Instantaneous Hot Water System	
	1 Inset Single Sink, Stainless Steel, 1200mm and standard taps	
<b>LOOSE FURNITURE</b>		
	1 APP08 Fridge 380L (Frost Free)	
	1 MIS20 Flip Top Bin	
	2 CHA03 Task Chair	
	12 CHA01 Classroom Chair	
	6 TAB17 Classroom Desk (Double)	
	6 TAB13 Mobile Workbench	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust grillesRequire extraction above all cooktops	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	11 Double GPOs	
	2 Channel Skirting Duct to nominated walls	
	Roof Vent Operator	
	2 Service pendants over Island Benches (2 x DGPO & 1 x DD)	
	1 Power to stove	
	1 Power to hot water unit	
	1 Power to future exhaust hood	
<b>Conditioning</b>		
	Ceiling fan(s)	
<b>Lighting</b>		
	Suspended Tubular Luminaire	
<b>Data and Communications</b>		
	13 Computer outlet(s) @ 800 mm above FFL and min. 800mm apart	
	1 Telephone	
	1 PA Speakers with volume adjustment	
<b>SECURITY &amp; DETECTION</b>		

<b>Intruder</b>	Intruder Detection
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm
<b>MECHANICAL</b>	
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Sewerage
<b>Water Supply</b>	Hot (45°) & Cold Water Flow Controls

<b>TEACHER'S PREPARATION</b>		<b>PS-CB2/3 &amp; 5-03</b>
<b>Dimensions</b>		<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Duties other than teaching	
<b>Occupancy</b>	School Staff	
<b>Locality</b> +		
<b>Relationship</b>	Direct Access and vision to Internal Activity Areas	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile - Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, ½ Glazed, solid core timber door.	
<b>Windows</b>	Openable. Fixed treatments.	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-Up Boards	
	1 FF16 Overhead Shelving Unit	
<b>EQUIPMENT AND FIXTURES</b>		
	Provision for electric panel heater	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	4 CHA14 Meeting Chair	
	4 TAB02 Interview Table – 1200	
	2 STO05 Filing Cabinet - 4 drawer	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>		
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	3 Double GPOs	
<b>Conditioning</b>		
	Ceiling fan(s)	
<b>Lighting</b>		
	Recessed Lighting. Motion sensor lighting	
<b>Data and Communications</b>		
	6 Computer outlet	
	1 Telephone	
<b>Other</b>		
	PA with volume control	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>ACTIVITY STORE</b>		<b>PS-CB2/3 &amp; 5-04</b>
<b>Dimensions</b>		<b>Floor Area:</b> 10 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Activity Store	
<b>Occupancy</b>	School Staff	
<b>Locality</b>	+ Direct Access to Internal Activity Area	
<b>Relationship</b>	Direct Access to Communications Cupboard	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO	
<b>Lighting</b>	Recessed Lighting. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (reed switch)	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>TECHNOLOGY &amp; ENTERPRISE STORE</b>		<b>PS-CB2/3 &amp; 5-05</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Enterprise and Technology Store	
<b>Occupancy</b>	School Staff	
<b>Locality</b>	+ Direct Access to Veranda	
<b>Relationship</b>	Ready Access to UAT	
<b>Comments</b>	Door needs to be wide enough to cope with trolleys	
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tile	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO	
<b>Lighting</b>	Recessed Lighting. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	



<b>CLEANER'S STORE</b>		<b>PS-CB2/3&amp;5-06</b>
<b>Dimensions</b>	Min side 2m	<b>Floor Area: 4 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Cleaners store	
<b>Occupancy</b>	Cleaner	
<b>Locality</b>	+	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard - Painted Tiled splashback behind cleaners sink	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening solid core timber door. Low grille.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	1 MIS04 Broom and Spade Rack	
	1 SHV04 Overhead Shelving	
	2 MIS05 Vacuum Cleaner Hose Hanger	
<b>EQUIPMENT AND FIXTURES</b>		
	Instantaneous Electric Water Heater	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Adequate ventilation in case of chemical spillage	
<b>Extraction</b>	Rotary Ventilator	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1 Double GPOs Power to hot water unit	
<b>Lighting</b>		
	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection. (Heavy duty reed switch on roller door)	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	Ceiling grilles connected to a roof mounted, wind operated rotary ventilator and door grille for inlet of air. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor waster gully Sewerage	
<b>Water Supply</b>	Hot (60°) and Cold Water	
<b>Controls</b>	1x potable cold and hot water wall set 1x non-potable cold water hose tap with threaded outlet	
<b>Other</b>	Double check valve assembly on wall	
<b>Fixtures</b>	1x Cleaner's Sink Nom. 600 x 500 1x Wall mounted safety eye wash with retractable hose fixed to AS4775.	

<b>COMMUNICATIONS CUPBOARD</b>		<b>PS-CB2/3&amp;5-07</b>
<b>Dimensions</b>	Minimum internal dimension 1000w x 900d	<b>Floor Area:</b> 0.90 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Communications duct	
<b>Occupancy</b>		
<b>Locality</b>	+ Direct Access from within Activity Store	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard. Drop-In type	
<b>Skirting</b>	Nil	
<b>Doors</b>	Outward opening double solid core timber doors. High & low grilles.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Equipment Racks – key lockable with 19 inch internal mounting brackets.	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive - Door Grilles	
<b>Extraction</b>		
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1 15A socket for Communications	
	1 DGPO for PA	
	1 GPO at high level for future fan	
	1 GPO for intruder alarm system DPG	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Security Equipment DPG	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	High & low level door grilles.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>ELECTRICAL CUPBOARD</b>		<b>PS-CB2/3&amp;5-08</b>
<b>Dimensions</b>		<b>Floor Area:</b> 0.90 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality</b>	+	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard. Drop-In type	
<b>Skirting</b>	Nil	
<b>Doors</b>	Outward opening, double solid core timber doors. 180° Swing hinge to one leaf to ensure 1800 clear opening.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Lighting</b>	Artificial	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>FEMALE STUDENT TOILETS</b>		<b>PS-CB2/3&amp;5-09</b>
<b>Dimensions</b>	Min ceiling height 2.4m	<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female Students	
<b>Locality</b>	+ External.	
<b>Relationship</b>	Ready Access to Learning Area 1 & Male Student Toilets	
<b>Comments</b>	Light switches to be automated. Include one sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1 Trough, Stainless Steel, 1200mm	
	3 Push button Time Flow Bib Taps	
	3 WC(s), Vitreous China, In duct cistern	
	3 Toilet Paper Holder	
	2 Soap Dispenser	
	1 Electric Hand Dryer	
	1 Mirror 1200H x 1500w	
	1 Hand Basin Vitreous China	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical Ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>MALE STUDENT TOILETS</b>		<b>PS-CB2/3&amp;5-10</b>
<b>Dimensions</b>	Min ceiling height 2.4m	<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male Students	
<b>Locality</b>	+	
<b>Relationship</b>	Ready Access to Female Student Toilets	
<b>Comments</b>	Light switches to be automated. Include a sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1 Trough, Stainless Steel, 1200mm	
	3 Push button Time Flow Bib Taps	
	1 Waterless Urinal, Wall hung, Vitreous China	
	1 900L 304-Grade Stainless Steel 1.2mm Floor Style Urinal	
	2 Toilet Paper Holder	
	2 Soap Dispenser	
	1 Electric Hand Dryer	
	1 Mirror 1200H x 1500w	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Air Grille	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	Mechanical Ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>ASSISTED ACCESS TOILET TYPE 1</b>		<b>PS-CB2/3&amp;5-11</b>
<b>Dimensions</b>	2992mm x 2725mm	<b>Floor Area:</b> 8 m <sup>2</sup>
<b>Signage</b>	AS 1428.1 (2009) required symbols With Braille signage below affixed to wall in accordance with BCA 2013	
<b>Function</b>	Students with disabilities accompanied by one or more education assistants. AAT implies that the facility can be used by any student.	
<b>Occupancy</b>	Students, Students with Disabilities, Teachers and Education Assistants	
<b>Locality</b>	+ External	
<b>Relationship</b>	Ready Access to Technology & Enterprise Store and Cleaner's Room.	
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. The pan to be located in a peninsula layout.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with MR-Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening solid core timber door. Low Grille. 350H SS kick-plate to both sides of door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Mirror: Above hand basin.	
	Handrails: Drop down stainless steel handrails on either side of pan.	
	Toilet: Vitreous China pan. Braille indicated, dual flush buttons.	
	Hand Basin: Vitreous China, Accessible. (Wall mounted, free access underneath).	
	Tap Appliances: Extended levers and extended nozzle to be accessible by student in wheelchair	
	Soap Dispenser: 900mm above FFL	
	Toilet Roll Holder: Attached to Handrail	
	Hand Dryer: In accordance with AS1428.1 (2009)	
	Fixtures: Hot water unit	
	Other: 150x400 shelf, back rest & coat hooks to AS1428.1 (2009)	
	Other: 600Wx300D Half height lockable cupboard	
<b>LOOSE FURNITURE</b>		
	Supplied by the Department as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural and artificial	
<b>Extraction</b>	Ceiling Exhaust Fan	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO, Large switches 900mm above FFL Minimum 500mm from hand basin A/GPO for Exhaust Fan	
<b>Lighting</b>	Surface Mounted Florescent. Motion sensor lighting Large light switch at 900mm above FFL	
<b>Emergency Call Button</b>	Push button alarm linked to Admin 700mm above FFL near handrail	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Exhaust Fan	

<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Sewerage
<b>Water Supply</b>	Flow Controls Cold Water & Tempered Hot (45°) Water – 45deg C max.

## 12.4 Classroom Blocks 4

PS-CB4-01	Classrooms1 & 2
PS-CB4-02	Art & Crafts Classroom
PS-CB4-03	Inclusive Education Classroom
PS-CB4-04	Internal Activity Area
PS-CB4-05	Teacher's Preparation
PS-CB4-06	Activity Area Store
PS-CB4-07	Kiln Room
PS-CB4-08	Paper Store
PS-CB4-09	Science Store
PS-CB4-10	Inclusive Ed Store
PS-CB4-11	Cleaner's Store
PS-CB4-12	Communication Cupboard
PS-CB4-13	Electrical Cupboard
PS-CB4-14	Female Student Toilets
PS-CB4-15	Male Student Toilets
PS-CB4-16	Assisted Access Toilet Type 3



<b>CLASSROOMS 1 &amp; 2</b>		<b>PS-CB4-01</b>
<b>Dimensions</b>		<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality + Relationship</b>	Direct Access and vision to Internal Activity Area.	
<b>Comments</b>	Learning Areas are mirror images of each other, arranged in pairs with operable wall between Ceilings on rake to a maximum of 4.5m. Normal whiteboards in lieu of Interactive Whiteboards (IWB) IWB to have built in short throw projector and speakers	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External (to Internal Activity Area): Inward opening fully glazed aluminium panel double doors. External (to Veranda): Inward opening fully glazed aluminium panel door with inside turn snib door lock.	
<b>Windows</b>	Openable	
<b>Partitions</b>	Operable walls between Teaching Areas with pin-up material maximised on both sides and a nominated section of whiteboard	
<b>FIXED FURNITURE</b>		
	8	BOA01 Pin-Up Boards
	1	BOA05 Pivot Whiteboard
	3	BOA02 Whiteboard
	1	FF21 Tall Cupboard Unit (Lockable)
<b>EQUIPMENT AND FIXTURES</b>		
		Heater(s)
	2	Cable Wires @ 2300 AFL
<b>LOOSE FURNITURE</b>		
	2	TAB12 Mobile Computer Desk
	1	MIS19 Waste Bin
	1	CHA03 Task Chair
	2	TAB11 Computer Desk
	36	MIS26 Desk Tray
	1	DES04 Teacher's Desk
	18	TAB17 Classroom Desk (double)
	3	STO03 Display Shelving – 2 Shelf
	36	CHA01 Classroom Chair
	1	TAB06 Occasional Table
	1	TAB19 Nature Study Table
	3	STO14 Tote Trolley
	1	TAB10 Laptop Table (on castors, 720mm H or 900mm H depending on application)
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Rated Operable Walls. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8	Double GPO(s)
	1	Roof Vent Operator GPO(s) for Heater(s)

<b>Conditioning</b>	Ceiling fan(s)
<b>Lighting</b>	Suspended Tubular Luminaire
<b>Data and Communications</b>	<p>9 Computer outlet(s)                  2115AFL DGPO &amp; blank plate, 2385AFL DGPO &amp; AV plate, centred above interactive WB, 500AFL AV plate, double data outlets &amp; DGPO for IWB located adjacent teachers' desk. Blank plates for USB/PC audio connection.</p> <p>1 PA Speakers with volume adjustment</p>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Security Detector required
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm
<b>MECHANICAL</b>	
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services
<b>Other</b>	Gas Heaters
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	Heaters

<b>ART &amp; CRAFT CLASSROOM</b>		<b>PS-CB4-02</b>
<b>Dimensions</b>		<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality + Relationship</b>	Direct Access to a Secure Courtyard, Veranda, Internal Activity Area, Science Store, Kiln Room and Paper Store	
<b>Comments</b>	Independent room. Ceiling on rake to a maximum of 4.5m. Maximise Pin-Up space	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting. 2 Channel Duct to 1 wall	
<b>Doors</b>	External (to Veranda): 1 ½ Inward opening fully glazed aluminium panel doors with inside turn snib door lock. External (to Internal Activity Area): Inward opening fully glazed aluminium panel door. External (to Court): Outward opening fully glazed aluminium panel door.	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	4	BOA01 Pin-Up Boards
	1	BOA02 White Board
	2	FF04 Cupboard Unit with 1800 x 600 SS Practical Trough
	1	BOA07 Chalk Board
	1	FF01 Bench - Open
	1	FF01 Bench, Fixed Shelf Under
<b>EQUIPMENT AND FIXTURES</b>		
	3	Cable Wires @ 2300 AFL Heater(s) Provision for Interactive White Board
<b>LOOSE FURNITURE</b>		
	2	TAB12 Mobile Computer Desk
	1	STO20 Art Drying Rack, mobile
	8	MIS09 Primary Easel
	4	MIS19 Waster Bin
	1	STO11 Stationery Cabinet
	1	CHA03 Task Chair
	1	DES04 Teacher's Desk
	1	EQ16 Pottery Kiln
Fit for Purpose		SHV07 Storeroom Shelving
	36	CHA06 Art Stool
	18	TAB18 Art and Science Desks
	2	STO13 Tool Trolley
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	9	Double GPO(s) GPO(s) for Heater(s) Roof Vent Operator
<b>Conditioning</b>	Ceiling fan(s)	

<b>Lighting</b>	Suspended Tubular Luminaire
<b>Data and Communications</b>	
	8 Computer outlet(s) @ 800 mm above FFL and min. 800mm apart
	1 PA Speakers with volume adjustment
	2115AFL DGPO & blank plate, 2385AFL DGPO & AV plate, centred above interactive WB, 500AFL AV plate, double data outlets & DGPO for IWB located adjacent teachers' desk. Blank plates for USB/PC audio connection.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Security Detector required
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm
<b>MECHANICAL</b>	
<b>A/C</b>	Reverse Cycle Air Conditioning Refer to G5: Mechanical Services
<b>Other</b>	
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Sewerage 2 x Bucket Traps
<b>Gas Service</b>	Heaters
<b>Water Supply</b>	Flow Controls Cold water Tempered Hot Water – 45deg C max.

<b>INCLUSIVE EDUCATION CLASSROOM</b>		<b>PS-CB4-03</b>
<b>Dimensions</b>		<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Teaching Area	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32, small group of students with disabilities and / or learning difficulties.	
<b>Locality + Relationship</b>	Adjacent Art Room (but no Direct Access) Direct Access to a Store from within the Inclusive Education Classroom	
<b>Comments</b>	Independent room. Ceiling on rake to a maximum of 4.5m.	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External (to Internal Activity Area): Inward opening, fully glazed aluminium panel double doors. External (to Veranda): Inward opening, fully glazed aluminium panel door with inside turn snib door lock.	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	2	BOA01 Pin-Up Boards
	1	BOA06 Pivot Whiteboard
	1	Bench – Cupboard Unit
	1	Bench – Drawer Unit
	1	Overhead Cupboard Unit
	2	BOA02 Whiteboard
	1	Cupboard Unit
<b>EQUIPMENT AND FIXTURES</b>		
	2	Cable Wires @ 2300 AFL Provision for IWB
<b>LOOSE FURNITURE</b>		
	2	TAB12 Mobile Computer Desk
	1	MIS19 Waste Bin
	1	CHA03 Task Chair
	14	MIS26 Desk Tray
	1	DES04 Teacher's Desk
	7	TAB17 Classroom Desk (Double)
	1	TAB20 Classroom Desk (Single)
	2	STO03 Display Shelving – 2 Shelf
	14	CHA01 Classroom Chair
	1	TAB06 Occasional Table
	1	TAB19 Nature Study Table
	2	STO14 Tote Trolley
	1	APP07 Fridge 240L - Frost Free
	1	APP13 Microwave
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	11	Double GPO(s)
	1	Power to hot water unit

<b>Conditioning</b>	Roof Vent Operator
<b>Lighting</b>	Split System Reverse cycle Suspended Tubular Luminaire
<b>Data and Communications</b>	8 Computer outlet(s) @ 800 mm above FFL and min. 800mm apart PA Speaker(s) and Controller 2115AFL DGPO & blank plate, 2385AFL DGPO & AV plate, centred above interactive WB, 500AFL AV plate, double data outlets & DGPO for IWB located adjacent teachers' desk. Blank plates for USB/PC audio connection.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Security Detector required
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm
<b>MECHANICAL</b>	
<b>A/C</b>	Reverse Cycle
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	N/A

INTERNAL ACTIVITY AREA		PS-CB4-04
<b>Dimensions</b>		<b>Floor Area:</b> 60 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Activity Area for Block	
<b>Occupancy</b>	School Staff, Students. Student numbers will vary from 25 to 32.	
<b>Locality + Relationship</b>	Direct Access to Art and Craft Classroom, Inclusive Education Classroom and General Classrooms.	
<b>Comments</b>	Direct Access to External Activity Area, Teacher's Preparation and Activity Store. Ceilings on rake to a maximum of 4.5m.	
<b>Floor</b>	Sheet vinyl	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Metal Strip Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening fully glazed double doors to External Activity Area with inside turn snib door lock.	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
Fit for Purpose	FF04 Bench Cupboard Unit	
2	FF06 Bench Drawer Unit	
1	FF04 Bench	
1	APP04 Stove	
<b>EQUIPMENT AND FIXTURES</b>		
1	Single Bowl Inset Sink, Stainless Steel, 1200mm Standard taps	
1	Instantaneous Electric Water Heater	
<b>LOOSE FURNITURE</b>		
1	APP06 Under Bench Fridge 140L (Frost free)	
6	TAB13 Mobile workbenches	
12	CHA01 Classroom Chair	
6	TAB17 Classroom Desk (Double)	
1	MIS20 Flip Top Bin	
2	CHA03 Task chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Mechanical ridge venting / rotary venting Require extraction above all cooktops	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
11	Double GPOs	
	2 Channel Skirting Duct to nominated walls	
	Roof Vent Operator	
2	Service pendants over Island Benches (2xDGPO & 1 x DD)	
<b>Conditioning</b>		
	Ceiling Fan(s)	
<b>Lighting</b>		
	Suspended Tubular Luminaire	
<b>Data and Communications</b>		
13	Computer outlet(s) @ 800 mm above FFL and min. 800mm apart	
1	Telephone	
1	PA Speakers with volume adjustment	
<b>Other</b>		

	1	Power to hot water unit
	1	Power to stove
	1	Power to future exhaust hood
	1	Double GPO for refrigerator
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Intruder Detection
<b>Smoke</b>		Smoke detector connected to Intruder Detection Alarm
<b>MECHANICAL</b>		
<b>A/C</b>		Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		Sewerage
<b>Water Supply</b>		Cold Water & Hot (45°)
		Flow Controls



<b>TEACHER'S PREPARATION</b>		<b>PS-CB4-05</b>
<b>Dimensions</b>		<b>Floor Area:</b> 15 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Duties other than teaching	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Direct Access to Internal Activity Area	
<b>Comments</b>		
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles - Acoustic	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening ½ glazed solid core timber door.	
<b>Windows</b>	Openable. Fixed treatments.	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-Up Board	
	1 FF16 Overhead Shelving Unit	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	4 CHA14 Meeting Chair	
	4 TAB02 Interview Table – 1200	
	2 STO05 Filing Cabinet - 4 drawer	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>		
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	3 Double GPO(s)	
<b>Conditioning</b>		
	Ceiling Fan(s)	
<b>Lighting</b>		
	Recessed Lighting. Motion sensor lighting	
<b>Data and Communications</b>		
	1 Computer outlet	
	1 Telephone	
<b>Other</b>		
	1 PA with volume control	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>ACTIVITY STORE</b>		<b>PS-CB4-06</b>
<b>Dimensions</b>		<b>Floor Area:</b> 10 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Activity Store	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Direct Access to Internal Activity Area Direct Access to Communications Cupboard from within the Activity Store	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening solid core timber door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Lighting</b>	Recessed Lighting. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>KILN ROOM</b>		<b>PS-CB4-07</b>
<b>Dimensions</b>		<b>Floor Area:</b> 13 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Kiln Room for Arts & Crafts	
<b>Occupancy</b>	School Staff, Students	
<b>Locality + Relationship</b>	Direct Access from Art and Craft Classroom	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber double door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1 EQ16 Pottery Kiln	
	1 FF10 Drying Rack	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Kiln hood with rotary ventilator & low level air inlet grille in wall	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
	1 Single Phase Outlet, 15A	
	1 Three Phase Outlet, 20A – 5 pin	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>Other</b>	Kiln hood connected to roof mounted, wind operated rotary ventilator and wall grille for air inlet. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>PAPER STORE</b>		<b>PS-CB4-08</b>
<b>Dimensions</b>	Min ceiling height 2.4m	<b>Floor Area:</b> 13 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Store Room for Arts & Crafts	
<b>Occupancy</b>	School Staff, Students	
<b>Locality + Relationship</b>	Direct Access from Art and Craft Classroom	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plaster Board – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	1 FF17 Paper Storage Unit	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Lighting</b>	Recessed Lighting. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>SCIENCE STORE</b>		<b>PS-CB4-09</b>
<b>Dimensions</b>		<b>Floor Area:</b> 13 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Science Store Room	
<b>Occupancy</b>	School Staff, Students	
<b>Locality + Relationship</b>	Direct Access from Art and Craft Classroom	
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber door. Low door grille.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ceiling grille & rotary ventilator	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Lighting</b>	Recessed Lighting. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Detection Alarm	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Exhaust</b>	Ceiling grille connected to roof mounted wind operated rotary ventilator and door grille for air inlet. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>INCLUSIVE EDUCATION STORE</b>		<b>PS-CB4-10</b>
<b>Dimensions</b>		<b>Floor Area:</b> 8 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Inclusive Ed Store	
<b>Occupancy</b>	School Staff, Students	
<b>Locality + Relationship</b>	Direct Access from Inclusive Education Classroom	
<b>Comments</b>	Internal and external access	
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, ½ glazed, solid core timber door.	
<b>Windows</b>	Internal Door Only	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO(s)	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>		
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>CLEANER STORE</b>		<b>PS-CB4-11</b>
<b>Dimensions</b>		<b>Floor Area:</b> 4m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Cleaners store	
<b>Occupancy</b>	Cleaner	
<b>Locality + Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with MR Plasterboard - Painted. Tiled splashback behind cleaners sink	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening, solid core timber door. Low door grille.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	1	MIS04 Broom and Spade Rack
	1	SHV04 Overhead Shelving
	2	MIS05 Vacuum Cleaner Hose Hanger
<b>EQUIPMENT AND FIXTURES</b>		
		Instantaneous Electric Water Heater
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Adequate ventilation in case of chemical spillage	
<b>Extraction</b>		
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1	Double GPO(s)
	1	Power to hot water unit
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection. Reed switch	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grille connected to a roof mounted, wind operated rotary ventilator & door grille for air inlet. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Gully Sewerage	
<b>Controls</b>	1x potable cold and hot water wall set 1x non-potable cold water hose tap with threaded outlet	
<b>Water Supply</b>	Hot (60°) and Cold Water	
<b>Other</b>	Double check valve assembly on wall	
<b>Fixtures</b>	1x Cleaner's Sink Nom. 600 x 500 1x Wall mounted safety eye wash with retractable hose fixed to AS4775.	

<b>COMMUNICATIONS CUPBOARD</b>		<b>PS-CB4-12</b>
<b>Dimensions</b>	Minimum internal dimension 1000w x 900d	<b>Floor Area:</b> 0.90 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Communications duct	
<b>Occupancy</b>		
<b>Locality + Relationship</b>	Direct Access from within Activity Store	
<b>Comments</b>		
<b>Floor</b>		
	Mono concrete, Sealed	
<b>Walls</b>		
	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>		
	Plasterboard	
	Drop-In type	
<b>Skirting</b>		
	Nil	
<b>Doors</b>		
	Outward opening, solid core timber double doors. High & low door grilles.	
<b>Windows</b>		
	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Equipment Racks – key lockable with 19 inch internal mounting brackets.	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Door Grilles	
<b>Extraction</b>	Provide a GPO at a high level to allow a thermostatically controlled exhaust fan to be installed in the future.	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	GPO at high level to accommodate a future thermostatically controlled exhaust fan GPO for intruder alarm system DPG 15A socket for communications DGPO for PA	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Security Equipment DPG	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	High and low level door grilles.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	



<b>ELECTRICAL CUPBOARD</b>		<b>PS-CB4-13</b>
<b>Dimensions</b>		<b>Floor Area:</b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality + Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono-Concrete (Sealed)	
<b>Walls</b>	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>	Drop-In Plasterboard. Painted	
<b>Skirting</b>	Nil	
<b>Doors</b>	External opening, double solid core door. 180° hinges to one leaf to ensure clear opening of 1800.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	Communications Rack	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
<b>Extraction</b>		
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Lighting</b>	None	
<b>Data and Communications</b>	Refer to G6: Electrical Services	
<b>Power</b>	1 Double GPO(s)	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>FIRE SERVICE</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>FEMALE STUDENT TOILETS</b>		<b>PS-CB4-14</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female Students	
<b>Locality + Relationship</b>	Ready Access to Male Student Toilets	
<b>Comments</b>	Light switches to be automated Include sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard -Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Standard Height Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Trough, Stainless Steel, 1200mm
	3	Push button Time Flow Bib Taps
	3	WC(s), Vitreous China, In Duct Cistern
	3	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICE</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>MALE STUDENT TOILETS</b>		<b>PS-CB4-15</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male Students	
<b>Locality + Relationship</b>	Ready Access to Female Student Toilets	
<b>Comments</b>	Light switches to be automated. Include a sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Trough, Stainless Steel, 1200mm
	3	Push button Time Flow Bib Taps
	1	900L 304-Grade Stainless Steel 1.2mm Floor Style Urinal
	2	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Mirror
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICE</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>ASSISTED ACCESS TOILET TYPE 3</b>		<b>PS-CB4-16</b>
<b>Dimensions</b>	3630 x 3310	<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	Braille indicated, dual flush buttons	
<b>Function</b>	Students in wheelchairs or with other disabilities requiring assistance with toilet and showering needs by one or more education assistants.	
<b>Occupancy</b>	Students, Students with Disabilities, Teachers and Education Assistants.	
<b>Locality + Relationship</b>	Ready Access to Inclusive Education Store and Cleaner's Room.	
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. Pan to be located in peninsula layout.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with MR Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening solid core timber door. Clear opening of 870mm. 350h Kick-plate to both sides of door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
Fit for Purpose	FF14 Overhead cupboard (lockable)	
<b>EQUIPMENT AND FIXTURES</b>		
	Mirror: Above hand basin. Handrails: Drop down stainless steel handrails on either side of pan. Handrail to have toilet roll holder. Grab rail fixed to side of shower recess Toilet: Vitreous China pan. Braille indicated, dual flush buttons. Hand Basin: Vitreous China, Accessible. (wall mounted, free access underneath). Tap Appliances: Extended levers and extended nozzle to be accessible by student in a wheelchair Shower: Flick mixer with handle for easy grip. Detachable hand held shower nozzle On soft bend hosing with attached shower arm. Soap Dispenser: 900mm above FFL Toilet Roll Holder: Attached to Handrail Hand Dryer: In accordance with AS1428.1 (2009) Hot water unit Curtain rail around shower area with opaque shower curtain Other: 150 x 400 shelf, back rest & 2 coat hooks to AS1428.1 (2009) Flushing rim cistern located on brickwork over.	
<b>LOOSE FURNITURE</b>		
	Mechanical hoist Height adjustable change table.	
NOTE	Loose Furniture supplied by the Department as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Artificial	
<b>Extraction</b>	Mechanical	
<b>Lighting</b>	Natural and artificial. Motion sensor lighting	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO; at 900mm above FFL, with large switches 1 Double GPO at 500AFL for hoist and change table Exhaust Fan	
<b>Lighting</b>	Motion sensor lighting	
<b>Emergency Call Button</b>	Push button alarm linked to Admin at 700mm above FFL near handrail	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		

<b>Smoke</b>	
<b>MECHANICAL</b>	
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services
<b>Extraction</b>	Mechanical ventilation
<b>FIRE SERVICE</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Sewage Floor flushing rim
<b>Water Supply</b>	Flow Controls Cold Water Tempered Hot Water – 45deg C max

## **I2.5 Library Block**

PS-LSB-01	Library Resource Area
PS-LSB-02	Library Work Area
PS-LSB-03	Library Store
PS-LSB-04	[Not Used]
PS-LSB-05	[Not Used]
PS-LSB-06	Cleaner's Store
PS-LSB-07	Communications Cupboard
PS-LSB-08	Electrical Cupboard
PS-LSB-09	[Not Used]
PS-LSB-10	[Not Used]
PS-LSB-11	[Not Used]

LIBRARY RESOURCE AREA		PS-LSB-01
<b>Dimensions</b>		<b>Floor Area:</b> 230 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Library	
<b>Occupancy</b>	School Staff, students.	
<b>Locality + Relationship</b>		
<b>Comments</b>	Maximise number and size of Pin-up Boards	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard	
<b>Ceiling</b>	Metal Strip Acoustic on Rake	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, fully glazed aluminium panel double doors. Emergency Exit: Inward opening, Fully Glazed Aluminium Panel, Single Door.	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-Up Board (2100L x 1100H)	
<b>EQUIPMENT AND FIXTURES</b>		
	Heater(s)	
<b>LOOSE FURNITURE</b>		
	2 LIB01 AV Carrel	
	4 MIS19 Waste Bin	
	2 LIB02 Booklet Stand (Revolving)	
	1 CHA13 Waiting Area Chair (Visitors)	
	2 CHA03 Task Chair	
4 (minimum)	TAB11 Computer Desk	
	1 LIB03 Encyclopaedia Reference Stand	
	1 STO07 Filing Cabinet – 2 Drawer	
	1 STO06 Filing Cabinet – 3 Drawer	
	1 LIB05 Magazine Rack	
	1 LIB06 Map Holder	
	1 MIS24 Multifile	
Fit for Purpose	CHA11 Informal Seating	
	2 STO16 Printer Trolley	
	1 LIB07 Picture Rack	
	1 LIB08 Poster Storage Rack (V Shaped)	
	2 MIS07 Acoustic Screen	
	10 SHV03 Library Shelving	
Fit for Purpose	SHV07 Storeroom Shelving	
	1 CHA09 Office Stool	
	2 LIB09 Storage baskets (mobile)	
	48 CHA11 Informal Seating (Student Chairs)	
	2 TAB05 Table, meeting	
	8 TAB03 Conference Table - Components	
	2 LIB04 Library Book Trolley	
	1 BOA06 Mobile Whiteboard	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		

<b>Power</b>	
22	Double GPOs GPO(s) for Heater(s)
4	4 Flush Floor Boxes with 2 Double GPOs and 2 Double Data Outlets in each. 16 GPOs and 16 Data Outlets in total.
2	Cleaners outlets Ridge Vent Operators
<b>Conditioning</b>	
	Ceiling Fans
<b>Lighting</b>	
	Suspended Tubular Luminaire Emergency Lighting and Exit Signs
<b>Data and Communications</b>	
19	Data outlet(s)
3	TV Aerial Outlet. 2115AFL DGPO & blank plate, 2385AFL DGPO & AV plate, centred above interactive WB, 500AFL AV plate, double data outlets & DGPO for IWB. Blank plates for USB/PC audio connection.
2	PA Speakers with single volume adjustment
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Intruder Detection
<b>Smoke</b>	Smoke detector connected to Intruder Alarm System
<b>MECHANICAL</b>	
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICE</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	Heaters



<b>WORK AREA</b>		<b>PS-LSB-02</b>
<b>Dimensions</b>		<b>Floor Area:</b> 25m <sup>2</sup>
<b>Signage</b>	N/A	
<b>Function</b>	Library work area	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Direct Access to Resource Area Floor Area is part of total Resource Area (230 m <sup>2</sup> )	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>	Metal Strip Acoustic on Rake	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	N/A	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin-up Board - 2300Lx1200H	
	1 FF05 Bench Cupboard Unit – Library	
	1 FF19 Pigeon Hole Shelving Unit – Library	
	2 FF16 Overhead Shelving	
	1 FF02 Bench – Open (Library)	
	1 FF04 Bench, Adjustable Shelving Under	
	1 FF14 Overhead Cupboard	
	1 FF12 Library Counter	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Inset Sink, S/Steel, Single, 1200L Standard Taps Instantaneous Hot Water Unit	
<b>LOOSE FURNITURE</b>		
	1 Mobile Drawer Unit	
	1 STO17 Processing Unit	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural via Resource Area	
<b>Extraction</b>	Exhaust grilles	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	13 Double GPOs	
	1 Auto GPO	
<b>Conditioning</b>	Ceiling Fans	
<b>Lighting</b>	Suspended Tubular Luminaire	
<b>Data and Communications</b>		
	8 Data Outlets	
	1 TV	
	1 UAT Shower Alarm . Buzzer/Light	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder + Smoke</b>	Intruder Detection Smoke detector connected to Intruder Alarm System	
<b>MECHANICAL</b>		
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services	
<b>FIRE SERVICE</b>		
<b>Fire-fighting</b>	Portable Fire Extinguisher and Fire Blanket	
<b>HYDRAULIC &amp; GAS</b>		

<b>Gas Services</b>	Heaters
<b>Waste</b>	Sewerage
<b>Water Supply</b>	Hot & Cold Water

<b>LIBRARY STORE</b>		<b>PS-LSB-03</b>
<b>Dimensions</b>		<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Store area for Library School Staff.	
<b>Occupancy</b>	School Staff	
<b>Locality + Relationship</b>	Direct Access to Resource Area and Work Area	
<b>Comments</b>		
<b>Floor</b>	Mono Concrete (sealed)	
<b>Walls</b>	–Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber door. 350H kickplate to both sides of door	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Boards (3000L x 1200H)	
	1 BOA02 Whiteboards (2100L X 1200H)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	2 STO16 Printer Trolley	
	6 SHV03 Library Shelving	
	1 SHV01 Compactus	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	2 Double GPOs	
<b>Lighting</b>		
	Surface Luminaire	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder	
<b>Smoke</b>	Smoke detector connected to intruder.	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

[NOT USED]	PS-LSB-04
<b>Dimensions</b> <b>Signage</b> <b>Function</b> <b>Occupancy</b> <b>Locality + Relationship</b> <b>Comments</b>	<b>Floor Area: NA m<sup>2</sup></b>
<b>Floor</b> <b>Walls</b> <b>Ceiling</b> <b>Skirting</b> <b>Doors</b> <b>Windows</b> <b>Partitions</b>	
<b>FIXED FURNITURE</b>	
<b>EQUIPMENT AND FIXTURES</b>	
<b>LOOSE FURNITURE</b>	
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b> <b>Extraction</b> <b>Lighting</b> <b>Acoustics</b>	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
<b>Conditioning</b>	
<b>Lighting</b>	
<b>Data and Communications</b>	

<b>SECURITY &amp; DETECTION</b>
Intruder
Smoke
<b>MECHANICAL</b>
A/C
<b>FIRE SERVICES</b>
Fire-fighting equipment
<b>HYDRAULIC &amp; GAS</b>
Waste
Gas Service
Water Supply

[NOT USED]	PS-LSB-05
<b>Dimensions</b> <b>Signage</b> <b>Function</b> <b>Occupancy</b> <b>Locality + Relationship</b> <b>Comments</b>	<b>Floor Area: NA m<sup>2</sup></b>
<b>Floor</b> <b>Walls</b> <b>Ceiling</b> <b>Skirting</b> <b>Doors</b> <b>Windows</b> <b>Partitions</b>	
<b>FIXED FURNITURE</b>	
<b>EQUIPMENT AND FIXTURES</b>	
<b>LOOSE FURNITURE</b>	
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b>	
<b>Extraction</b>	
<b>Lighting</b>	
<b>Acoustics</b>	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
<b>Conditioning</b>	
<b>Lighting</b>	
<b>Data and Communications</b>	
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	
<b>Smoke</b>	
<b>MECHANICAL</b>	
<b>A/C</b>	
<b>Extraction</b>	
<b>FIRE SERVICES</b>	
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas Service</b>	

<b>CLEANER'S STORE</b>		<b>PS-LSB-06</b>
<b>Dimensions</b>	Min.2m (W) x Min.2m (L)	<b>Floor Area:</b> 4 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Cleaner's Room	
<b>Occupancy</b>	Cleaners	
<b>Locality + Relationship</b>		
<b>Comments</b>	May be located in the Covered Assembly Block. Layout Drawings take precedent over FD Detail	
<b>Floor</b>	Mono-Concrete (Sealed)	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted. Tiled splashback behind cleaners sink	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening, solid core timber door. Low grille.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	1 SHV04 Overhead Shelving.	
	2 MIS05 Vacuum Cleaner Hose Hangers	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Adequate ventilation in case of chemical spillage	
<b>Extraction</b>	Air exhaust	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO	
	1 Provide power for instantaneous hot water unit	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Alarm System (reed switch)	
<b>Smoke</b>	Smoke Detector Connected to Intruder Alarm System	
<b>MECHANICAL</b>		
<b>Extraction</b>	Ceiling grille connected to a roof mounted wind operated rotary ventilator & door grille for air inlet. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Controls</b>	1x potable cold and hot water wall set 1x non-potable cold water hose tap with threaded outlet Double check valve assembly on wall	
<b>Fixtures</b>	1x Wall mounted safety eye wash with retractable hose fixed to AS4775. 1x Cleaner's Sink Nom. 600 x 500 1x Instantaneous Electric Hot Water Unit	
<b>Water Supply</b>	Hot (60°) and Cold Water	
<b>Waste</b>	Floor Waste Gully Sewerage	

<b>COMMUNICATIONS CUPBOARD</b>		<b>PS-LSB-07</b>
<b>Dimensions</b>	Minimum internal dimension 1000w x 900d	<b>Floor Area:</b> 0.90 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Communications duct	
<b>Occupancy</b>		
<b>Locality + Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard. Drop-In type	
<b>Skirting</b>	Ni	
<b>Doors</b>	Outward opening, solid core timber doors. High and low door grilles.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Equipment Racks – key lockable with 19 inch internal mounting brackets.	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive - Door Grilles	
<b>Extraction</b>	Future thermostatically controlled exhaust fan	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 Double GPOs 1 GPO at high level to accommodate a future thermostatically controlled exhaust fan. 1 15A outlet for communications rack 1 GPO for Intruder Alarm System DPG 1 DGPO for PA	
<b>Equipment</b>	MATV, PA & Security equipment.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Security Equipment DPG	
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Other</b>	High & low level door grilles	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	



<b>ELECTRICAL CUPBOARD</b>		<b>PS-LSB-08</b>
<b>Dimensions</b>		<b>Floor Area: 0.9 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality + Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard – Painted	
<b>Ceiling</b>	Plasterboard. Drop-In type	
<b>Skirting</b>	Nil	
<b>Doors</b>	Outward opening, solid core timber doors.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>		
<b>Lighting</b>	Artificial	
<b>Acoustics</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>Other</b>		
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		

<b>[NOT USED]</b>	<b>PS-LSB-09</b>
<b>Dimensions</b> <b>Signage</b> <b>Function</b> <b>Occupancy</b> <b>Locality + Relationship</b> <b>Comments</b>	<b>Floor Area: NA m<sup>2</sup></b>
<b>Floor</b> <b>Walls</b> <b>Ceiling</b> <b>Skirting</b> <b>Doors</b> <b>Windows</b> <b>Partitions</b>	
<b>FIXED FURNITURE</b>	
<b>EQUIPMENT AND FIXTURES</b>	
<b>LOOSE FURNITURE</b>	
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b> <b>Extraction</b> <b>Lighting</b> <b>Acoustics</b>	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
<b>Lighting</b>	
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	
<b>Smoke</b>	
<b>MECHANICAL</b>	
<b>A/C</b>	
<b>Extraction</b>	
<b>FIRE SERVICES</b>	
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
<b>Water Supply</b>	

<b>[NOT USED]</b>	<b>PS-LSB-10</b>
<b>Dimensions</b> <b>Signage</b> <b>Function</b> <b>Occupancy</b> <b>Locality + Relationship</b> <b>Comments</b>	<b>Floor Area: NA m<sup>2</sup></b>
<b>Floor</b> <b>Walls</b> <b>Ceiling</b> <b>Skirting</b> <b>Doors</b> <b>Windows</b> <b>Partitions</b>	
<b>FIXED FURNITURE</b>	
<b>EQUIPMENT AND FIXTURES</b>	
<b>LOOSE FURNITURE</b>	
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b> <b>Extraction</b> <b>Lighting</b> <b>Acoustics</b>	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>  <b>Lighting</b>	
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b> <b>Smoke</b>	
<b>MECHANICAL</b>	
<b>A/C</b> <b>Extraction</b>	
<b>FIRE SERVICES</b>	
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b> <b>Water Supply</b>	

<b>[NOT USED]</b>	<b>PS-LSB-11</b>
Dimensions Signage Function Occupancy Locality + Relationship Comments	<b>Floor Area: NA m<sup>2</sup></b>
Floor Walls Ceiling Skirting Doors Windows	
<b>EQUIPMENT AND FIXTURES</b>	
LOOSE FURNITURE	
<b>ENVIRONMENTAL</b>	
Extraction Lighting Acoustics	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
Power  Lighting  Emergency Call Button	
<b>SECURITY &amp; DETECTION</b>	
Emergency Call Button	
<b>MECHANICAL</b>	
A/C Extraction	
<b>FIRE SERVICES</b>	
<b>HYDRAULIC &amp; GAS</b>	
Controls Water Supply	

## **I2.6 Covered Assembly Block**

PS-CAB-01	Covered Assembly Area
PS-CAB-02	Music Classroom
PS-CAB-03	Canteen
PS-CAB-04	Canteen Store & Broom Cupboard
PS-CAB-05	Canteen Staff Office
PS-CAB-06	Sports Store
PS-CAB-07	Uniform Store
PS-CAB-08	Gardener's Fertiliser Store
PS-CAB-09	Gardener's Machine Store
PS-CAB-10	Gardeners Workshop
PS-CAB-11	PA System Cupboard
PS-CAB-12	Electrical Cupboard
PS-CAB-13	Cleaner's Store

<b>COVERED ASSEMBLY AREA</b>		<b>PS-CAB-01</b>
<b>Dimensions</b>		<b>Floor Area:</b> 280 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Assemblies, drama, indoor sports	
<b>Occupancy</b>	School Staff, students, visitors	
<b>Locality + Relationship</b>		
<b>Comments</b>	Orientation dependent upon climatic conditions.	
<b>Floor</b>	Indoor/Outdoor floor covering on Mono Concrete such as Flotex, or a similar product equivalent in function, quality, appearance, etc. to the approval of the State. Refer to block plan for Flotex foursquare and line markings to be in contrasting colour.	
<b>Walls</b>	Face brick	
<b>Ceiling</b>	N/A. Shade cloth on wire mesh under insulation	
<b>Skirting</b>	N/A	
<b>Doors</b>	External: Outward opening, fully glazed aluminium panel door Roller Shutters: Motorised aluminium slat roller shutters connected to key operated individual switches located at each roller shutter.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	4	CHA08 Bench Seating - Aluminium
	1	EQ03 Chilled Drinking Trough - 2000L
<b>EQUIPMENT AND FIXTURES</b>		
Fit for Purpose	Painted line markings for games	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Natural – Roof lights & Wall Openings	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 Weatherproof Double GPOs. 2 High level GPO, switched to P.A. Cupboard 2 Microphone outlets PA Audio loop in slab	
<b>Lighting</b>	Surface Mounted Luminaire Lighting Vandal proof	
<b>Other Equipment</b>	4	PA Speakers with cage
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke detector connected to Intruder Alarm System	
<b>MECHANICAL</b>		
<b>Ventilation / Extraction</b>	Passive - Fixed Ridge vent or gable louvres	
<b>Circulation</b>	1 x Large Diameter, HVLS Ceiling Fan	
<b>FIRE SERVICES</b>		
<b>Fire-services equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Drains</b>	Stormwater drain in centre. Floor to fall to drain	
<b>Water</b>	Cold Water	

<b>MUSIC CLASSROOM</b>		<b>PS-CAB-02</b>
<b>Dimensions</b>	Min Ceiling 2.4m	<b>Floor Area:</b> 75m <sup>2</sup>
<b>Signage</b>	Room name	
<b>Function</b>	Music Room	
<b>Occupancy</b>	Up to 32 Students	
<b>Locality + Relationship</b>	Direct Access to the Covered Assembly Area	
<b>Comments</b>	To have large opening operable wall to Undercover Area Ensure lintels are specified at wall openings for Acoustic panel FD.07	
<b>Floor</b>	Carpet	
<b>Walls</b>	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>	Metal Strip Acoustic & Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External: Inward opening, fully glazed aluminium panel door.	
<b>Partitions</b>	Operable Wall to Covered Assembly with pin-up material maximised on inside sides and weatherproof surface externally	
<b>Windows</b>	Openable Fixed treatments	
<b>FIXED FURNITURE</b>		
	4 BOA01 Pinup Boards (1740L x 1245H)	
	1 BOA08 Music Board / Whiteboard ( 4200l x 1200h )	
	3 MIS08 Acoustic Panels (Music Room) (800L x 1370H)	
	1 FF13 Low Shelving Unit (Music Room) (6650l x 600w x 720h)	
	1 FF13 Low Shelving Unit (Music Room) (1900l x 600w x 720h)	
	1 FF22 Tall Shelving Unit (Music Room) (1200l x 600w x 2200h)	
	1 FF22 Tall Shelving Unit (Music Room) (2500l x 600w x 2200h )	
<b>EQUIPMENT AND FIXTURES</b>		
	Heater (s)	
<b>LOOSE FURNITURE</b>		
	16 EQ15 Mobile Stage - Tiered Seating (pairs)	
	1 STO11 Stationery Cabinet	
	1 CHA03 Task chair	
	1 DES04 Teacher's desk	
	1 TAB01 Informal Table	
	1 MIS19 Waste Bin	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Natural – windows & roof lights	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 Double GPOs GPO(s) for Heater(s) To Ceiling fan(s) Power to electrically operated roof vent	
<b>Lighting</b>	Suspended Tubular Luminaire	
<b>Equipment</b>	Ceiling fans	
<b>Data and Communications</b>	4 Computer outlet(s)	

	1	Telephone
	1	PA Speakers with volume adjustment 2115AFL DGPO & blank plate, 2385AFL DGPO & AV plate, centred above interactive WB, 500AFL AV plate, double data outlets & DGPO for IWB. Blank plates for USB/PC audio connection.
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Intruder Detection
<b>Smoke</b>		Smoke Detector Connected to Intruder Alarm and keypad
<b>MECHANICAL</b>		
<b>A/C</b>		Evaporative. Refer to G5: Mechanical Services
<b>Circulation</b>		Ceiling fans
<b>FIRE SERVICES</b>		
		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>		To gas heater



<b>CANTEEN</b>		<b>PS-CAB-03</b>
<b>Dimensions</b>	Min Ceiling 2.4m	<b>Floor Area:</b> 35 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Canteen	
<b>Occupancy</b>	School Staff, Canteen staff, P&C	
<b>Locality + Relationship</b>	Direct Access to Canteen Store, office and Broom Cupboard from within the Canteen. Direct Access to the Covered Assembly Area.	
<b>Comments</b>	Class 1 type food handling area to Health Regulations. Hot Water Unit Located in Store	
<b>Floor</b>	Sheet Vinyl	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted / Ceramic Tiles. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	Painted Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Hinged 180 Degrees Solid Core Door to external to be Zinc/Colorbond Clad to both internal & external faces & edges Security / Flyscreen doors Motorised aluminium roller shutter to Servery Counter , with double hung flyscreen	
<b>Windows</b>	Openable with security / flyscreens	
<b>FIXED FURNITURE</b>		
	1 EQ04 Cool Room - 1800 X 2400 with 1200 X 600 Glazed inset door	
	1 FF09 Canteen Servery Bench	
	1 FF07 Canteen Island Bench	
To suit layout	FF08 Canteen Perimeter Benching and Shelving	
	1 TAB21 Stainless Steel Bench	
<b>EQUIPMENT AND FIXTURES</b>		
	Commercial electric oven/gas cook top	
	Commercial Exhaust Hood	
	Paper Towel Dispenser	
	Insect Electrocuter, Dishwasher	
	Fridges, Freezers, Pie Warmer (N.I.C)	
<b>Sanitary Hardware</b>	Paper Towel Dispenser	
	Soap Dispenser	
	Glass Mirror above Hand Basin	
<b>LOOSE FURNITURE</b>		
	1 MIS19 Waste Bin	
	1 CHA03 Task chair	
	1 MIS06 Clothes locker	
	1 DES03 Office Workstation	
	2 STO05 Filing cabinet - 4 drawer	
	1 APP10 Freezer - domestic, upright, frost free, 360-400L – preference is for lower energy consumption models	
	1 APP09 Fridge 500L	
Fit for Purpose	SHV07 Storeroom Shelving	
	4 CHA07 Science Stool	
	2 SHV02 Cool Room Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural by operable windows Mechanical Exhaust Hood	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Natural – windows	

	Artificial ( refer ELECTRIC & COMMUNICATIONS section below )
<b>Acoustics</b>	Refer to G8: Acoustic Services
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
	6 Double GPOs
	4 GPO on Ceiling Pendant Over Fridge / Freezer @ 2100 AFFL
	1 GPO and switch for Insect Killer
	1 15 amp outlet for Griddle adjacent stove
<b>Lighting</b>	
	Luminaire recessed with flat opal diffuser. Sealed ceiling
<b>Other</b>	
	Power to exhaust hood
	Power to oven
	Power to Cool Room
	Power to dishwasher
<b>Equipment &amp; Fixtures</b>	
	Insect Killer
	Electric oven
	Provide connection to Cool Room
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Intruder detection & Keypad
<b>Smoke</b>	
<b>MECHANICAL</b>	
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services
<b>Ventilation/Extraction</b>	Commercial Exhaust Hood
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Water Supply</b>	
	To Evaporative Cooler
	Instant. Gas Water Heater (in external cupboard)
	Cold Water
<b>Controls</b>	
	Flow Controls
<b>Sanitary Fixtures</b>	
	Prep. Sink, S/Steel, Single Bowl
	Basin, Vitreous China
	Single Lever Mixer or Lever Type Handles to Basin
	Standard Taps to sinks
<b>Waste</b>	
	Evaporative Cooler & cool room drainage
	Floor Waste Gully, Grease Trap
	Trapped waste to sinks & hand basin
<b>Gas Supply</b>	
	To cook top

<b>CANTEEN STORE &amp; BROOM CUPBOARD</b>		<b>PS-CAB-04</b>
<b>Dimensions</b>		<b>Floor Area:</b> 5 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Canteen store	
<b>Occupancy</b>	Canteen staff, P&C	
<b>Locality + Relationship</b>	Direct Access from within the Canteen	
<b>Comments</b>	Canteen – Class 1 type food handling area to Health regulations. NB Layout Drawing dimensions take precedent over Standard Furniture Drawings (PS series)	
<b>Floor</b>	Sheet Vinyl	
<b>Walls</b>	Steel Stud with MR Plasterboard - Painted	
<b>Ceiling</b>	Painted Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Store: Inward opening, solid core timber door. Broom cupboard: Outward opening, solid core timber door.	
<b>Windows</b>	N/A	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	MIS04 Broom and Spade Rack (in Broom Cupboard) SHV04 Overhead Shelving	
<b>EQUIPMENT AND FIXTURES</b>		
	Inset Sink, S/Steel, 1500L, Double bowl Inset Sink with 2 drainers Standard Taps Boiling Water Unit (Wall mount)– install provisions for another Gas Heater Instantaneous gas water heater – Located in duct between Male & Female Toilets	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial ( refer ELECTRICAL & COMMUNICATIONS section below )	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPOs	
<b>Lighting</b>	Luminaire surface mounted	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	N/A	

<b>CANTEEN STAFF OFFICE</b>		<b>PS-CAB-05</b>
<b>Dimensions</b>		<b>Floor Area: 3 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Canteen Staff Office	
<b>Occupancy</b>	Canteen staff, P& C	
<b>Locality + Relationship</b>	Direct Access from within the Canteen	
<b>Comments</b>	Canteen – Class 1 type food handling area to Health regulations.	
<b>Floor</b>		
	Sheet Vinyl	
<b>Walls</b>		
	Steel Stud with MR-Plasterboard Painted	
<b>Ceiling</b>		
	Painted Plasterboard	
<b>Skirting</b>		
	Vinyl Skirting	
<b>Doors</b>		
	N/A	
<b>Windows</b>		
	N/A	
<b>Partitions</b>		
	N/A	
<b>FIXED FURNITURE</b>		
	1	BOA02 Whiteboards - 1000L x 600H
	1	FF16 Overhead Shelving
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	Described within Canteen PS-CAB-03	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Via Canteen	
<b>Extraction</b>		
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO(s)
<b>Lighting</b>		
	Recessed Luminaire	
<b>Data and Communications</b>		
	1	Telephone
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
<b>Smoke</b>		
<b>MECHANICAL</b>		
<b>A/C</b>	Evaporative. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Service</b>	N/A	

<b>SPORTS STORE</b>		<b>PS-CAB-06</b>
<b>Dimensions</b>	Min Ceiling 2.4m	<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Storage of external sports equipment	
<b>Occupancy</b>	School Staff, Students	
<b>Locality + Relationship</b>	Direct Access to Covered Assembly Area via single door access and roller door. Additional Double hinged doors to external wall may be considered depending upon oval location & site planning.	
<b>Comments</b>	NB Layout Drawing dimensions take precedent over Standard Furniture Drawings (PS series)	
<b>Floor</b>	Mono-Concrete (Sealed)	
<b>Walls</b>	Steel Stud with Plasterboard, Painted. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	None	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	To Covered Area – Inward opening, solid core timber door. To Covered Area – Roller door, reinforce bottom & sides for security	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
Fit for Purpose	SHV06 Sports Store Shelving	
	1 STO21 Mat Rack	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO for compressors etc.	
<b>Lighting</b>	Luminaire, surface mounted Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder detection Reed switch to roller door	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Water Supply</b>	N/A	

<b>UNIFORM STORE</b>		<b>PS-CAB-07</b>
<b>Dimensions</b>		<b>Floor Area: 10 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Storage of School Uniforms	
<b>Occupancy</b>		
<b>Locality + Relationship</b>	Direct Access to Covered Assembly Area	
<b>Comments</b>		
<b>Floor</b>	Sheet vinyl	
<b>Walls</b>	Steel Stud with Plasterboard - Painted. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Inward opening, solid core timber door.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	DES03 Office Workstation as required	
	CHA04 Office Chair as required	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1 Double GPO	
<b>Lighting</b>		
	Luminaire surface mounted	
	Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke Detector Connected to Intruder Alarm System	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>GARDENER'S FERTILISER STORE</b>		<b>PS-CAB-08</b>
<b>Dimensions</b>		<b>Floor Area:</b> 4 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Gardener's fertiliser Storage Area	
<b>Occupancy</b>	Gardener	
<b>Locality + Relationship</b>	Ready Access to Machine Store, Gardener's Workshop	
<b>Comments</b>	Must be accessible with a bag trolley/wheel barrow loaded with fertiliser	
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with Plasterboard. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	No Ceiling	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward Opening Solid Core Door. Door to be zinc/Colorbond clad to both internal & external faces and edges. Door grille at low level.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural Ventilation – Rotary Roof Ventilator	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Lighting</b>	Surface mounted Luminaire Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke Detector Connected to Intruder Alarm System	
<b>MECHANICAL</b>		
<b>Exhaust</b>	Ceiling grille connected to roof mounted, wind operated rotary ventilator and over door grille for air inlet.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>GARDENER'S MACHINE STORE</b>		<b>PS-CAB-09</b>
<b>Dimensions</b>		<b>Floor Area:</b> 15 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Gardeners machinery	
<b>Occupancy</b>	Gardener	
<b>Locality + Relationship</b>	Ready Access to Fertiliser Store, Gardener's Workshop	
<b>Comments</b>		
<b>Floor</b>	Mono Concrete Sealed	
<b>Walls</b>	Steel Stud with Plasterboard. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	No Ceiling	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Double ,Outward Opening, Solid Core Door. Grille for air inlet. Door to be zinc/Colorbond clad to both internal & external faces and edges. Low level door grille.	
<b>Windows</b>	Top hung awning.	
<b>Partitions</b>	N/A.	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural Ventilation – Rotary Roof Ventilator	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 Double GPO	
<b>Lighting</b>	Luminaire Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grille connected to roof mounted, wind operated rotary ventilator with door grille for air inlet.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	N/A	



<b>GARDENER'S WORKSHOP</b>		<b>PS-CAB-10</b>
<b>Dimensions</b>		<b>Floor Area: 11 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Gardener's Workshop Area	
<b>Occupancy</b>	Gardener	
<b>Locality + Relationship</b>	Ready Access to proximity to Machine Store, Fertiliser Store	
<b>Floor</b>	Mono-Concrete (sealed)	
<b>Walls</b>	Steel Stud With Plasterboard. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Single, Outward Opening, Solid Core Door. Grille for air inlet. Door to be zinc/Colorbond clad to both internal & external faces and edges. Door grille at low level.	
<b>Windows</b>	Openable	
<b>FIXED FURNITURE</b>		
	1 MIS10 Peg Board	
	1 FF11 Gardener's Work Bench	
	1 MIS04 Broom and Spade Rack	
<b>EQUIPMENT AND FIXTURES</b>		
	Reticulation Controller	
<b>LOOSE FURNITURE</b>		
	1 CHA03 Task chair	
	1 DES03 Office Workstation	
	1 MIS19 Waste Bin	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural Ventilation – Rotary Roof Ventilator	
<b>Extraction</b>		
<b>Lighting</b>	Natural – windows Artificial ( refer ELECTRICAL & COMMUNICATIONS section below )	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	6 Double GPO 1 GPO for Reticulation Controller	
<b>Lighting</b>	Luminaire	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection & keypad	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grill connected to roof mounted, wind operated rotary ventilator with door grille for air inlet.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Trapped waste to trough	
<b>Water Supply</b>	Cold Water & Hot (60°)	
<b>Sanitary Fixtures</b>	Standard Taps SS Trough, 45L Insert type	

PA SYSTEM CUPBOARD		PS-CAB-11
<b>Dimensions</b>		<b>Floor Area:</b> 2 m <sup>2</sup>
<b>Signage</b>	Room name	
<b>Function</b>	Typically contains Light & volume controls. Microphones, CD player etc.	
<b>Occupancy</b>	School Staff or Community Groups after school hours	
<b>Locality + Relationship</b>	Direct Access to Covered Assembly Area	
<b>Comments</b>	On a wall providing vision to stage area other than Music Room wall. All data and communications outlets must comply with current DET Data Communications Cabling Standards and Specifications (4.0 at June 2008) available at <a href="http://www.det.wa.edu.au/education/ict/purchasing/">http://www.det.wa.edu.au/education/ict/purchasing/</a>	
<b>Floor</b>	Mono-Concrete (sealed)	
<b>Walls</b>	Steel Stud with Plasterboard - Painted	
<b>Ceiling</b>	Mineral Fibre Ceiling Tiles	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	Outward opening, solid core timber door. Hinged to open away from stage	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	<ul style="list-style-type: none"> <li>2 Double GPOs</li> <li>Isolator switches for Covered Area GPOs</li> <li>1 Ridge vent controller</li> <li>4 Roller door switches</li> <li>PA Equipment</li> </ul>	
<b>Lighting</b>	<ul style="list-style-type: none"> <li>Switch for high level GPO to covered area. Refer to 6.8.3</li> <li>Luminaire</li> <li>Light switches for Covered Area</li> </ul>	
<b>Equipment</b>	Refer to Electrical & Communications Brief 5.5	
<b>SECURITY &amp; DETECTION</b>		
<b>Security</b>	Intruder Detection	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas Supply</b>	N/A	

<b>ELECTRICAL CUPBOARD</b>		<b>PS-CAB-12</b>
<b>Dimensions</b>	Min 500 deep	<b>Floor Area:</b> 0.9 m <sup>2</sup>
<b>Signage</b>	Room name	
<b>Function</b>	Houses Covered Assembly Area Building Main Switchboard	
<b>Occupancy</b>	Maintenance Services	
<b>Locality + Relationship</b>	Direct Access to Covered Assembly Area	
<b>Comments</b>	May be on external wall if strong weatherproof doors are used All data and communications outlets must comply with current DoE Data Communications Cabling Standards and Specifications (4.0 at June 2008) available at <a href="http://www.det.wa.edu.au/education/ict/purchasing/">http://www.det.wa.edu.au/education/ict/purchasing/</a>	
<b>Floor</b>	Mono-Concrete (sealed)	
<b>Walls</b>	Steel Stud with Plasterboard – Painted.	
<b>Ceiling</b>	Drop in Plasterboard at 2400AFL	
<b>Skirting</b>	N/A	
<b>Doors</b>	Outward opening, solid core timber double doors.	
<b>Windows</b>	N/A	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	N/A	
<b>Lighting</b>	N/A	
<b>Acoustics</b>	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 DGPO @ 1200AFL	
<b>Equipment</b>	Building Main Switchboard Refer to DoE Data Communications Cabling Standards and Specifications (See COMMENTS above)	
<b>Lighting</b>	N/A	
<b>Data and Communications</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	N/A	

<b>CLEANER'S STORE</b>		<b>PS-CAB-13</b>
<b>Dimensions</b>		<b>Floor Area: 4 m<sup>2</sup></b>
<b>Signage</b>	Room name	
<b>Function</b>	Cleaners store	
<b>Occupancy</b>	Cleaner	
<b>Locality + Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Steel Stud with MR-Plasterboard – Painted. Tiled splashback behind cleaners sink. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Vinyl Skirting	
<b>Doors</b>	External Solid Core Door. Zinc/Colorbond clad to both internal & external faces and edges. To open outwards. Low Grille.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	1	MIS04 Broom and Spade Rack
	1	SHV04 Overhead Shelving
	2	MIS05 Vacuum Cleaner Hose Hanger
<b>EQUIPMENT AND FIXTURES</b>		
		N/A
<b>LOOSE FURNITURE</b>		
		N/A
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Adequate ventilation in case of chemical spillage	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO(s) 1 Power to hot water unit
<b>Lighting</b>	Surface Luminaire Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection (Reed Switch on door)	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grille connected to a roof mounted, wind operated rotary ventilator and door grille for inlet of air. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting</b>	Portable Fire Extinguisher	
<b>HYDRAULIC &amp; GAS</b>		
<b>Controls</b>	1x potable cold and hot water wall set 1x non-potable cold water hose tap with threaded outlet	
<b>Other</b>	Double check valve assembly on wall	
<b>Fixtures</b>	1x Wall mounted safety eye wash with retractable hose fixed to AS4775. 1x Cleaner's Sink Nom. 600 x 500 1x Instantaneous Electric Water Heater	
<b>Water Supply</b>	Hot (60°) and Cold Water	
<b>Waste</b>	Floor waste gully Sewerage	

## **I2.7 Universal Access**

PS/SS-UAT-0 UAT Type 0

PS/SS-UAT-0a UAT Type 0a

PS/SS-AAT-1 AAT Type 1

PS/SS-AAT-2A AAT Type 2a

PS/SS-AAT-3 AAT Type 3

<b>UNIVERSAL ACCESS TOILET – TYPE 0</b>		<b>PS/SS-UAT-0</b>
<b>Dimensions</b>	In accordance with AS1428.1(2009)	<b>Floor Area:</b> As required
<b>Signage</b>	Signage and Braille to AS1428.1 (2009) and relevant NCC standards.	
<b>Function</b>	Universal Access Toilet for adults with physical disabilities.	
<b>Occupancy</b>	School Staff, Adults with physical disabilities.	
<b>Locality</b>	+	As per relevant schedule of accommodation. The pan to be located in one corner.
<b>Relationship</b>		
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. This UAT provides space for a School Staff member or other adult in a wheelchair.	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard – Painted.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tiled	
<b>Doors</b>	External, Solid core. Low Grill. 350H SS kickplate to both sides of door. Keyed door lock	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Full height adjacent hand basin, in accordance with AS1428.1 (2009)	
<b>Handrails</b>	Stainless steel as per AS1428.1 (2009). Handrail to have toilet roll holder.	
<b>Hand basin</b>	Vitreous China, wall mounted. Free access underneath.	
<b>Toilet pan</b>	Vitreous China pan, suspended from wall. Braille indicated dual flush buttons.	
<b>Soap dispenser</b>	900mm above finished floor level.	
<b>Tap appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Toilet roll holder</b>	Attached to interior of handrail	
<b>Hand dryer</b>	In accordance with AS1428.1 (2009)	
<b>Door locks</b>	Refer to 8.4 Hardware Schedule	
<b>Other</b>	150 x 400 shelf, backrest & 2x coat hooks to AS1428.1 (2009)	
<b>LOOSE FURNITURE</b>		
	NIC – Supplied by DoE as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive & Active	
<b>Extraction</b>	Exhaust fan.	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO with large switches	
<b>Lighting</b>	Surface luminaire, Large light switch.	
<b>Alarm</b>	Push button alarm linked to Admin at 750mm AFL near handrail.	
<b>Emergency Button</b>	<b>Call</b>	Push button alarm linked to Admin 700mm above FFL near handrail
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>Extraction</b>	Exhaust fan	
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Water Supply</b>	Flow controls Cold Water	

<b>Waste</b>	Tempered Hot Water – 45deg C max. Sewerage
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<b>UNIVERSAL ACCESS TOILET – TYPE 0A</b>		<b>PS/SS-UAT-0A</b>
<b>Dimensions</b>	In accordance with AS1428.1(2009)	<b>Floor Area:</b> As required
<b>Signage</b>	Signage and Braille to AS1428.1 (2009) and relevant NCC standards.	
<b>Function</b>	Universal Access Toilet with shower facility.	
<b>Occupancy</b>	School Staff, Adults.	
<b>Locality</b>	+	As per relevant accommodation schedule.
<b>Relationship</b>		
<b>Comments</b>	This is above AS 1428.1 (2009) requirements.	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard – Painted.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tiled	
<b>Doors</b>	External, Solid core outward opening. clear opening of 870mm	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Full height mirror adjacent hand basin in accordance with 1428.1(2009).	
<b>Handrails</b>	Stainless steel as per 1428.1(2009). Handrail to have toilet roll holder. Grab rail fixed to side of shower recess.	
<b>Hand basin</b>	Vitreous China with lever style taps. Accessible by wheelchair	
<b>Toilet</b>	Vitreous China pan, central on wall. Braille indicated dual flush buttons.	
<b>Soap dispenser</b>	900mm above FFL	
<b>Tap appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Shower</b>	Detachable hand held shower nozzle on soft bend hosing with attached shower arm. Flick switch mixer with handle for easy grip.	
<b>Curtain rail</b>	Around shower area. With opaque shower curtain	
<b>Hand dryer</b>	In accordance with AS1428.1 (2009)	
<b>Door locks</b>	Refer to 8.4 Hardware Schedule	
<b>Other</b>	150 x 400 shelf, backrest & 2 coat hooks to AS1428.1 (2009)	
<b>LOOSE FURNITURE</b>		
	NIC – Supplied by DoE as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive vent.	
<b>Extraction</b>	Exhaust fan.	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO at 900mm above FFL	
<b>Lighting</b>	Surface Luminaire	
<b>Alarm</b>	Push button alarm Linked to Admin at 700mm above FFL near handrail	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>Extraction</b>	Exhaust fan	
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Water Supply</b>	Flow controls Cold Water	



<b>Waste</b>	Tempered Hot Water – 45deg C max. N/A
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<b>ASSISTED ACCESS TOILET – TYPE 1</b>		<b>PS/SS-AAT-1</b>
<b>Dimensions</b>	2.60m x 2.32m	<b>Floor Area:</b> 6.03m <sup>2</sup>
<b>Signage</b>	Signage and Braille to 1428.1 (2009) and relevant NCC standards.	
<b>Function</b>	Students with disabilities accompanied by one or more education assistants. AAT implies that the facility can be used by any student.	
<b>Occupancy</b>	Students, Students with Disabilities, Teachers and Education Assistants	
<b>Locality + Relationship</b>	As per relevant accommodation schedule.	
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. The pan to be located in a peninsula layout.	
<b>Floor</b>	Ceramic Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard – Painted.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tiled	
<b>Doors</b>	External, Solid core outward opening. clear opening of 870mm	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Full height mirror adjacent hand basin in accordance with 1428.1(2009).	
<b>Handrails</b>	Stainless steel as per 1428.1(2009). Handrail to have toilet roll holder. Grab rail fixed to side of shower recess.	
<b>Hand basin</b>	Vitreous China with lever style taps. Accessible by wheelchair	
<b>Toilet</b>	Vitreous China pan, central on wall. Braille indicated dual flush buttons.	
<b>Soap dispenser</b>	900mm above FFL	
<b>Tap appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Shower</b>	Detachable hand held shower nozzle on soft bend hosing with attached shower arm. Flick switch mixer with handle for easy grip.	
<b>Curtain rail</b>	Around shower area. With opaque shower curtain	
<b>Hand dryer</b>	In accordance with AS1428.1 (2009)	
<b>Door locks</b>	Refer to 8.4 Hardware Schedule	
<b>Other</b>	150 x 400 shelf, backrest & 2 coat hooks to AS1428.1 (2009)	
<b>LOOSE FURNITURE</b>		
	NIC – Supplied by DoE as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural and artificial	
<b>Extraction</b>	Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	A/GPO for Exhaust Fan	
	1	Double GPO, Large switches 900mm above FFL, minimum 500mm from hand basin.
<b>Lighting</b>	Surface Mounted Florescent	
	Large light switch at 900mm above FFL	
<b>Alarm</b>	Push button alarm linked to Admin 700mm above FFL near handrail	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>Extraction</b>	Exhaust fan	
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Water Supply</b>	Flow controls	

<b>Waste</b>	Cold Water, and Tempered Hot Water – 45deg C max. Sewerage
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<b>ASSISTED ACCESS TOILET – TYPE 2A</b>		<b>PS/SS-AAT-2A</b>
<b>Dimensions</b>	3350 x 3540	<b>Floor Area:</b> 11.86m <sup>2</sup>
<b>Signage</b>	Room Name. Signage and Braille to AS1428.1 (2009) and relevant NCC standards.	
<b>Function</b>	Shower & AAT	
<b>Occupancy</b>	Pre Toilet Trained, Students with a disability with School Staff Assistance, Adults.	
<b>Locality + Relationship</b>	As per relevant accommodation schedule.	
<b>Comments</b>	Pan to be located in peninsula layout Shower facility located in one corner. This is above AS 1428.1 (2009) requirements.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted. Tile splashback.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting &amp; Wet Area</b>	Tiled	
<b>Doors</b>	External: Outward opening. Low grille, 350h SS kick plate.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	Full-height lockable cupboard similar to Std. Dtl. FD.61 but full height, 150x400 shelf, back rest & coat hooks to AS1428.1 (2009) Flushing rim cistern located in brickwork over.	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Full height mirror adjacent hand basin, in accordance with AS1428.1 (2009).	
<b>Handrails</b>	Drop down stainless steel handrails on either side of pan. Handrail to have interior toilet roll holder. Grab rail fixed to side of shower recess.	
<b>Hand basin</b>	Vitreous China. Accessible by wheelchair	
<b>Toilet</b>	Vitreous China pan. Braille indicated dual flush buttons.	
<b>Soap dispenser</b>	900mm above FFL	
<b>Tap appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Shower</b>	Detachable hand held shower nozzle on soft bend hosing attached shower arm. Flick switch mixer with handle for easy grip.	
<b>Curtain rail</b>	Around shower area. With opaque shower curtain	
<b>Hand dryer</b>	In accordance with AS1428.1 (2009)	
<b>Door locks</b>	Refer to 8.4 Hardware Schedule	
<b>Other</b>	150 x 400 shelf, backrest & 2 coat hooks to AS1428.1 (2009)	
<b>LOOSE FURNITURE</b>		
	NIC – Supplied by DoE as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Artificial	
<b>Extraction</b>	Ceiling Exhaust Fan	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO with large switches 1 Double GPO at 500AFL for hoist and change table Exhaust Fan	
<b>Lighting</b>	Large light switch at 900mm above FFL	
<b>Alarm</b>	Push button alarm linked to Admin 700mm above FFL near handrail	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>MECHANICAL</b>		
<b>Extraction</b>	Ducted exhaust system with roof mounted coil	
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

**HYDRAULIC & GAS**

<b>Water Supply</b>	Flow controls Cold Water Tempered Hot Water – 45deg C max.
<b>Waste</b>	Sewerage Floor flushing rim

<b>ASSISTED ACCESS TOILET – TYPE 3</b>		<b>PS/SS-AAT-3</b>
<b>Dimensions</b>	4.00m x 3.20m	<b>Floor Area:</b> 12.8m <sup>2</sup>
<b>Signage</b>	Signage and braille to AS1428.1 (2009) and relevant NCC standards	
<b>Function</b>	Students in wheelchairs or with other disabilities requiring assistance with toilet and showering needs by one or more education assistants	
<b>Occupancy</b>	Students, Students with Disabilities, Teachers and Education Assistants.	
<b>Locality + Relationship</b>	As per relevant accommodation schedule.	
<b>Comments</b>	This is above AS 1428.1 (2009) requirements. Pan to be located in peninsula layout.	
<b>Floor</b>	Vinyl (R10)	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted.	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Coved Vinyl 300mm	
<b>Doors</b>	Solid Core outward opening. Clear opening of 870mm. Refer to 8.4 Hardware Schedule.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Mirror</b>	Full height mirror adjacent handbasin in accordance with AS1428.1 (2009).	
<b>Handrails</b>	Drop down stainless steel handrails on either side of pan. Handrail to have toilet roll holder. Grab rail fixed to side of shower recess	
<b>Hand basin</b>	Vitreous China, Accessible (Wall mounted, free access underneath).	
<b>Toilet</b>	Vitreous China pan. Braille indicated, dual flush buttons.	
<b>Soap dispenser</b>	900mm above FFL	
<b>Tap appliances</b>	Extended levers and extended nozzle to be accessible by person in wheelchair.	
<b>Shower</b>	Flick mixer with handle for easy grip. Detachable hand held shower nozzle on soft bend hosing with attached shower arm.	
<b>Toilet roll holder</b>	Attached to Handrail	
<b>Hand dryer</b>	In accordance with AS1428.1 (2009)	
<b>Door locks</b>	Refer to 8.4 Hardware Schedule	
<b>Other</b>	150 x 400 shelf, back rest & coat hooks to AS1428.1 (2009) Flushing rim cistern located on brickwork over. Curtain rail around shower area with opaque shower curtain. Overhead lockable cupboard to FD.61	
<b>LOOSE FURNITURE</b>		
	MED14 Mechanical Hoist MED15 Height Adjustable Change Table.	
	For Ellenbrook North Secondary School and Lakelands Secondary School MED14 and MED15 to be provided by Project Co	
	For all other Schools MED14 and MED15 supplied by DoE as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Artificial	
<b>Extraction</b>	Mechanical	
<b>Lighting</b>	Natural and artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 Double GPO; at 900mm above FFL, with large switches 1 Double GPO at 500AFL for hoist and change table Exhaust Fan	
<b>Lighting</b>	Large light switch at 900mm above FFL	
<b>Alarm</b>	Push button alarm linked to Admin 700mm above FFL near handrail	

<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	N/A
<b>MECHANICAL</b>	
<b>Extraction</b>	Ducted exhaust system with roof mounted coil
<b>A/C</b>	Reverse Cycle. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Water Supply</b>	Flow controls Cold Water Tempered Hot Water – 45deg C max.
<b>Waste</b>	Sewerage Floor flushing rim

## **I2.8 Transportable Units**

PS-TU-PP-01      Transportable Unit – Pre Primary

PS-TU-GLA-01    Transportable Unit – General Learning Area



<b>TRANSPORTABLE UNIT – PRE PRIMARY</b>		<b>PS-TU-PP-01</b>
<b>Dimensions</b>	Between 70-110sqm	
<b>Function</b>	General Learning Area	
<b>Occupancy</b>	1 x Teacher + 32 students.	
<b>Locality + Relationship</b>	Direct Access to the External Play Area, and Ready Access to Teaching Block 1	
<b>Comments</b>	<p>Allowance must be made for external mounted refrigerated air conditioning units on a short side.</p> <p>A minimum 1.5m separation must be provided between all Transportable Units, or as required by Quality Standards.</p> <p>Allowances must be made for all Engineering Services described in Part C4: Future Development and Expansion</p>	
<b>CONSTRUCTION</b>		
	N/A – Refer to Schedule 21	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	N/A – Refer to Schedule 21	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A – Refer to Schedule 21	
<b>LOOSE FURNITURE</b>		
	2	MIS20 Flip Top Bin
	2	MIS19 Waste Bin
	1	STO09 Storage Cabinet
	1	PPK01 Carpenters Bench on Wheels
	2	PPK13 Carpet square
	2	CHA03 Task Chair
	1	PPK02 Cheval Mirror
	1	DES04 Teachers Desk
	1	PPK14 Dolls Pram
	2	PPK15 Door Mat
	2	MIS09 Primary Easel
	1	APP17 Electric fry pan
	1	PPK03 Folding bookcase
	1	PPK04 Jumping mattress
	1	PPK12 Play Kitchenette
	2	PPK16 Modular Box, Type A
	2	PPK17 Modular Box, Type B
	18	PPK18 Paint Pots and Lids
	2	PPK05 Paint Stand
	2	PPK06 Plastic Barrels
	1	PPK07 Play Wardrobe
	1	PPK08 Playbed with Mattress
	1	PPK09 Play Stove
	1	APP15 Portable cooker
	1	APP06 Under Bench Refrigerator 140L
	1	PPK10 Scramble Net
	1	MIS07 Acoustic Screen
Fit for Purpose		SHV07 Store room Shelving
	3	STO04 Display Shelving - 1 Shelf
	3	STO03 Display Shelving - 2 Shelf
	1	PPK19 Sisal rop
	1	MIS03 Step ladder
	25	CHA01 Classroom Chair (of a height suitable for users)

- 1 TAB06 Occasional Table
- 6 TAB15 Trapezoidal Table
- 1 TAB14 Circular Table 750 diameter
- 1 STO15 Storage Trolley
- 1 PPK11 Water trolley
- 1 TAB16 Work table 1500 x 900

**SERVICES AND ENVIRONMENT**

**ENVIRONMENTAL**

Refer to C4: Future Development and Expansion and Schedule 21.

**ELECTRICAL & COMMUNICATIONS**

Refer to C4: Future Development and Expansion and Schedule 21.

**SECURITY & DETECTION**

Refer to C4: Future Development and Expansion and Schedule 21.

**MECHANICAL**

Refer to C4: Future Development and Expansion and Schedule 21.

**HYDRAULIC & GAS**

Refer to C4: Future Development and Expansion and Schedule 21.

<b>TRANSPORTABLE UNIT – GENERAL LEARNING AREA (PRIMARY SCHOOL)</b>		<b>PS-TU-GLA-01</b>
<b>Dimensions</b>	Between 70-110sqm	
<b>Function</b>	General Learning Area.	
<b>Occupancy</b>	1 x Teacher + 25-32 students.	
<b>Locality + Relationship</b>	Ready Access to adjacent Teaching Blocks	
<b>Comments</b>	<p>Allowance must be made for external mounted refrigerated air conditioning units on a short side. A minimum 1.5m separation must be provided between all Transportable Units, or as required by Quality Standards.</p> <p>Allowances must be made for all Engineering Services described in Part C4: Future Development and Expansion.</p>	
<b>CONSTRUCTION</b>		
N/A – Refer to Schedule 21		
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
N/A – Refer to Schedule 21		
<b>EQUIPMENT AND FIXTURES</b>		
N/A – Refer to Schedule 21		
<b>LOOSE FURNITURE</b>		
	2	TAB12 Mobile Computer Desk
	1	MIS19 Waste Bin
	1	CHA03 Task Chair
	2	TAB11 Computer Desk
	36	MIS26 Desk Tray
	1	DES04 Teacher's Desk
	18	TAB17 Classroom Desk (Double)
	3	STO03 Display Shelving – 2 Shelf
	36	CHA01 Classroom Chair
	1	TAB06 Occasional Table,
	1	TAB19 Nature Study Table
	3	STO14 Tote Trolley
	1	TAB10 Laptop Table (on castors, 720mm H or 900mm H, depending on application)
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
Refer to C4: Future Development and Expansion and Schedule 21.		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
Refer to C4: Future Development and Expansion and Schedule 21.		
<b>SECURITY &amp; DETECTION</b>		
Refer to C4: Future Development and Expansion and Schedule 21.		
<b>MECHANICAL</b>		
Refer to C4: Future Development and Expansion and Schedule 21.		
<b>HYDRAULIC &amp; GAS</b>		
Refer to C4: Future Development and Expansion and Schedule 21.		

### **13. ROOM DATA SHEETS – SECONDARY SCHOOLS**

- (a) Whilst every care has been taken to populate Schedule 20 (Schedules of Accommodation), Schedule 23 (FF&E) and *Appendix 13: Room Data Sheets* as comprehensively as possible, these have been compiled in the absence of a design for the new School Facilities and there may be additional requirements that go beyond those noted in this Section.
- (b) The onus is on Project Co to provide the quantities and types of FF&E in accordance with the RDS, Schedule 20 (FF&E), Schedule 26 (Design Brief) and Project Co's obligations in the Deed to ensure that the School Facilities are Fit For Purpose.

#### **13.1 Administration**

SS-ADM-01	Communications Room
SS-ADM-02	Principal's Office / Education Support Associate Principal's Office
SS-ADM-03	Business Manager's Office / Education Support Business Manager's Office
SS-ADM-04	Secure Store / Education Support Secure Store
SS-ADM-05	Reprographics Room
SS-ADM-06	Reception and General Office
SS-ADM-07	Office Staff Tea Room
SS-ADM-08	Public Foyer

<b>COMMUNICATIONS ROOM</b>		<b>SS-ADM-01</b>
<b>Dimensions</b>	Min side 3 m	<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	COMMUNICATIONS ROOM	
<b>Function</b>	The Communications room contains the school's data/communication cabinets and associated equipment and supplies.	
<b>Occupancy</b>	Short-term, 1-2 people	
<b>Locality and relationship</b>	The Communications room must not have any external windows and must be ventilated with air inlets opening to the corridor.	
<b>Comments</b>	1:50 scale electrical drawings are required showing the location of all equipment. The Communication room must have appropriate ventilation for the active equipment within the room but no external windows. Air conditioning must be based on the requirements of the active equipment installed within the room. The room must be secure.	
<b>Floor</b>	Stain resistant, non-slip	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Plasterboard or similar. No reinforcement required (security sensor in room is sufficient)	
<b>Doors</b>	Solid core, lockable.	
<b>Windows</b>	No windows permitted	
<b>FIXED FURNITURE</b>		
	1 Side bench if space permits. Refer to <i>E13.5.2 Fixed Benches</i>	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Switch and server equipment to be provided by Department of Education.	
<b>ENVIRONMENTAL</b>		
<b>Lighting</b>	Natural and artificial lighting. Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	16 Double GPOs at side of room 800mm AFL 4 15A GPOs above communications cabinets	
<b>Data points</b>	8 Data at side of room 800mm AFL	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	

PRINCIPAL / EDUCATION SUPPORT ASSOCIATE PRINCIPAL		SS-ADM-02
<b>Dimensions</b>	Min side 4m	<b>Floor Area:</b> 22 m <sup>2</sup> / 20 m <sup>2</sup>
<b>Signage</b>	PRINCIPAL	
<b>Function</b>	The Principal and Associate Principal's office should be capable of being used as an office, interview room, meeting room and study. It may be used for small meetings and must be comfortable and private with good sound insulation.	
<b>Occupancy</b>	1 person plus 2-4 visitors	
<b>Locality</b>	+ The Principal and Associate Principal's offices must be located with Ready Access to the General Office, to the Business Manager and to other key School Staff. The layout should provide security and separation from arriving visitors. The store must have Direct Access from within the office.	
<b>Relationship</b>		
<b>Comments</b>	Members of the public should not be able to gain direct access to the Principal's Office without first reporting to Reception. Acoustic privacy is required for confidential conversations. Ed Support Associate Principal's Offices are only required in schools identified as Education Support Schools.	
<b>Floor</b>		
	Anti-static carpet	
<b>Walls</b>		
	Construction to minimise sound transfer between neighbouring rooms. Refer to G8: Acoustic Services.	
<b>Ceiling</b>		
	Acoustically treated. Refer to Refer to G8: Acoustic Services.	
<b>Doors</b>		
	Keyed	
<b>Windows</b>		
	Operable - horizontal sliding, lockable (all administrative areas to be keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>		
	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Generally not fixed to allow changes by the School Facility.	
	1 BOA01 Pin Up Board (minimum 1000mm)	
	1 BOA02 White Board (minimum 1000mm)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment will be provided by school	
<b>LOOSE FURNITURE</b>		
	1 DES03 Office Workstation	
	1 CHA04 Office Chair	
	1 STO08 Bookshelf	
	1 TAB02 Interview Table	
	5 CHA14 Meeting Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	6 Double GPOs Located adjacent to data	
<b>Data points</b>	4 Located on side wall at ~800 mm AFL in a location to suit desk placement	
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>BUSINESS MANAGER / EDUCATION SUPPORT BUSINESS MANAGER</b>		<b>SS-ADM-03</b>
<b>Dimensions</b>	Min side 4m	<b>Floor Area:</b> 15 m <sup>2</sup>
<b>Signage</b>	BUSINESS MANAGER	
<b>Function</b>	The Business Manager's office should be capable of being used as an office, interview room, meeting room and study. It may be used for small meetings and must be comfortable and private	
<b>Occupancy</b>	1 person plus 2-4 visitors	
<b>Locality and relationship</b>	The Business Manager's office should be located in the administration area with Ready Access to other key School Staff. The layout should provide security and separation from arriving visitors. The Business Manager's store must be located with Direct Access from within the office. The office must be securable.	
<b>Comments</b>	Acoustic privacy is required for confidential conversations. The Education Support Business Manager's office is only required in schools identified as Education Support Schools	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Construction to minimise sound transfer between neighbouring rooms. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all administrative areas to be keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	NOTES: Generally not fixed to allow changes by school.	
	1 BOA01 Pin Up Board (minimum 1000mm)	
	1 BOA02 White Board (minimum 1000mm)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment to be supplied by school.	
<b>LOOSE FURNITURE</b>		
	1 DES03 Office Workstation	
	1 CHA04 Office Chair	
	1 STO08 Bookshelf	
	1 TAB02 Interview Table	
	5 CHA14 Meeting Chairs	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	6 Double GPOs Located adjacent to data	
<b>Data points</b>	4 Located on side wall at ~800 mm AFL in a location to suit desk placement	
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security level: HIGH	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>SECURE STORE / EDUCATION SUPPORT SECURE STORE</b>		<b>SS-ADM-04</b>
<b>Dimensions</b>	Min side 3 m	<b>Floor Area:</b> 50 m <sup>2</sup> / 20 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>	The Secure store is for general storage purposes, including the storage of confidential and archival records.	
<b>Occupancy</b>	Temporary, 1-3 people	
<b>Locality</b>	+ The Secure store should be located with Ready Access to related administration areas of the school and have no external windows.	
<b>Relationship</b>		
<b>Comments</b>	The Secure store or Business Managers office should include a secure, fire rated safe with shelving for the storage of confidential records and other valuables. Ed Support Secure Store only required in schools identified as Education Support Schools	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Stain resistant, non-slip flooring.	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	To be made secure against intrusion (this is in addition to security sensor).	
<b>Doors</b>	Solid core, lockable. Refer to E9: Openings.	
<b>Windows</b>	N/A	
<b>Partitions</b>	N/A	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	Fit for Purpose SHV01 Compactus	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment provided by school	
<b>LOOSE FURNITURE</b>		
	Fit for Purpose SHV07 Storeroom Shelving. note Provide 25% extra shelving pieces, and/or island shelving	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ceiling extraction fan	
<b>Lighting</b>	Sensor activated. Refer to G6: Electrical Services	
<b>Acoustics</b>	N/A	
<b>Power</b>	1 Double GPOs Located adjacent to data	
<b>Lighting</b>	Surface mounted luminaire – Motion Sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security Level: High	
<b>MECHANICAL</b>		
<b>Air cooling</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	



<b>REPROGRAPHICS ROOM</b>		<b>SS-ADM-05</b>
<b>Dimensions</b>	Min side 3 m	<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Function</b>	Provide a central location for printing, contains high speed multi-function printing devices, paper storage and collation space	
<b>Occupancy</b>	Short-term, 2-4 people	
<b>Locality</b>	+ Ready Access to all administration School Staff	
<b>Relationship</b>		
<b>Comments</b>	Surrounding areas should not be affected by noise or School Staff traffic	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Durable, non slip flooring or anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Hollow core. Low level ventilation grill. Lockable. Refer to E9: Openings.	
<b>Windows</b>	If room is located adjacent an external wall, operable - horizontal sliding, lockable (all administrative areas keyed alike) to be provided. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	1 Storage cupboards	
	1 Layout space at 900mm AFL adjacent to multi-function devices	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Print equipment purchased by school	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: 15A GPO required for some multi-function devices	
	4 GPOs at print station 800mm AFL	
<b>Data points</b>	4 Mounted on wall in 800mm AFL	
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>Equipment</b>	Multi-function devices, photocopiers or printers provided by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	Mechanical exhaust adjacent to the photocopier/multi-function device and located so that any dust or fumes are drawn away from the operator	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>RECEPTION AND GENERAL OFFICE</b>		<b>SS-ADM-06</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 85 m <sup>2</sup>
<b>Signage</b>	ADMINISTRATION Also require external signage to clearly indicate a path to the Administration Building for visitors	
<b>Function</b>	The Reception and General Office is the first point of contact to all visitors and is used for the general administration of the school.	
<b>Occupancy</b>	4-6 persons plus visitors	
<b>Locality</b>	+ The reception should be located with Direct Access to the main entrance, and be easily visible from the entrance.	
<b>Relationship</b>	There should be a clear line of vision to the main entrance from the General Office area. The Reception and General Office should be located with Ready Access to the Principal's and Business Manager's offices.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Counter height to allow for students, disabled and adults, allow sufficient clearance for computer displays	
	1 Reception counter (refer to E13.5.2.2)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment purchased by school	
<b>LOOSE FURNITURE</b>		
	7 CHA04 Office Chair	
	1 STO12 Mobile Pedestal	
	6 DES03 Office workstations	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Reception desk requires GPOs both above and below desk	
	2 Double GPOs below desk per office station	
	2 Double GPOs above desk per office station	
<b>Data points</b>	2 Per office station	
	1 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>OFFICE STAFF TEA ROOM</b>		<b>SS-ADM-07</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	TEA ROOM	
<b>Function</b>	Tea room for administrative School Staff and conference room.	
<b>Occupancy</b>	School Staff only	
<b>Locality and relationship</b>	The Office Staff Tea Room should be located near the administrative office areas and near the Conference Room.	
<b>Floor</b>	Anti-static carpet. Vinyl to kitchenette area.	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Keyed.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all administrative areas to be keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>EQUIPMENT AND FIXTURES</b>		
	Kitchenette	
	1	APP05 Fridge Freezer
	1	APP13 Microwave
	1	Sink (Refer to E12.6)
		Instantaneous hot water system
<b>LOOSE FURNITURE</b>		
To suit layout	TAB02 Interview Table - 1200	
	TAB04 Interview Table - 900	
	CHA14 Meeting Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	9 Double GPO	
	1	Fridge GPO
	1	Microwave GPO
Min 2	Above bench GPO	
	Power for instantaneous hot water system	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	Extraction fan required for kitchenette	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1 Sink waste	
<b>Water supply</b>	1 Sink - hot and cold water	

<b>PUBLIC FOYER</b>		<b>SS-ADM-08</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	Also require external signage to clearly indicate a path to the Administration Building for visitors	
<b>Function</b>	The Public Foyer is the first point of contact to all visitors.	
<b>Occupancy</b>	Visitors – public	
<b>Locality + Relationship</b>	The Public Foyer must be located with Direct Access to the Reception and General Office, with a clear line of vision from the main entrance to the Reception.	
<b>Comments</b>	Must be designed in such a way to restrict unauthorised public access to other areas of the Administration Block.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Automatic sliding doors to main entrance. Electronic Security. Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	4	CHA13 Waiting Area Chairs
1		STO02 Pamphlet Stand
	2	TAB09 Coffee Table
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4	DGPOs
	1	GPO for future provision of wall mounted electronic school information display
<b>Data points</b>	1	Data point for future provision of wall mounted electronic school information display
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

## **13.2 Information Resource Centre**

SS-IRC-01	Resource Area
SS-IRC-02	Reception Area
SS-IRC-03	Library Administration Area
SS-IRC-04	AV Workroom
SS-IRC-05	Secure Store
SS-IRC-06	Staff Common Room
SS-IRC-07	Student Group Room
SS-IRC-08	Kitchenette
SS-IRC-09	Bag Store / Alcove

RESOURCE AREA		SS-IRC-01
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 500 m <sup>2</sup>
<b>Signage</b>	INFORMATION RESOURCE CENTRE	
<b>Function</b>	The Information Resource Centre contains physical and digital resources, as well as offering access to online, AV and other resources through provision of desktop and notebooks computers, computer tablets and AV equipment. A range of spaces are required for use by whole classes or smaller groups to undertake learning activities based upon library resources. There should also be space for individual reading and small group discussion, plus the flexibility to allow larger groups of School Staff or students to assemble for presentations.	
<b>Occupancy</b>	3-6 School Staff plus 100-150 students	
<b>Locality and relationship</b>	A central location within the school is required to allow Ready Access for all Learning Areas including those in other buildings.	
<b>Comments</b>	This space is used for both research and active teaching. Requirements include quiet individual work spaces for senior students; formal and informal furniture and facilities for themed displays. A secure store must be located with Ready Access for storage of laptop trolleys.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Refer to E8: Building Structure and Fabric	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services and to E8: Building Structure and Fabric	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings	
<b>Windows</b>	Operable - horizontal sliding, lockable (all administrative areas to be keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES:	A variety of built in furniture is required along walls and in some central locations to support private or small group study.	
25	LIB01 AV Carrel	
5	TAB22 Group Study Desks	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	A library book detection system is required to be installed near the main entry AV equipment: type and model be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
NOTES:	Bookshelves must be mobile to allow flexibility of spaces	
To suit 128 students	TAB20 Classroom Desk (Single) and TAB17 Classroom Desk (Double)	
128	CHA01 Classroom Chairs	
5	CHA04 Office chairs	
25	CHA03 Task chairs	
Fit for Purpose	CHA11 Informal Seating (refer <i>E13.1 General</i> )	
Fit for Purpose	TAB01 Informal Tables (refer <i>E13.1 General</i> )	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
12	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	25 DGPOs - 1 per individual study desk	
	5 DGPOs – 1 per small group study desk	
	4 DGPOs per each AV location	
	24 DGPOs distributed in convenient locations within the library	
	24 GPOs – 4 in each floor box	

	GPO for gas heater locations
<b>AV conduits</b>	
NOTES:	At least 2 locations are required to have AV services to support a wide variety of possible devices. The 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power permitted in conduits
	Outlets on front wall:
1	Conduit outlet for HDMI, VGA, audio, ...
1	Conduit outlet for USB, ...
	Outlets on teacher bench:
1	Conduit outlet for HDMI, VGA, audio, ...
1	Conduit outlet for USB, ...
<b>Data points</b>	
4	2 per each librarian or teacher AV position (above bench height)
3	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)
30	Student (above bench height)
3	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>	
	Refer G6: Electrical Services
<b>Equipment</b>	
	To be purchased by school
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Indirect Evaporative. Refer to G5: Mechanical Services
<b>Extraction</b>	Mechanical extraction adjacent to photocopier/multi-function device.
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas supply</b>	Supply to gas heater locations

<b>RECEPTION AREA</b>		<b>SS-IRC-02</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 25 m <sup>2</sup>
<b>Signage</b>	RECEPTION	
<b>Function</b>	Central location for assistance and support	
<b>Occupancy</b>	2-4 School Staff and multiple students seeking assistance	
<b>Locality and relationship</b>	Direct Access from the entry with Ready Access and a good visual connection with the Resource Area. Also requires a good view of people entering or leaving the Information Resource Centre. The reception area is a part of the Resource Area.	
<b>Comments</b>	Students waiting at the reception area must not block the flow of people entering or leaving the Information Resource Centre.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display opportunities.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services and E8: Building Structure and Fabric.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings	
<b>Windows</b>	Operable – horizontal sliding, lockable (all rooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	Built in desk with space for at least 3 workstations plus 2400mm wide of free space, maximum width of bench 800 mm. Refer to <i>E13.5.2.3: Computer Work Benches</i>	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Purchased by school	
<b>LOOSE FURNITURE</b>		
	4 CHA04 Office Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows 2 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Require GPOs both above and below the desk 18 GPOs, each workstation to have 4 GPOs below desk and 2 GPOs above desk	
<b>Data points</b>	6 On library reception desk, 2 per workstation 1 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Indirect Evaporative. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	



<b>LIBRARY ADMINISTRATION AREA</b>		<b>SS-IRC-03</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 45 m <sup>2</sup>
<b>Signage</b>	OFFICE	
<b>Function</b>	Provide quiet office space for School Staff responsible for the administration of the Information Resource Centre	
<b>Occupancy</b>	1-3 School Staff	
<b>Locality and relationship</b>	Ready Access to the Reception and AV Workroom	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display opportunities.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services and E8: Building Structure and Fabric.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings	
<b>Windows</b>	Operable – horizontal sliding, lockable (all rooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	NOTES: N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Purchased by school	
<b>LOOSE FURNITURE</b>		
	2 DES03 Office Workstations	
	2 CHA04 Office chairs	
	1 STO08 Bookshelf	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	2 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 Double GPOs, 4 per workstation	
<b>Data points</b>	4 2 per workstation	
	1 for a printer	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>AV WORKROOM</b>		<b>SS-IRC-04</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 25 m<sup>2</sup></b>
<b>Signage</b>	AUDIO VISUAL	
<b>Function</b>	Work area for preparation, cataloguing and dissemination of paper and digital resources	
<b>Occupancy</b>	2- 4 School Staff	
<b>Locality and relationship</b>	Ready Access to the Reception and Library Administration Area	
<b>Comments</b>	Usually an internal room to minimise intrusion of external sounds	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services and E8: Building Structure and Fabric	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Require benching at both 720mm AFL and 900mm AFL to allow for both seated and standing tasks. Refer to <i>E13.5.2: Fixed Benches</i>	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Require access to TV antenna or cable TV	
<b>LOOSE FURNITURE</b>		
	2 CHA05 Drafting Stools	
	2 CHA04 Office chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	2 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building then consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	12 GPOs, 6 per workstation	
<b>Data points</b>	8 4 per workstation 2 for printer/scanner/multi-function device	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	Mechanical extraction adjacent to multifunction device location	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	

<b>SECURE STORE</b>		<b>SS-IRC-05</b>
<b>Dimensions</b>	Minimum side 3m	<b>Floor Area: 25 m<sup>2</sup></b>
<b>Signage</b>	STORE	
<b>Function</b>	Provide highly secure storage and charging facilities for expensive computer or AV equipment	
<b>Occupancy</b>	Temporary access by School Staff to collect and return equipment or materials	
<b>Locality and relationship</b>	Ready Access to the Resource Area is required. Location must avoid difficult to negotiate corners when pushing a fully loaded notebook computer trolley.	
<b>Floor</b>	Durable, non slip flooring or non-slip concrete	
<b>Walls</b>	No fixed shelving	
<b>Ceiling</b>	Plasterboard	
<b>Doors</b>	Solid core, keyed. Refer to E9: Openings	
<b>Windows</b>	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ceiling extraction fan	
<b>Lighting</b>	Sensor activated artificial lighting. Refer G6: Electrical Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	6 GPOs on 3 different circuits near the entry door.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	

<b>STAFF COMMON ROOM</b>		<b>SS-IRC-06</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 220 m <sup>2</sup>
<b>Signage</b>	COMMON ROOM	
<b>Function</b>	Provide a collegiate meeting place for all School Staff. Includes a kitchenette.	
<b>Occupancy</b>	120-180 School Staff	
<b>Locality and relationship</b>	Central location with Easy Access to the administration building. Located within the Information Resource Centre with Direct Access via an operable wall to the Resource Area.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services and E8: Building Structure and Fabric.	
<b>Doors</b>	Open outwards, keyed Refer to E9: Openings	
<b>Windows</b>	Operable – horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings.	
<b>Partitions</b>	Operable windows are to be fitted with insect / security screens that are robust and vandal resistant. Operable wall, acoustically rated folding type.	
<b>FIXED FURNITURE</b>		
NOTES:	Benching and cupboards associated with the kitchenette facilities should be 900mm AFL	
To provide 180 pigeon holes	FF18 Pigeon Hole Unit	
1	BOA03 Term Planner Whiteboard (minimum 1200mm wide whiteboard per term)	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Non-fixed kitchen equipment to be purchased by school	
	Kitchenette	
1	Sink	
1	APP03 Dishwasher	
1	APP12 Boiling Water Unit	
1	APP03 Microwave	
1	APP05 Fridge Freezer	
<b>LOOSE FURNITURE</b>		
To suit 180 School Staff	TAB02 Interview Table 1200 and/or TAB04 Interview Table 900	
180	CHA14 Meeting Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
8	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building then consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: All GPOs 800 mm AFL except for dishwasher, fridge/freezer	
16	GPOs adjacent to data outlets	
6	GPOs in kitchen area (microwave, dishwasher, other electric appliances)	
4	GPOs in fridge/freezer area	
<b>Data points</b>	8 Distributed around room, 800 mm AFL	
4	Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Indirect Evaporative. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		

<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
	1 Sink waste
	1 Dishwasher waste
<b>Water supply</b>	
	1 Mixing tap with hot and cold water
<b>Gas supply</b>	N/A

<b>STUDENT GROUP ROOM</b>		<b>SS-IRC-07</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	STUDENT GROUP ROOM	
<b>Function</b>	A seminar style room for student group work. Used for a wide variety of activities including quiet reading and other independent work, small and large group work, lectures / presentations	
<b>Occupancy</b>		
<b>Locality and relationship</b>	To have Direct Access to the Resource Area.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services and E8: Building Structure and Fabric.	
<b>Doors</b>	Open outwards, keyed Refer to E9: Openings	
<b>Windows</b>	Operable – horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	NOTES:	
	1 BOA01 Pin Up Board	
	1 BOA02 Whiteboard	
	NOTES: Design may include some fixed furniture or only use loose furniture	
<b>EQUIPMENT AND FIXTURES</b>		
	To be supplied by School	
<b>LOOSE FURNITURE</b>		
To suit layout	A variety of seating and table options and configurations	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fan or wall mounted fans if high vaulted ceiling	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4 Double SS-LC-02GPOs distributed at ~ 800mm AFL 2 GPOs adjacent each data outlet GPO(s) for heater(s)	
<b>Data points</b>	4 Distributed on perimeter walls 2 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall – data outlet to be visible from room (not inside ceiling)	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Indirect evaporative cooling. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>	NOTES: ON/OFF positions of gas taps should be easily checked by teacher. Heater(s)	

<b>KITCHENETTE</b>		<b>SS-IRC-08</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 10 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality and relationship</b>	Located within the Staff Common Room	

<b>BAG STORE / ALCOVE</b>		<b>SS-IRC-09</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Student Storage	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Must have Direct Access to the Reception Area.	
<b>Comments</b>	Student storage spaces must be well and evenly lit with no dark recesses. The location and design must give careful consideration to the discouragement of bullying and other antisocial behaviour.	
<b>Floor</b>	Durable, non-slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>		
<b>Windows</b>		
<b>Partitions</b>		
<b>FIXED FURNITURE</b>		
Fit for Purpose	Hooks, Racks or Lockers	
<b>EQUIPMENT AND FIXTURES</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Lighting</b>	Refer G6: Electrical Services.	
<b>Equipment</b>		
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>		
<b>Extraction</b>		
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		



### **13.3 Learning Communities**

SS-LC-01	General Classroom (GLA)
SS-LC-04	Seminar Room
SS-LC-03	Inclusive Education Classroom + Store
SS-LC-02	Incidental Learning Area
SS-LC-05	Lecture Theatre

<b>GENERAL CLASSROOM (GLA)</b>		<b>SS-LC-01</b>
<b>Dimensions</b>	Min side 7 m	<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	CLASSROOM #	
<b>Function</b>	General Learning Areas are used for the teaching of general subjects and the theoretical aspects of specialist subjects. Specialist focal points and resource areas may be integrated within the General Learning Areas.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality + Relationship</b>	Require Ready Access to Incidental Learning Areas, and Ready Access to an external learning environment is desirable. All classrooms to be in pairs with operable wall between.	
<b>Comments</b>	The General Learning Areas should be flexible in their design to enable a variety of learning activities.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E8: Building Structure and Fabric and E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike) Refer to E8: Building Structure and Fabric and E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Board (minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements	
<b>LOOSE FURNITURE</b>		
	30 TAB20 Classroom Desks (Single)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	32 CHA01 Classroom Chairs	
	1 DES04 Teacher's Desk	
	1 CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	Min 4x Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	GPO(s) for heater(s)	
	1 Cleaner GPO on front wall	
	Teacher AV location:	
	4 GPOs	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	

- Outlets on front wall offset to side of AV area:
- 1 Conduit outlet for HDMI, VGA, audio ...
  - 1 Conduit outlet for USB, ...

**Data points**

- 2 Teacher AV location at ~ 800 mm AFL
- 2 Student at ~ 800 mm AFL
- 2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)

**Lighting**

To assist with AV provide separate switch to reduce lighting at the front of the room.  
 Avoid glare off teaching surfaces. Install light sensors to perimeter lights. Refer G6: Electrical Services.

**SECURITY & DETECTION**

**Intruder** Refer to G6: Electrical Services

**Smoke** As per NCC requirements

**MECHANICAL**

**Air cooling** Evaporative. Refer to G5: Mechanical Services

**FIRE** N/A

**SERVICES****HYDRAULIC & GAS****Gas supply**

NOTES: ON/OFF positions of gas taps should be easily checked by teacher.  
 heater(s)

<b>INCIDENTAL LEARNING AREA</b>		<b>SS-LC-02</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	INCIDENTAL LEARNING	
<b>Function</b>	The Incidental Learning Areas are used for a wide variety of activities including quiet reading and other independent work, small and large group work, lectures / presentations, simple art and science activities and inquiry / research activities.	
<b>Occupancy</b>	Typically 0-2 teachers and 2-32 students	
<b>Locality and relationship</b>	Incidental Learning areas must be located with Ready Access and good vision from associated General Learning Areas, and include furniture that can be rearranged to support different sized groups undertaking a variety of activities at one time. Incidental learning areas could be designed as group rooms common to each pair of General Learning Areas.	
<b>Comments</b>	Incidental Learning area may have alternative furniture and wet area(s) (optional) with associated bench space and storage. Lighting and acoustic treatment should be appropriate for the size of the space.	
<b>Floor</b>	Durable, non slip flooring or Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Maximise display board area. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Require separate lockable entry doors external to any classroom. Refer to E8: Building Structure and Fabric and E9: Openings.	
<b>Windows</b>	Operable – horizontal sliding, lockable (all laboratories keyed alike). Refer to E8: Building Structure and Fabric and E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	NOTES: Design must be Fit for Purpose and may include some fixed furniture or only use loose furniture	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment supplied by school	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	A variety of seating options and/or work surfaces	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fan or wall mounted fans if high vaulted ceiling	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 Double GPOs distributed at ~ 800mm AFL 2 GPOs adjacent each data outlet GPO(s) for heater(s)	
<b>Data points</b>	4 Distributed on perimeter walls 2 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall – data outlet to be visible from room (not inside ceiling)	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Evaporative. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>	ON/OFF positions of gas taps should be easily checked by teacher.	

heater(s)

<b>INCLUSIVE EDUCATION CLASSROOM + STORE</b>		<b>SS-LC-03</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 65 m <sup>2</sup> + 8 m <sup>2</sup>
<b>Signage</b>	INCLUSIVE #	
<b>Function</b>	Education Support	
<b>Occupancy</b>	1 x Teacher, education assistants and 12 students	
<b>Locality</b>	+ Requires Ready Access to the Incidental Learning Area, and Ready Access to an external learning environment is beneficial. Must be located on the ground floor.	
<b>Relationship</b>		
<b>Comments</b>	The Inclusive Education Classroom should be flexible in its design to enable a variety of learning activities. It includes a kitchenette and a separate secure store (minimum of 8 m <sup>2</sup> in addition to the 65 m <sup>2</sup> classroom) that must have Direct Access from within the room and is to be provided with appropriate shelving to accommodate general teaching materials and resources.	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Maximise display board area. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E8: Building Structure and Fabric and E9: Openings.	
<b>Windows</b>	Operable – horizontal sliding, lockable (all classrooms keyed alike). Refer to E8: Building Structure and Fabric and E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Boards (minimum 1800mm total width)	
	1 BOA02 Whiteboard	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location – typically to the side that is furthest from the main entry door AV device, type and model is to be selected by school to meet local curriculum requirements.	
	Kitchenette	
	1 Sink (Refer to <i>E12.6: General Purpose Sinks</i> )	
	1 Hot water system	
	1 APP13 Microwave	
	1 APP05 Fridge Freezer	
	1 APP14 Kettle	
<b>LOOSE FURNITURE</b>		
	1 DES04 Teacher's Desk	
	1 CHA04 Office Chair	
	1 STO06 Filing Cabinet – 4 Drawer	
	1 MIS19 Waste Bin	
	10 TAB20 Classroom Desk (Single)	
	3 TAB17 Classroom Desk (Double)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	14 CHA01 Classroom Chairs	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
Min 4x	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	

	<ul style="list-style-type: none"> <li>1 GPO for cleaner (typically 500mm AFL)</li> <li>1 Cleaner GPO on front wall</li> </ul> <p>Teacher AV location:</p> <ul style="list-style-type: none"> <li>4 GPOs</li> <li>4 GPOs at ~800 mm AFL adjacent to data</li> <li>4 Additional GPOs at ~800 mm AFL in suitable locations</li> </ul> <p>Kitchenette</p> <ul style="list-style-type: none"> <li>1 Fridge GPO</li> <li>1 Microwave GPO</li> <li>1 Above bench GPOs</li> <li>1 DGPO to store</li> </ul> <p>Power to hot water unit</p>
<b>AV conduits</b>	
	<p>NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit</p> <p>Outlets high on front wall:</p> <ul style="list-style-type: none"> <li>1 Conduit outlet for HDMI, VGA, audio, ...</li> <li>1 Conduit outlet for USB, ...</li> </ul> <p>Outlets on front wall offset to side of AV area:</p> <ul style="list-style-type: none"> <li>1 Conduit outlet for HDMI, VGA, audio ...</li> <li>1 Conduit outlet for USB, ...</li> </ul>
<b>Data points</b>	
	<ul style="list-style-type: none"> <li>2 Teacher AV location at ~ 800 mm AFL</li> <li>2 Student at ~ 800 mm AFL</li> <li>2 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall – data outlet to be visible from room (not inside ceiling)</li> </ul>
<b>Lighting</b>	
	<p>Refer G6: Electrical Services. Provide separate switch to reduce lighting at the front of the room to assist with AV. Avoid glare off teaching surfaces. Install light sensors to perimeter lights.</p> <p>Motion sensor lighting to store</p>
<b>Equipment</b>	
	<ul style="list-style-type: none"> <li>1 Recessed fire extinguisher cabinet readily accessible to kitchenette area</li> <li>1 Hot water unit</li> </ul>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	
	Reverse cycle. Refer to G5: Mechanical Services
<b>Extraction</b>	
	Extraction fan required for kitchenette
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
	<ul style="list-style-type: none"> <li>1 Sink waste</li> </ul>
<b>Water supply</b>	
	<p>NOTES: Tapware to be installed with locking plates or similar to prevent rotation.</p> <p>Tempered water to be provided to sinks</p> <ul style="list-style-type: none"> <li>1 Mixer tap hot and cold water</li> </ul>

<b>SEMINAR ROOMS</b>		<b>SS-LC-04</b>
<b>Dimensions</b>	Min side 7 m	<b>Floor Area: 40 m<sup>2</sup></b>
<b>Signage</b>	CLASSROOM #	
<b>Function</b>		
<b>Occupancy</b>	1 x Teacher + 20 students	
<b>Locality</b>	+ All 3 Seminar Rooms are to be adjacent with operable walls between.	
<b>Relationship</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E8: Building Structure and Fabric and E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike) Refer to E8: Building Structure and Fabric and E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Board (minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements	
<b>LOOSE FURNITURE</b>		
	20 TAB20 Classroom Desks (Single)	
	20 CHA01 Classroom Chairs	
	1 DES04 Teacher's Desk	
	1 CHA04 Office Chair	
<b>Environmental</b>		
<b>Ventilation</b>	Natural ventilation – operable windows	
	Min 4x	Ceiling fans
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall:	
	4	GPOs above AV location (typically 2200, 2400mm AFL)
	1	GPO for cleaner (typically 500mm AFL)
		GPO(s) for heater(s)
	1	Cleaner GPO on front wall
		Teacher AV location:
	4	GPOs
	4	GPOs at ~800 mm AFL adjacent to data
	4	Additional GPOs at ~800 mm AFL in suitable locations
<b>AV conduits</b>	<b>NOTES:</b> 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1	Conduit outlet for HDMI, VGA, audio, ...
	1	Conduit outlet for USB, ...
		Outlets on front wall offset to side of AV area:
	1	Conduit outlet for HDMI, VGA, audio ...
	1	Conduit outlet for USB, ...
<b>Data points</b>		



	2 Teacher AV location at ~ 800 mm AFL
	2 Student at ~ 800 mm AFL
	2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>	
	To assist with AV provide separate switch to reduce lighting at the front of the room.
	Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights. Install light sensors to perimeter lights. Refer G6: Electrical Services.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas supply</b>	
	NOTES: ON/OFF positions of gas taps should be easily checked by teacher. heater(s)

<b>LECTURE THEATRE</b>		<b>SS-LC-05</b>
<b>Dimensions</b>	Minimum side 10 m	<b>Floor Area:</b> 150 m <sup>2</sup>
<b>Signage</b>	LECTURE THEATRE	
<b>Function</b>	A terraced space to support lecture / presentation style activities to groups of up to 100 students.	
<b>Occupancy</b>	Teacher plus 100 students	
<b>Locality and relationship</b>	Consideration should be given to designing the Lecture Theatre in such a way that it can be used as an audience space for performances in the drama activity area. Seating will not necessarily need to be provided as carpeted steps should allow 100 students to be comfortably seated.	
<b>Comments</b>	Must have wheelchair access. Lighting and AV infrastructure should be able to support the lecture/presentation functionality of the Lecture Theatre.	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Solid core. Lockable. Refer to E8: Building Structure and Fabric and E9: Openings.	
<b>Windows</b>	None	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Board (minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Must have audio loop. Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous duct or conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door.	
	1 AV device: type and model is to be selected by school to meet local curriculum requirements	
<b>LOOSE FURNITURE</b>		
	NOTES: Require Ready Access to AV and lighting for teacher without any trip hazard, may be via floor box, lectern or combination.	
	1 EQ13 Lectern	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall: 4 GPOs above AV location (typically 2200, 2400mm AFL) 1 GPO for cleaner (typically 500mm AFL) GPO(s) for heater(s) 1 Cleaner GPO on front wall Teacher AV location: 4 GPOs 4 GPOs at ~800 mm AFL adjacent to data 4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit Outlets high on front wall: 1 Conduit outlet for HDMI, VGA, audio, ... 1 Conduit outlet for USB, ... Outlets on front wall offset to side of AV area: 1 Conduit outlet for HDMI, VGA, audio ... 1 Conduit outlet for USB, ...	
<b>Data points</b>	2 Teacher AV location at ~ 800 mm AFL 2 Student at ~ 800 mm AFL 2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)	

<b>Lighting</b>	To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights. Refer G6: Electrical Services.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services Security level: HIGH
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas supply</b>	N/A

### **13.4 Science Learning Area**

SS-SLA-01	General Laboratory
SS-SLA-02	Chemistry Laboratory
SS-SLA-03	Project Laboratory / Classroom
SS-SLA-04	Preparation Area / Science Technician's Area
SS-SLA-05	Chemical Store
SS-SLA-06	Secure Equipment Store
SS-SLA-07	Inclusive Education Classroom

<b>GENERAL LABORATORY</b>		<b>SS-SLA-01</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	SCIENCE #	
<b>Function</b>	Provide opportunities for all students to participate in laboratory investigations in a safe environment allow teacher demonstration of experiments and provide a stimulating and effective teaching environment.	
<b>Occupancy</b>	1 x Teacher + 32 students with a layout that allows for safe movement while experiments are being conducted. Services should be evenly distributed so that a total of 10 groups can work safely.	
<b>Locality and relationship</b>	Requires Ready Access to Preparation Area Internal and external door access required for safety Preferably located on ground floor	
<b>Comments</b>	A science laboratory is a specialist room that is clearly different from a standard classroom. It has extra storage facilities – including for clearly visible scientific equipment or specimens.	
<b>Floor</b>	Chemical resistant vinyl	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area. Front teaching wall to have central 2100 mm reserved for a range of AV devices – if school does not advise an AV device prior to practical completion then screw fix a piece of standard whiteboard 1200mm high by 2100mm wide – it can be removed later for a variety of AV solutions (e.g. ultra large LCD screens, Interactive Whiteboards)	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed	
<b>Windows</b>	Operable – horizontal sliding, lockable (all laboratories keyed alike). Refer E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
NOTES:	<p>Require furniture and services to be planned to allow a total of 10 x student group stations – 9 at standard height and 1 height adjustable. The perimeter student benching should be chemical resistant with sink, gas, and power. Benches are to be 900mm high AFL and 700mm deep with space under 50% of the total length of perimeter bench (for the knees of sitting students). Minimum 2 cupboards (lockable doors, all laboratories keyed alike, flush handles to open preferred) and 3 drawers per sink location. For experiment location with adjustable height bench (to suit wheelchair, min. 1200 mm wide), the bench should have a small raised edge at the front to avoid spills flowing onto the person in the wheelchair.</p> <p>Perimeter benching at 900mm AFL to both side and rear walls of each science laboratory. One section of the perimeter benching (minimum length 1500mm) must be height adjustable with good clearance below for wheelchair access.</p> <p>1 Overhead* display cabinets – minimum 1800mm total width, sliding glass front, lockable (all laboratories keyed alike), adjustable chemical resistant shelving, minimum 2 shelves provided per section</p> <p>1 Overhead* storage cabinets – minimum 1800mm total width, open front, adjustable chemical resistant shelving, minimum 2 shelves provided per section</p> <p>* all over bench cabinets to be mounted 600 mm above bench for safe Bunsen burner flame clearance. Maximum height of 1800mm. To be constructed of chemical resistant, plastic laminated, moisture resistant fibre board or similar. The bottom surface above gas outlets requires a heat treatment.</p> <p>5 Under bench storage cupboards with lockable doors (all laboratories keyed alike), flush handles to open preferred</p> <p>1 Tray storage racks (hold minimum of 6 trays)</p> <p>1 A chemical resistant teacher demonstration bench, offset from the centreline of the laboratory, with sink, gas, power, data, AV services, 3 lockable drawers and 2 x under bench cupboards</p> <p>1 BOA01 Pin Up Board (minimum 1800mm total width)</p>	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	<p>Student perimeter benching: 10 gas outlets, 20 GPOs, 4 cold water only sinks, 1 x double sink with hot &amp; cold water plus eyewash. Services to be spaced so that each of 10 groups of students will have a section of bench with ready access to gas, power and a sink. Place gas and power away from sinks – if possible 500 mm or more from nearest edge of sink</p> <p>Front wall centre: Provision for AV – 2 GPOs 2600 mm AFL offset left by 300mm, 2 GPOs 2400 mm AFL offset left by 300mm, 1 AV plate 2600mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to fixed position at teacher demonstration bench, 1</p>	

	<p>AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to fixed position teacher demonstration bench.                  AV equipment is to be selected by school to meet local curriculum requirements.</p> <p>1 Teacher bench offset to side of room away from main student entry with sink towards centre end: 2 gas outlets, 4 GPO, 2 data, 2 AV plates (for USB, HDMI, VGA audio, ...) at end of 2 x 32 mm diameter continuous conduits leading to front wall, sink, low height cold water tap to avoid blocking AV, require space for teacher to sit at bench with laptop connected to data, power and AV. Minimum of 3 drawers and 1 lockable cupboard.</p> <p>1 EQ10 Fire Extinguisher                  1 EQ09 Fire Blanket                  1 EQ08 Eye Wash</p>
<b>LOOSE FURNITURE</b>	
	<p>16 TAB18 Art and Science Desks                  32 CHA07 Science Stools                  1 CHA05 Drafting Stool</p>
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b>	Natural ventilation – openable windows
Min 4x	Ceiling fans
<b>Acoustics</b>	Refer to G8: Acoustic Services
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
NOTES:	<p>DoE requires a separate 'red mushroom' emergency shut off switch for electricity – resetting to only be possible via a removable key.                  All electricity GPOs (student and teacher) on keyed emergency gas shut off EXCEPT</p> <ul style="list-style-type: none"> <li>- data projector DGPO on front wall</li> <li>- interactive white board DGPO on front wall</li> <li>- teacher computer DGPO on teacher bench (adjacent to data outlet and AV plugs)</li> <li>- 24 hour DGPO on rear wall (used for aquarium or ongoing science experiments – marked DO NOT TURN OFF)</li> <li>- gas heater GPO</li> <li>- cleaner GPO on front wall</li> </ul> <p>Front wall:</p> <p>4 GPOs above AV location (typically 2200, 2400mm AFL)                  1 GPO for cleaner (typically 500mm AFL)</p> <p>Teacher bench:</p> <p>4 GPOs</p> <p>Student benches:</p> <p>20 GPOs</p> <p>2 GPOs for 24 hour access on rear wall (used for aquarium or ongoing science experiments – usually marked DO NOT TURN OFF)</p> <p>Power to hot water unit to sink</p>
<b>AV conduits</b>	
NOTES:	<p>2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit</p> <p>Outlets on front wall:</p> <p>1 Conduit outlet for HDMI, VGA, audio, ...                  1 Conduit outlet for USB, ...</p> <p>Outlets on teacher bench:</p> <p>1 Conduit outlet for HDMI, VGA, audio, ...                  1 Conduit outlet for USB, ...</p>
<b>Data points</b>	
	<p>2 Teacher bench (above bench)                  2 Student (above bench)                  2 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall – data outlet to be visible from room (not inside ceiling)</p>
<b>Lighting</b>	

	<p>Refer to G6: Electrical Services                  To assist with AV provide separate switch to reduce lighting at the front of the room.                  Avoid glare off teaching surfaces.                  If a single storey building, consider dimmable tubular skylights.                  At least 30% of laboratories per school site (minimum 1 x laboratory) must be able to be darkened – blinds must be safe from Bunsen burner flames.</p>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	Detection generally not suitable for science laboratories due to combustion experiments
<b>MECHANICAL</b>	
<b>Air cooling</b>	Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
	NOTES: Sink outlets connect to dilution pit
<b>Water supply</b>	
	NOTES: Require backflow prevention for water to sinks where chemicals are used. All tap ware to be installed securely with locking plates or similar (to prevent rotation).
	4 Single student sinks, high clearance gooseneck tap ware with nozzles, cold water only (avoid sinks in corners of laboratory)
	1 Double sink with hot and cold water, swivel gooseneck, wall mounted draining rack (Laboratory or similar), adjacent eye wash with pressure adjustable cold water
	1 Single teacher sink with low height cold water tap to (to avoid blocking AV)
<b>Gas supply</b>	
	NOTES: DoE requires a separate 'red mushroom' emergency shut off switches for gas – resetting to only be possible via a removable teacher controlled key.
	Emergency gas shutoff:
	- all gas turrets (student and teacher) on keyed emergency gas shut off
	EXCEPT
	- gas heater not on keyed emergency gas shut off
	ON/OFF positions of gas taps should be easily checked by teacher
	- lever tap style is recommended for easy ON/OFF indication
	2 Gas outlets on teacher bench, mounted towards rear of bench within 100 mm of edge so the teaching and experiment space is not restricted.
	10 Gas outlets on student benches – distributed evenly around perimeter benching.
	Gas heater

<b>CHEMISTRY LABORATORY</b>		<b>SS-SLA-02</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	CHEMISTRY #	
<b>Function</b>	Similar to Science Laboratory (GENERAL) but with access to a fume cupboard with a fan that removes hazardous fumes via ducting to well above highest roof point.	
<b>Occupancy</b>	1 x Teacher + 32 students with a layout that allows for safe movement while experiments are being conducted.	
<b>Locality</b>	+ Requires Ready Access to Preparation Area.	
<b>Relationship</b>	Fume cupboard must be located so as to enable maximum visibility by a class (avoid corners or areas restricted by benches).	
<b>Comments</b>	The number of laboratories with access to a fume cupboard should be at least 40% of the total number of labs (minimum 1 x laboratory). Double sided fume cupboards can be shared between the Preparation Area and a Chemistry Laboratory (however any programmable controls are to be placed on the Preparation Area side). Each 1200 mm wide fume cupboard must have a double GPO, gas and water. Double sided fume cupboards must have all controls duplicated on both sides (including controls for GPO, gas and water).	
<b>FIXED FURNITURE</b>		
Same as SS-SLA-01		
<b>EQUIPMENT AND FIXTURES</b>		
Same as SS-SLA-01		
<b>LOOSE FURNITURE</b>		
Same as SS-SLA-01		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Same as SS-SLA-01 plus power, light and 2 x GPOs for fume cupboard. Power to the fume cupboard should be separate to the keyed emergency electrical shut off.	
<b>AV points</b>	Same as SS-SLA-01	
<b>Data points</b>	Same as SS-SLA-01	
<b>Lighting</b>	Same as SS-SLA-01	
<b>MECHANICAL</b>		
<b>Extraction</b>	Allowance must be made for any pressure changes outside of the fume cupboard when air cooling systems are running at the same time (negative pressure can result in air and fumes being drawn from the fume cupboard through the hatch window). The fume cupboard must pass all tests under a variety of typical teaching heating and air cooling scenarios.	
<b>FIRE SERVICES</b>		
Same as SS-SLA-01		
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Fume cupboard waste plumbing must not connect with other sink waste plumbing in the Preparation Area or in any Laboratory.	
<b>Water supply</b>	<p>NOTES: On a double sided fume cupboard, cold water control taps must be provided on both sides, the single water outlet is within the fume cupboard</p> <ol style="list-style-type: none"> <li>1 Cold water outlet</li> <li>2 Control taps (for double sided fume cupboard)</li> </ol>	
<b>Gas supply</b>	<p>NOTES: On a double sided fume cupboard, gas control taps must be provided on both sides ON/OFF positions of gas taps should be easily checked by teacher - lever tap style is recommended for easy ON/OFF indication</p> <ol style="list-style-type: none"> <li>1 Gas outlet within fume cupboard</li> <li>2 Control taps (for double sided fume cupboard)</li> </ol>	



PROJECT CLASSROOM / LABORATORY		SS-SLA-03
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 75 m <sup>2</sup>
<b>Signage</b>	SCIENCE PROJECTS #	
<b>Function</b>	Provide place for smaller groups of students to participate in laboratory investigations in a safe environment.	
<b>Occupancy</b>	1 x Teacher + 20 students with a layout that allows for safe movement while experiments are being conducted. Services limited to a single rear bench.	
<b>Locality and relationship</b>	Ready Access to other science laboratories and preparation area. Preferably located on ground floor.	
<b>Comments</b>	Smaller space to support project based group work	
<b>Floor</b>	Chemical resistant vinyl	
<b>Walls</b>	Front teaching wall to have central 2100 mm reserved for a range of AV devices – if school does not advise an AV device prior to practical completion then screw fix a piece of standard whiteboard 1200mm high by 2100mm wide – it can be removed later for a variety of AV solutions (including ultra large LCD screens, Interactive Whiteboards)	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed	
<b>Windows</b>	Operable – horizontal sliding, lockable (all laboratories keyed alike)	
<b>FIXED FURNITURE</b>		
	<p>NOTES: The rear wall perimeter student benching should be chemical resistant with double sink, gas, and power. Benches are to be 900mm high AFL and 700mm deep. Minimum 2 cupboards (lockable doors, all laboratories keyed alike, flush handles to open preferred) and 3 drawers per sink location. Perimeter benching at 900mm AFL rear wall only.</p> <ul style="list-style-type: none"> <li>1 Overhead storage cabinets – minimum 1800mm total width, open front, adjustable chemical resistant shelving, minimum 2 shelves provided per section All over bench cabinets to be mounted 600 mm above bench for safe Bunsen burner flame clearance. Maximum height of 1800mm. To be constructed of chemical resistant, plastic laminated, moisture resistant fibre board or similar. The bottom surface above gas outlets requires a heat treatment.</li> <li>1 Under bench storage cupboards with lockable doors (all laboratories keyed alike), flush handles to open preferred</li> <li>5 Tray storage racks (hold minimum of 6 trays)</li> <li>1 BOA01 Pin Up Board (minimum 1800mm total width)</li> </ul>	
<b>EQUIPMENT AND FIXTURES</b>		
	<p>NOTES: Student rear wall benching: 2 double gas outlets, 8 GPOs, 1 x double sink with hot &amp; cold water plus eyewash. Sink to be at centre of rear wall. Place gas and power away from sinks – if possible 500 mm or more from nearest edge of sink Front wall centre: Provision for AV – 2 GPOs 2600 mm AFL offset left by 300mm, 2 GPOs 2400 mm AFL offset left by 300mm, 1 AV plate 2600mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to fixed position at teacher demonstration bench, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to fixed position teacher demonstration bench (see AV diagram in Section 7-10, AV device to be selected by school) AV equipment is to be selected by school to meet local curriculum requirements.</p> <ul style="list-style-type: none"> <li>1 Teacher AV offset to side of room away from main student entry with sink towards centre end. 4 GPO, 2 data, 2 AV plates (for USB, HDMI, VGA audio, ...) at end of 2 x 32 mm diameter continuous conduits leading to front wall.</li> <li>1 EQ10 Fire Extinguisher</li> <li>1 EQ09 Fire Blanket</li> <li>1 EQ08 Eye Wash</li> </ul>	
<b>LOOSE FURNITURE</b>		
	<ul style="list-style-type: none"> <li>10 TAB18 Art and Science Desks</li> <li>20 CHA07 Science Stools</li> <li>1 CHA05 Drafting Stool</li> </ul>	

<b>ENVIRONMENTAL</b>	
<b>Acoustics</b>	Refer to G8: Acoustic Services
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	<p>NOTES: DoE requires a separate 'red mushroom' emergency shut off switch for electricity – resetting to only be possible via a removable key.                      All electricity GPOs (student and teacher) on keyed emergency gas shut off EXCEPT</p> <ul style="list-style-type: none"> <li>- data projector DGPO on front wall</li> <li>- interactive white board DGPO on front wall</li> <li>- teacher computer DGPO (adjacent to data outlet and AV plugs)</li> <li>- 24 hour DGPO on rear wall (used for aquarium or ongoing science experiments – marked DO NOT TURN OFF)</li> <li>- cleaner GPO on front wall</li> </ul> <p>Front wall:</p> <ul style="list-style-type: none"> <li>4 GPOs above AV location (typically 2200, 2400mm AFL)</li> <li>1 GPO for cleaner (typically 500mm AFL)</li> </ul> <p>Rear bench:</p> <ul style="list-style-type: none"> <li>6 GPOs</li> <li>2 GPOs for 24 hour access (used for aquarium or ongoing science experiments – usually marked DO NOT TURN OFF)</li> </ul> <p>Power for hot water unit to sink</p>
<b>AV conduits</b>	<p>NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit</p> <p>Outlets at ~2400 mm AFL on front wall:</p> <ul style="list-style-type: none"> <li>1 Conduit outlet for HDMI, VGA, audio, ...</li> <li>1 Conduit outlet for USB, ...</li> </ul> <p>Outlets at side teacher position on front wall:</p> <ul style="list-style-type: none"> <li>1 Conduit outlet for HDMI, VGA, audio, ...</li> <li>1 Conduit outlet for USB, ...</li> </ul>
<b>Data points</b>	<ul style="list-style-type: none"> <li>2 Teacher AV location ~ 800mm AFL</li> <li>2 Student (~ 800mm AFL, above rear bench)</li> <li>2 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall – data outlet to be visible from room (not inside ceiling)</li> </ul>
<b>Lighting</b>	<p>Refer to G6: Electrical Services</p> <p>To assist with AV provide separate switch to reduce lighting at the front of the room.</p> <p>Avoid glare off teaching surfaces.</p> <p>If a single storey building, consider dimmable tubular skylights.</p> <p>At least 30% of laboratories per school site (minimum 1 x laboratory) must be able to be darkened – blinds must be safe from Bunsen burner flames.</p>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	Detection generally not suitable for science laboratories due to combustion experiments
<b>MECHANICAL</b>	
<b>Air cooling Circulation</b>	Evaporative. Refer to G5: Mechanical Services
Min 4x	Ceiling fans
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	<p>NOTES: Sink outlet connects to dilution pit</p>

**Water supply**

NOTES: Require backflow prevention for water to sinks where chemicals are used.

All tap ware to be installed securely with locking plates or similar (to prevent rotation).

- 1 Double sink with hot and cold water, swivel gooseneck, wall mounted draining rack (Laboratory or similar), adjacent eye wash with pressure adjustable cold water

**Gas supply**

NOTES: DoE requires a separate 'red mushroom' emergency shut off switches for gas – resetting to only be possible via a removable teacher controlled key.

Emergency gas shutoff:

- all gas turrets (student and teacher) on keyed emergency gas shut off

EXCEPT

- gas heater not on keyed emergency gas shut off

- 4 ON/OFF positions of gas taps should be easily checked by teacher  
- lever tap style is recommended for easy ON/OFF indication

Gas outlets on rear bench, mounted towards rear of bench within 100 mm of edge so the experiment space is not restricted.

Gas heater

<b>PREPARATION AREA / SCIENCE TECHNICIAN'S AREA</b>		<b>SS-SLA-04</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 75 m <sup>2</sup> / 12 m <sup>2</sup>
<b>Signage</b>	SCIENCE PREPARATION	
<b>Function</b>	Preparation of chemicals and equipment	
<b>Occupancy</b>	Typically 2-4 School Staff	
<b>Locality and relationship</b>	Requires Direct Access to co-located Chemical Store and Secure Equipment Store, and Ready Access to science laboratories	
<b>Comments</b>	<p>Within the Preparation Area there should be adequate storage for trolleys, trays and large amounts of science equipment of widely varying shapes and sizes. The Preparation Area must also include an office area, island bench, workshop bench with a small vice, fume cupboard, sinks, dishwasher, fridge and freezer. Further requirements include:</p> <ul style="list-style-type: none"> <li>- aisle widths between shelving are to be adequate for movement of trolleys;</li> <li>- Preparation Areas and the laboratories should be at the same level, ground level preferred;</li> <li>- the floor surface between the Preparation Area and classroom laboratories should be smooth to avoid jolting of trolleys loaded with equipment or chemicals;</li> <li>- location required for fridge and freezer; and</li> <li>- location required for a filing cabinet.</li> </ul> <p>No ignition sources to be installed within 3 metres of chemical store or preparation bench e.g. no gas heaters with exposed pilot lights</p>	
<b>Floor</b>	Chemical resistant vinyl	
<b>Walls</b>	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Refer E8: Building Structure and Fabric	
<b>Doors</b>	Require separate entry external to any classroom and two exits	
<b>Windows</b>	Operable – horizontal sliding, lockable (all laboratories keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
NOTES:	All benches at 900 mm except computer workstation area at 720 mm AFL	
Multiple	<p>Storage and Drawer Units</p> <ul style="list-style-type: none"> <li>- the preparation area should be fitted with a variety of adjustable shelving, small and large drawers and racks for standard equipment trays</li> <li>- some drawers to be 400mm in depth, some to be fitted with dividers</li> <li>- all free standing storage and drawer units to be a maximum height of 1800mm.</li> <li>- all slide out tray units and drawers to terminate at a height of 1200mm, with adjustable plastic laminated shelves over to a maximum height of 1800mm.</li> <li>- tray racks for delivery of equipment to the laboratories should be as close as practicable to the door serving the laboratories.</li> <li>- shelving should be provided under benches</li> </ul> <p>Work bench with vice fitted, 900mm AFL, min 1200mm wide, require storage board on wall above for tools.</p>	
1	SHV01 Compactus	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	<p>Double sided fume cupboards can be shared between the Preparation Area and a Chemistry Laboratory (however any programmable controls are to be placed on the Preparation Area side). Each 1200 mm wide fume cupboard must have a double GPO, gas and water. Double sided fume cupboards must have all controls duplicated on both sides (i.e. double GPO, gas and water controls on each side).</p> <ul style="list-style-type: none"> <li>- fully serviced double sided updraft fume cupboard between preparation area and an adjacent lab with operation panels, GPOs and tap controls on both sides</li> <li>- 1 PVC laboratory sink with a goose neck spout and taps adjacent to fume cupboard</li> <li>- fume cupboard sink (built in)</li> <li>- 1 double bowl, trough type stainless steel sink with drainer, with wall mounted taps over and a high goose neck swivel spout, hot water, wall mounted drainer (Labo or similar) over the sink and an adjacent eye wash station</li> <li>- a double gas turret with toggle taps</li> <li>- gas emergency isolation solenoid plus gate handled valve</li> </ul>	
1	EQ10 Fire Extinguisher	
1	EQ09 Fire Blanket	
1	EQ08 Eye Wash	
1	APP08 Fridge 380L	

	1	APP10 Freezer 500L
	1	APP03 Dishwasher (stainless steel)
<b>LOOSE FURNITURE</b>		
	1	STO05 Filing Cabinet
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		Natural ventilation – openable windows
<b>Acoustics</b>		Refer to G8: Acoustic Services
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	8	GPOs distributed above bench Require centre of plug outlet minimum 100mm above bench surface
	2	GPOs adjacent each data outlet
	3	GPOs for fridge , freezer and dishwasher Power to hot water units to sinks
<b>Data points</b>		
	4	2 workstations with 2 data each
<b>Lighting</b>		
		Clear lighting required over work surfaces and storage areas – important that there is also good lighting in between the rows of shelving. Refer to G6: Electrical Services.
<b>Equipment</b>		
		To be supplied by school
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		Detection generally not suitable for science laboratories due to combustion experiments
<b>MECHANICAL</b>		
<b>Air cooling</b>		Evaporative. Refer to G5: Mechanical Services
<b>Extraction</b>		Mechanical fan
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
		Plumbing connected to dilution pit Fume cupboard plumbing must be separate Waste connections for sinks and dishwasher
<b>Water</b>		
		Hot and cold water to sink
<b>Gas</b>		
	2	gas outlets on work bench, must be on separate shutoff to laboratories
	1	gas outlet within fume cupboard

<b>CHEMICAL STORE</b>		<b>SS-SLA-05</b>
<b>Dimensions</b>	Min side 3 m	<b>Floor Area:</b> 12 m <sup>2</sup>
<b>Signage</b>	CHEMICALS STORE	
<b>Function</b>	Storage of chemicals	
<b>Occupancy</b>	Temporary access by School Staff to collect and return chemicals	
<b>Locality and relationship</b>	Direct Access required from within Preparation Area – to open directly towards preparation benches, near to fume cupboard	
<b>Comments</b>	<p>No hot water system, communication system or electrical switchboard installed inside or within 3 metres</p> <p>An approved flammable liquids cabinet shall be provided in the chemicals store or nearby (3 m clear of power outlets)</p> <p>The chemical store must have:</p> <ul style="list-style-type: none"> <li>- no windows</li> <li>- no metal supports, shelving or brackets (corroded by acid)</li> <li>- enough shelving bays to allow legislative segregation of dangerous goods classes of chemicals (minimum 10)</li> </ul>	
<b>Floor</b>	Chemical resistant vinyl	
<b>Walls</b>	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Refer E8: Building Structure and Fabric	
<b>Doors</b>	Solid core lockable door keyed separately to all other doors, air intake mounted low in the door	
<b>Windows</b>	N/A	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES:	Shelving on all available perimeter walls	
Fit for Purpose	SHV05 Science Store Shelving	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Flammable liquids cabinet does not require external venting or mechanical extraction due to risk management by science technicians	
1	STO23 Flammable Liquids Cabinet (250L)	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	None permitted	
<b>Lighting</b>	External light switch	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
	Security level: HIGH	
<b>MECHANICAL</b>		
<b>Extraction</b>	Chemical resistant commercial grade exhaust system designed to run 24/7 to efficiently remove all vapours	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets	

<b>SECURE EQUIPMENT STORE</b>		<b>SS-SLA-06</b>
<b>Dimensions</b>	Minimum side 2 m	<b>Floor Area: 5 m<sup>2</sup></b>
<b>Signage</b>	STORE	
<b>Function</b>	Secure storage of equipment	
<b>Occupancy</b>	Temporary access by School Staff to collect and return equipment	
<b>Locality and relationship</b>	Direct Access required from within Preparation Area - to open directly towards preparation benches	
<b>Comments</b>		
<b>FIXED FURNITURE</b>		
<b>Floor</b>	Chemical resistant vinyl	
<b>Walls</b>	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Refer E8: Building Structure and Fabric	
<b>Doors</b>	Solid core. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>NOTES:</b>	Maximum amount of shelving on all available perimeter walls	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer to G6: Electrical Services.	
<b>Equipment</b>	To be supplied by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services Security level: HIGH	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>INCLUSIVE EDUCATION CLASSROOM + STORE</b>		<b>SS-SLA-07</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 65 m <sup>2</sup> + 8 m <sup>2</sup>
<b>Signage</b>	INCLUSIVE #	
<b>Function</b>	Education Support	
<b>Occupancy</b>	1 x Teacher, education assistants and 12 students	
<b>Locality and relationship</b>	The classroom must be located on the ground floor with Direct Access to the Inclusive Education Store from within the classroom. The classroom should be co-located (Ready Access) with the Science Learning Area Block.	
<b>Comments</b>	Only required in schools identified as Education Support Schools The Inclusive Education Classroom should be flexible in its design to enable a variety of learning activities. It includes a kitchenette and a separate secure store (minimum of 8 m <sup>2</sup> in addition to the 65 m <sup>2</sup> classroom) that is to be provided with appropriate shelving to accommodate general teaching materials and resources.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Maximise display board area. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Board (minimum 1800mm total width)	
	1 BOA02 Whiteboard	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2600 mm AFL offset left by 300mm, 2 GPOs 2400 mm AFL offset left by 300mm, 1 AV plate 2600mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location – typically to the side that is furthest from the main entry door. AV device, type and model is to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	1 DES04 Teacher's Desk	
	1 CHA04 Office Chair	
	3 CHA09 Office Stools	
	1 STO04 Filing Cabinet – 4 Drawer	
	1 MIS19 Rubbish Bin	
	10 TAB20 Classroom Desk (Single). Height adjustable.	
	3 TAB17 Classroom Desk (Double). Height adjustable.	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	14 CHA01 Classroom Chairs	
	Kitchenette	
	1 APP13 Microwave	
	1 APP05 Fridge Freezer	
	1 APP14 Kettle	
<b>Fit for Purpose</b>	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	Min 4x	Ceiling fans
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Ability to reduce lighting for AV at front of room	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		



	<p>Front wall:</p> <ul style="list-style-type: none"> <li>4 GPOs above AV location (typically 2200, 2400mm AFL)</li> <li>1 GPO for cleaner (typically 500mm AFL)</li> <li>1 Cleaner GPO on front wall</li> </ul> <p>Teacher AV location:</p> <ul style="list-style-type: none"> <li>4 GPOs</li> <li>4 GPOs at ~800 mm AFL adjacent to data</li> <li>4 Additional GPOs at ~800 mm AFL in suitable locations</li> </ul> <p>Kitchenette</p> <ul style="list-style-type: none"> <li>1 Fridge GPO</li> <li>1 Microwave GPO</li> <li>1 Above bench GPOs</li> <li>1 DGPO to store</li> </ul> <p>Power to hot water unit</p>
<b>AV conduits</b>	<p>NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit</p> <p>Outlets high on front wall:</p> <ul style="list-style-type: none"> <li>1 Conduit outlet for HDMI, VGA, audio, ...</li> <li>1 Conduit outlet for USB, ...</li> </ul> <p>Outlets on front wall offset to side of AV area:</p> <ul style="list-style-type: none"> <li>1 Conduit outlet for HDMI, VGA, audio ...</li> <li>1 Conduit outlet for USB, ...</li> </ul>
<b>Data points</b>	<ul style="list-style-type: none"> <li>2 Teacher AV location at ~ 800 mm AFL</li> <li>2 Student at ~ 800 mm AFL</li> <li>2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)</li> </ul>
<b>Lighting</b>	<p>Refer to G6: Electrical Services. Provide separate switch to reduce lighting at the front of the room to assist with AV. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights. Install light sensors to perimeter lights.</p> <p>Motion sensor lighting to Store</p>
<b>EQUIPMENT</b>	
	<ul style="list-style-type: none"> <li>1 Recessed fire extinguisher cabinet readily accessible to kitchenette area</li> <li>1 Hot water unit</li> </ul>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services
<b>Extraction</b>	Extraction fan required for kitchenette
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	<ul style="list-style-type: none"> <li>1 Sink waste</li> </ul>
<b>Water supply</b>	<p>NOTES: Tapware to be installed with locking plates or similar to prevent rotation.</p> <p>Tempered water to be provided to sinks</p> <ul style="list-style-type: none"> <li>1 Mixer tap hot and cold water</li> </ul>

### 13.5 Technologies Learning Area

SS-TLA-01	Woodwork Workshop
SS-TLA-02	Metalwork Workshop
SS-TLA-03	Machine Room
SS-TLA-04	Senior Engineering Workshop
SS-TLA-05	Senior Construction Workshop
SS-TLA-06	Welding Bays - Oxy, Mig & Arc
SS-TLA-07	Finishing Room & Chemical Store
SS-TLA-08	Wood Materials Store
SS-TLA-09	Metal Materials Store
SS-TLA-10	Planning Room
SS-TLA-11	Mechatronics & Robotics Laboratory
SS-TLA-12	Food Technology Studios 1 & 2
SS-TLA-13	Food Technology Studio 3
SS-TLA-14	Food Preparation Areas
SS-TLA-15	Pantry and Food Stores
SS-TLA-16	Textiles & Human Development Studio
SS-TLA-17	IT Laboratories / Digital Design (CAD) Laboratory
SS-TLA-18	Business Studies Classroom
SS-TLA-19	Model Office
SS-TLA-20	Model Stores
SS-TLA-21	Tool Equipment Stores
SS-TLA-22	Mechatronics Stores

SS-TLA-23	Digital Design (CAD) Store
SS-TLA-24	IT Store / Technician
SS-TLA-27	Gas Store
SS-TLA-28	Textiles Fitting Room and Store

WOODWORK WORKSHOPS		SS-TLA-01
<b>Dimensions</b>	Min side 9 m	<b>Floor Area:</b> 125 m <sup>2</sup>
<b>Signage</b>	WOODWORK #	
<b>Function</b>	Provide opportunities for all students to design and create items from wood, and learn about the safe use of machines.	
<b>Occupancy</b>	1 x teacher + 22 students with a layout that allows safe movement while machines and benches are in use. A wood workshop is a specialist room with high safety requirements.	
<b>Locality</b>	+ All workshops must be separate with individual external and internal entries.	
<b>Relationship</b>	Requires Direct Access to the Model Store, Tool Store and Machine Room from within the workshop, and Ready Access to the Wood Store. Ready Access to a Planning Room, the Finishing Room and a Composite Workshop is desirable.	
<b>Comments</b>	Equipment placement must be checked by DoE Employee Relations staff for safety prior to being bolted to the floor	
<b>FLOOR</b>		
<b>Floor</b>	Non slip concrete. Refer to E8: Building Structure and Fabric	
<b>Walls</b>	Require sufficient wall space for safe machine placement, white board, tool boards Minimum solid wall height 1000 mm AFL	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Openable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant. Viewing windows (laminated safety glass if near machines, minimise noise transfer)	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
<b>NOTES:</b>	Benches usually not fixed (heavy), mobile tool trolleys may also be used	
<b>EQUIPMENT AND FIXTURES</b>		
<i>Fixed equipment</i>	<i>Typical make/model, comments, layout, power, extraction, other</i>	
TEQ07 Bandsaw - Woodwork	Meber 500, Hafco BP-630 or similar quality brand Sited at side of room for easy supervision 100mm dia fixed connection wood dust extraction	
TEQ08 Compound Mitre Saw and trestle	100mm dia fixed connection wood dust extraction with purpose built collection hood, Dewalt or similar quality brand	
TEQ09 Drill, Bench 16 mm	Bench mounted	
TEQ10 Drill, Pedestal 16 mm	Floor mounted, Waldron Super 16, Hafco PD35 or similar quality brand	
TEQ11 First aid station	Near eye wash and trough	
TEQ12 Grinder, bench mounted	200 mm dual stone Hafco 250mm or similar quality brand	
TEQ13 Lathes, Wood (2 x short bed)	Full set of lathe tools with each 100mm dia fixed connection wood dust extraction	
TEQ14 Lathe, Wood (1 x long bed)	Full set of lathe tools 100mm dia fixed connection wood dust extraction	
TEQ15 Linisher, Wood - Belt/ Disc Sander (1 x Combination Belt / Disc)	150 mm belt, 300 disc Floor mounted, less noise issues if located near Machine Room, 100mm dia fixed connection wood dust extraction	
TEQ16 Morticer & Bench	Bench Vicmarc M25 or similar quality brand	
TEQ17 Pendant power outlets (8 min)	240V 10A Above each bench	
TEQ18 Tool Sharpener	Bench mounted Tormek or similar quality brand	
<b>LOOSE FURNITURE</b>		
	Minimum 22	TEQ01 Bench Stations (typically 6 benches x 4 students, alternatively 4 benches x 6 students)
	1	TEQ02 Height Adjustable Bench
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows High ceiling fans or wall mounted fans with protective mesh grid	
<b>Lighting</b>	Natural and artificial lighting, if single storey, consider dimmable tubular skylights.	

<b>Acoustics</b>	Refer to G8: Acoustic Services. Signage requiring wearing of earmuffs to be placed near all noisy equipment.
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	<p>NOTES: Phase and Amp rating for each machine must be determined 15A or higher to be wall or floor mounted Suspended power to be 10 A only</p> <p>4 Electrical emergency safety shutoffs distributed around room, 1000-1200mm AFL</p>
<b>Data points</b>	<p>1 Wireless - minimum height 2000mm AFL, central ceiling surface mount if less than 4000mm AFL, otherwise on side wall - data outlet to be visible from room (not inside ceiling)</p>
<b>Lighting</b>	Refer G6: Electrical Services
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Refer to G5: Mechanical Services
<b>Extraction</b>	Require efficient connection to the main wood dust extraction system servicing wood workshops and machine room
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	<p>1 Wash basin drain</p>
<b>Water supply</b>	<p>1 Cold water – wash basin</p>

<b>METALWORK WORKSHOP</b>		<b>SS-TLA-02</b>
<b>Dimensions</b>	Min side 9 m	<b>Floor Area:</b> 125 m <sup>2</sup>
<b>Signage</b>	METALWORK #	
<b>Function</b>	Provide opportunities for all students to design and create items from metal and learn about the safe use of machines.	
<b>Occupancy</b>	1 x teacher + 22 students with a layout that allows safe movement while machines and benches are in use. A metal workshop is a specialist room with high safety requirements.	
<b>Locality Relationship</b>	+ All workshops must be separate with individual external and internal entries. Requires view to welding bays and external areas (for supervision). Requires external area GPO for grinding operations (to keep the noise away from the main class). Workshop must have Ready Access to the finishing room.	
<b>Comments</b>	Equipment placement must be checked by DoE Employee Relations staff for safety prior to being bolted to the floor	
<b>Floor</b>	Non slip concrete. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	Minimum solid wall height 1000 mm AFL	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings. Allow for internal entry door from main area of school and external door to covered yard.	
<b>Windows</b>	Openable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant Windows in hazard zones near machines may require laminated safety glass.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES: Benches usually not fixed (heavy), mobile tool trolleys may be used.		
<b>FIXED EQUIPMENT</b>		
<i>Item</i>	<i>Typical make/model, comments, layout, power, extraction, other</i>	
TEQ19 Bandsaw - Metalwork	HAFCO VB-450 or similar quality brand	
TEQ20 Bench Shears (fixed to bench)	Metalmaster S200 or similar quality brand	
TEQ21 Buffer (bench mounted)	HAFCO 200mm BG8 or similar quality brand	
TEQ22 Cold Saw c/w 2m trestles	2m trestle either side, HAFCO CS310D or similar quality brand	
TEQ23 Combination Linisher Grinder	Abbott & Ashley Multitool LA364 or similar quality brand	
TEQ24 Geared Head Drill	Hafco GHD22 or similar quality brand	
TEQ25 Grinder (bench mounted)	HAFCO 200mm BG8 or similar quality brand	
TEQ26 Guillotine	Fintek P5210 or similar quality brand	
TEQ27 Magnetic Bender	Electrobrake EB1250 or similar quality brand	
TEQ28 Metal Lathes	Romac C6236-1000 or similar quality brand	
TEQ29 Metal Milling Machine	BM250AM-450mm or similar quality brand	
TEQ30 Metal Roll Former	Manual sheet metal curving roll former, Sahinler R 1270 or similar quality brand	
TEQ31 Oxy/Acetylene Welding Kit	Lincoln or similar quality brand (school to order gas bottles)	
TEQ32 Pedestal Drill Press	Hafco PD35 or similar quality brand	
TEQ33 Pipe Bender	Metalcraft or similar quality brand	
TEQ34 Scroll Bender	Metalcraft Balustrade Bender or similar quality brand	
TEQ35 Spot Welder		
TEQ36 Wash basin with adjacent eye wash	Cold water. Eyewash – dual eye spray, ergonomic handle and lock on water flow, requires pressure adjustment valve located nearby	
<b>LOOSE EQUIPMENT</b>		
TEQ37 Anvil (50kg)		
Arc Welders	Purchased by school	
Mig Welders	Purchased by school	
TIG Welders	Purchased by school	
	22	TEQ01 Bench Stations (typically 6 benches x 4 students, alternatively 4 benches x 6 students)
	6	TEQ05 Welding Benches

1 TEQ02 Height Adjustable Bench (provided by builder)	
<b>ENVIRONMENTAL</b>	
<b>Ventilation</b>	Natural ventilation – openable windows High ceiling fans or wall mounted fans with protective mesh grid
<b>Lighting</b>	Natural and artificial lighting, if a single storey building, consider dimmable tubular skylights.
<b>Acoustics</b>	Refer to G8: Acoustic Services. Signage requiring wearing of earmuffs to be placed near all noisy equipment.
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	NOTES: Phase and Amp rating for each machine must be determined 15A or higher to be wall or floor mounted Suspended power to be 10 A only
	4 Electrical emergency safety shutoffs distributed around room, 1000-1200mm AFL
<b>Data points</b>	1 Wireless - minimum height 2000mm AFL, central ceiling surface mount if less than 4000mm AFL, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>	Refer G6: Electrical Services
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Refer to G5: Mechanical Services
<b>Extraction</b>	Require fume extraction systems servicing all welding areas
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Waste connection of basin and eyewash
<b>Water supply</b>	Cold water - basin and eyewash
<b>Gas supply</b>	N/A

MACHINE ROOM		SS-TLA-03
<b>Dimensions</b>	Min side 7 m	<b>Floor Area:</b> 75 m <sup>2</sup>
<b>Signage</b>	Machine Room	
<b>Function</b>	Provide machines capable of cutting or finishing wood supplied in large sheets or lengths, allow for construction of larger wood projects	
<b>Occupancy</b>	1-4 persons. A machine room is a specialist room with very high safety requirements.	
<b>Locality</b>	+ Must be located between, with Direct Access to, the 2 woodwork workshops. Must have Direct Access to the wood store	
<b>Relationship</b>	External access by roller door Orientation of machinery is crucial to effective use All low level extraction must be flush with floor, require steel plate cover (not mesh), must include access for inspection, clearance of blockages Due to noise the main extraction plant is to be located at least 10 m from the machine room or nearest workshop Require access by truck to yard for deliveries	
<b>Comments</b>	Equipment placement must be checked by DoE Employee Relations staff for safety prior to being bolted to the floor	
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Minimum solid wall height 1000 mm AFL	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	External roller door –minimum width 2.4 m (secure construction required) Double doors to each wood workshop	
<b>Windows</b>	Strengthened glass	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<i>Fixed equipment</i>	<i>Typical make/model, comments, layout, power, extraction, other</i>	
TEQ41 Panel Saw	Altendorf WA6 -2600 or similar quality brand Sited centrally to allow for full extension of all wood sheeting support arms 1 x 125 mm dia fixed connection wood dust extraction 1 x 60 mm dia fixed connection wood dust extraction 415V, 3 Phase	
TEQ42 Buzzer/Planer	Hammer A3-31 or similar quality brand 125 mm dia fixed connection wood dust extraction 415V, 3 Phase	
TEQ43 Thicknesser	Felder D951 or similar quality brand 125 mm dia fixed connection wood dust extraction 415V, 3 Phase	
TEQ44 Radial Arm Saw c/w 3m trestle	Omega RN 450 or similar quality brand 1 x 100 mm dia fixed connection wood dust extraction 1 x 40 mm dia fixed connection wood dust extraction	
TEQ45 Router Table with Router	Hafco RT 100 Table Makita RP 2301FC Router or similar quality brand 80 mm dia fixed connection wood dust extraction	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Wall mounted fans with protective mesh grid Additional ventilation can be provided by opening the roller door	
<b>Lighting</b>	Natural and artificial lighting	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Phase and Amp rating for each machine must be determined Power provided via the floor must not be a trip hazard or restrict the movement of wood through machines	



	2	Electrical emergency safety shutoffs distributed around room, 1000-1200mm AFL
<b>Lighting</b>		
		Refer G6: Electrical Services. For safety all machine work surfaces must be well illuminated.
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		N/A
<b>Water supply</b>		N/A
<b>Gas supply</b>		N/A

<b>SENIOR ENGINEERING WORKSHOP</b>		<b>SS-TLA-04</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	ENGINEERING #	
<b>Function</b>	Final design determined in consultation with the School Principal	
<b>Occupancy</b>	1 x teacher, 22 students Layout must allow safe movement while machines and benches are in use.	
<b>Locality</b>	+ Must be located with Ready Access to other workshops, and Direct Access to a Planning Room and	
<b>Relationship</b>	secure, powered External Covered Work Area. Can be conjoined with Senior Construction Workshop as one large workshop.	
<b>Floor</b>		
	Non slip concrete. Refer E8: Building Structure and Fabric.	
<b>Walls</b>		
	Minimum solid wall height 1000 mm AFL	
<b>Ceiling</b>		
	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>		
	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>		
	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	NOTES: Determined in consultation with School Principal	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Determined in consultation with School Principal	
	1 Wash basin	
	1 EQ08 Eyewash	
<b>LOOSE FURNITURE</b>		
	Determined in consultation with School Principal	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows on at least 1 wall High ceiling fans or wall mounted fans with protective mesh grid	
<b>Lighting</b>	Natural and artificial lighting, if a single storey building consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services. Signage requiring wearing of earmuffs to be placed near all noisy equipment.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Phase and Amp rating for each machine must be determined 15A or higher to be wall or floor mounted Suspended power to be 10 A only	
	4 Electrical emergency safety shutoffs distributed around room, 1000-1200mm AFL	
<b>Data points</b>	1 Wireless - minimum height 2000mm AFL, central ceiling surface mount if less than 4000mm AFL, otherwise on side wall - data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Refer to G5: Mechanical Services	
<b>Extraction</b>	Require fume extraction systems servicing all welding areas	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1 Wash basin and eyewash drain	
<b>Water supply</b>	1 Wash basin and eyewash – cold water	
<b>Gas supply</b>	N/A	

<b>SENIOR CONSTRUCTION WORKSHOP</b>		<b>SS-TLA-05</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Final design determined in consultation with the School Principal	
<b>Occupancy</b>	1 x teacher + 22 students with a layout that allows safe movement while machines and benches are in use.	
<b>Locality</b>	+ Must be located with Ready Access to other workshops, and Direct Access to a Planning Room and	
<b>Relationship</b>	secure, powered External Covered Work Area. Can be conjoined with Senior Engineering Workshop as one large workshop.	
<b>Floor</b>	Non slip concrete. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	Minimum solid wall height 1000 mm AFL	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Determined in consultation with School Principal	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Determined in consultation with School Principal	
	1 Wash basin	
<b>LOOSE FURNITURE</b>		
	Determined in consultation with School Principal	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows on at least 1 wall High ceiling fans or wall mounted fans with protective mesh grid	
<b>Lighting</b>	Natural and artificial lighting, if a single storey building consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services. Signage requiring wearing of earmuffs to be placed near all noisy equipment.	
<b>Partitions</b>	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Phase and Amp rating for each machine must be determined, 15A or higher to be wall or floor mounted, suspended power to be 10 A only.	
	4 Electrical emergency safety shutoffs distributed around room, 1000-1200mm AFL	
<b>Data points</b>	1 Wireless - minimum height 2000mm AFL, central ceiling surface mount if less than 4000mm AFL, otherwise on side wall - data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Refer to G5: Mechanical Services	
<b>Extraction</b>	Require fume extraction systems servicing all welding or painting areas	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1 Wash basin drain	
<b>Water supply</b>	1 Cold water	
<b>Gas supply</b>	N/A	

<b>WELDING BAYS – OXY, MIG &amp; ARC</b>		<b>SS-TLA-06</b>
<b>Dimensions</b>	Min side 1.6 m	<b>Floor Area:</b> 3.5 m <sup>2</sup> per bay, total 28 m <sup>2</sup>
<b>Function</b>	Provide a multipurpose space for a variety of welding projects	
<b>Occupancy</b>	1 -2 persons	
<b>Locality</b>	+ Must be located with Direct Access to the Metalwork Workshop (from within the room and/or outside)	
<b>Relationship</b>	Able to be supervised by teacher	
<b>Comments</b>	Welding curtains or shields must protect all School Staff and students from flash. All switches or gauges should be outside the arc of the welding torch flame.	
<b>Floor</b>	Non slip concrete. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	N/A – welding curtains to contain flash	
<b>Ceiling</b>	N/A	
<b>Doors</b>	N/A	
<b>Windows</b>	N/A	
<b>Partitions</b>	Fire rated	
<b>FIXED FURNITURE</b>		
	NOTES: Bench location to be matched with location of fixed fume extraction, bench can be mobile if have flexible welding fume extraction arms	
	1 TEQ05 Welding Bench per welding bay	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Welding equipment to be purchased by school, gas bottles to be hired by school	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Fan forced extraction of fumes, wall mounted fans with protective mesh grid.	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	NOTES: Power outlets and switches to be located away from the main welding work surface	
	1 3 phase 20-30A	
	1 10A	
<b>Lighting</b>		
	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Refer to G5: Mechanical Services	
<b>Extraction</b>	Require fume extraction systems servicing all welding or painting areas	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>		
	NOTES: Reticulated oxygen and acetylene to be provided to 4 bays, gas bottles will be stored externally in metal cages at separate locations.	

<b>FINISHING ROOM &amp; CHEMICAL STORE</b>		<b>SS-TLA-07</b>
<b>Dimensions</b>	Min side 2.5 m	<b>Floor Area:</b> 10 m <sup>2</sup> & 5 m <sup>2</sup> - Total of 15 m <sup>2</sup>
<b>Signage</b>	FINISHING	
<b>Function</b>	Provide a safe location for the spray painting of projects	
<b>Occupancy</b>	1-2 persons	
<b>Locality</b>	+ No ignition sources are permitted within the Zone 1 Hazardous Area at any time when spray painting is being performed. Significant separation is also required from any other ignition sources, including switches, lights, grinding and welding. Must be co-located with and have Direct Access to the 5 m <sup>2</sup> Chemical Store.	
<b>Relationship</b>		
<b>Comments</b>	Finishing Room requirements include a pressure differential gauge, purge air system, suitable ductwork, a compliant exhaust stack, no internal switches or other potential ignition points and the lights must be Class 1 Zone 1 for explosive environments. Paints must be stored in a separate flammable liquid cabinet in the associated Chemicals Store. Venting of the cabinet is not required as all materials must be stored in closed containers.	
<b>Floor</b>	Non slip concrete. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	Minimum solid wall height 1000 mm AFL	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Vision window well clear of the spray painting work surface	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Many substances involved in spray painting are hazardous e.g. paints, solvents, dusts, powders, paint removers, degreasers, rust removers	
	1 STO23 Flammable Liquid Cabinet (200L - in associated 5 m <sup>2</sup> storage area)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Extinguishers should be located apart to ensure that at least 1 is available in the event of a fire	
	2 EQ10 Fire extinguishers (dry powder type)	
<b>LOOSE FURNITURE</b>		
	1 TEQ06 Spray Table	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Require inlet vent for makeup air	
<b>Lighting</b>	Explosion proof lighting required; can be supplemented with natural lighting via tubular skylight.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: No GPOs or switches permitted in the spray booth area. Explosion proof lighting required	
<b>Lighting</b>	Require Class 1 Zone 1 lighting for explosive environments	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	To Chemical Store only. Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Require pressure differential gauge, purge air system, suitable ductwork, a compliant exhaust stack, no internal switches or other potential ignition points	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets	
<b>HYDRAULIC &amp; GAS</b>		
	1 Compressed air	

<b>WOOD MATERIALS STORE</b>		<b>SS-TLA-08</b>
<b>Dimensions</b>	Min length 6 m	<b>Floor Area: 30 m<sup>2</sup></b>
<b>Signage</b>	WOOD STORE	
<b>Function</b>	Store lengths and sheets of timber	
<b>Occupancy</b>	Temporary access by School Staff or students to store, collect or return wood pieces	
<b>Locality</b>	+ Must be have Direct Access to the Machine Room and Direct or Ready Access to the Woodwork	
<b>Relationship</b>	Workshops	
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Durable, impact resistant	
<b>Ceiling</b>	Insulated	
<b>Doors</b>	Double door, roller shutter or open access	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
	<p>NOTES: Various sizes and lengths of timber are stored, also sheets of wood</p> <p>Horizontal storage for the lengths of timber should have:</p> <ul style="list-style-type: none"> <li>- minimum spacing between shelves of 300 mm</li> <li>- maximum distance between supports of 1500 mm</li> <li>- a maximum height of 1800 mm</li> </ul> <p>The sheet wood storage must:</p> <ul style="list-style-type: none"> <li>- hold up to 10 sheets of 2400 mm x 1200 mm wood</li> <li>- have a maximum height of 1800mm.</li> </ul>	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>METAL MATERIALS STORE</b>		<b>SS-TLA-09</b>
<b>Dimensions</b>	Min length 7 m	<b>Floor Area: 35 m<sup>2</sup></b>
<b>Signage</b>	METAL STORE	
<b>Function</b>	Store lengths of bar and rod plus sheets of metal	
<b>Occupancy</b>	Temporary access by School Staff or students to store, collect or return metal rod or sheet	
<b>Locality</b>	+ Must have Direct Access to Metalwork and Engineering Workshops, and Ready Access for trucks for metal deliveries.	
<b>Relationship</b>		
<b>Comments</b>	Critical that a 6 m length of metal can be moved from the delivery truck to the metal store and then into a workshop, similarly for a 2400mm x 1200mm sheet of metal	
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Durable, impact resistant	
<b>Ceiling</b>	Insulated	
<b>Doors</b>	Double door, roller shutter or open access	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
<b>NOTES:</b>	6 m lengths of metal must easily fit through all doorways without hitting any shelving The rod and bar storage must be heavy duty and engineered to withstand very heavy metal loads. It requires: <ul style="list-style-type: none"> <li>- maximum space between supports of 1.5 m</li> <li>- strong bracing</li> <li>- each rung to be vertically above the one below</li> <li>- a maximum height of 1800 mm</li> </ul> The sheet metal storage must: <ul style="list-style-type: none"> <li>- hold up to 10 sheets of 2400 mm x 1200 mm metal</li> <li>- have a maximum height of 1800mm.</li> </ul>	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher	

<b>PLANNING ROOMS</b>		<b>SS-TLA-10</b>
<b>Dimensions</b>	Min side 4 m	<b>Floor Area: 40 m<sup>2</sup></b>
<b>Signage</b>	PLANNING #	
<b>Function</b>	Provide a clean environment for planning, computer assisted drawing and instruction	
<b>Occupancy</b>	1 teacher plus 16 students	
<b>Locality</b>	+ Must have Direct Access to two workshops (may be located between), and visual connection to as many workshops as possible.	
<b>Relationship</b>	Ready Access to Mechatronics and Robotics Lab	
<b>Comments</b>	Additional acoustic treatments may be required if adjacent to noisy workshops	
<b>Floor</b>	Heavy duty carpet	
<b>Walls</b>	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant. Must avoid glare on computer display screens.	
<b>FIXED FURNITURE</b>		
	Fixed perimeter benching at 720 mm AFL on all walls except teaching/AV wall	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Require sufficient bench space for a range of computer displays	
	AV equipment to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
22	CHA03 Task Chairs	
1	CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows if practical	
2	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services. Additional treatments may be required if adjacent to noisy workshops.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
NOTES:	Devices used in this room can include desktop computers, laptops, scanner, plotter	
Multiple	DGPOs adjacent to every data, repeated every 800 mm; mounted on cable ducting at ~800mm AFL	
1	GPO for gas heater	
	Teacher AV location:	
4	GPOs	
<b>AV conduits</b>		
NOTES:	2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power permitted in conduit	
	Outlets on front wall:	
1	Conduit outlet for HDMI, VGA, audio, ...	
1	Conduit outlet for USB, ...	
	Outlets on teacher bench:	
1	Conduit outlet for HDMI, VGA, audio, ...	
1	Conduit outlet for USB, ...	
<b>Data points</b>		
2	Teacher AV location	
Max 16	Student (located at 800mm separation, above bench)	
1	Wireless - minimum height 2000mm AFL	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	



<b>MECHANICAL</b>	
<b>Air cooling</b>	Evaporative
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas supply</b>	
NOTES: ON/OFF positions of gas taps should be easily checked by teacher.	
1	Gas heater

<b>MECHATRONICS AND ROBOTICS LAB</b>		<b>SS-TLA-11</b>
<b>Dimensions</b>	Min side 7 m	<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	MECHATRONICS	
<b>Function</b>	Provide learning opportunities with mechanical, pneumatic, electronic and computer technologies. Allow students to create or experiment with circuits, control systems, simple automated machines and robots.	
<b>Occupancy</b>	1 x teacher + 22 students with a layout that allows safe movement while machines and benches are in use.	
<b>Locality</b>	+ Direct Access to an appropriate workshop and Mechatronics Store.	
<b>Relationship</b>	Ready Access to a Planning Room	
<b>Comments</b>	One half of the room will usually contain benches with a heat resistant surface, the other half will be standard desk surface	
<b>Floor</b>		
	Refer E8: Building Structure and Fabric	
<b>Walls</b>		
	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>		
	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>		
	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>		
	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>		
	N/A	
<b>FIXED FURNITURE</b>		
	50%	U shaped fixed furniture with heat resistant benching at 720 mm AFL and mechanical fume extraction e.g. suit soldering
	50%	U shaped fixed furniture with standard desk surface at 720 mm AFL
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES:	Equipment to be selected and purchased by school e.g. 3D printers
		Bench space for 22 students
	1	Stainless Steel Trough
	1	EQ09 Fire blanket
	1	EQ10 Fire extinguisher
	1	EQ08 Eyewash
<b>LOOSE FURNITURE</b>		
	22	CHA03 Task Chair
	1	CHA04 Office Chair
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
	Natural ventilation – openable windows	
	4	Ceiling fans
<b>Lighting</b>		
	Natural and artificial lighting, if it is a single storey building then consider dimmable tubular skylights.	
<b>Acoustics</b>		
	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	NOTES:	Benches with a heat resistant surface: GPOs for soldering
		Standard desk surface: GPOs for computers
	24	Double GPOs
	1	Gas heater GPO
<b>Data points</b>		
	2	Teacher location (above bench)
	12	Student (above computer benches)
	1	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		
	Refer G6: Electrical Services	
<b>Equipment</b>		
	Purchased by school to suit curriculum needs	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
	Refer to G6: Electrical Services	
<b>Smoke</b>		
	As per NCC requirements	

<b>MECHANICAL</b>	
<b>Air cooling</b>	Refer to G5: Mechanical Services
<b>Extraction</b>	Mechanical extraction at 4 locations for laser cutting, 3D printing or similar devices
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	Waste connection to trough and eyewash
<b>Water supply</b>	Cold water only to trough and eyewash
<b>Gas supply</b>	
	1 Gas heater

<b>FOOD TECHNOLOGY STUDIOS 1 &amp; 2</b>		<b>SS-TLA-12</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	FOOD TECHNOLOGY #	
<b>Function</b>	Provide opportunities to prepare and cook a variety of food and study nutrition in classroom kitchens with well-designed workflow and easy-to-clean surfaces	
<b>Occupancy</b>	1 x Teacher + 22 students.	
<b>Locality</b>	+ Direct Access to Food Preparation Area.	
<b>Relationship</b>	Ready Access to Pantry, Stores, Cool Room and the Planning Room	
<b>Comments</b>	Services should be evenly distributed so that each of the 10 groups has access to a sink, cooktop, oven and bench space. Require 1 x height adjustable bench.	
<b>Floor</b>	Non slip, stain resistant. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	Smooth, impact resistant	
<b>Ceiling</b>	The finished ceiling surface must not have any perforation or exposed joints, cracks or crevices. This is to prevent the contamination of food and enable effective cleaning of the surface. This also ensures that the ceiling is pest proof.	
<b>Doors</b>	Vision panel, open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike), Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES:	Separate in bench cooktops and below bench ovens (rather than single units containing both a stove and an oven) allow more flexibility in room placement. Built in cupboards need to be vermin proof and easily cleaned.	
1	TEQ02 Height Adjustable Bench	
1	Demonstration Bench	
1	Lockable teachers drawer/cupboard	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Oven and cooktop selections need to be highly reliable with robust controls and good service and parts availability in Western Australia. Major brands with at least a 5 year history are preferred. Recommended cooktop and oven features include:	
	- range of programmable cooking features	
	- fan forced for even heating (and less burning)	
	- good quality oven seals	
	- large capacity oven (up to 80 litres)	
	- oven door with glass window	
	- separate grill	
10	Stainless Steel Sinks	
1	TEQ46 Electric cooktop or TEQ47 Gas cooktop (teacher demonstration)	
5	TEQ46 Electric cooktop	
5	TEQ47 Gas cooktop	
10	TEQ48 Electric Ovens	
1	EQ09 Fire blanket	
1	EQ10 Fire extinguisher	
	AV equipment to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
22	CHA06 Art Stools (backless)	
1	CHA05 Drafting Stool	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Operable windows – horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
4	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, then consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		

<p><b>NOTES:</b> Induction cooktops draw a large current so sufficient allowance must be made when determining the total current available on site.                  DoE requires a separate 'red mushroom' emergency shut off switch for electricity – resetting to only be possible via a removable key.                  All electricity cooktops and ovens on keyed emergency gas shut off EXCEPT                  - data projector/LCD display DGPO on front wall                  - interactive white board/LCD DGPO on front wall                  - teacher computer DGPO (adjacent to data outlet and AV plugs)                  - gas heater GPO                  - cleaner GPO on front wall</p> <p>Allow sufficient power for electric induction cooktops and electric ovens</p> <p>40 4 x GPOs per group is minimum requirement                  4 Teacher AV location                  4 GPOs above AV location (typically 2200, 2400mm AFL)                  1 GPO for cleaner (typically 500mm AFL)                  1 Gas heater GPO</p> <p><b>AV conduits</b></p> <p><b>NOTES:</b> 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power permitted in conduit                  Outlets on front wall:                  1 Conduit outlet for HDMI, VGA, audio, ...                  1 Conduit outlet for USB, ...                  Outlets at teacher position:                  1 Conduit outlet for HDMI, VGA, audio, ...                  1 Conduit outlet for USB, ...</p> <p><b>Data points</b></p> <p>2 Teacher AV position                  2 Student (above bench and away from sinks or ovens)                  2 Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)</p> <p><b>Lighting</b></p> <p>Refer G6: Electrical Services</p>	<p><b>SECURITY &amp; DETECTION</b></p> <p><b>Intruder</b> Refer to G6: Electrical Services  <b>Smoke</b> As per NCC requirements</p> <p><b>MECHANICAL</b></p> <p><b>Air cooling</b>                  Evaporative. Refer to G5: Mechanical Services</p> <p><b>Extraction</b>                  Require extraction above all gas cooktops, recommend range hoods above all electrical cooktops</p> <p><b>FIRE SERVICES</b>                  Fire-fighting equipment Portable Fire Extinguishers and Fire Blankets</p> <p><b>HYDRAULIC &amp; GAS</b></p> <p><b>Waste</b></p> <p><b>NOTES:</b> Grease trap required                  10 Sink drains</p> <p><b>Water supply</b>                  10 Hot &amp; cold water mixer taps</p> <p><b>Gas supply</b>                  5 Gas cooktops                  1 Gas heater</p>
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<b>FOOD TECHNOLOGY STUDIO 3</b>		<b>SS-TLA-13</b>
<b>Dimensions</b>	Min side 9 m	<b>Floor Area: 120 m<sup>2</sup></b>
<b>Signage</b>	COMMERCIAL KITCHEN	
<b>Function</b>	Provide students with commercial kitchen experience	
<b>Occupancy</b>	1 x Teacher + 22 students.	
<b>Locality</b>	+ Direct Access to Food Preparation Area and Planning Room.	
<b>Relationship</b>	Ready Access to the Pantry, Stores and Cool Room.	
<b>Comments</b>	Commercial kitchen must meet all current health requirements for premises used for the preparation of food for sale. Services should be evenly distributed so that each of 8 groups has access to a sink, cooktop, oven and bench space.	
<b>Floor</b>	Non slip, stain resistant. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	Smooth, impact resistant	
<b>Ceiling</b>	The finished ceiling surface must not have any perforation or exposed joints, cracks or crevices. This is to prevent the contamination of food and enable effective cleaning of the surface. This also ensures that the ceiling is pest proof.	
<b>Doors</b>	Vision panel, open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable – horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Commercial kitchens use mainly stainless steel equipment and benches Stainless steel preparation benches Stainless steel storage cupboards and drawers	
<b>EQUIPMENT AND FIXTURES</b>		
	8 TEQ48 Commercial Stoves	
	1 EQ09 Fire blanket	
	1 EQ10 Fire extinguisher	
	8 Stainless Steel Sinks	
Fit for Purpose	APP15 Portable Cooktops APP13 Microwaves AV equipment to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	8 TEQ04 Mobile Trolleys	
	22 CHA06 Art Stools (backless)	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows, fitted with security mesh fly screens	
	4 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Allow sufficient power for plug in portable induction cooktops and microwave ovens	
	32 GPOs distributed within the room for convenient access at work stations	
<b>AV conduits</b>	NOTES: Consider LCD screen due to limited wall space in commercial kitchen, 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power permitted in conduit	
	Outlets on display wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets	at teacher location:
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	1 Gas Heater GPO	

<b>Data points</b>	2 Teacher location (above bench)
	2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>	Refer G6: Electrical Services
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services
<b>Extraction</b>	Central extraction hood over all gas stoves
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
	NOTES: Grease trap required
	8 Sink drains
<b>Water supply</b>	
	8 Hot and cold mixer taps
<b>Gas supply</b>	
	8 Gas cooktops
	1 Gas heater

<b>FOOD PREPARATION AREAS</b>		<b>SS-TLA-14</b>
<b>Dimensions</b>	Min side varies	<b>Floor Area:</b> Total 28 m <sup>2</sup>
<b>Signage</b>	FOOD PREPARATION #	
<b>Function</b>	Provide work space for food assistants to purchase, store and prepare ingredients	
<b>Occupancy</b>	2 – 4 persons	
<b>Locality</b>	+ Direct Access to as many Food Studios as possible (may be located between).	
<b>Relationship</b>	Direct Access to Pantry, Food Stores and Cool Room Accessible for food deliveries	
<b>Comments</b>		
<b>Floor</b>	Non slip, stain resistant. Refer E8: Building Structure and Fabric.	
<b>Walls</b>	Smooth, impact resistant	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	Perimeter benching and storage	
<b>EQUIPMENT AND FIXTURES</b>		
	1 APP03 Dishwasher	
	1 Double sink	
	1 TEQ47 Oven (electric)	
	1 TEQ47 Cooktop (gas)	
	1 APP13 Microwave (supplied by school)	
	1 EQ09 Fire blanket	
	1 EQ10 Fire extinguisher	
<b>LOOSE FURNITURE</b>		
	2 CHA05 Drafting Stools	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows, fitted with security mesh fly screens	
	1 Ceiling fan	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	12 GPOs distributed in convenient locations (for equipment noted above)	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Refer to G5: Mechanical Services	
<b>Extraction</b>	Central extraction hood over cooktop	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	NOTES: Grease trap required	
	1 Sink waste	
	1 Dishwasher waste	
<b>Water supply</b>	1 Mixer tap with hot and cold water	
<b>Gas supply</b>	1 Gas cooktop	



<b>PANTRY AND FOOD STORES</b>		<b>SS-TLA-15</b>
<b>Dimensions</b>	Min side varies	<b>Floor Area:</b> 10 m <sup>2</sup> each
<b>Signage</b>	PANTRY, STORE	
<b>Function</b>	Storage of food and dry goods	
<b>Occupancy</b>		
<b>Locality</b>	+ Direct Access to each of the Food Preparation Areas (2 for each Food Preparation Area)	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Durable, non slip flooring.	
<b>Walls</b>	Sealed and painted	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Provide 40% extra pieces of adjustable shelving	
To perimeter walls	SHV02 Cool Room Shelving	
<b>Lighting</b>	Natural and artificial lighting, consider a skylight	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>TEXTILES &amp; HUMAN DEVELOPMENT STUDIO</b>		<b>SS-TLA-16</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	TEXTILES & HUMAN DEVELOPMENT	
<b>Function</b>	Provide learning opportunities regarding the properties and performance of textiles, allow students to design and produce their own textile items.	
<b>Occupancy</b>	1 x teacher + 22 students	
<b>Locality</b>	+ Ready Access to laundry, Direct Access to Changeroom, Store and enclosed courtyard suitable for young children. External shade and low trough with water required to courtyard.	
<b>Relationship</b>		
<b>Comments</b>	Ready Access to up to 22 sewing machines is an essential requirement, tables must also allow layout of rolls of fabric.	
<b>Floor</b>		
	Anti-static carpet	
<b>Walls</b>		
	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>		
	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>		
	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>		
	Operable - horizontal sliding, lockable (all rooms keyed alike) . Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>		
	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Require 2 or 3 large sewing and fabric tables in fixed positions to allow flush mounted GPOs for quick access to power for sewing machines	
	2-3 Large textile sewing and fabric cutting tables	
	1 Perimeter bench for special purpose sewing machines (e.g. overlockers) and a trough that can be used as a baby bath	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Require provision of a shallow trough that can be used for the bathing of a baby as part of human development curriculum	
	AV equipment to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	22 CHA10 Student Stools	
	22 TEQ50 Sewing machines	
	3 TEQ51 Overlockers	
	1 CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
	Natural ventilation – openable windows	
	4 Ceiling fans	
<b>Lighting</b>		
	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>		
	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	NOTES: Require flush mounted power outlets accessible from above on each table	
	24 GPOs	
	4 GPOs at teacher AV location	
	10 GPOs at side of room	
	1 Gas heater GPO	
<b>AV conduits</b>		
	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power permitted in conduit	
	Outlets on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets	on teacher bench:
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
<b>Data points</b>		

	2	Teacher AV location (above bench)
	2	Student (above bench)
	2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		Refer G6: Electrical Services
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	1	Trough waste
<b>Water supply</b>		
	NOTES:	Hot water to have a safe temperature control fitted
	1	Mixing tap – hot and cold water
	1	Shallow trough suitable for bathing a baby
<b>Gas supply</b>		
	NOTES:	ON/OFF positions of gas taps should be easily checked by teacher.
	1	Gas heater

<b>IT LABORATORIES / DIGITAL DESIGN (CAD) LABORATORY</b>		<b>SS-TLA-17</b>
<b>Dimensions</b>	Min side 8m	<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	COMPUTING #	
<b>Function</b>	Provide computer laboratories where every student has use of their own desktop or computer.	
<b>Occupancy</b>	1 teacher plus 25 students	
<b>Locality</b>	+ Can be located in a variety of locations around school, at least one required in the Technologies building.	
<b>Relationship</b>		
<b>Comments</b>	1 x height adjustable work station, minimum width 1200mm.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Openable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant. Avoid direct glare on any computer screens.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	<p>NOTES: Benching to maximise the number of positions for computers. Fixed desk layout may be perimeter with central island, "W" shaped or clustered so long as can fit minimum of 25 students, each with access to a computer. 1 section of bench must be height adjustable (minimum width 1200mm).</p>	
<b>EQUIPMENT AND FIXTURES</b>		
	<p>NOTES: Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door.</p> <p>1 AV device, type and model is to be selected by school to meet local curriculum requirements</p>	
<b>LOOSE FURNITURE</b>		
	<p>1 CHA04 Office Chair</p> <p>25 CHA03 Task Chair</p>	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	<p>Natural ventilation – openable windows</p> <p>4 Ceiling fans</p>	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	<p>Front wall:</p> <p>4 GPOs above AV location (typically 2200, 2400mm AFL)</p> <p>1 GPO for cleaner (typically 500mm AFL)</p> <p>1 Gas heater GPO</p> <p>1 Cleaner GPO on front wall</p> <p>Teacher AV location:</p> <p>4 GPOs</p> <p>4 GPOs at ~800 mm AFL adjacent to data</p> <p>4 Additional GPOs at ~800 mm AFL in suitable locations</p>	
<b>AV conduits</b>	<p>NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit</p> <p>Outlets high on front wall:</p> <p>1 Conduit outlet for HDMI, VGA, audio, ...</p> <p>1 Conduit outlet for USB, ...</p> <p>Outlets on front wall offset to side of AV area:</p> <p>1 Conduit outlet for HDMI, VGA, audio ...</p> <p>1 Conduit outlet for USB, ...</p>	

<b>Data points</b>	<ul style="list-style-type: none"> <li>2 Teacher AV location at ~ 800 mm AFL</li> <li>25 Student at ~ 800 mm AFL</li> <li>2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)</li> </ul>
<b>Lighting</b>	<p>Refer G6: Electrical Services.</p> <p>To assist with AV provide separate switch to reduce lighting at the front of the room.</p> <p>Avoid glare off teaching surfaces.</p> <p>If a single storey building then can consider dimmable tubular skylights.</p>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	<p>Refer to G6: Electrical Services</p> <p>Security Level: High</p>
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Reverse cycle (> 25 computers). Refer to G5: Mechanical Services
<b>Gas supply</b>	<p>NOTES: ON/OFF positions of gas taps should be easily checked by teacher.</p> <ul style="list-style-type: none"> <li>1 Gas heater</li> </ul>
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguisher

<b>BUSINESS STUDIES CLASSROOM</b>		<b>SS-TLA-18</b>
<b>Dimensions</b>	Min side 7 m	<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	CLASSROOM #	
<b>Function</b>	Teaching of Accounting/Business Studies	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality</b>	+	
<b>Relationship</b>		
<b>Comments</b>	The Business Studies Classroom should be flexible in design to enable a variety of learning activities.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Board (Minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements	
<b>LOOSE FURNITURE</b>		
	30 TAB20 Classroom Desks (Single)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	32 CHA01 Classroom Chairs	
	1 DES04 Teacher's Desk	
	1 CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
Min 4x	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	1 Gas heater GPO	
	1 Cleaner GPO on front wall	
	Teacher AV location:	
	4 GPOs	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>		
<b>NOTES:</b>	2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets on front wall offset to side of AV area:	
	1 Conduit outlet for HDMI, VGA, audio ...	
	1 Conduit outlet for USB, ...	

<b>Data points</b>	<ul style="list-style-type: none"> <li>2 Teacher AV location at ~ 800 mm AFL</li> <li>2 Student at ~ 800 mm AFL</li> <li>2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)</li> </ul>
<b>Lighting</b>	<p>To assist with AV provide separate switch to reduce lighting at the front of the room.          Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights. Install light sensors to perimeter lights. Refer G6: Electrical Services.</p>
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Evaporative. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
	N/A
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas supply</b>	<p>NOTES: ON/OFF positions of gas taps should be easily checked by teacher.</p> <ul style="list-style-type: none"> <li>1 Gas heater</li> </ul>

<b>MODEL OFFICE</b>		<b>SS-TLA-19</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>	MODEL OFFICE	
<b>Function</b>	Enable students to practice typical reception office procedures.	
<b>Occupancy</b>	2 persons	
<b>Locality</b>	+ To have Ready Access to Business Studies Classroom	
<b>Relationship Comments</b>		
<b>FLOOR FINISHES</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Counter height to allow for students, disabled and adults, allow sufficient clearance for computer displays	
	1 Reception counter (refer to E13.5.2.2)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment purchased by school	
<b>LOOSE FURNITURE</b>		
	1 DES03 Office Workstation	
	2 CHA04 Office Chair	
	2 CHA13 Waiting Area Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Reception desk requires GPOs both above and below desk	
	2 GPOs below desk per office station	
	2 GPOs above desk per office station	
<b>Data points</b>	2 Per office station	
	1 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	



<b>MODEL STORES</b>		<b>SS-TLA-20</b>
<b>Dimensions</b>	Varies	<b>Floor Area:</b> Refer to Schedule of Accommodation
<b>Signage</b>	MODEL STORE	
<b>Function</b>	Storage of models and equipment of various sizes and lengths	
<b>Occupancy</b>	Temporary access by School Staff or students to store, collect or return models	
<b>Locality and relationship</b>	Must have Direct Access to the Woodwork Workshop or Metalwork Workshop the store is associated with	
<b>Comments</b>	Elongated to allow for maximum shelving space	
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Durable, impact resistant	
<b>Ceiling</b>	Insulated	
<b>Doors</b>	Double door, roller shutter or open access	
<b>Windows</b>	None	
<b>LOOSE FURNITURE</b>		
	NOTES: 450 deep, around 3 sides SHV08 Workshop Shelving	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 GPOs	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	

TOOL AND EQUIPMENT STORES		SS-TLA-21
<b>Dimensions</b>	Varies	<b>Floor Area:</b> Refer to Schedule of Accommodation
<b>Signage</b>		
<b>Function</b>	Storage of tools and equipment of various sizes and lengths	
<b>Occupancy</b>	Temporary access by School Staff or students to store, collect or return tools and equipment	
<b>Locality and relationship</b>	Must have Direct Access to the woodwork Workshop or Metalwork Workshop the store is associated with	
<b>Comments</b>		
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Durable, impact resistant	
<b>Ceiling</b>	Insulated	
<b>Doors</b>	Solid Core. Lockable.	
<b>Windows</b>	None	
LOOSE FURNITURE		
	NOTES:	450 deep, around 3 sides
	Fit for Purpose	SHV08 Workshop Shelving
ELECTRICAL & COMMUNICATIONS		
<b>Power</b>	2 GPOs	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	N/A	
SECURITY & DETECTION		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
MECHANICAL		
<b>Extraction</b>	N/A	
FIRE SERVICES		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>MECHATRONICS STORE</b>		<b>SS-TLA-22</b>
<b>Dimensions</b>		<b>Floor Area:</b> 5 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Storage of models, tools and equipment	
<b>Occupancy</b>	Temporary access by School Staff or students to store, collect or return models, tools and equipment	
<b>Locality relationship</b>	<b>and</b>	Direct Access to the Mechatronics and Robotics Laboratory
<b>Comments</b>		
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Durable, impact resistant	
<b>Ceiling</b>	Insulated	
<b>Doors</b>	Solid Core. Lockable.	
<b>Windows</b>	None	
<b>LOOSE FURNITURE</b>		
<b>Fit for Purpose</b>	The store shelves shall: <ul style="list-style-type: none"> <li>- have multiple door cabinets of equipment storage around 2 sides</li> <li>- have lockable cabinets on one side</li> </ul> STO09 or STO10 to suit application	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 DGPOs	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	N/A	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	

<b>DIGITAL DESIGN (CAD) STORE</b>		<b>SS-TLA-23</b>
<b>Dimensions</b>	Varies	<b>Floor Area: 5 m<sup>2</sup></b>
<b>Signage</b>	STORE	
<b>Function</b>	.	
<b>Occupancy</b>	Temporary access by School Staff	
<b>Locality and relationship</b>	Must have Direct Access to the Digital Design (CAD) Laboratory.	
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving	
<b>Floor</b>	Durable, non-slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>LOOSE FURNITURE</b>		
	NOTES: Generally maximise amount of shelving on all available perimeter walls	
Fit for Purpose	SHV07 Store Room Shelving	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	If store is to be used for charging trolleys containing notebook computers then require 6 GPOs on 3 different circuits near the entry door.	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>FIRE SERVICES</b>		
	N/A	

IT STORE / TECHNICIAN		SS-TLA-24
<b>Dimensions</b>	Varies	<b>Floor Area:</b> 25 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>	.	
<b>Occupancy</b>	Temporary access by School Staff	
<b>Locality and relationship</b>	Must have Ready Access to the IT Laboratories	
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving	
<b>Floor</b>		
	Durable, non-slip flooring	
<b>Walls</b>		
	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>		
	Flush plasterboard	
<b>Doors</b>		
	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>		
	None	
<b>LOOSE FURNITURE</b>		
	NOTES: Generally maximise amount of shelving on all available perimeter walls	
Fit for Purpose	SHV07 Store Room Shelving	
Fit for Purpose	CH04 Office Chair	
Fit for Purpose	DES03 Office Workstation	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	If store is to be used for charging trolleys containing notebook computers then require 6 GPOs on 3 different circuits near the entry door. If an office workstation is included, provide an additional GPO to suit location of Workstation.	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>GAS STORE</b>		<b>SS-TLA-27</b>
<b>Dimensions</b>		<b>Floor Area:</b> 2 stores of 7m2, total 14 m2
<b>Function</b>	Provide safe and secure storage for gas bottles	
<b>Occupancy</b>	N/A	
<b>Locality</b>	+ Located in the External Covered Work Area, and directly associated with the welding bays. Refer to	
<b>Relationship</b>	SS-TLA-06	
<b>Comments</b>	To provide reticulated oxygen and acetylene to 4 welding bays. Gas bottles must be stored externally in metal cages at separate locations.	
<b>Floor</b>		
	Non slip concrete	
<b>Walls</b>		
	Durable, impact resistant	
<b>Ceiling</b>		
	N/A	
<b>Doors</b>		
	N/A	
<b>Windows</b>		
	N/A	
<b>Partitions</b>		
	Metal cages	
<b>FIXED FURNITURE</b>		
	1 N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Gas bottles to be provided by the school	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	N/A	
<b>Lighting</b>		
	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
	Refer to G6: Electrical Services	
<b>Smoke</b>		
	As per NCC requirements	
<b>MECHANICAL</b>		
	Refer G5.12: Mechanical Services	
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>		
	NOTES: Reticulated oxygen and acetylene to be provided to the required number welding bays complete with associated manifolds and gauges. Gas bottles, supplied by the school are to be stored externally in metal cages at separate locations.	

<b>TEXTILES FITTING ROOM AND STORE</b>		<b>SS-TLA-28</b>
<b>Dimensions</b>	Varies	<b>Floor Area:</b> 1x15 m <sup>2</sup> x 1x2 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>		
<b>Occupancy</b>	Temporary access by School Staff	
<b>Locality and relationship</b>	Requires Direct Access and must be accessed from the Textiles and Human Development Studio	
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving	
<b>Floor</b>	Durable, non-slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
NOTES: A combination of fixed and loose furniture may be provided. Include provision for hanging storage and specialty shelving items as required.		
<b>LOOSE FURNITURE</b>		
NOTES: Generally maximise amount of shelving on all available perimeter walls		
Fit for Purpose	SHV07 Store Room Shelving	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	If store is to be used for charging trolleys containing notebook computers then require 6 GPOs on 3 different circuits near the entry door.	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>FIRE SERVICES</b>		
	N/A	

### 13.6 The Arts Learning Area

SS-ALA-01	Drawing & Painting Studio
SS-ALA-02	Art & Folio Stores
SS-ALA-03	Printmaking Studio
SS-ALA-04	Ceramics / Sculpture Studio
SS-ALA-05	Kiln Room
SS-ALA-06	Art Project Room / Seminar Room
SS-ALA-07	Teaching Space 1 (Drama 1)
SS-ALA-08	Teaching Space 2 (Drama & Dance)
SS-ALA-09	Property, Flats and Chair Store
SS-ALA-10	Bio Box
SS-ALA-11	Green Room / Change
SS-ALA-12	Dance Studio
SS-ALA-13	Kitchenette / Servery / Box Office
SS-ALA-14	Music Classroom
SS-ALA-15	Music Ensemble Room
SS-ALA-16	Music Practice Room
SS-ALA-17	Music Store
SS-ALA-18	Media Classroom
SS-ALA-19	Film / TV / Audio Stores 1 & 2
SS-ALA-20	Visual & Audio Control Room
SS-ALA-21	Digital Media Laboratory
SS-ALA-22	Uniform Store



SS-ALA-23	Foyer
SS-ALA-24	Gallery
SS-ALA-25	Print Area / Alcove
SS-ALA-26	Silkscreen Washdown
SS-ALA-27	Dance Store / Change
SS-ALA-28	Drama Store
SS-ALA-29	Printmaking Store

<b>DRAWING &amp; PAINTING STUDIO</b>		<b>SS-ALA-01</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 120 m <sup>2</sup>
<b>Signage</b>	VISUAL ARTS	
<b>Function</b>	A studio for the learning and production of visual art, including hand drawn, hand painted, mixed media and computer art.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	Ready Access to other studios, gallery and staff studies. Direct Access to Store. Views to courtyard if possible.	
<b>Comments</b>		
<b>Floor</b>	Durable, non-slip flooring around wet fixtures.	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Perforated flush plasterboard or similar	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Openable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	Bench to one wall with cupboards under and central 2.4m long stainless steel trough.	
	Bench to second wall with cupboards under, with 900mm wide overhanging bench top suitable for computers and dry layout.	
	1 BOA01 Pin Up Board (minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door.	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	8 TAB18 Arts and Science Desks (to seat 32 students)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	32 CHA06 Art Stools	
	1 CHA05 Drafting Stools	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
Min 4x	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Acoustic attenuation. Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	1 Gas heater GPO	
	Teacher AV location:	
	4 GPOs	
	8 Suspended pendant power outlets (distributed above central desks, outlet 1800mm AFL)	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 GPOs at ~800 mm AFL in suitable locations (distributed on perimeter)	
<b>AV conduits</b>		
<b>NOTES:</b>	2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	

	1	Conduit outlet for USB, ...
		Outlets offset to side of AV area:
	1	Conduit outlet for HDMI, VGA, audio ...
	1	Conduit outlet for USB, ...
<b>Data points</b>		
	2	Teacher AV location at ~ 800 mm AFL
	2	Student at ~ 800 mm AFL – located 1000mm clear of sinks/troughs
	2	Wireless – minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall – data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		
		Require high colour accuracy lighting with a colour rendering index (CRI) >= 90
		To assist with AV provide separate switch to reduce lighting at the front of the room.
		Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Reverse Cycle Air Conditioning. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>		
	1	Gas heater

<b>ART &amp; FOLIO STORES</b>		<b>SS-ALA-02</b>
<b>Dimensions</b>	Min ceiling height 2.4m	<b>Floor Area:</b> 15 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>	Store room for Drawing and Painting Studio	
<b>Occupancy</b>	Occasional – School Staff and students	
<b>Locality and relationship</b>	Direct Access from Drawing and Painting Studio	
<b>Comments</b>		
<b>Floor</b>	Sealed concrete	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Plasterboard	
<b>Doors</b>	Inward opening, solid core door. Lockable. Refer to E9: Openings.	
<b>Windows</b>	No requirement	
<b>FIXED FURNITURE</b>		
Fit for Purpose	Paper Storage Unit	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV06 Storeroom Shelving	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1 DGPO	
<b>Lighting</b>		
	Sensor activated. Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	

<b>PRINTMAKING STUDIO</b>		<b>SS-ALA-03</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	PRINTMAKING	
<b>Function</b>	Provide an open plan studio with good lighting for etching, relief, lithography and screen printing.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	Requires Ready Access to other studios, stores, gallery and staff studies. Views to courtyard if possible.	
<b>Comments</b>	External trough and hose for silkscreen cleaning	
<b>Floor</b>	Non-slip vinyl	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Openable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	Alcove with 2.4m long stainless steel trough. Bench to 2 side walls with cupboards under, with 900mm wide overhanging bench top suitable for computers and dry layout.	
Fit for Purpose	BOA01 Pin Up Board (Minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door.	
1	AV device, type and model is to be selected by school to meet local curriculum requirements.	
1	External trough and hose Silkscreen Washdown	
1	External trough (min 1500mm wide)	
1	Flexible hose with mixing taps Drying space above drainer	
<b>LOOSE FURNITURE</b>		
8	TAB18 Arts and Science Desks (to seat 32 students)	
1	TAB25 Classroom Desk (Double/Height Adjustable)	
32	CHA06 Art Stools	
1	CHA05 Drafting Stools	
<b>Environmental</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
Min 4x	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall:	
4	GPOs above AV location (typically 2200, 2400mm AFL)	
1	GPO for cleaner (typically 500mm AFL)	
1	Gas heater GPO	
	Teacher AV location:	
4	GPOs	
8	Suspended pendant power outlets (distributed above central desks, outlet 1800mm AFL)	
4	GPOs at ~800 mm AFL adjacent to data	
4	GPOs at ~800 mm AFL in suitable locations (distributed on perimeter)	

<b>AV conduits</b>	
NOTES:	2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit
	Outlets high on front wall:
1	Conduit outlet for HDMI, VGA, audio, ...
1	Conduit outlet for USB, ...
	Outlets offset to side of AV area:
1	Conduit outlet for HDMI, VGA, audio ...
1	Conduit outlet for USB, ...
<b>Data points</b>	
2	Teacher AV location at ~ 800 mm AFL
2	Student at ~ 800 mm AFL
2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>	
	Require high colour accuracy lighting (colour rendering index $\geq 90$ )
	To assist with AV provide separate switch to reduce lighting at the front of the room.
	Avoid glare off teaching surfaces.
	If a single storey building then can consider dimmable tubular skylights.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	Reverse Cycle Air Conditioning. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Gas supply</b>	
1	Gas heater
<b>Waste</b>	Waste connection for external trough and flexible hose. Drainer
<b>Water supply</b>	Water supply for trough and flexible hose with mixing taps – hot and cold water

<b>CERAMICS AND SCULPTURE STUDIO</b>		<b>SS-ALA-04</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	CERAMICS & SCULPTURE	
<b>Function</b>	A studio for the learning and production of three dimensional visual art and craft.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	Direct Access from within classroom to green and sculpture stores, kiln room. Ready Access to all parts of the Arts Learning Area including Staff Studies and Gallery. Direct Access to external courtyard.	
<b>Comments</b>	External screened garden courtyard work area outside of the ceramics and sculpture studio.	
<b>Floor</b>	Sealed concrete. Non-slip tiled area for potter wheels with plumbing grate with clay bucket trap for use with potter wheel.	
<b>Walls</b>	A high impact 1500mm AFL tiled splashback to potters wheels.	
<b>Ceiling</b>	Flush perforated plasterboard or similar	
<b>Doors</b>	Double door to external work area.	
<b>Windows</b>	Natural light/ventilation.	
<b>FIXED FURNITURE</b>		
	1 Fixed 2.4m long 600mm deep open bench with single shelf under one long wall with an 1800mm long stainless steel double bowl sink (hot & cold). Stainless steel troughs on wall adjacent to pottery wheels, minimum total width 1800mm, allow space for 4-6 taps (cold only).	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Access to external courtyard Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door.	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements.	
	4-6 EQ17 Pottery wheels	
<b>LOOSE FURNITURE</b>		
	8 TAB18 Arts and Science Desks (to seat 32 students)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	32 CHA06 Art Stools	
	1 CHA05 Drafting Stool	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
	Min 4x	Ceiling fans
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Acoustic attenuation. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Suspended pendant power allows flexibility in the placement of potters wheels	
	4-6	Suspended GPOs for pottery wheels. Front wall:
	4	GPOs above AV location (typically 2200, 2400mm AFL)
	1	GPO for cleaner (typically 500mm AFL)
	1	Gas heater GPO
		Teacher AV location:
	4	GPOs
	4	GPOs at ~800 mm AFL adjacent to data
	4	Additional GPOs at ~800 mm AFL in suitable locations
<b>AV conduits</b>	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or	

	discontinuities, reserved for AV only – no power cables permitted in conduit
	Outlets high on front wall:
	1 Conduit outlet for HDMI, VGA, audio, ...
	1 Conduit outlet for USB, ...
	Outlets on front wall offset to side of AV area:
	1 Conduit outlet for HDMI, VGA, audio ...
	1 Conduit outlet for USB, ...
<b>Data points</b>	
	2 Teacher AV location at ~ 800 mm AFL
	2 Student at ~ 800 mm AFL
	2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>	
	Require high colour accuracy lighting (colour rendering index $\geq 90$ ).
	To assist with AV provide separate switch to reduce lighting at the front of the room.
	Avoid glare off teaching surfaces.
	If a single storey building then can consider dimmable tubular skylights.
<b>SECURITY &amp; DETECTION</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements
<b>MECHANICAL</b>	
<b>Air cooling</b>	
	Reverse Cycle Air Conditioning. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
	1 Floor drainage to all potters wheels
	1 Clay trap
	1 Sink drain
<b>Water supply</b>	
	1 Mixing tap – hot and cold water
	4-6 Cold water taps over trough and adjacent to potters wheels
<b>Gas supply</b>	
	1 Gas heater



<b>KILN ROOM</b>		<b>SS-ALA-05</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>	KILN ROOM	
<b>Function</b>	Kiln room for Arts Learning Area	
<b>Occupancy</b>	School Staff, Students	
<b>Locality and relationship</b>	Direct Access from the Ceramics and Sculpture Studio.	
<b>Comments</b>		
<b>Floor</b>	Sealed concrete	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush perforated plasterboard or similar	
<b>Doors</b>	Inward opening, solid core timber double door. Refer to E9: Openings.	
<b>Windows</b>	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	1-2 EQ16 Pottery Kiln(s) (quantity to meet local curriculum requirements)	
	1 Drying Rack	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1 DGPO	
	1 Single Phase Outlet, 15A	
	1 Three Phase Outlet, 20A -5 pin	
<b>Lighting</b>	Refer G6: Electrical Services. Motion sensor lighting	
<b>MECHANICAL</b>		
<b>Air cooling</b>	N/A	
<b>Ventilation</b>	Kiln hood with rotary ventilator and low level air inlet grille in wall. Provide constant ventilation.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>ART SEMINAR ROOM</b>		<b>SS-ALA-06</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	ART PROJECT ROOM	
<b>Function</b>	To provide a flexible area for work on prolonged projects or use as a seminar room	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	Requires Ready Access to the art studios	
<b>Comments</b>	May be used for art projects or as a seminar room	
<b>Floor</b>	Anti-static carpet. Durable, anti-slip flooring adjacent to wet area.	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Keyed.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 Fixed bench with trough & cold water tap along rear wall	
	1 BOA01 Pin Up Board (Minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher demonstration bench, 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	3-6 TAB13 Mobile Workbenches (900H)	
	25 CHA06 Art Stools	
	1 CHA05 Drafting Stool	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
	Min 4x Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	1 Gas heater GPO	
	Teacher AV location:	
	4 GPOs	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>		
<b>NOTES:</b>	2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets offset to side of AV area:	
	1 Conduit outlet for HDMI, VGA, audio ...	
	1 Conduit outlet for USB, ...	
<b>Data points</b>		

	2	Teacher AV location at ~ 800 mm AFL
	2	Student at ~ 800 mm AFL
	2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		Require high colour accuracy lighting (colour rendering index $\geq 90$ ). To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights.
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
		Evaporative Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		Trough waste
<b>Water supply</b>		cold tap over trough
<b>Gas supply</b>		
	1	Gas heater

<b>TEACHING SPACE 1 (DRAMA 1)</b>		<b>SS-ALA-07</b>
<b>Dimensions</b>	Minimum side: 12 m	<b>Floor Area:</b> 200 m <sup>2</sup>
<b>Signage</b>	DRAMA	
<b>Function</b>	Provide the main theatre space for learning, practice and performances, contains the stage area, cyclorama and side curtains	
<b>Occupancy</b>	1-2 Teachers + 32-64 students when teaching; larger numbers of School Staff, students and public in the 2 combined spaces during a performance	
<b>Locality and relationship</b>	Direct Access to Property, Flats & Chair Store. Direct Access to Drama and Dance (Teaching Space 2) via a folding, acoustically-rated operable wall. Ready Access to Green Rooms, Bio Box and an External Learning Area. Must be located to consider public access during performances.	
<b>Comments</b>	Teaching Spaces 1 and 2 are separated by a folding wall, when opened together a 300 m <sup>2</sup> public performance space is created. The area can have all natural light blocked out.	
<b>Floor</b>	Stain resistant timber flooring suitable for drama, dance and the movement of props. Consider an easily replaced sacrificial covering in the main acting area where props often require securing.	
<b>Walls</b>	Acoustic treatment as required for optimum sound quality during practice sessions or performances. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Double doors to allow for the entry and exit of large numbers of people when used for a performance, double height double doors to prop store	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES: EQ18 Retractable seating provided in adjacent space		
<b>EQUIPMENT AND FIXTURES</b>		
NOTES: Lighting bars detailed in POWER		
1 Projector		
1 EQ05 Cyclorama and rear curtain		
2 EQ21 Side curtains		
<b>LOOSE FURNITURE</b>		
NOTES: May have CHA02 Training Chairs in addition to retractable seating		
Various Props – moved in from Property, Flats & Chair Store as required		
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
NOTES: Wall mounted GPOs must be flush		
3 Suspended lighting grids 4.5m above floor level, on electrically operated winch system		
8 GPOs ~800mm AFL		
<b>Data points</b>		
4 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)		
<b>Lighting</b>	Require high colour accuracy lighting (colour rendering index >= 90). Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse Cycle. Refer to G5: Mechanical Services	
<b>Circulation</b>		
Min 4x	Ceiling fans	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>TEACHING SPACE 2 (DRAMA &amp; DANCE)</b>		<b>SS-ALA-08</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	DRAMA & DANCE	
<b>Function</b>	Performance space for Drama, Theatre, Music or Dance.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	Direct Access from Foyer. Ready Access to other Performing Arts areas including Music Rooms and Green Rooms.	
<b>Comments</b>	Teaching Spaces 1 and 2 are separated by a folding wall, when opened together a 300 m <sup>2</sup> public performance space is created. The area can have all natural light blocked out. Includes 25 m <sup>2</sup> retractable seating recess	
<b>Floor</b>	Sprung timber floor, must be able to support retractable seating movement without affecting the floor surface	
<b>Walls</b>	High Impact. Timber skirting with ventilation holes for floor. Neutral, preferably dark colour. Acoustic treatment as required for optimum sound quality during practice sessions or performances. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Double solid core, acoustic seals. Refer to G8: Acoustic Services.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES:	Rear wall must be structurally capable of supporting retractable seating as per SOA.	
	1 EQ18 Retractable seating	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	There must be at least 1 lighting bar within this space for optimum lighting of the faces of performers. Lighting bars detailed in POWER	
<b>LOOSE FURNITURE</b>		
NOTES:	May have CHA02 Training Chairs in addition to retractable seating	
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Acoustic attenuation, isolation and reverberation. Non parallel walls or acoustic treatment. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
NOTES:	Wall mounted GPOs must be flush	
	1 Suspended lighting grids 4.5m above floor level, on electrically operated winch system	
	8 GPOs ~800mm AFL distribute around walls	
<b>Data points</b>		
	2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>		
	3 Suspended lighting grids 4.5m above floor level, on electrically operated winch system.	
	2 Side wall mounted vertical lighting bars Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Circulation</b>		
	4 Ceiling fans	

<b>PROPERTY, FLATS &amp; CHAIR STORE</b>		<b>SS-ALA-09</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 60 m <sup>2</sup>
<b>Signage</b>	PROPS STORE	
<b>Function</b>	To act as chair, property and flats store for Teaching Space 1 (Drama 1)	
<b>Occupancy</b>	Occasional	
<b>Locality and relationship</b>	Direct access from Teaching Space 1 (Drama 1). External access for delivery of large items.	
<b>Comments</b>	4m long flats need to be stored either horizontally or vertically.	
<b>Floor</b>	Sealed concrete	
<b>Walls</b>	High Impact plasterboard	
<b>Ceiling</b>	Plasterboard	
<b>Doors</b>	Double height to suit flats access. Internal sliding door or double doors, external roller shutter.	
<b>Windows</b>	No requirement	
<b>FIXED FURNITURE</b>		
NOTES: Require a secure section – link mesh enclosure with lockable gate.		
4 3600mm high vertical bars spaced 500mm apart to assist in storage of flat items		
<b>EQUIPMENT AND FIXTURES</b>		
NOTES: Provided by school		
<b>LOOSE FURNITURE</b>		
2 STO10 Metal Storage Cabinet		
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Minimise noise transfer between prop store and performance space	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
4	GPOs located on wall	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
N/A		

<b>BIO BOX</b>		<b>SS-ALA-10</b>
<b>Dimensions</b>	Min side 2.5 m	<b>Floor Area: 8 m<sup>2</sup></b>
<b>Signage</b>	BIO BOX	
<b>Function</b>	Control Room for operators to monitor and adjust lights, microphones and sound mixing equipment to deliver the best outcome in the performance space	
<b>Occupancy</b>	Teacher plus 2 – 4 students	
<b>Locality and relationship</b>	Ready Access to Teaching Spaces 1 and 2. Must overlook audience and Teaching Space 1 (performance space).	
<b>Comments</b>	Floor level nominally at least 2m above performance space.	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Carpet	
<b>Walls</b>	Durable, easily cleaned, painted. Attenuate sound between bio box and performance space. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Plasterboard	
<b>Doors</b>	Solid core, acoustic seal. Refer to G8: Acoustic Services.	
<b>Windows</b>	Operable sliding window to performance space. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
NOTES:	Require full width bench space for control equipment 720mm high x 800mm deep bench on window wall facing performance space, no cupboards below central 2400mm width of bench	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Equipment purchased by school	
<b>LOOSE FURNITURE</b>		
	4 CHA03 Task Chairs	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Acoustic Isolation. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	12 GPO at ~800mm AFL, distributed along back of bench	
<b>Data points</b>	4 Data at ~800mm AFL, distributed along back of bench	
<b>Lighting</b>	NOTES: Must be dimmable Directed lighting for vision within bio box without significant light entering the performance space	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Circulation</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	

<b>GREEN ROOM / CHANGE</b>		<b>SS-ALA-11</b>
<b>Dimensions</b>	Min side 4 m	<b>Floor Area:</b> 2x15 m <sup>2</sup> , Total 30 m <sup>2</sup>
<b>Signage</b>	GREEN ROOM (FEMALE), GREEN ROOM (MALE)	
<b>Function</b>	Make-up and changeroom for performances.	
<b>Occupancy</b>	Up to 16 persons in Green Room Area.	
<b>Locality and relationship</b>	Mostly associated with the Drama studio – one room for male & one room for female. Green Room must have Ready Access from all parts of Performing Arts.	
<b>Comments</b>	Can be an inspiring space with creative makeup mirrors and lighting	
<b>Floor</b>	Carpet. Durable, non-slip flooring in front of make-up bench.	
<b>Walls</b>	Durable, easily cleaned, painted. Attenuate sound between green room and performance space. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustic Absorption. Refer to G8: Acoustic Services	
<b>Doors</b>	Solid core, acoustic seal. Wheel chair access to AS1428.1.	
<b>Windows</b>	Natural light/ventilation. Operable - horizontal sliding, lockable. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
NOTES:	750mm high x 600mm deep make-up bench, open under, with 2x46 litre stainless steel inset troughs to end wall of Green Room. 700mm high mirror with associated make-up lighting above the make-up bench – maximise length. 250mm deep open shelf above mirror over make-up bench. 1200mm wide x 2000mm high wall mounted mirror. 2000mm high x 2400mm wide x 600mm deep open adjustable shelf unit.	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	EQ02 Blackout Curtain to door leading into Drama.	
<b>LOOSE FURNITURE</b>		
	8 CHA03 Task Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Acoustic attenuation. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: All power to be min 500mm from edge of basin 5 Double GPO above make-up bench, 1 double GPO on wall	
<b>Data points</b>	N/A	
<b>Lighting</b>	Require light source surrounding makeup mirror so that it illuminates the front and sides of the face without any glare. Daylight spectrum or natural light bulb/LED.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE</b>	N/A	
<b>SERVICES</b>		
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	2 inset basins	
<b>Water supply</b>	2 inset basins with hot and cold lever arm mixing tap	



<b>DANCE STUDIO</b>		<b>SS-ALA-12</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area: 100 m<sup>2</sup></b>
<b>Signage</b>	DANCE STUDIO	
<b>Function</b>	Performance space for Drama, Theatre, Music or Dance.	
<b>Occupancy</b>	1 Teacher plus 32 students	
<b>Locality and relationship</b>	Direct Access from Foyer as a separate teaching space. Ready Access to other areas within Performing Arts.	
<b>Comments</b>	High ceiling, sprung wooden floor, mirrors along one wall	
<b>Floor</b>	Sprung timber floor	
<b>Walls</b>	High impact. Refer to G8: Acoustic Services. One wall with mirrors and timber dance bar.	
<b>Ceiling</b>	Acoustic control. Refer to G8: Acoustic Services	
<b>Doors</b>	Double solid core, acoustic seals. Refer to G8: Acoustic Services.	
<b>Windows</b>	No requirement	
<b>FIXED FURNITURE</b>		
Along one wall	EQ22 Studio Mirrors	
Along one wall	EQ01 Ballet Barre	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Purchased by school	
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Acoustic attenuation, isolation and reverberation to complement Drama Studio. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Wall mounted GPOs must be flush 8 GPOs	
<b>Data points</b>	2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	High level (not hanging) with adequate lux levels. Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Circulation</b>	4 Ceiling fans	
<b>FIRE SERVICES</b>		
	N/A	

<b>KITCHENETTE / SERVERY / BOX OFFICE</b>		<b>SS-ALA-13</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 8 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Accommodates several functions: As a box office for selling tickets; As a servery counter for the sale of school uniforms; Serving coffee and tea during performance intermissions.	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Co-located with Direct Access to the Foyer	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Durable, stain and slip resistant.	
<b>Walls</b>	Durable, impact resistant, easily cleaned	
<b>Ceiling</b>	Acoustic control. Refer to G8: Acoustic Services	
<b>Doors</b>	Opening shutter over servery counter. Keyed. Refer to E9: Openings.	
<b>Windows</b>	If applicable - Operable - horizontal sliding, lockable (all administrative areas to be keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
Fit for Purpose	Standing height bench with opening shutter over	
Fit for Purpose	Storage cupboards – cups, cutlery etc.	
<b>EQUIPMENT AND FIXTURES</b>		
	1	Sink
	1	APP06 Under Bench Fridge
	1	APP12 Boiling Water Unit
<b>LOOSE FURNITURE</b>		
NOTES:	To be purchased in consultation with school CHA05 Drafting Stools	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	Min 2	Above bench GPO
	1	Fridge GPO
	1	Hot water unit GPO
<b>Data points</b>		
	2	Data points above bench
	1	Telephone point above bench
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
<b>Fire-fighting</b>	Portable Fire Extinguishers and Fire Blankets	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	1	Sink waste
<b>Water supply</b>		
	1	Sink - hot and cold water

<b>MUSIC CLASSROOM</b>		<b>SS-ALA-14</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 2x75 m <sup>2</sup>
<b>Signage</b>	MUSIC	
<b>Function</b>	An area for learning music and keyboard. Two classrooms: one is set up as a music IT lab, one is set up for keyboards	
<b>Occupancy</b>	1 Teacher plus 32 students	
<b>Locality and relationship</b>	Ready Access to other performing arts areas	
<b>Comments</b>	Acoustic isolation an advantage. Perimeter benching similar to IT Laboratories and Media Classroom	
<b>Floor</b>	Carpet	
<b>Walls</b>	High impact plasterboard – non parallel for acoustic attenuation. Refer to G8: Acoustic Services	
<b>Ceiling</b>	Perforated plasterboard	
<b>Doors</b>	Solid core. Wheel chair access to AS1428.1. Able to fit an upright piano.	
<b>Windows</b>	Natural light/ventilation. Operable - horizontal sliding, lockable. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 BOA02 Whiteboard (nominally 1.8m long, matt finish)	
	1 BOA01 Pin Up board (nominally 1.8m long).	
<b>Fit for Purpose</b>	Bench open under & lockable cupboards.	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements.	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
	4 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Acoustic attenuation. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	10 Double GPOs for keyboards installed in wall ducts. Front wall: 4 GPOs above AV location (typically 2200, 2400mm AFL) 1 GPO for cleaner (typically 500mm AFL) 1 Gas heater GPO Teacher AV location: 4 GPOs 4 GPOs at ~800 mm AFL adjacent to data 4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit Outlets high on front wall: 1 Conduit outlet for HDMI, VGA, audio, ... 1 Conduit outlet for USB, ... Outlets on front wall offset to side of AV area: 1 Conduit outlet for HDMI, VGA, audio ... 1 Conduit outlet for USB, ...	
<b>Data points</b>	2 Dual voice/data outlets. Wireless data connection IWB outlets & conduits only (IWB supplied by others)	

	2	Teacher AV location at ~ 800 mm AFL
	Up to 32	Student at ~ 800 mm AFL distributed at 800mm intervals on wall duct mounted above perimeter benching
	2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights.
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Reverse Cycle. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>		
	1	Gas heater

<b>MUSIC ENSEMBLE ROOM</b>		<b>SS-ALA-15</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 40 m <sup>2</sup>
<b>Signage</b>	MUSIC ENSEMBLE ROOM	
<b>Function</b>	Allow a wide variety of musical instruments to be played in harmony	
<b>Occupancy</b>	1 x Teacher, up to 16 students	
<b>Locality and relationship</b>	Ready Access to Music Classrooms, Music Practice Rooms and the Music Store	
<b>Comments</b>	Significant acoustic treatments required. Refer to G8: Acoustic Services.	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use. Refer to G8: Acoustic Services Maximise display board area.	
<b>Ceiling</b>	Significant acoustic treatment required. Refer to G8: Acoustic Services	
<b>Doors</b>	Double width, solid core. Acoustic seals. Refer to G8: Acoustic Services. Double glazed viewing window in one door. Able to fit an upright piano.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	NOTES: No fixed furniture for maximum flexibility	
<b>EQUIPMENT AND FIXTURES</b>		
	1 BOA08 Music Whiteboard (Minimum 1800mm total width)	
	1 BOA01 Pin Up Board (Minimum 1800mm total width)	
<b>LOOSE FURNITURE</b>		
	16 CHA01 Classroom Chairs	
	16 MIS16 Music Stands	
	1 CHA04 Office Chair	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
	2 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 GPOs at ~800 mm AFL adjacent to data	
	16 Additional GPOs at ~800 mm AFL in suitable locations	
<b>Data points</b>	2 Teacher location at ~ 800 mm AFL	
	2 Student at ~ 800 mm AFL	
	2 Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	If a single storey building then can consider dimmable tubular skylights.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>MUSIC PRACTICE ROOM</b>		<b>SS-ALA-16</b>
<b>Dimensions</b>	Min side 3 m	<b>Floor Area:</b> 3 x 10 m <sup>2</sup> rooms, total area = 30 m <sup>2</sup>
<b>Signage</b>	PRACTICE #	
<b>Function</b>	A room where small group music theory and practice and drama can be carried out – vocal, instrumental, electronic.	
<b>Occupancy</b>	Up to 3 persons	
<b>Locality and relationship</b>	Ready Access to Music Classrooms and performance space.	
<b>Comments</b>	Significant acoustic treatments required. Refer to G8: Acoustic Services.	
<b>Floor</b>	Carpet	
<b>Walls</b>	High impact plasterboard.	
<b>Ceiling</b>	Significant acoustic treatment required. Refer to G8: Acoustic Services.	
<b>Doors</b>	Solid core. Acoustic seals. Refer to G8: Acoustic Services. Double glazed viewing window in door. Able to fit an upright piano.	
<b>Windows</b>	Natural light/ventilation. Operable - horizontal sliding, lockable (all classrooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	NOTES: No fixed furniture for maximum flexibility	
<b>EQUIPMENT AND FIXTURES</b>		
	1 BOA08 Music Whiteboard (Minimum 1200mm total width of whiteboard)	
	1 BOA01 Pin Up Board (Minimum 1200mm total width)	
<b>LOOSE FURNITURE</b>		
	3 CHA01 Classroom Chairs	
	3 MIS16 Music stands	
	1 CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
	1 Ceiling fan	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Acoustic attenuation, sound reverberation and isolation. Non parallel walls. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	12 GPOs at 800mm AFL, distributed around walls	
<b>Data points</b>	2 Data at ~ 800 mm AFL	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>MUSIC STORE</b>		<b>SS-ALA-17</b>
<b>Dimensions</b>	Min side 4 m	<b>Floor Area: 40 m<sup>2</sup></b>
<b>Signage</b>	MUSIC STORE	
<b>Function</b>	Secure store for musical instruments.	
<b>Occupancy</b>	Occasional	
<b>Locality and relationship</b>	Ready Access to Music Classrooms, Music Practice Rooms and performance space.	
<b>Comments</b>	Considerable flexibility is required to suit a wide range of instruments	
<b>Floor</b>	Sealed concrete	
<b>Walls</b>	High impact plasterboard.	
<b>Ceiling</b>	Plasterboard. Security mesh above ceiling.	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings. Able to fit an upright piano.	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: The type of storage will need to be customized to the instruments at a particular school	
Fit for Purpose	Secure cupboards of varying height, depth and width with adjustable shelving to suit a variety of musical instruments.	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Instruments purchased by school or students	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>MEDIA CLASSROOM</b>		<b>SS-ALA-18</b>
<b>Dimensions</b>	Min side 8 m	<b>Floor Area:</b> 75 m <sup>2</sup>
<b>Signage</b>	MEDIA CLASSROOM	
<b>Function</b>	Learning space for the use of multimedia computers, cameras, microphones and other equipment	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	Ready Access to the Film / TV / Audio Studios, preferably located between them.	
<b>Comments</b>	Fixed perimeter benching with loose tables in the centre of the room for group work	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use. Refer to G8: Acoustic Services Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike). Refer to E9: Openings. All operable windows to be fitted	
<b>FIXED FURNITURE</b>		
NOTES:	Front wall to be free of benching Perimeter benching on three sides of the room, 800mm deep, 720mm AFL	
	1 BOA01 Pin Up Board (Minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher demonstration bench, 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest away from the main entry door.	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	6 TAB17 Classroom Desk (Double)	
	32 CHA01 Classroom Chairs	
	1 CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows.	
Min 4x	Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	1 Gas heater GPO	
	Teacher AV location:	
	4 GPOs	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>		
<b>Notes:</b>	2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets offset to side of AV area:	
	1 Conduit outlet for HDMI, VGA, audio ...	
	1 Conduit outlet for USB, ...	
<b>Data points</b>		



	2	Teacher AV location at ~ 800 mm AFL
	Up to 32	Student at ~ 800 mm AFL distributed at 800mm intervals on wall duct mounted above perimeter benching
	2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		
		To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights.
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		
		Reverse cycle. Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		Portable Fire Extinguishers
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>		
	1	Gas heater

<b>FILM, TV AND AUDIO STUDIOS 1 &amp; 2</b>		<b>SS-ALA-19</b>
<b>Dimensions</b>	Minimum side 2 m	<b>Floor Area:</b> 30 m <sup>2</sup> each
<b>Signage</b>	FILM/TV/AUDIO STUDIO	
<b>Function</b>	Small acoustically isolated studios for recording interviews and sounds	
<b>Occupancy</b>	1-3 persons	
<b>Locality and relationship</b>	Ready Access to Media Classroom, away from loud pedestrian or street noise. Single story preferred for acoustic isolation.	
<b>Comments</b>	Sound quality is critical within this space	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Sound absorbent material recommended for wall surface. Consideration to sound attenuation between neighbouring areas.	
<b>Ceiling</b>	Plaster, may require sound absorbent material	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None except double glazed window to audio and visual control room	
<b>FIXED FURNITURE</b>		
	NOTES: No fixed furniture to allow flexibility.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 GPOs at ~ 800mm AFL mounted on perimeter walls	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	A Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>VISUAL &amp; AUDIO CONTROL ROOM</b>		<b>SS-ALA-20</b>
<b>Dimensions</b>	Minimum side 2 m	<b>Floor Area:</b> 15 m <sup>2</sup>
<b>Signage</b>	VISUAL & AUDIO CONTROL ROOM	
<b>Function</b>	Control point for operators to monitor and adjust cameras, microphones and recording equipment within the TV studio.	
<b>Occupancy</b>	2-4 persons	
<b>Locality and relationship</b>	Facing into Film / TV / Audio studio. Ready Access to Media classroom.	
<b>Comments</b>	Small acoustically isolated room with clear vision into Film / TV / Audio Studio	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use.	
<b>Ceiling</b>	Plaster, may require sound absorbent material	
<b>Doors</b>	Solid core with vision window. Lockable. Refer to E9: Openings.	
<b>Windows</b>	Large double glazed window into TV studio, must minimise sound transfer	
<b>FIXED FURNITURE</b>		
	NOTES: Bench must be directly below window	
	1 Bench 800 mm deep, 720 mm AFL	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	16 GPOs distributed at regular intervals along bench, ~800mm AFL, must be above and at rear of bench	
<b>Data</b>	4 Data at ~800mm AFL, distributed along back of bench	
<b>Lighting</b>	Dimmable lighting required. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>DIGITAL MEDIA LABORATORY</b>		<b>SS-ALA-21</b>
<b>Dimensions</b>	Min side 8m	<b>Floor Area:</b> 80 m <sup>2</sup>
<b>Signage</b>	COMPUTING #	
<b>Function</b>	Every student has use of their own desktop or computer.	
<b>Occupancy</b>	1 teacher plus 25 students	
<b>Locality and relationship</b>		
<b>Comments</b>		
<b>Floor</b>		
	Anti-static carpet	
<b>Walls</b>		
	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>		
	Acoustically treated. Refer to G8: Acoustics	
<b>Doors</b>		
	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>		
	Openable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
	Avoid direct glare on any computer screens.	
<b>Partitions</b>		
	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Benching to maximise the number of positions for computers. Fixed desk layout may be perimeter with central island, "W" shaped or clustered so long as can fit minimum of 25 students, each with access to a computer. 1 section of bench must be height adjustable (minimum width 1200mm).	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door.	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements.	
<b>LOOSE FURNITURE</b>		
	1 CHA04 Office Chair	
	25 CHA01 Classroom Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
	Natural ventilation – openable windows	
	4 Ceiling fans	
<b>Lighting</b>		
	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>		
	Refer to G8: Acoustics	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	1 GPO(s) for heater(s)	
	1 Cleaner GPO on front wall	
	Teacher AV location:	
	4 GPOs	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>		
	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets on front wall offset to side of AV area:	

	1	Conduit outlet for HDMI, VGA, audio ...
	1	Conduit outlet for USB, ...
<b>Data points</b>		
	2	Teacher AV location at ~ 800 mm AFL
	25	Student at ~ 800 mm AFL
	2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		
		Refer 6.10 Sub-consultant Brief – Electrical and Communications. To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights.
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services Security Level: High
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Reverse cycle (> 25 computers). Refer to G5: Mechanical Services
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>		Portable Fire Extinguishers

<b>UNIFORM STORE</b>		<b>SS-ALA-22</b>
<b>Dimensions</b>		<b>Floor Area: 20 m<sup>2</sup></b>
<b>Signage</b>	UNIFORM STORE	
<b>Function</b>	Storage of School Uniforms	
<b>Occupancy</b>		
<b>Locality + Relationship</b>		
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving	
<b>Floor</b>	Durable, non slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>	Inward opening, solid core timber door.	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	NOTES	Maximize amount of shelving on all available perimeter walls.
	Fit for Purpose	SHV07 Storeroom Shelving
		DES03 Office Workstation as required
	Fit for Purpose	CHA04 Office Chair as required
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	N/A	
<b>Extraction</b>	Exhaust grille	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	1	Double GPO
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>FOYER</b>		<b>SS-ALA-23</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 40 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>	Students and Visitors – public	
<b>Locality</b>	+ Direct Access to Gallery Space and Teaching Space 2.	
<b>Relationship</b>	Must be designed in such a way to minimise unauthorised public access to other areas of the Arts Learning Area.	
<b>Comments</b>	May be combined with the Gallery space.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Lockable.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	4	CHA13 Waiting Area Chairs
	1	STO02 Pamphlet Stand
	2	TAB09 Coffee Table
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4	DGPOs
	1	GPO for future provision of wall mounted electronic school information display
<b>Data points</b>	1	Data point for future provision of wall mounted electronic school information display
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>FIRE SERVICES</b>		
	N/A	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse Cycle Air Conditioning. Refer to G5: Mechanical Services	

<b>GALLERY</b>		<b>SS-ALA-24</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 40 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>	Students and Visitors – public	
<b>Locality</b>	+ Direct Access to Foyer.	
<b>Relationship</b>	Must be designed in such a way to minimise unauthorised public access to other areas of the Arts Learning Area.	
<b>Comments</b>	May be combined with the Foyer space.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted White. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Lockable.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	Maximise hanging rails and provision for the display of student artwork.	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	CHA11 Informal Seating	
Fit for Purpose	TAB01 Informal Tables	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	4	DGPOs
<b>Data points</b>		
<b>Lighting</b>	Adjustable display lighting, coordinated with hanging rails and artwork display Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse Cycle Air Conditioning. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	



<b>PRINT AREA / ALCOVE</b>		<b>SS-ALA-25</b>
<b>Dimensions</b>		<b>Floor Area: 12 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>	Temporary occupancy	
<b>Locality and relationship</b>	Direct Access from within the Printmaking Studio	
<b>Comments</b>		
<b>Floor</b>	Non-slip vinyl	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	May be open to printmaking studio	
<b>Windows</b>	Same as printmaking studio	
<b>FIXED FURNITURE</b>		
	750D Bench to one side suitable for A2 paper storage, and benchtop printing presses BOA01 Pin Up Board (to one wall)	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Freestanding Printing Press 2 Bench top Printing Presses.	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 GPO located above the fixed bench 2 GPOs at approximately 1000 AFL adjacent to date	
<b>Data points</b>	1 Data point adjacent to GPO	
<b>Lighting</b>	Require high colour accuracy lighting (colour rendering index >= 90) To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. If a single storey building then can consider dimmable tubular skylights.	
<b>SECURITY &amp; DETECTION – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>Intruder</b>		
<b>Smoke</b>		
<b>MECHANICAL – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>Extraction</b>		
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>Gas supply</b>		

<b>SILKSCREEN WASHDOWN</b>		<b>SS-ALA-26</b>
<b>Dimensions</b>	Min side 8	<b>Floor Area: 8 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>	Temporary occupancy	
<b>Locality and relationship</b>	Direct Access from within the Printmaking Studio	
<b>Comments</b>		

<b>DANCE STORE / CHANGE</b>		<b>SS-ALA-27</b>
<b>Dimensions</b>		<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>	Storage and Change area	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Direct Access from within the Dance Studio	
<b>Comments</b>	Provide separate male and female Change Rooms	
<b>Floor</b>	Durable, non-slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustic control. Refer to G8: Acoustic Services	
<b>Doors</b>	Internal Doors, and privacy curtains to change areas if required	
<b>Windows</b>	No requirement	
<b>FIXED FURNITURE</b>		
To Change Rooms	750mm high x 600mm deep make-up bench, open under, with 2x46 litre stainless steel inset troughs to end wall 700mm high mirror with associated make-up lighting above the make-up bench – maximise length. 1200mm wide x 2000mm high wall mounted mirror. Overhead shelving and hanging rails to suit layout	
<b>EQUIPMENT AND FIXTURES</b>		
	3 Mobile Costume Racks	
<b>LOOSE FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving (maximise)	
To Dance Store		
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Acoustic attenuation, isolation and reverberation to complement Dance Studio. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
NOTES:	Wall mounted GPOs must be flush	
	8 GPOs	
<b>Data points</b>		
	1 Wireless	
<b>Lighting</b>		
	High level (not hanging) with adequate lux levels. Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>		
	Reverse Cycle Air Conditioning. Refer to G5: Mechanical Services	
<b>Circulation</b>		
<b>FIRE SERVICES</b>		
Fire-fighting equipment	Portable Fire Extinguishers	

<b>DRAMA STORE</b>		<b>SS-ALA-28</b>
<b>Dimensions</b>		<b>Floor Area: 20 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality and relationship</b>	Direct Access from Teaching Space 1 (Drama)	
<b>Comments</b>		
<b>Floor</b>		
	Durable, non-slip flooring	
<b>Walls</b>		
	Durable, impact resistant, easily cleaned, painted. Attenuate sound between store and performance space. Refer to G8: Acoustic Services.	
<b>Ceiling</b>		
	Acoustic Absorption. Refer to G8: Acoustic Services	
<b>Doors</b>		
	Solid core, acoustic seal. Wheel chair access to AS1428.1.	
<b>Windows</b>		
	No requirement	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>Fit for Purpose</b>	SHV07 Storeroom Shelving (maximise to perimeter) Provide specialty shelving to suit layout as required	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>		
<b>Lighting</b>	Artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Acoustic attenuation. Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Data points</b>		
<b>Lighting</b>	High level (not hanging) with adequate lux levels. Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>		
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
<b>Water supply</b>		

<b>PRINTMAKING STORE</b>		<b>SS-ALA-29</b>
<b>Dimensions</b>		<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>	Temporary occupancy by students and School Staff to collect and store items, equipment and artwork	
<b>Locality and relationship</b>	Direct Access from within the Printmaking Studio	
<b>Comments</b>		
<b>Floor</b>	Non-slip vinyl	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas and consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Double door, roller shutter or open access	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	Maximise shelving to all perimeter walls. Typically 600D x 2100H. Height adjustable shelves, or spaced appropriately to be Fit for Purpose	
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>Environmental</b>		
<b>Ventilation</b>		
<b>Lighting</b>	Artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Data points</b>		
<b>Lighting</b>		
<b>SECURITY &amp; DETECTION – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>Intruder</b>		
<b>Smoke</b>		
<b>MECHANICAL – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>Air cooling</b>		
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS – SAME AS PRINTMAKING STUDIO SS-ALA-03</b>		
<b>Gas supply</b>		

### **13.7 Health and Physical Education Learning Area**

SS-HPE-01	Sports Hall
SS-HPE-02	Sports Store
SS-HPE-03	Fitness Centre
SS-HPE-04	Health and Physical Education Classrooms
SS-HPE-05	Outdoor Education Store
SS-HPE-06	Female Student Changeroom + WC
SS-HPE-07	Male Student Changeroom + WC
SS-HPE-08	Female Student Changeroom
SS-HPE-09	Male Student Changeroom
SS-HPE-10	Secure Lockers and Store

<b>SPORTS HALL</b>		<b>SS-HPE-01</b>
<b>Dimensions</b>	38m x 23m	<b>Floor Area:</b> 874 m <sup>2</sup>
<b>Signage</b>	HALL	
<b>Function</b>	Provide a safe indoor space for a range of sports. May be used for aerobics, badminton, basketball, dance, fitness, gymnastics, netball, volleyball, etc. After hours use may also occur.	
<b>Occupancy</b>	Typically 50-200 School Staff and students when used for fitness or sports, up to 1000 School Staff and students for school assemblies.	
<b>Locality and relationship</b>	Ready Access to Changerooms, Sports Hall Store, Sports Oval and Hard Courts. Significant attention is required for the safety of participants due to the high levels of physical activity.	
<b>Comments</b>	A large span, high volume structure that needs to be economical and energy efficient – the roof area is suitable for a large array of solar panels.	
<b>Floor</b>	A multipurpose surface is required –wood, synthetic or a combination. The load bearing ability must be shown on a placard. Refer to Standards Australia documents: Handbook Sporting Facilities Manual Part 2: Sporting Surfaces SAA HB49.2 1993 and Synthetic Sporting Surfaces Part 1 General Principles AS 3541.1 1988.The floor surface must resist scratching or indentation by furniture, and be easy to clean and maintain. The positions of fixed and portable sports equipment and their floor sockets should be integrated into the design (flush finished fixture sockets with screw in caps). The surface must have multiple court markings.	
<b>Walls</b>	Durable, impact resistant, easily cleaned.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Multiple double width doors, emergency egress doors open outwards. Refer to E9: Openings.	
<b>Windows</b>	High level only. Operable. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>FIXED FURNITURE</b>		
	NOTES: Due to multiple sports there are usually a variety of floor fittings with removable sports equipment e.g. volley ball nets, badminton nets, netball goals. Basketball backboards and hoops for each court	
	1 EQ06 Digital scoreboard	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Nets, seating and sports equipment all needs to be removable to allow for clear playing surfaces appropriate to each sport	
<b>LOOSE FURNITURE</b>		
	200 CHA01 Classroom Chairs	
	10 CHA12 Freestanding Bench Seating (3600mm long)	
<b>ENVIRONMENTAL</b>		
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	NOTES: All GPOs must be recessed to avoid any impact injuries	
	4 GPOs	
	48 GPOs at ~800 mm AFL adjacent to data GPOs at ~300 mm AFL distributed in suitable locations around hall	
<b>Data points</b>		
	2 Front or side wall at ~ 800 mm AFL	
	2 Wireless - minimum height 3000mm AFL on side wall	
<b>Lighting</b>	Good illumination levels are required for accurate perception in sports. Lights must be protected from damage by balls.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	G5: Mechanical Services	

<b>Circulation</b>	Min 1x Large diameter, HVLS ceiling fan
<b>FIRE SERVICES</b>	
	N/A



<b>SPORTS HALL STORE</b>		<b>SS-HPE-02</b>
<b>Dimensions</b>	Min Ceiling 2.4	<b>Floor Area:</b> 45 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>	Storage of external sports equipment	
<b>Occupancy</b>	School Staff, Students	
<b>Locality and relationship</b>	Direct Access to Sports Hall.	
<b>Comments</b>	Additional double-hinged doors to external wall may be considered depending upon location and site planning.	
<b>Floor</b>	Sealed concrete	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	None	
<b>Doors</b>	Inward opening, solid core timber door Roller door, reinforce bottom and sides for security. Key locked Refer to E9: Openings.	
<b>Windows</b>	None.	
<b>FIXED FURNITURE</b>		
Fit for Purpose	SHV06 Sports Store Shelving	
Fit for Purpose	STO21 Mat Rack	
<b>Lighting</b>	Natural and artificial lighting. If single storey, consider dimmable tubular skylights. Motion sensor lighting.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 DGPO for compressors etc.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	

<b>FITNESS CENTRE</b>		<b>SS-HPE-03</b>
<b>Dimensions</b>	Minimum side 6 m	<b>Floor Area:</b> 90 m <sup>2</sup>
<b>Signage</b>	FITNESS CENTRE	
<b>Function</b>	Provide a range of exercise opportunities. May involve cardiovascular equipment, free weights, pin loaded machines, floor mats, ropes, balls, steps, etc.	
<b>Occupancy</b>	1 Teacher plus up to 32 students	
<b>Locality and relationship</b>	Ready Access to Changerooms, Sports Hall, Sports Oval and Hard Courts.	
<b>Comments</b>	Layout of equipment must allow for easy transition of students between exercise stations. Pin selectable equipment allows fast changeover times.	
<b>Floor</b>	Anti-static carpet, tough and hard wearing (due to heavy gym equipment and occasional impact by weights)	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Attenuate sound. Refer to G8: Acoustic Services	
<b>Doors</b>	Solid core. Refer to E9: Openings.	
<b>Windows</b>	Operable. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES: Gym equipment is usually purchased in consultation with schools		
<b>LOOSE FURNITURE</b>		
Fit for Purpose	STO19 Bag racks	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Require GPOs at 1200mm intervals on 2 walls, minimum 300mm AFL	
<b>Lighting</b>	Natural and artificial lighting. If single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services Security level: MEDIUM	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Reverse cycle. G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>HEALTH AND PHYSICAL EDUCATION CLASSROOMS</b>		<b>SS-HPE-04</b>
<b>Dimensions</b>	Min side 7 m	<b>Floor Area:</b> 65 m <sup>2</sup>
<b>Signage</b>	CLASSROOM #	
<b>Function</b>	Used for the teaching of health and physical education subjects.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality and relationship</b>	To be located in pairs with operable wall between.	
<b>Comments</b>	Health and Physical Education Classrooms must be flexible in their design to enable a variety of learning activities.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>FIXED FURNITURE</b>		
	1 BOA01 Pin Up Board (Minimum 1800mm total width)	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door	
	1 AV device, type and model is to be selected by school to meet local curriculum requirements	
<b>LOOSE FURNITURE</b>		
	30 TAB20 Classroom Desks (Single)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	32 CHA01 Classroom Chairs	
	1 DES04 Teacher's Desk	
	1 CHA04 Office Chair	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	Min 4x Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Front wall:	
	4 GPOs above AV location (typically 2200, 2400mm AFL)	
	1 GPO for cleaner (typically 500mm AFL)	
	1 Gas heater GPO	
	1 Cleaner GPO on front wall	
	Teacher AV location:	
	4 GPOs	
	4 GPOs at ~800 mm AFL adjacent to data	
	4 Additional GPOs at ~800 mm AFL in suitable locations	
<b>AV conduits</b>	NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit	
	Outlets high on front wall:	
	1 Conduit outlet for HDMI, VGA, audio, ...	
	1 Conduit outlet for USB, ...	
	Outlets on front wall offset to side of AV area:	
	1 Conduit outlet for HDMI, VGA, audio ...	

	1	Conduit outlet for USB, ...
<b>Data points</b>		
	2	Teacher AV location at ~ 800 mm AFL
	2	Student at ~ 800 mm AFL
	2	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible, otherwise on side wall - data outlet to be visible from room (not inside ceiling)
<b>Lighting</b>		To assist with AV provide separate switch to reduce lighting at the front of the room. Avoid glare off teaching surfaces. Install light sensors to perimeter lights. Refer G6: Electrical Services
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Evaporative. G5: Mechanical Services
<b>FIRE SERVICES</b>		
		N/A
<b>HYDRAULIC &amp; GAS</b>		
<b>Gas supply</b>		
		NOTES: ON/OFF positions of gas taps should be easily checked by teacher.
	1	Gas heater

<b>OUTDOOR EDUCATION STORE</b>		<b>SS-HPE-05</b>
<b>Dimensions</b>	Min side 6 m	<b>Floor Area:</b> 60 m <sup>2</sup>
<b>Signage</b>	OUTDOOR STORE	
<b>Function</b>	Store canoes, life jackets, paddles, wetsuits, packs, bikes, surfboards, tents, camping and other outdoor items used in the school curriculum	
<b>Occupancy</b>	Access by School Staff and students to store, collect and return outdoor equipment	
<b>Locality and relationship</b>	Ready Access to Sports Oval, Hard Courts and external road for vehicles	
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving, need min 4 m of stainless/galvanized/aluminium free draining shelving (for drying wet/salty items)	
<b>Floor</b>	Non slip concrete	
<b>Walls</b>	Durable, impact resistant	
<b>Ceiling</b>	Insulated, skylights required	
<b>Doors</b>	1 x solid core door, 1 x roller shutter min width 3m, min height 3.6 m (sufficient height and width for a loaded canoe trailer) Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
<b>NOTES:</b>	Wide variety of wet and dry items are stored	
<b>Fit for Purpose</b>	SHV06 Sports Store Shelving include: - storage shelving including 50% adjustable (camping equipment, paddles, etc.) - drying racks/hooks - min 4 m of stainless/galvanized/aluminium free draining shelving (for drying wet items, hang lifejackets, etc.) - lockable cabinet (GPS, etc.) - wash trough (min 2m, for rinsing salt water from gear) - have a maximum height of 1800mm.	
<b>LOOSE FURNITURE</b>		
	1 STO10 Metal Storage Cabinet	
	1 APP01 Washing machine	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 x GPOs (away from wet areas or drying racks)	
<b>Lighting</b>	Natural and artificial lighting Skylights required. Switch and sensor activated. Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Security alarm required. G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Mechanical extraction to laundry area	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC</b>		
<b>Water</b>	1 x hot & cold water mixer tap over trough 1 x hot & 1 x cold water taps with screw fittings for washing machine 1 x wash down tap + hose (cold only) 1 x trough waste	
<b>Waste</b>	1 x washing machine waste	

<b>FEMALE STAFF CHANGEROOM AND WC</b>		<b>SS-HPE-06</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 10 m <sup>2</sup>
<b>Signage</b>	FEMALE STAFF CHANGEROOM	
<b>Function</b>	Female changeroom, shower area and WC	
<b>Occupancy</b>	1 School Staff member	
<b>Locality and relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Durable, non-slip, moisture-resistant i.e. tiles	
<b>Walls</b>	Durable, moisture-resistant i.e. Tiles	
<b>Ceiling</b>	Moisture Resistant Plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
	1 Cupboard (min 1500mm)	
	1 Bench (min 1500mm)	
	1 Mirror	
<b>EQUIPMENT AND FIXTURES</b>		
	Change Area	
	1 Hand basin	
	1 Electric Hand Dryer	
	1 Waste Paper Bin	
	1 Liquid Soap Dispenser	
	2 Hooks	
	WC Area	
	1 Toilet	
	1 Toilet Roll Holder	
	Shower Area	
	1 Full height partition to shower cubicle with lockable door	
	1 Shower	
	2 Hooks	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	G8: Acoustic Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	1 Shower waste	
	1 Floor waste	
	1 Toilet waste	
<b>Water supply</b>		
<b>NOTES:</b>	Tapware to be installed with locking plates or similar to prevent rotation.	
	1 Hot/Cold mixer tap to hand basin	
	1 Water supply to toilet	

<b>MALE STAFF CHANGEROOM AND WC</b>		<b>SS-HPE-07</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 10 m <sup>2</sup>
<b>Signage</b>	MALE STAFF CHANGEROOM	
<b>Function</b>	Male changeroom, shower area and WC	
<b>Occupancy</b>	1 School Staff member	
<b>Locality and relationship</b>		
<b>Comments</b>		
<b>Floor</b>		
	Durable, non-slip, moisture-resistant i.e. tiles	
<b>Walls</b>		
	Durable, moisture-resistant i.e. Tiles	
<b>Ceiling</b>		
	Moisture Resistant Plasterboard	
<b>Doors</b>		
	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>		
	None	
<b>Partitions</b>		
	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
	1 Cupboard (min 1500mm)	
	1 Bench (min 1500mm)	
	1 Mirror	
<b>EQUIPMENT AND FIXTURES</b>		
	Change Area	
	1 Hand basin	
	1 Electric Hand Dryer	
	1 Waste Paper Bin	
	1 Liquid Soap Dispenser	
	2 Hooks	
	WC Area	
	1 Toilet	
	1 Toilet Roll Holder	
	Shower Area	
	1 Full height partition to shower cubicle with lockable door	
	1 Shower	
	2 Hooks	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	G8: Acoustic Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Extraction fan required	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	1 Shower waste	
	1 Floor waste	
	1 Toilet waste	
<b>Water supply</b>		
NOTES:	Tapware to be installed with locking plates or similar to prevent rotation.	
	1 Hot/Cold mixer tap to hand basin	
	1 Water supply to toilet	

<b>FEMALE STUDENT CHANGEROOM</b>		<b>SS-HPE-08</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	FEMALE CHANGEROOM	
<b>Function</b>	Female changerooms with showers	
<b>Occupancy</b>		
<b>Locality and relationship</b>	The Student Changerooms must have Direct Access to the Sports Hall and Female Student Toilets.	
<b>Comments</b>	Each changeroom to provide a change area and a shower area with 10 shower cubicles.	
<b>Floor</b>	Durable, non-slip, moisture-resistant i.e. tiles	
<b>Walls</b>	Durable, moisture-resistant i.e. Tiles	
<b>Ceiling</b>	Moisture resistant plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
	Change Area	
	- Perimeter seating benches and island seating bench to suit layout	
	- Hooks to suit layout	
	Shower Area	
	1 Bench	
	20 Hooks (2 per shower cubicle)	
<b>EQUIPMENT AND FIXTURES</b>		
	Shower Area	
	10 Showers (1 per shower cubicle)	
	Full height partition to shower cubicles with lockable door	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Lighting</b>	Refer G6: Electrical Services.	
<b>Equipment</b>	NOTES: Provide appropriate electrical connections to all electrical equipment listed in other sections of this room information sheet	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>AC</b>		
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	Shower Area	
	10 Shower floor waste (1 per shower cubicle)	
	Change Area	
	1 Floor waste	
<b>Water supply</b>		
	Tempered watered to be provided to student changerooms	
	Change Area	
	- Hot/Cold water supply to shower (1 per change cubicle)	



<b>MALE STUDENT CHANGE ROOM</b>		<b>SS-HPE-09</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 100 m <sup>2</sup>
<b>Signage</b>	MALE CHANGEROOM	
<b>Function</b>	Male change rooms with showers	
<b>Occupancy</b>		
<b>Locality and relationship</b>	The Student Change Rooms must have Direct Access to the Sports Hall and Male Student Toilets.	
<b>Comments</b>	Each changeroom to provide a change area and a shower area with 10 shower cubicles.	
<b>Floor</b>	Durable, non-slip, moisture-resistant i.e. tiles	
<b>Walls</b>	Durable, moisture-resistant i.e. Tiles	
<b>Ceiling</b>	Moisture resistant plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
	Change Area	
Fit for Purpose	Perimeter seating benches and island seating bench to suit layout	
Fit for Purpose	Hooks to suit layout	
	Shower Area	
1	Bench	
20	Hooks (2 per shower cubicle)	
<b>EQUIPMENT AND FIXTURES</b>		
	Shower Area	
10	Showers (1 per shower cubicle)	
	Full height partition to shower cubicles with lockable door	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Lighting</b>	Refer G6: Electrical Services.	
<b>Equipment</b>	NOTES: Provide appropriate electrical connections to all electrical equipment listed in other sections of this room information sheet	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>Extraction</b>	Extraction fan required	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	Shower Area	
10	Shower floor waste (1 per shower cubicle)	
	Change Area	
1	Floor waste	
<b>Water supply</b>	Tempered water to be provided to student change rooms	
20	Hot/Cold water supply to shower (1 per change cubicle)	

<b>SECURE AREA</b>		<b>SS-HPE-10</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	SECURE AREA	
<b>Function</b>	Storage of student valuables during physical education lessons	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Ready Access to Change Rooms	
<b>Comments</b>	Student valuables are collected by physical education staff and stored as a class group (male and female) for the duration of a PE lesson.	
<b>Floor</b>		
	Durable, non-slip flooring	
<b>Walls</b>		
	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>		
	Flush plasterboard	
<b>Doors</b>		
	If a room, door should be solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>		
	None	
<b>Partitions</b>		
	Durable, non-slip flooring	
<b>FIXED FURNITURE</b>		
	- Lockable Storage Lockers to suit layout or other suitable storage solution	
<b>EQUIPMENT AND FIXTURES</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Lighting</b>	Refer G6: Electrical Services.	
<b>Equipment</b>		
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air conditioning</b>		
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		

### **13.8 Cafeteria**

SS-CAF-01	Cleaner's Bulk Store
SS-CAF-02	Dry Good Store / Appliance and Utensils Store
SS-CAF-03	Preparation / Sales Area
SS-CAF-04	Cool Room
SS-CAF-05	Enclosed Eating Area
SS-CAF-06	Foyer Queuing Area
SS-CAF-07	Freezer Room

<b>CLEANER'S BULK STORE</b>		<b>SS-CAF-01</b>
<b>Dimensions</b>	Min side 3 m	<b>Floor Area: 10 m<sup>2</sup></b>
<b>Signage</b>	CLEANER	
<b>Function</b>	Provide storage space for all cleaning equipment	
<b>Occupancy</b>	1 person - The Cleaner's Bulk Store should only be accessed by cleaning staff.	
<b>Locality and relationship</b>	External access required. Must not be an access way to toilet ducts, hot water systems, electrical ducting or other building services.	
<b>Comments</b>	Central store where deliveries of cleaning supplies and large quantities of concentrated chemicals may be stored	
<b>Floor</b>		
	Durable, non slip flooring or concrete with non-slip clear or tinted sealed finish	
<b>Walls</b>		
	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>		
	Flush plasterboard	
<b>Doors</b>		
	Open outwards. Solid core with louvered vent to lower section. Refer to E9: Openings.	
<b>Windows</b>		
	None	
<b>FIXED FURNITURE</b>		
NOTES:	BOA01 Pin Up Boards	
One wall	SHV04 Overhead Shelving	
	MIS04 Broom and Spade Rack	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Equipment supplied by school	
	If a hot water system is within the Cleaner's Bulk Store, it must not pose a risk to the volatile chemicals that area used.	
1	Cleaner's sink	
1	Instantaneous electric water heater	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical fan in ceiling	
<b>Lighting</b>	If single storey building, consider dimmable tubular skylights. Motion sensor lighting. Refer G6: Electrical Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 GPO at 500mm AFL	
	Provide power for instantaneous electric water heater	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	NOTES: Require tap fittings – see following pages for tap fitting examples	
1	Cleaner's sink	
	Floor waste gully	
<b>Water supply</b>	NOTES: Provide backflow prevention for water to sinks where chemicals are used.	
1	Cleaners sink - Hot and cold water	

<b>DRY GOOD STORE / APPLIANCE &amp; UTENSILS STORE</b>		<b>SS-CAF-02</b>
<b>Dimensions</b>	Varies	<b>Floor Area:</b> 12 m <sup>2</sup> each
<b>Signage</b>	DRY STORE, APPLIANCE STORE	
<b>Function</b>	Used for the storage of dry goods, cooking equipment, crockery and cutlery	
<b>Occupancy</b>	Temporary access by School Staff to collect and return equipment or materials	
<b>Locality and relationship</b>	Ready Access to the Preparation / Sales Area.	
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Durable, impact resistant flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	NOTES: Maximum amount of shelving on all available perimeter walls	
Fit for Purpose	SHV02 Cool Room Shelving - have vertical dividers at no more than 600mm apart.	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school	
<b>SECURITY</b>		
	N/A	
<b>MECHANICAL</b>		
<b>Extraction</b>	N/A	
<b>FIRE SERVICES</b>		
	N/A	

PREPARATION / SALES AREA		SS-CAF-03
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 120 m <sup>2</sup>
<b>Signage</b>	CAFETERIA	
<b>Function</b>	Provide an efficient and cost effective area for the preparation and sale of healthy food in accordance with the Department of Education Policy and Standards for Healthy Food and Drink Choices in Public Schools; plus provide a valuable social space for students	
<b>Occupancy</b>	Queuing - maximum of 25 students Preparation – typically 3-6 School Staff Eating – maximum of 100 students in the internal space	
<b>Locality and relationship</b>	Central to school site. May be below the library. Preparation Area requires Ready Access to the Cafeteria Office, Cool Room, Freezer Room, Dry Goods Store, Appliance and Utensils Stores. Recommended that delivery persons do not need to travel more than 200 metres from delivery truck to deliver fresh food.	
<b>Comments</b>	It is critical that the design allows for time efficient movement and supervision of intense bursts of students at recess and lunch. 500-1500 students may wish to purchase food each day within a very limited time period; consultation is required with School Staff in regard to proposed payment systems.	
<b>Floor</b>		
	Non slip, stain resistant. Refer E8: Building Structure and Fabric	
<b>Walls</b>		
	Smooth, impact resistant, non slip	
<b>Ceiling</b>		
	The finished ceiling surface must not have any perforation or exposed joints, cracks or crevices. This is to prevent the contamination of food and enable effective cleaning of the surface. This also ensures that the ceiling is pest proof.	
<b>Doors</b>		
	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>		
	Operable - horizontal sliding, lockable (all rooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>		
	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Layout must allow for efficient workflow	
	Dishwasher Exit Bench	
	Dishwasher Inlet Bench	
	Display Heated	
	Display Refrigerated	
	Stainless Steel Benching – perimeter and island	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Typical items listed below, selection to be customized to suit design	
	Coffee Grinder	
	Coffee Machine	
	Dish Caddy	
	Dish Washer Pass Thru	
	Drain Protector	
	Freezers	
	Fridges	
	Griddle Chrome Surface	
	Grille Electric Oven	
	Insecticutor	
	Jet Spray Pre Rinse With Faucet	
	Oven Multi Tray	
	Oven Range	
	Pass Through Food Warmer	
	Pass Through Hot Box	
	Steamer	
	Fire blanket	
	Fire Extinguisher	
	2 double stainless steel sinks (or 1 double sink and 2 single sinks)	
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		

<b>Ventilation</b>	Natural ventilation – openable windows with security mesh fly screens
4	Ceiling fans
<b>Lighting</b>	Natural and artificial lighting, if single storey building then can consider dimmable tubular skylights.
<b>Acoustics</b>	Refer to G8: Acoustic Services
<b>ELECTRICAL &amp; COMMUNICATIONS</b>	
<b>Power</b>	
NOTES:	Power requirements and locations need to be checked to match the phase and Amp ratings for the selected equipment
16	Above bench GPOs
12	Suspended GPOs (above island benching)
4	GPOs office desk (above bench)
<b>Data points</b>	
2	Office desk (above bench)
5	To allow for EFTPOS options
<b>Lighting</b>	Refer G6: Electrical Services
<b>SECURITY</b>	
<b>Intruder</b>	Refer to G6: Electrical Services
<b>Smoke</b>	As per NCC requirements.
<b>MECHANICAL</b>	
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services
<b>Extraction</b>	Mechanical extraction required above all cooking equipment
<b>FIRE SERVICES</b>	
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers and Fire Blankets
<b>HYDRAULIC &amp; GAS</b>	
<b>Waste</b>	
NOTES:	Grease trap specifications as required by local Health Regulations
4	Sink waste
	Dishwasher waste
<b>Water supply</b>	
4	Hot and cold mixing taps (1 over each sink)
2	Threaded tap fittings for dishwasher (hot and cold)
<b>Gas supply</b>	
NOTES:	Require high volume gas supply sufficient for 8 burner commercial gas cooker
1	Gas supply for gas cooktop

<b>COOL ROOM</b>		<b>SS-CAF-04</b>
<b>Dimensions</b>	Varies	<b>Floor Area:</b> 8 m <sup>2</sup> each
<b>Signage</b>	COOL ROOM	
<b>Function</b>	Used for the storage of perishable food items.	
<b>Occupancy</b>	Temporary access by School Staff to collect and return food supplies	
<b>Locality and relationship</b>	Direct Access from the Preparation Area. May provide Direct Access to the Freezer Room from the Cool Room.	
<b>Comments</b>	Cool rooms must be built in accordance with all relevant Quality Standards, Laws and Best Industry Practices. Project Co must furnish and install walk-in cool rooms, including all insulated walls, ceilings, floors, doors, hardware, refrigeration systems, mechanical systems, internal electrical systems, controls, gauges, internal lighting, and other ancillary items required for a completely fabricated and operational Freezer Room.	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Durable, impact resistant flooring graded to the door	
<b>Walls</b>	Thermal Insulating Panel	
<b>Ceiling</b>	Thermal Insulating Panel.	
<b>Doors</b>	Insulated. Door must be able to be opened from inside without a key.	
<b>Windows</b>	None	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
NOTES:	Maximum amount of shelving on all available perimeter walls	
Fit for Purpose	SHV02 Cool Room Shelving - have vertical dividers at no more than 600mm apart.	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school	
<b>SECURITY</b>		
	Assistance push button alarm	
<b>MECHANICAL</b>		
<b>Refrigeration System</b>	To maintain cool room at required temperature to be Fit for Purpose.	
<b>Extraction</b>		
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Condensate drain line	



<b>ENCLOSED EATING AREA</b>		<b>SS-CAF-05</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 200 m <sup>2</sup>
<b>Signage</b>	CAFETERIA	
<b>Function</b>	Provide a valuable space for students to socialise, purchase and consume food.	
<b>Occupancy</b>	Eating – maximum of 100 students in the internal space	
<b>Locality and relationship</b>	Central to school site. May be below the library. Requires Direct Access to the Sales, Foyer and Queuing Area.	
<b>Comments</b>	It is critical that the design allows for time efficient movement and supervision of intense bursts of students at recess and lunch; 500-1500 students may wish to purchase food each day within a very limited time period; consultation is required with School Staff in regard to proposed payment systems.	
<b>Floor</b>	Non slip, stain resistant. Refer E8: Building Structure and Fabric	
<b>Walls</b>	Smooth, impact resistant, non slip	
<b>Ceiling</b>	The finished ceiling surface must not have any perforation or exposed joints, cracks or crevices. This is to prevent the contamination of food and enable effective cleaning of the surface. This also ensures that the ceiling is pest proof.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	100	CHA17 Cafe Chairs
	25	TAB08 Cafe Tables
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows with security mesh fly screens	
	4	Ceiling fans
<b>Lighting</b>	Natural and artificial lighting, if single storey building then can consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Power requirements and locations need to be checked to match the phase and Amp ratings for the selected equipment	
	8	GPOs in locations to suit vending machines
<b>Data points</b>	3 Wireless – located adjacent to eating area, minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements.	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Evaporative cooled	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
<b>Water supply</b>		
<b>Gas supply</b>		

<b>FOYER AND QUEUING AREA</b>		<b>SS-CAF-06</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 25 m <sup>2</sup>
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>	Queuing - maximum of 25 students	
<b>Locality and relationship</b>	Direct Access to Preparation and Sales Area, and Enclosed Eating Area	
<b>Comments</b>	It is critical that the design allows for time efficient movement and supervision of intense bursts of students at recess and lunch; 500-1500 students may wish to purchase food each day within a very limited time period; consultation is required with School Staff in regard to proposed payment systems.	
<b>Floor</b>	Non slip, stain resistant. Refer E8: Building Structure and Fabric	
<b>Walls</b>	Smooth, impact resistant, non slip	
<b>Ceiling</b>	The finished ceiling surface must not have any perforation or exposed joints, cracks or crevices. This is to prevent the contamination of food and enable effective cleaning of the surface. This also ensures that the ceiling is pest proof.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows with security mesh fly screens	
<b>Lighting</b>	Natural and artificial lighting, if single storey building then can consider dimmable tubular skylights.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Data points</b>	N/A	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements.	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Evaporative. Refer to G5: Mechanical Services.	
<b>Extraction</b>		
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
<b>Water supply</b>		
<b>Gas supply</b>		

<b>FREEZER ROOM</b>		<b>SS-CAF-07</b>
<b>Dimensions</b>	Varies	<b>Floor Area:</b> 8 m <sup>2</sup> each
<b>Signage</b>	FREEZER ROOM	
<b>Function</b>	Used for the storage of frozen food items.	
<b>Occupancy</b>	Temporary access by School Staff to collect and return food supplies	
<b>Locality and relationship</b>	Direct Access to the Preparation Area. May have Direct Access from within the Cool Room	
<b>Comments</b>	Freezer rooms must be built in accordance with all relevant Quality Standards, Laws and Best Industry Practices.  Project Co must furnish and install walk-in freezers, including all insulated walls, ceilings, floors, doors, hardware, refrigeration systems, mechanical systems, internal electrical systems, controls, gauges, internal lighting, and other ancillary items required for a completely fabricated and operational Freezer Room.	
<b>CONSTRUCTION</b>		
<b>Floor</b>	Insulated. Durable, impact resistant flooring graded to the door	
<b>Walls</b>	Thermal Insulating Panel	
<b>Ceiling</b>	Thermal Insulating Panel.	
<b>Doors</b>	Insulated. Door must be able to be opened from inside without a key.	
<b>Windows</b>	None	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
NOTES:	Maximum amount of shelving on all available perimeter walls	
Fit for Purpose	SHV02 Cool Room Shelving - have vertical dividers at no more than 600mm apart.	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	N/A	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school	
<b>SECURITY</b>		
	Assistance push button alarm	
<b>MECHANICAL</b>		
<b>Refrigeration Systems</b>	to maintain freezer temperature of -20°C to +2°C	
<b>Extraction</b>		
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Condensate drain line	

### **13.9 Education Support Learning Community**

SS-ESLC-01	Staff Collegiate Room
SS-ESLC-02	Resource Room
SS-ESLC-03	Specialist Office
SS-ESLC-04	Secondary Teaching Areas
SS-ESLC-05	Low Stimulus Room
SS-ESLC-06	Life Skills / Hospitality
SS-ESLC-07	External Covered Area
SS-ESLC-08	Consumables Store
SS-ESLC-09	Staff Changeroom & Shower
SS-ESLC-10	Student Changeroom & Shower / Hoist
SS-ESLC-11	Physio Gym
SS-ESLC-12	Physio Gym Store
SS-ESLC-13	Pool Enclosure
SS-ESLC-14	Pool Store
SS-ESLC-15	Pool Plant
SS-ESLC-16	Pool Chemical Store

<b>STAFF COLLEGIATE ROOM</b>		<b>SS-ESLC-01</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	STAFF ROOM	
<b>Function</b>		
<b>Occupancy</b>	6 School Staff Stations with 5 additional 'hot seats' for education assistants	
<b>Locality and relationship</b>	Direct Access to the Staff Study and Reprographics Rooms.	
<b>Comments</b>	Interior fit-outs should enable collaboration between School Staff	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. G8: Acoustic Services. Tiles to kitchenette splashback	
<b>Ceiling</b>	Refer to E8: Building Structure and Fabric and G8: Acoustic Services.	
<b>Doors</b>	Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all administrative areas to be keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	Refer to E8: Building Structure and Fabric	
<b>FIXED FURNITURE</b>		
Fit for Purpose	DES03 Office Workstations are required – consider wrap around desks for convenience of teacher when doing preparation or marking.	
Fit for Purpose	BOA01 Pin Up boards	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Equipment to be supplied by schools	
<b>LOOSE FURNITURE</b>		
	6	CHA04 Office Chairs
	6	DES03 Office Workstations
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Dampers to any skylights Motion Sensor lighting Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1	DGPO and data outlet per School Staff desk at ~ 800mm AFL
<b>Data points</b>	1	Data outlet per School Staff desk adjacent to power points at ~ 800mm AFL
	1	Additional data outlet per every 4 School Staff for phone access
<b>Telephone</b>	1	Telephone outlet
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air conditioning</b>	Reverse cycle. Refer to G5: Mechanical Services	

<b>RESOURCE ROOM</b>		<b>SS-ESLC-02</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	RESOURCE ROOM	
<b>Function</b>	The Resource Room is generally used for the storage of physical teaching resources.	
<b>Occupancy</b>	School Staff only	
<b>Locality and relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Acoustically treated. G8: Acoustic Services and to E8: Building Structure and Fabric	
<b>Doors</b>	If applicable: Refer to E9: Openings.	
<b>Windows</b>	If applicable: operable - horizontal sliding, lockable (all administrative areas keyed alike) to be provided if room is located adjacent an external wall. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
Fit for Purpose	SHV01 Compactus Unit	
<b>FIXED FURNITURE</b>		
Fit for Purpose	SHV07 Storeroom Shelving (Maximise)	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Dampers to any skylights Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 DGPO ~ 800mm AFL	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air conditioning</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>SPECIALIST OFFICE</b>		<b>SS-ESLC-03</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 20 m <sup>2</sup>
<b>Signage</b>	OFFICE # or ROLE	
<b>Function</b>	Offices should be capable of being used as an office, interview room, meeting room and study.	
<b>Occupancy</b>	4 people plus occasional visitors – 'hot seats'	
<b>Locality and relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
Fit for Purpose	BOA01 Pin Up Board	
Fit for Purpose	BOA02 Whiteboard	
<b>LOOSE FURNITURE</b>		
	4	DES03 Office Workstation
	4	CHA04 Office Chair
	1	FF15/FF16 Overhead Shelving and Cabinets
	2	STO09 Storage Cabinet
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	1	Ceiling fan
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services. Dampers to any skylights	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	2	GPOs per workstation to suit placement, adjacent to data points
	1	GPO at min 500mm AFL
<b>AV points</b>		
	1	Per workstation, located adjacent to GPOs to suit desk placement
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air conditioning</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>SECONDARY TEACHING AREAS</b>		<b>SS-ESLC-04</b>
<b>Dimensions</b>	Minimum side 7m	<b>Floor Area:</b> 65 m <sup>2</sup> + 15 m <sup>2</sup>
<b>Signage</b>	CLASSROOM #	
<b>Function</b>	Secondary Teaching Areas are used for the teaching of general subjects and the theoretical aspects of specialist subjects.	
<b>Occupancy</b>	10 students plus 3-4 School Staff/each	
<b>Locality and relationship</b>	Must be located on the ground floor. All classrooms to be in pairs with operable wall between. Direct Access to a kitchenette and Secure Store from within the Teaching Area must be provided Direct Access must be provided to the adjoining External Covered Area.	
<b>Comments</b>	The Secondary Teaching Areas should be flexible in their design to enable a variety of learning activities. The secure store must be a minimum of 15 m <sup>2</sup> (in addition to the 65 m <sup>2</sup> classroom) and is to be provided with appropriate shelving to accommodate general teaching materials and resources.	
<b>Floor</b>	Anti-static carpet. Durable, stain-resistant, nonslip flooring to kitchenette area	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Tiles to kitchenette splashback. Attenuate sound between areas and consistent with room use. G8: Acoustic Services. Maximise display board area.	
<b>Ceiling</b>	Acoustically treated. G8: Acoustic Services.	
<b>Doors</b>	Designed in accordance with AS 1428.1-2009 Design for access and mobility. Require separate lockable entry doors external to any classroom. Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all classrooms keyed alike) Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	Minimum 1800mm total width of pinup boards required	
<b>EQUIPMENT AND FIXTURES</b>		
	Kitchenette	
	1 APP05 Fridge Freezer	
	1 Sink	
<b>LOOSE FURNITURE</b>		
	1 DES04 Teacher's Desk	
	3 CHA09 Office Stools	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	8 TAB20 Classroom Desk (Single)	
	1 CHA01 Classroom Chair	
	Kitchenette	
	1 APP13 Microwave	
	1 APP05 Fridge Freezer	
	1 APP14 Kettle	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation	
	4 min Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting Avoid glare off teaching surfaces. Dampers to any skylights Install light sensors to perimeter lights. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	8 GPOs at ~800 mm AFL adjacent to data 1 Fridge GPO 1 Microwave GPO 1 Kettle GPO	
<b>Data points</b>	4 Outlets at ~800 mm AFL adjacent to data	
<b>Telephone</b>		



- 1 Telephone for internal "distressed calls" to Nurse or Associate Principal. Locate on wall facing Kitchenette, out of reach and sight from students.

**Equipment**

NOTES: Provide appropriate electrical connections to all electrical equipment listed in other sections of this room information sheet

**SECURITY & DETECTION**

**Intruder** Refer to G6: Electrical Services

**Smoke** As per NCC requirements

**MECHANICAL****Air conditioning**

Reverse cycle. Refer to G5: Mechanical Services

**Extraction**

Extraction fan required for kitchenette

**FIRE SERVICES**

N/A

**HYDRAULIC & GAS****Waste**

- 1 Sink waste

**Water supply**

NOTES: Tapware to be installed with locking plates or similar to prevent rotation.  
Tempered water to be provided to Secondary Teaching Area sinks

- 1 Mixer tap hot and cold water

<b>LOW STIMULUS ROOM</b>		<b>SS-ESLC-05</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 7 m <sup>2</sup> (minimum)
<b>Signage</b>		
<b>Function</b>	For protective isolation for aggressive students	
<b>Occupancy</b>	1 Student	
<b>Locality and relationship</b>	Must allow for constant monitoring by a School Staff member seated externally (must be able to view the entire area). May have Direct Access to a staff administration or staff study area.	
<b>Comments</b>	The floor and wall finish of Low Stimulus Room shall be durable, stain and impact resistant and easily cleaned. No switches, equipment or lights suspended from ceiling, no intrusions from fittings.	
<b>Floor</b>		
	Durable, stain resistant, non slip flooring	
<b>Walls</b>		
	Durable, impact resistant, easily cleaned	
<b>Ceiling</b>		
<b>Doors</b>		
	Lockable from outside. Designed in accordance with AS 1428.1-2009 Design for access and mobility. Refer to E9: Openings.	
<b>Windows</b>		
	Large viewing panel in door and viewing panel to adjoining staff area.	
<b>ENVIRONMENTAL</b>		
<b>Lighting</b>	Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air conditioning</b>		
	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>LIFE SKILLS / HOSPITALITY</b>		<b>SS-ESLC-06</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 90 m <sup>2</sup>
<b>Signage</b>	LIFE SKILLS	
<b>Function</b>	The Life Skills Room must act as a mock up living room, kitchen and laundry, or home.	
<b>Occupancy</b>		
<b>Locality and relationship</b>		
<b>Comments</b>	The space, furniture and equipment must be universally accessible.	
<b>Floor</b>	Durable, stain resistant, non slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Tiles to wet area splashbacks. Attenuate sound between areas and consistent with room use. G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. G8: Acoustic Services.	
<b>Doors</b>	Designed in accordance with AS 1428.1-2009 Design for access and mobility. Require separate lockable entry doors external to any classroom. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all laboratories keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
<b>NOTES:</b>	<p>Incorporate deep drawers to kitchen benches for wheelchair access to pots</p> <p>All fixed furniture to be in accordance with AS 1428.1-2009 Design for access and mobility</p> <p>Overhead cabinetry</p> <p>Kitchen benches. Min 5500 mm of bench area to be provided (can be discontinuous)</p> <p>BOA01 Pin Up Board</p>	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	<p>All equipment and fixtures must be provided by Project Co</p> <p>All equipment and fixtures to be in accordance with AS 1428.1-2009 Design for access and mobility</p> <p>Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door..</p> <p>1 AV device: type and model is to be selected by school to meet local curriculum requirements.</p> <p>Laundry Area</p> <p>1 Trough (in proximity to washing machine/dryer) – height adjustable, wheelchair accessible tough and taps</p> <p>1 APP01 Washing Machine</p> <p>1 APP02 Dryer</p> <p>Kitchen Area</p> <p>1 Sink – height adjustable, wheelchair accessible sink and taps</p> <p>1 APP05 Fridge Freezer</p> <p>1 APP04 Stove</p> <p>2 APP15 Portable Cooker</p> <p>Various small appliances dependent on school program.</p>	
<b>LOOSE FURNITURE</b>		
<b>NOTES:</b>	<p>Loose furniture must be provided by Project Co</p> <p>Additional loose furniture (i.e. single bed, sofa, table, chairs) that is dependent on school program To be provided by the School.</p> <p>2 CHA09 Office Stools</p> <p>2 STO24 Pantry Cupboard</p> <p>5 TEQ02 Height Adjustable Bench Station</p>	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation and ceiling fans	
<b>Lighting</b>	<p>Natural and artificial lighting – openable windows</p> <p>Ability to reduce lighting for AV at front of room</p> <p>Dampers to any skylights</p> <p>Refer G6: Electrical Services</p>	
<b>Acoustics</b>	G8: Acoustic Services.	

**ELECTRICAL & COMMUNICATIONS**

**Power**

- 1 Fridge GPO
- 1 Oven GPO
- 1 Dryer GPO
- 2 Electric Hotplate GPOs
- 1 Washing Machine GPO
- 5 DGPO above kitchen bench with associated data points
- 4 GPOs above AV location (typically 2200, 2400mm AFL)

**AV points**

NOTES: 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power cables permitted in conduit

Outlets high for AV equipment:

- 1 Conduit outlet for HDMI, VGA, audio, ...
  - 1 Conduit outlet for USB, ...
- Outlets on front wall offset to side of AV area:
- 1 Conduit outlet for HDMI, VGA, audio ...
  - 1 Conduit outlet for USB, ...

**Data points**

- 1 Assisted call button
- 1 Above kitchen bench with associated GPOs
- 1 Outlets on front wall offset to side of AV area

**Equipment**

NOTES: Provide appropriate electrical connections to all electrical equipment listed in other sections of this room information sheet

- 1 Fire Extinguisher

**SECURITY & DETECTION**

**Intruder** Refer to G6: Electrical Services

**Smoke** As per NCC requirements

**MECHANICAL**

**Air conditioning** Reverse cycle. Refer to G5: Mechanical Services

**Extraction** Extraction fan required for kitchenette and laundry areas.

**FIRE SERVICES**

**Fire-fighting equipment** Portable Fire Extinguishers and Fire Blankets

**HYDRAULIC & GAS**

**Waste**

- 1 Kitchen sink waste
- 1 Laundry trough waste
- 1 Washing Machine waste

**Water supply**

NOTES: Tapware to be installed with locking plates or similar to prevent rotation.  
All hand basins & sink taps shall be suitable for universal access (long handle and long nozzle)

- 1 Hot/cold mixer to kitchen sink
- 1 Hot/cold mixer to laundry trough
- 1 Hot/cold water supply to washing machine

**Gas supply**

NOTES: ON/OFF positions of gas taps should be easily checked by teacher.  
Gas supply for oven

<b>EXTERNAL COVERED AREA</b>		<b>SS-ESLC-07</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 50 m<sup>2</sup></b>
<b>Signage</b>	EXTERNAL LEARNING	
<b>Function</b>	The External Covered Area allows for additional activities immediately outside the classroom.	
<b>Occupancy</b>	Up to 70 students	
<b>Locality and relationship</b>	Direct Access from the adjacent Secondary Teaching Area.	
<b>Comments</b>		
<b>Floor</b>	Durable, impact resistant, easily cleaned.	
<b>Walls</b>	Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Ensure birds are not able to perch under roof	
<b>Doors</b>	N/A	
<b>Windows</b>	N/A	
<b>FIXED FURNITURE</b>		
	3 TAB23 External Tables	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Hose cock	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Passive	
<b>Lighting</b>	Natural – roof lights & wall openings	
<b>Acoustics</b>	G8: Acoustic Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	1 Hosecock waste	
	Stormwater drain	
<b>Water supply</b>		
	1 Hosecock – cold water only	

<b>CONSUMABLES STORE</b>		<b>SS-ESLC-08</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 5 m<sup>2</sup></b>
<b>Signage</b>	STORE	
<b>Function</b>	Secure storage of consumables which relate to the Life Skills room.	
<b>Occupancy</b>	Temporary access by School Staff to collect and return materials.	
<b>Locality and relationship</b>	Direct Access from the Life Skills room, with internal access between.	
<b>Comments</b>		
<b>Floor</b>		
	Durable, stain resistant, non-slip flooring.	
<b>Walls</b>		
	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>		
	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>		
	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>		
	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>LOOSE FURNITURE</b>		
	NOTES: Maximum amount of open shelving on all available perimeter walls	
Fit for Purpose	SHV02 Cool Room Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation	
<b>Lighting</b>	Natural and artificial lighting, consider a skylight. Sensor activated. Refer G6: Electrical Services	
<b>Acoustics</b>	G8: Acoustic Services.	
<b>Equipment</b>	Purchased by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>FIRE SERVICES</b>		
	N/A	

<b>STAFF CHANGEROOM &amp; SHOWER</b>		<b>SS-ESLC-09</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 8 m<sup>2</sup></b>
<b>Signage</b>	STAFF CHANGEROOM	
<b>Function</b>	Unisex change and shower area	
<b>Occupancy</b>	1 School Staff member	
<b>Locality and relationship</b>	Direct Access to the Hydrotherapy Pool.	
<b>Comments</b>		
<b>Floor</b>		
	Durable, non-slip, moisture-resistant i.e. tiles	
<b>Walls</b>		
	Durable, moisture-resistant i.e. Tiles	
<b>Doors</b>		
	Solid core. Lockable. Refer to E9: Openings. Door grilles to Changeroom door accessing pool.	
<b>Windows</b>		
	None	
<b>FIXED FURNITURE</b>		
	1 Lockable cupboard (min 1500mm)	
	1 Bench (min 1500mm)	
	1 Mirror	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Hand basin	
	1 Toilet	
	1 Shower	
	1 Electric Hand Dryer	
	1 Liquid Soap Dispenser	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ventilation requirements will need to be in accordance with the Code of Practice for Aquatic Facilities, Australian Standard AS 1668.2 – The Use of Ventilation and Air conditioning in Buildings-Ventilation Design for Indoor Air Contaminant Control, Australian Standard AS 5601 – Gas Installations, Australian Standard AS 3780 – The Storage and Handling of Corrosive Substances.	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	G8: Acoustic Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>		
	Extraction fan required	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>		
	1 Shower waste	
	1 Floor waste	
<b>Water supply</b>		
NOTES:	Tapware to be installed with locking plates or similar to prevent rotation.	
	1 Hot/Cold mixer tap to hand basin	
	1 Hot/Cold water supply to shower	

<b>STUDENT CHANGE ROOM &amp; SHOWER / HOIST</b>		<b>SS-ESLC-10</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 60 m <sup>2</sup>
<b>Signage</b>	FEMALE or MALE CHANGE ROOM	
<b>Function</b>	Separate Male/Female Change Rooms with overhead tracking to pool	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Ready Access to the Physio-gym Direct Access to the Hydrotherapy Pool. A suspended hoist system is to run between the Student Change Rooms and Hydrotherapy Pool.	
<b>Comments</b>	Each Change Room to provide a change area with 2 change cubicles, a shower area with 2 shower cubicles and a 5 m <sup>2</sup> UAT. Change Room to be designed in accordance with AS 1428.1-2009 Design for access and mobility.	
<b>Floor</b>	Durable, non-slip, moisture-resistant i.e. tiles	
<b>Walls</b>	Durable, moisture-resistant i.e. Tiles	
<b>Ceiling</b>		
<b>Doors</b>	Electronic sliding doors to be provided from the circulation space of the Education Support Learning Community. Designed in accordance with AS 1428.1-2009 Design for access and mobility. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>Partitions</b>	Shower Cubicles – shower partition, shower curtain Change Cubicles – curtain track	
<b>FIXED FURNITURE</b>		
<b>NOTES:</b>	All fixed furniture to be in accordance with AS 1428.1-2009 Design for access and mobility	
	Change Area to pool	
2	STO10 Metal Storage Cabinet	
2	MED05 Change Table (1 per change cubicle)	
	Shower Area	
2	Bench	
2	Hooks	
2	MED13 Shower Seat (1 per shower cubicle)	
<b>EQUIPMENT AND FIXTURES</b>		
<b>NOTES:</b>	All equipment and fixtures to be in accordance with AS 1428.1-2009 Design for access and mobility.	
1	Hoist (electric) and track	
	Change Area	
2	Ceiling mounted electric heater (1 per change cubicle)	
2	Shower (1 per change cubicle)	
	Overhead curtain to delineate cubicles	
	Shower Area	
2	Showers (1 per shower cubicle)	
	Full height partition to shower cubicles with shower curtain	
	Toilet Area	
1	Shower	
1	Handbasin	
1	Toilet	
1	Liquid soap dispenser	
1	Hand dryer	
1	Toilet Roll Holder in drop down handrails	
1	Mirror	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ventilation requirements will need to be in accordance with the Code of Practice for Aquatic Facilities, Australian Standard AS 1668.2 – The Use of Ventilation and Air conditioning in Buildings-Ventilation Design for Indoor Air Contaminant Control, Australian Standard AS 5601 – Gas Installations, Australian Standard AS 3780 – The Storage and Handling of Corrosive Substances.	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		



- 1 DGPO per change cubicle
- 1 DPGO

**Assisted call button**

- Change Area
- 2 1 per change cubicle
- Shower Area
- 1 Readily accessible for both shower cubicles
- Toilet Area
- 1 Accessible from toilet pan
- 1 Accessible from shower

**Lighting**

Refer G6: Electrical Services.

**Equipment**

NOTES: Provide appropriate electrical connections to all electrical equipment listed in other sections of this room information sheet

**SECURITY & DETECTION**

**Intruder** Refer to G6: Electrical Services

**Smoke** As per NCC requirements

**MECHANICAL**

**Air conditioning** Reverse cycle. Refer to G5: Mechanical Services

**Extraction** Extraction fan required

**FIRE SERVICES**

N/A

**HYDRAULIC & GAS**

**Waste**

- Shower Area
- 2 Shower floor waste (1 per shower cubicle)
- Toilet Area
- 1 Floor waste with flushing rim
- 1 Handbasin waste
- 1 Toilet waste

**Water supply**

NOTES: All hand basins & sink taps shall be suitable for universal access (long handle and long nozzle)  
Tempered watered to be provided to student changerooms

- Change Area
- 2 Hot/Cold water supply to shower (1 per change cubicle)
- Shower Area
- 2 Hot/Cold water supply to Shower (1 per shower cubicle)
- Toilet Area
- 1 Hot/Cold water supply to Shower
- 1 Hot/Cold water mixer to handbasin
- 1 Water supply for toilet

<b>PHYSIO GYM</b>		<b>SS-ESLC-11</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 75 m<sup>2</sup></b>
<b>Signage</b>	PHYSIO GYM	
<b>Function</b>	Provide a safe indoor space for a range of physio gym activities.	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Ready Access to Changerooms, External Covered Area, Sports Oval and Hard Courts. Direct Access to the Physio Gym Store from within the Physio Gym	
<b>Comments</b>	Significant attention is required for the safety of participants due to the levels of physical activity. Should be located on the Ground Floor Level	
<b>Floor</b>	Rubber flooring and skirting	
<b>Walls</b>	Durable, impact resistant, easily cleaned.	
<b>Ceiling</b>	Acoustically treated. G8: Acoustic Services.	
<b>Doors</b>	Designed in accordance with AS 1428.1-2009 Design for access and mobility. Solid core. Consider a sliding door for the main entrance. Refer to E9: Openings.	
<b>Windows</b>	Combination of fixed and operable - horizontal sliding, lockable. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>LOOSE FURNITURE</b>		
<b>Equipment</b>	Physio equipment to be purchased in consultation with Schools Principal	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: All GPOs must be recessed to avoid any impact injuries 8 GPOs, minimum 500mm AFL	
<b>AV points</b>	1 Outlet to be located adjacent to a GPO, minimum 500mm AFL 1 Outlet located adjacent to light switches	
<b>Assisted call button</b>	1 Assisted Call Button at ~800 mm AFL in a readily accessible location	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security level: HIGH	
<b>MECHANICAL</b>		
<b>Air conditioning</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>PHYSIO GYM STORE</b>		<b>SS-ESLC-12</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 30 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>	Storage of physio gym equipment.	
<b>Occupancy</b>	Temporary access by School Staff to collect and return equipment.	
<b>Locality and relationship</b>	Direct Access to the Physio Gym.	
<b>Comments</b>		
<b>Floor</b>	Monolithic Concrete	
<b>Walls</b>	Durable, impact resistant, easily cleaned.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Roller Door. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>FIXED FURNITURE</b>		
	NOTES: Maximise storage shelving to all walls	
	Fit for Purpose SHV06 Sports Store Shelving	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Equipment</b>	Purchased by school	
<b>ENVIRONMENTAL</b>		
<b>Lighting</b>	Natural and artificial lighting, consider a skylight Sensor activated. Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>FIRE SERVICES</b>		
	N/A	

<b>POOL ENCLOSURE</b>		<b>SS-ESLC-13</b>
<b>Dimensions</b>	17.5m x 13.5m	<b>Floor Area: 175 m<sup>2</sup></b>
<b>Signage</b>	POOL	
<b>Function</b>	Enclosure for 10m x 6m pool & associated ballast	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Direct Access to Student Changerooms, Pool Store, Pool Chemical Store and Pool Plant. Direct Access to Staff Changerooms.	
<b>Comments</b>	Suspended hoist system to be run between the Student Changerooms and Pool. The pool enclosure must have external access.	
<b>Floor</b>	Tiled. Moisture-resistant and durable.	
<b>Walls</b>	Tiled. Moisture-resistant and durable. Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Durable, non-corrosive	
<b>Doors</b>	Solid core with ventilation louvers. Lockable. Refer to E9: Openings.	
<b>Windows</b>	Fixed. Consider high level lighting/skylights.	
<b>FIXED FURNITURE</b>		
	1	Small shelf to accommodate phone and A4 size files/folder
<b>Fit for Purpose</b>	Open shelving fixed to the wall to accommodate pool lift accessories and floating/swimming aids	
<b>EQUIPMENT AND FIXTURES</b>		
	1	MIS18 Pool Cover
	1	MED06 Electric Hoist and Track
	1	MED07 Water Powered Pool Lift
	2	Hose cock evenly distributed
<b>LOOSE FURNITURE</b>		
	1	MIS17 Clock
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ventilation requirements will need to be in accordance with the Code of Practice for Aquatic Facilities, AS 1668.2, AS 5601 and AS 3780 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting Dampers to any skylights	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4 DGPOs distributed throughout space	
<b>Assisted call button</b>	6 Distributed as to be readily accessible throughout the space	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>Equipment</b>	Provide electrical connections to all electrical equipment listed in other sections of the RDSs	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security level: HIGH	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Provide appropriate waste connections for the pool and associated equipment	
<b>Water supply</b>	Provide appropriate water connections to water-powered pool lift 2 Hose cock – cold water only	

<b>POOL STORE</b>		<b>SS-ESLC-14</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 10 m <sup>2</sup>
<b>Signage</b>	STORE	
<b>Function</b>	Used for the secure storage of pool equipment, including an emergency equipment recess.	
<b>Occupancy</b>		
<b>Locality and relationship</b>	Ground floor. Direct Access to the Pool Enclosure	
<b>Comments</b>		
<b>Floor</b>	Durable, slip resistant	
<b>Walls</b>	Durable, impact resistant, easily cleaned.	
<b>Ceiling</b>	Durable, Non-corrosive	
<b>Doors</b>	Solid core with ventilation louvers. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ventilation requirements will need to be in accordance with the Code of Practice for Aquatic Facilities, Australian Standard AS 1668.2 - The Use of Ventilation and Air conditioning in Buildings-Ventilation Design for Indoor Air Contaminant Control, Australian Standard AS 5601 – Gas Installations, Australian Standard AS 3780 - The Storage and Handling of Corrosive Substances.	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security level: HIGH	
<b>FIRE SERVICES</b>		
	N/A	

<b>POOL PLANT</b>		<b>SS-ESLC-15</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 60 m<sup>2</sup></b>
<b>Signage</b>	PLANT	
<b>Function</b>	Houses plant equipment related to the Pool Area.	
<b>Occupancy</b>	Temporary access by maintenance staff	
<b>Locality and relationship</b>	Direct Access to the Pool Enclosure	
<b>Comments</b>		
<b>Floor</b>	Concrete, slip resistant	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Non-corrosive	
<b>Doors</b>	Solid core with ventilation louvers. Lockable. Refer to E9: Openings.	
<b>Windows</b>	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Sink	
Fit for Purpose	Pool plant equipment	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ventilation requirements will need to be in accordance with the Code of Practice for Aquatic Facilities, Australian Standard AS 1668.2 - The Use of Ventilation and Air conditioning in Buildings-Ventilation Design for Indoor Air Contaminant Control, Australian Standard AS 5601 – Gas Installations, Australian Standard AS 3780 - The Storage and Handling of Corrosive Substances.	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Provide appropriate electrical connections to all pool equipment	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security level: HIGH	
<b>MECHANICAL</b>		
<b>Extraction</b>	Extraction fan required	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1 Sink waste 1 Floor waste Provide appropriate waste connections to all pool equipment	
<b>Water supply</b>	NOTES: Provide backflow for waste. Tapware to be installed with locking plates or similar to prevent rotation. 1 Hose cock 1 Sink – cold water only Provide appropriate water connections to all pool equipment	
<b>Gas supply</b>	NOTES: Provide appropriate natural gas connections to pool equipment if required.	

<b>POOL CHEMICAL STORE</b>		<b>SS-ESLC-16</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 5 m<sup>2</sup></b>
<b>Signage</b>	CHEMICALS STORE	
<b>Function</b>	Storage of chemicals relating to the Pool area.	
<b>Occupancy</b>	Temporary access by maintenance staff	
<b>Locality and relationship</b>	Ready Access to the Pool Enclosure and Pool Plant. Direct Access may be provided.	
<b>Comments</b>		
<b>Floor</b>	Chemical and slip resistant	
<b>Walls</b>	Durable, impact resistant, easily cleaned. Refer E8: Building Structure and Fabric	
<b>Ceiling</b>	Non-corrosive. Refer E8: Building Structure and Fabric	
<b>Doors</b>	Solid core lockable door keyed separately to all other doors, air intake mounted low in the door. Refer to E9: Openings.	
<b>Windows</b>	None permitted	
<b>EQUIPMENT AND FIXTURES</b>		
	1	EQ19 Safety Shower
	1	EQ08 Eye Wash
	1	Hose cock
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Ventilation requirements will need to be in accordance with the Code of Practice for Aquatic Facilities, Australian Standard AS 1668.2 - The Use of Ventilation and Air conditioning in Buildings-Ventilation Design for Indoor Air Contaminant Control, Australian Standard AS 5601 – Gas Installations, Australian Standard AS 3780 - The Storage and Handling of Corrosive Substances.	
<b>Lighting</b>	External light switch. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Provide appropriate electrical connections to all Chemical storage tank equipment	
	1	DPGO
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements Security level: HIGH	
<b>MECHANICAL</b>		
<b>Extraction</b>	Chemical resistant commercial grade exhaust system designed to run 24/7 to efficiently remove all vapours	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Provide appropriate waste connections to all Chemical storage tank equipment	
	1	Floor waste to Safety Shower
<b>Water supply</b>	NOTES: Provide backflow for waste. Tapware to be installed with locking plates or similar to prevent rotation. Provide appropriate water connections to all Chemical storage tank equipment	
	1	Hose cock – cold water supply only
	1	Safety shower and eyewash unit – cold water supply only

### 13.10 Auxiliary Spaces

SS-AUX-01	Cleaner's Store
SS-AUX-02	Offices / Office & Interview Room
SS-AUX-03	Conference Room
SS-AUX-04	Interview Room
SS-AUX-05	Stores
SS-AUX-06	Laundry
SS-AUX-07	Reprographics Area & Storage
SS-AUX-08	Staff Study
SS-AUX-09	Nurse's Office
SS-AUX-10	Treatment / First Aid Room
SS-AUX-11	Female Student Toilets
SS-AUX-12	Male Student Toilets
SS-AUX-13	Female Student / Patron Toilets
SS-AUX-14	Male Student / Patron Toilets
SS-AUX-15	Female Staff / Female Staff and Visitors Toilet
SS-AUX-16	Male Staff / Male Staff and Visitors Toilet
SS-AUX-17	Female Staff Toilet Set 02
SS-AUX-18	Male Staff Toilet Set 02
SS-AUX-19	Female Student Toilet Set 02
SS-AUX-20	Male Student Toilet Set 02
SS-AUX-21	Student Foyer
SS-AUX-22	Bin Enclosure
SS-AUX-23	Male Staff Toilet Set 03



<b>CLEANER'S STORE</b>		<b>SS-AUX-01</b>
<b>Dimensions</b>	Min side 2 m	<b>Floor Area: 4 m<sup>2</sup></b>
<b>Signage</b>	CLEANER	
<b>Function</b>	Provide storage space for all cleaning equipment	
<b>Occupancy</b>	1 person - Should only be accessed by cleaners.	
<b>Locality and relationship</b>	Cleaner's Stores are located in every major building block to allow ready access for daily cleaning. Must not be an access way to toilet ducts, hot water systems, electrical ducting or other building services.	
<b>Comments</b>	There is also a central store where deliveries of cleaning supplies and large quantities of concentrated chemicals may be stored.	
<b>Floor</b>	Concrete with non-slip clear or tinted sealed finish	
<b>Walls</b>	Refer E8: Building Structure and Fabric Tile splashback behind cleaners sink	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>	Open outwards. Louvered vent to lower section of door. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
NOTES:	Shelving, sinks and taps detailed in following pages	
On one wall	SHV04 Overhead Shelving Wall hooks for hanging cleaning equipment MIS04 Broom and Spade Rack MIS05 Vacuum Hose Hanger	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Equipment supplied by school If a hot water system is within the Cleaner's Room it must not pose a risk to the volatile chemicals that are used	
1	Cleaner's sink	
1	Instantaneous electric water heater	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical fan in ceiling	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Motion sensor lighting. Refer G6: Electrical Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 GPO at 500mm AFL Power to hot water unit	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Extraction fan required.	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	NOTES: Require tap fittings – see following pages for tap fitting examples 1 Stainless steel trough	
<b>Water supply</b>	NOTES: Provide backflow prevention for water to sinks where chemicals are used. 1 Hot and cold water wall set 1 Hose tap – cold water only	

<b>OFFICES / OFFICE &amp; INTERVIEW ROOM</b>		<b>SS-AUX-02</b>
<b>Dimensions</b>	Min side 3m	<b>Floor Area:</b> Refer to Accommodation Schedule
<b>Signage</b>	OFFICE # or ROLE	
<b>Function</b>	Offices should be capable of being used as an office, interview room, meeting room and study.	
<b>Occupancy</b>	Varies – refer Accommodation Schedule. Occasional visitors.	
<b>Locality and relationship</b>	Ready Access to other associated Functional Units within the Functional Area.	
<b>Comments</b>	Members of the public should not be able to gain direct access to Offices.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Open outwards, keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
Fit for Purpose	BOA01 Pin Up Board (Minimum 1000mm)	
Fit for Purpose	BOA02 Whiteboard (Minimum 1000mm)	
<b>EQUIPMENT AND FIXTURES</b>		
NOTES:	Equipment will be provided by school	
<b>LOOSE FURNITURE</b>		
	1	DES03 Office Workstation
	1	CHA04 Office Chair
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	1	Ceiling fans
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	6 per workstation adjacent to data	
<b>Data points</b>	2 Per workstation (1 phone, 1 computer) located on side wall at 800mm AFL to suit desk placement	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>CONFERENCE ROOM</b>		<b>SS-AUX-03</b>
<b>Dimensions</b>	Min side 4 m	<b>Floor Area:</b> Refer to Accommodation Schedule
<b>Signage</b>	CONFERENCE ROOM	
<b>Function</b>	The Conference Room will be used as a meeting room and conference facility. Adequate technology services should be provided to enable conference calls and interactive presentations.	
<b>Occupancy</b>	5-20 people	
<b>Locality and relationship</b>	ADMINISTRATION Ready Access to the administrative area and the Office Staff Tea Room. It may be used by school council, School Staff, parents groups, students and other members of the community. EDUCATION SUPPORT LEARNING COMMUNITY Located on the Ground Floor with Ready Access to the Education Support Learning Community's entry.	
<b>Comments</b>	Members of the public should not be able to gain direct access to Conference Rooms	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	NOTES: ADMINISTRATION: Kitchen facilities available in nearby office staff tea room 1 Built in cabinet on 1 wall – minimum 1200mm length 1 BOA02 Whiteboard	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Front wall centre: Provision for AV – 2 GPOs 2400 mm AFL offset left by 300mm, 2 GPOs 2200 mm AFL offset left by 300mm, 1 AV plate 2400mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduits (with draw wire) to teacher AV location; 1 AV plate 2200mm AFL offset right by 300mm at end of 1 x 32 mm diameter continuous conduit (with draw wire) to nominated teacher AV location - typically to the side that is furthest from the main entry door. AV device, type and model is to be selected by school to meet local curriculum requirements	
<b>LOOSE FURNITURE</b>		
	To seat 20 TAB03 Conference Table – Components or TAB24 Conference Table 20 CHA14 Meeting Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows 2 Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting, if single storey building, consider dimmable tubular skylights. Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	NOTES: Floor box may be used to allow AV and technology access from centre of room, recommend access via flush mounted services at table height. 4 GPOs above AV location (typically 2200, 2400mm AFL) 1 Additional GPO at ~800 mm AFL in a convenient location 4 GPOs accessible to table, i.e. Floor box	
<b>AV points</b>	NOTES: Should be able to support a wide variety of possible AV devices. The 2 x 32 mm conduits must be continuous with smooth radius bends and no gaps or discontinuities, reserved for AV only – no power permitted in conduits Outlets high on front wall: 1 Conduit outlet for HDMI, VGA, audio, ... 1 Conduit outlet for USB, ... Outlets on front wall offset to side of AV area:	

	1	Conduit outlet for HDMI, VGA, audio, ...
	1	Conduit outlet for USB, ...
<b>Data points</b>	2	Central to table or AV area
	1	Wireless - minimum height 2000mm AFL, central ceiling surface mount if feasible- data outlet to be visible from room (not inside ceiling)
<b>Equipment</b>		
	NOTES:	Provide appropriate electrical connections to all electrical equipment listed in other sections of this room information sheet To be purchased by school
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		Refer to G6: Electrical Services Security level: HIGH
<b>Smoke</b>		As per NCC requirements
<b>MECHANICAL</b>		
<b>Air cooling</b>		Reverse cycle. Refer to G6: Mechanical Services
<b>FIRE SERVICES</b>		
		N/A

<b>INTERVIEW ROOM</b>		<b>SS-AUX-04</b>
<b>Dimensions</b>	Min side 3m	<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>	INTERVIEW	
<b>Function</b>	The Interview room must allow for private discussions.	
<b>Occupancy</b>	2-6 persons	
<b>Locality and relationship</b>	Ready Access to other associated Functional Units within the Functional Area.	
<b>Comments</b>	Acoustic privacy is required for confidential conversations.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Keyed. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
Fit for Purpose	BOA01 Pin Up Boards	
Fit for Purpose	BOA02 Whiteboards	
<b>LOOSE FURNITURE</b>		
	1 TAB02 Table	
	6 CHA14 Meeting Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
	1 Ceiling fan	
<b>Lighting</b>	Natural and artificial lighting. Refer G6: Electrical Services.	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4 GPOs Located adjacent to data	
<b>Public address</b>	1 Speaker with volume control	
<b>Data points</b>	2 Located on side wall 800mm AFL	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	

<b>STORES</b>		<b>SS-AUX-05</b>
Note: Applies to Stores generally. For Secure and specialised stores, refer to Schedule of Accommodation.		
<b>Dimensions</b>	Varies	<b>Floor Area:</b> Refer to Schedule of Accommodation
<b>Signage</b>	STORE	
<b>Function</b>	A variety of different sized stores are used for the secure storage of equipment and teaching resources.	
<b>Occupancy</b>	Temporary access by School Staff to collect and return equipment or materials.	
<b>Locality and relationship</b>	Require at least one store on each floor if double-storey – some stores may be used for secure storage of notebook trolleys or class sets of tablets. Stores should have ready access to Learning Areas.	
<b>Comments</b>	Require 50% adjustable shelving with 40% extra pieces of adjustable shelving.	
<b>Floor</b>	Durable, non-slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Flush plasterboard	
<b>Doors</b>	Solid core. Lockable. Refer to E9: Openings.	
<b>Windows</b>	None	
<b>LOOSE FURNITURE</b>		
	NOTES: Generally maximise amount of shelving on all available perimeter walls	
Fit for Purpose	SHV07 Store Room Shelving	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	If store is to be used for charging trolleys containing notebook computers then require 6 GPOs on 3 different circuits near the entry door.	
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>	Purchased by school.	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>FIRE SERVICES</b>		
<b>Fire –fighting equipment</b>	Portable Fire Extinguishers	

<b>LAUNDRY</b>		<b>SS-AUX-06</b>
<b>Dimensions</b>	Min side 1.5 m	<b>Floor Area:</b> Refer to Accommodation Schedule
<b>Signage</b>	LAUNDRY	
<b>Function</b>	Wash and dry fabric items from textiles or food rooms	
<b>Occupancy</b>		
<b>Locality and relationship</b>	TECHNOLOGIES LEARNING AREA Direct Access to Textiles & Human Development Studio Ready Access from Food Preparation Areas and other Food Studios. CAFETERIA Ready Access Stores and Preparation Areas. EDUCATION SUPPORT LEARNING COMMUNITY Ready Access to Physio Gym and Pool Areas.	
<b>Floor</b>	Durable, non-slip flooring.	
<b>Walls</b>	Tiled	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services	
<b>Doors</b>	Keyed. Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	NOTES: Storage cupboards to be Fit for Purpose to suit a variety of items including ironing board. Storage cupboards to include at least 40% extra pieces of adjustable shelving	
<b>EQUIPMENT AND FIXTURES</b>		
	1 APP01 Washing Machine	
	1 APP26 Dryer	
	1 Laundry tub	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows	
<b>Lighting</b>	Natural and artificial lighting	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	6 GPOs	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>Equipment</b>	Washer and dryer to be provided as part of the building project	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>Extraction</b>	Extraction fan required.	
<b>Passive ventilation</b>	Openable window	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sink waste, washing machine waste	
<b>Water supply</b>		
1	Screw fittings for washing machine	
1	Mixing tap – hot and cold water plus hot & cold screw fittings	
<b>Gas supply</b>		
1	Gas hot water	

<b>REPROGRAPHICS AREA &amp; STORAGE</b>		<b>SS-AUX-07</b>
<b>Dimensions</b>	Minimum side 2 m	<b>Floor Area:</b> Refer to Accommodation Schedule
<b>Signage</b>	REPROGRAPHICS	
<b>Function</b>	The Reprographics area is generally used to house a photocopier machine and for the storage of stationery and photocopier consumables.	
<b>Occupancy</b>	School Staff only	
<b>Locality and relationship</b>	Ready Access to associated Staff Studies and Administration areas as relevant	
<b>Comments</b>	Surrounding areas should not be affected by noise or School Staff traffic	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Refer to E9: Openings.	
<b>Windows</b>	If applicable: operable - horizontal sliding, lockable (all administrative areas keyed alike) to be provided if room is located adjacent an external wall. Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
<b>Fit for Purpose</b>	Benching with upper surface at 900mm AFL and storage below, minimum length 2000mm.	
<b>EQUIPMENT AND FIXTURES</b>		
<b>Notes:</b>	Print equipment purchased by school	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4 x GPO ~ 800mm AFL, 1 x 15A GPO ~ 800mm AFL, 2 data ~800mm AFL	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Extraction</b>	Mechanical exhaust adjacent to the photocopier/multi-function device and located so that any dust or fumes are drawn away from the operator	
<b>Air cooling</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	



<b>STAFF STUDY</b>		<b>SS-AUX-08</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> Refer to Accommodation Schedule
<b>Signage</b>	STAFF STUDY	
<b>Function</b>	Teacher space for preparation, marking, storage and collaboration adjacent to classrooms. It includes a planning area & kitchenette.	
<b>Occupancy</b>	Varies. Refer to Accommodation Schedule (may also include temporary teaching practice students)	
<b>Locality and relationship</b>	Ready Access to the Functional Area or Learning Areas that it is associated with.	
<b>Comments</b>	Interior fit-out should enable collaboration between School Staff. The staff study should contain appropriate desk and storage space for the number of teachers to be supported, along with sufficient data and power outlets.	
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Attenuate sound between areas and consistent with room use. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Refer to E8: Building Structure and Fabric and G8: Acoustic Services.	
<b>Doors</b>	Refer to E9: Openings.	
<b>Windows</b>	Operable - horizontal sliding, lockable (administrative areas to be keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>Partitions</b>	Refer to E8: Building Structure and Fabric	
<b>FIXED FURNITURE</b>		
	NOTES: Shelving/storage and School Staff desks are required – consider wrap around desks	
	1 DES03 Office Workstation per School Staff member	
<b>EQUIPMENT AND FIXTURES</b>		
	1 Maximise shelving and/or install a SHV01 Compactus	
	1 Fridge	
	1 Sink	
	1 Hot water unit	
<b>LOOSE FURNITURE</b>		
	1 CHA04 Office Chair per workstation	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fans	
<b>Lighting</b>	Natural and artificial lighting. Dampers to any skylights Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 DGPO per School Staff desk at ~ 800mm AFL Kitchenette 1 Fridge GPO 2 Above bench GPO Power supply for hot water unit	
<b>Data</b>	1 data outlet per School Staff desk at ~ 800mm AFL 1 additional data outlet per every 4 School Staff for phone access	
<b>Lighting</b>	Refer G6: Electrical Services	
<b>SECURITY</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1 Sink waste from kitchenette area	

<b>Water supply</b>
1 Hot/cold mixer to sink

<b>NURSE'S OFFICE</b>		<b>SS-AUX-09</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> 15 m <sup>2</sup>
<b>Signage</b>	NURSE'S OFFICE	
<b>Function</b>	The Nurse's office should be capable of being used as an office, interview room, meeting room and study. It should be comfortable and provide with good sound insulation.	
<b>Occupancy</b>	1 person plus occasional visitors	
<b>Locality and relationship</b>	Direct Access to the Treatment Room. Acoustic privacy is required for confidential conversations.	
<b>Floor</b>	Stain resistant, non-slip flooring.	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed. Designed in accordance with AS 1428.1-2009 Design for access and mobility. Refer to E9: Openings.	
<b>Windows</b>	Fixed or operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1 FF14 Overhead Cupboard (lockable)	
	1 Perimeter desk	
<b>EQUIPMENT AND FIXTURES</b>		
	NOTES: Equipment purchased by school	
	1 APP06 Under Bench Fridge	
<b>LOOSE FURNITURE</b>		
	2 STO09 (lockable.)	
	1 CHA04 Office Chairs	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer 6.10 Sub Consultant Brief – Electrical and Communication	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1 GPO for Fridge 1 DGPO below desk per office station 1 DGPO above desk per office station	
<b>Data points</b>	2 Per office station	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services Security level: HIGH	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1 Sink waste	
<b>Water supply</b>	NOTES: Tapware to be installed with locking plates or similar to prevent rotation. 1 Mixer tap with hot and cold water	

<b>TREATMENT ROOM</b>		<b>SS-AUX-10</b>
<b>Dimensions</b>	Variable	<b>Floor Area:</b> Refer to Accommodation Schedule
<b>Signage</b>	FIRST AID	
<b>Function</b>	The Treatment Room provides a safe, acoustically private space for the treatment of students.	
<b>Occupancy</b>	Temporary	
<b>Locality and relationship</b>	Direct Access to the Nurse's Office Ground Floor.	
<b>Comments</b>	Acoustic privacy is required for confidential conversations.	
<b>Floor</b>	Stain resistant, non-slip flooring	
<b>Walls</b>	Construction to minimise sound transfer between neighbouring rooms. Refer to G8: Acoustic Services. Tiled splashback to sink area.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Designed in accordance with AS 1428.1-2009 Design for access and mobility. Keyed. Refer to E9: Openings.	
<b>Windows</b>	If applicable - Horizontal sliding, lockable (all rooms keyed alike). Refer E9: Openings. Windows are to be fitted with insect / security screens that are robust and vandal resistant.	
<b>FIXED FURNITURE</b>		
	1	Bench cupboard unit FF14 Overhead Cupboard BOA01 Pin Up Boards
<b>EQUIPMENT AND FIXTURES</b>		
	1	Sink
	1	APP06 Under Bench Fridge
	1	Instantaneous electric water heater – under bench
<b>LOOSE FURNITURE</b>		
	1	MIS17 Clock
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows Ceiling fan(s)	
<b>Lighting</b>	Natural and artificial lighting Dampers to any skylights Refer G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	1	DGPO at minimum 500mm AFL
	1	DGPO to workbench
	1	Provide power to instantaneous hot water unit
	1	Fridge GPO
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	Reverse cycle. Refer to G6: Mechanical Services	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	1	Sink Waste
<b>Water supply</b>	NOTES: Tapware to be installed with locking plates or similar to prevent rotation.	
	1	Mixer tap with hot and cold water

<b>FEMALE STUDENT TOILETS</b>		<b>SS-AUX-11</b>
<b>Dimensions</b>		<b>Floor Area:</b> Refer to SOA
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female Students	
<b>Locality + Relationship</b>	Associated with Male Student Toilets	
<b>Comments</b>	Light switches to be automated Include sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	2	Trough, Stainless Steel, 1200mm
	5	Push button Time Flow Bib Taps
	5	WC(s), Vitreous China, In Duct Cistern
	5	Toilet Paper Holder
	2	Soap Dispenser
	1	Electric Hand Dryer
	2	Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>MALE STUDENTS TOILETS</b>		<b>SS-AUX-12</b>
<b>Dimensions</b>		<b>Floor Area:</b> Refer to SOA
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male Students	
<b>Locality + Relationship</b>	Associated with Female Student Toilets	
<b>Comments</b>	Light switches to be automated. Include a sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	2	Trough, Stainless Steel, 1200mm
	5	Push button Time Flow Bib Taps
	2	WC(s), Vitreous China, In Duct Cistern
	3	900L 304-Grade Stainless Steel 1.2mm Floor Style Urinal
	2	Toilet Paper Holder
	2	Soap Dispenser
	1	Electric Hand Dryer
	2	Mirror
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>FEMALE STUDENT / PATRON TOILETS</b>		<b>SS-AUX-13</b>
<b>Dimensions</b>		<b>Floor Area:</b> Refer to SOA
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female Students and Patrons	
<b>Locality + Relationship</b>	Associated with Male Student Toilets	
<b>Comments</b>	Light switches to be automated Include sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Trough, Stainless Steel, 1200mm
	3	Push button Time Flow Bib Taps
	3	WC(s), Vitreous China, In Duct Cistern
	3	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Mirror 1200H x 1500W
	1	Full height glass mirror
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Dual Motor Ceiling Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>		
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>A/C</b>		
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	

<b>MALE STUDENTS / PATRON TOILETS</b>		<b>SS-AUX-14</b>
<b>Dimensions</b>		<b>Floor Area:</b> Refer to SOA
<b>Signage</b>	Room Name. Additional signage required to compartments for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male Students and Patrons	
<b>Locality + Relationship</b>	Associated with Female Student Toilets	
<b>Comments</b>	Light switches to be automated. Include a sanitary compartment for people with ambulant disabilities in accordance with AS1428.1 (2009)	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Inward opening, solid core timber door. Low grille.	
<b>Windows</b>	Fixed with Permanent Vent. Obscure glazing.	
<b>Partitions</b>	Rynat or a similar product equivalent in function, quality, appearance, etc. to the approval of the State.	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Trough, Stainless Steel, 1200mm
	3	Push button Time Flow Bib Taps
	1	WC(s), Vitreous China, In Duct Cistern
	2	900L 304-Grade Stainless Steel 1.2mm Floor Style Urinal
	1	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Mirror 1200H x 1500W
	1	Full height glass mirror
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	N/A	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Sewerage	
<b>Water Supply</b>	Cold Water	



<b>FEMALE STAFF / FEMALE STAFF AND VISITOR TOILETS</b>		<b>SS-AUX-15</b>
<b>Dimensions</b>		<b>Floor Area:</b> 6m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female School Staff	
<b>Locality + Relationship</b>	Associated with Male Staff Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Semi recessed Vanity Basin, Vitreous China
	1	Standard Taps
	1	WC(s), Vitreous China
	1	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

<b>MALE STAFF / MALE STAFF AND VISITOR TOILETS</b>		<b>SS-AUX-16</b>
<b>Dimensions</b>		<b>Floor Area:</b> 6m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male School Staff	
<b>Locality + Relationship</b>	Associated with Female Staff Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Semi recessed Vanity Basin, Vitreous China
	1	Standard Taps
	1	WC(s), Vitreous China
	1	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

<b>FEMALE STAFF TOILETS SET 02</b>		<b>SS-AUX-17</b>
<b>Dimensions</b>		<b>Floor Area:</b> 16m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female School Staff	
<b>Locality + Relationship</b>	Associated with Male Staff Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	4	Semi recessed Vanity Basin, Vitreous China
	4	Standard Taps
	4	WC(s), Vitreous China
	4	Toilet Paper Holder
	2	Soap Dispenser
	1	Electric Hand Dryer
	2	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

<b>MALE STAFF TOILETS SET 02</b>		<b>SS-AUX-18</b>
<b>Dimensions</b>		<b>Floor Area:</b> 8m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male School Staff	
<b>Locality</b>	+	
<b>Relationship</b>	Associated with Female Staff Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	2	Semi recessed Vanity Basin, Vitreous China
	2	Standard Taps
	2	WC(s), Vitreous China
	2	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

<b>FEMALE STUDENT TOILETS SET 02</b>		<b>SS-AUX-19</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Female Students	
<b>Locality</b>	+	
<b>Relationship</b>	Associated with Male Students Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	4	Semi recessed Vanity Basin, Vitreous China
	4	Standard Taps
	3	WC(s), Vitreous China
	1	WC, Vitreous China Ambulant Pan
	4	Toilet Paper Holder
	2	Soap Dispenser
	1	Electric Hand Dryer
	2	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

<b>MALE STUDENT TOILETS SET 02</b>		<b>SS-AUX-20</b>
<b>Dimensions</b>		<b>Floor Area:</b> 12m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male Students	
<b>Locality</b>	+	
<b>Relationship</b>	Associated with Female Students Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	4	Semi recessed Vanity Basin, Vitreous China
	4	Standard Taps
	3	WC(s), Vitreous China
	1	WC, Vitreous China Ambulant Pan
	4	Toilet Paper Holder
	2	Soap Dispenser
	1	Electric Hand Dryer
	2	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

<b>STUDENT FOYER</b>		<b>SS-AUX-21</b>
<b>Dimensions</b>	Variable	<b>Floor Area: 20 m<sup>2</sup></b>
<b>Signage</b>		
<b>Function</b>	Internal foyer for Students	
<b>Occupancy</b>	Students	
<b>Locality</b>	+ Direct Access from the internal courtyard of the School Facility	
<b>Relationship</b>		
<b>Comments</b>		
<b>Floor</b>	Anti-static carpet	
<b>Walls</b>	Durable, impact resistant, easily cleaned, painted. Consideration to sound attenuation between areas. Refer to G8: Acoustic Services.	
<b>Ceiling</b>	Acoustically treated. Refer to G8: Acoustic Services.	
<b>Doors</b>	Keyed.	
<b>Windows</b>	Operable - horizontal sliding, lockable (all rooms keyed alike). Refer to E9: Openings. Operable windows are to be fitted with insect / security screens that are robust and vandal resistant	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
<b>LOOSE FURNITURE</b>		
	4	CHA13 Waiting Area Chairs
	2	TAB09 Coffee Table
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural ventilation – openable windows. Ceiling fans.	
<b>Lighting</b>	Natural and artificial lighting. Refer to G6: Electrical Services	
<b>Acoustics</b>	Refer to G8: Acoustic Services.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	4	DGPOs
<b>Data points</b>		
<b>Lighting</b>	Refer to G6: Electrical Services	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC requirements	
<b>MECHANICAL</b>		
<b>Air cooling</b>	Reverse cycle. Refer to G5: Mechanical Services	
<b>FIRE SERVICES</b>	N/A	

<b>BIN ENCLOSURE</b>		<b>SS-AUX22</b>
<b>Dimensions</b>	Varies	<b>Floor Area:</b> Refer to Schedule of Accommodation
<b>Signage</b>		
<b>Function</b>		
<b>Occupancy</b>		
<b>Locality and relationship</b>	Ready Access for Service Vehicles	
<b>Comments</b>	The location, layout and construction of the bin enclosure must be suitable for the delivery of Services in accordance with the Services Specifications. The bin enclosure must be lockable, accessible to service vehicles, and fitted with a hose tap and drain for wash down.	
<b>Floor</b>	Durable, non-slip flooring	
<b>Walls</b>	Durable, impact resistant, easily cleaned.	
<b>Ceiling</b>		
<b>Doors</b>	Lockable Gates, sized to suit bins	
<b>Windows</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	1	Hose Cock
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
<b>Lighting</b>	Sensor activated. Refer G6: Electrical Services	
<b>Equipment</b>		
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Water Supply</b>	Cold Water	
<b>Waste</b>	Floor Waste	



<b>MALE STAFF TOILETS SET 03</b>		<b>SS-AUX-23</b>
<b>Dimensions</b>		<b>Floor Area:</b> 8m <sup>2</sup>
<b>Signage</b>	Room Name. Additional signage as required by AS1428.1 (2009)	
<b>Function</b>		
<b>Occupancy</b>	Male School Staff	
<b>Locality</b>	+	
<b>Relationship</b>	Associated with Female Staff Toilets	
<b>Comments</b>	Light switches to be automated.	
<b>Floor</b>	Tiles	
<b>Walls</b>	Steel Stud with MR-Plasterboard - Painted	
<b>Ceiling</b>	Plasterboard	
<b>Skirting</b>	Tile	
<b>Doors</b>	Lockable, inward opening, solid core timber door.	
<b>Windows</b>		
<b>FIXED FURNITURE</b>		
<b>EQUIPMENT AND FIXTURES</b>		
	2	Semi recessed Vanity Basin, Vitreous China
	2	Standard Taps
	2	WC(s), Vitreous China
	1	Urinal
	2	Toilet Paper Holder
	1	Soap Dispenser
	1	Electric Hand Dryer
	1	Glass Mirror 1200H x 1500W
<b>LOOSE FURNITURE</b>		
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Mechanical	
<b>Extraction</b>	Exhaust Fan	
<b>Lighting</b>	Natural & Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	Exhaust Fan 1 GPO	
<b>Lighting</b>	Surface Luminaire. Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Refer to G6: Electrical Services	
<b>Smoke</b>	As per NCC Requirements	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Mechanical ventilation	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Floor Waste Sewerage	
<b>Water Supply</b>	Hot and Cold Water	

**13.11 Gardener**

SS-GDR-01 Fertiliser Store

SS-GDR-02 Machine Store

SS-GDR-03 Gardener's Workshop

<b>FERTILISER STORE</b>		<b>SS-GDR-01</b>
<b>Dimensions</b>		<b>Floor Area:</b> 5 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Gardener's fertiliser Storage Area	
<b>Occupancy</b>	Gardener	
<b>Locality + Relationship</b>	Direct Access to Machine Store and Gardener's Workshop	
<b>Comments</b>	Must be accessible with a bag trolley/wheel barrow loaded with fertiliser	
<b>Floor</b>	Mono concrete, Sealed	
<b>Walls</b>	Face Brickwork. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	Impact Resistant Plasterboard	
<b>Skirting</b>	Nil	
<b>Doors</b>	Outward Opening Solid Core Door. Door to be zinc/Colorbond clad to both internal & external faces and edges. Door grille at low level.	
<b>Windows</b>	Nil	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	1 STO10 Metal Storage Cabinet	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural Ventilation – Rotary Roof Ventilator	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	N/A	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Lighting</b>	Surface mounted Luminaire Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	Smoke Detector Connected to Intruder Alarm System	
<b>MECHANICAL</b>		
<b>Exhaust</b>	Ceiling grille connected to roof mounted, wind operated rotary ventilator and over door grille for air inlet.	
<b>FIRE SERVICES</b>		
	N/A	
<b>HYDRAULIC &amp; GAS</b>		
	N/A	

<b>MACHINE STORE</b>		<b>SS-GDR-02</b>
<b>Dimensions</b>		<b>Floor Area:</b> 25 m <sup>2</sup>
<b>Signage</b>	Room Name	
<b>Function</b>	Gardeners machinery	
<b>Occupancy</b>	Gardener	
<b>Locality + Relationship</b>	Direct Access to Fertiliser Store, Gardener's Workshop	
<b>Comments</b>		
<b>Floor</b>	Mono Concrete Sealed	
<b>Walls</b>	Face Brickwork. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>	N/A	
<b>Skirting</b>	N/A	
<b>Doors</b>	Double ,Outward Opening, Solid Core Door. Grille for air inlet. Door to be zinc/Colorbond clad to both internal & external faces and edges. Low level door grille.	
<b>Windows</b>	Top hung awning.	
<b>Partitions</b>	N/A.	
<b>FIXED FURNITURE</b>		
	N/A	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A	
<b>LOOSE FURNITURE</b>		
	N/A	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural Ventilation – Rotary Roof Ventilator	
<b>Extraction</b>	N/A	
<b>Lighting</b>	Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>	2 Double GPO	
<b>Lighting</b>	Luminaire Motion sensor lighting	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection	
<b>Smoke</b>	N/A	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grille connected to roof mounted, wind operated rotary ventilator with door grille for air inlet.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	N/A	

<b>GARDENER'S WORKSHOP</b>		<b>SS-GDR-03</b>
<b>Dimensions</b>		<b>Floor Area: 15 m<sup>2</sup></b>
<b>Signage</b>	Room Name	
<b>Function</b>	Gardener's Workshop Area	
<b>Occupancy</b>	Gardener	
<b>Locality + Relationship</b>	Direct Access to Machine Store, Fertiliser Store	
<b>Floor</b>	Mono-Concrete (sealed)	
<b>Walls</b>	Face Brickwork. Extend walls full height and seal to u/side of roof with fire rated insulation to achieve fire separation to adjacent rooms.	
<b>Ceiling</b>		
<b>Skirting</b>	N/A	
<b>Doors</b>	Single, Outward Opening, Solid Core Door. Grille for air inlet. Door to be zinc/Colorbond clad to both internal & external faces and edges. Door grille at low level.	
<b>Windows</b>	Openable	
<b>Partitions</b>	N/A	
<b>FIXED FURNITURE</b>		
	1 MIS10 Peg Board	
	1 Gardener's Work Bench	
	1 MIS04 Broom and Spade Rack	
<b>EQUIPMENT AND FIXTURES</b>		
	Reticulation Controller	
<b>LOOSE FURNITURE</b>		
	1 CHA03 Task Chair	
	1 DES03 Office Workstation	
	1 MIS19 Waste Bin	
Fit for Purpose	SHV07 Storeroom Shelving	
<b>ENVIRONMENTAL</b>		
<b>Ventilation</b>	Natural Ventilation – Rotary Roof Ventilator	
<b>Extraction</b>		
<b>Lighting</b>	Natural – windows Artificial	
<b>Acoustics</b>	Refer to G8: Acoustic Services	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
<b>Power</b>		
	6 Double GPO	
	1 GPO for Reticulation Controller	
<b>Lighting</b>	Luminaire	
<b>SECURITY &amp; DETECTION</b>		
<b>Intruder</b>	Intruder Detection & keypad	
<b>MECHANICAL</b>		
<b>A/C</b>	N/A	
<b>Extraction</b>	Ceiling grill connected to roof mounted, wind operated rotary ventilator with door grille for air inlet.	
<b>FIRE SERVICES</b>		
<b>Fire-fighting equipment</b>	Portable Fire Extinguishers	
<b>HYDRAULIC &amp; GAS</b>		
<b>Waste</b>	Trapped waste to trough	
<b>Water Supply</b>	Cold Water & Hot (60°)	
<b>Sanitary Fixtures</b>	Standard Taps SS Trough, 45L Insert type	

### **13.12 Transportable Units**

SS-TU-GLA-01 Transportable Unit – General Learning Area

<b>TRANSPORTABLE UNIT – GENERAL LEARNING AREA (SECONDARY SCHOOL)</b>		<b>SS-TU-GLA-01</b>
<b>Dimensions</b>	Between 70-110sqm	
<b>Function</b>	General Learning Area.	
<b>Occupancy</b>	1 x Teacher + 32 students	
<b>Locality + Relationship</b>	Ready Access to adjacent Teaching Blocks	
<b>Comments</b>	Allowance must be made for external mounted refrigerated air conditioning units on a short side. A minimum 1.5m separation must be provided between all Transportable Units, or as required by Quality Standards. Allowances must be made for all Engineering Services described in Part C4: Future Development and Expansion.	
<b>CONSTRUCTION</b>		
	N/A – Refer to Schedule 21	
<b>FIXTURES AND FURNITURE</b>		
<b>FIXED FURNITURE</b>		
	N/A – Refer to Schedule 21	
<b>EQUIPMENT AND FIXTURES</b>		
	N/A – Refer to Schedule 21	
<b>LOOSE FURNITURE</b>		
	30 TAB20 Classroom Desks (Single)	
	1 TAB25 Classroom Desk (Double/Height Adjustable)	
	32 CHA01 Classroom Chairs	
	1 DES04 Teacher’s Desk	
	1 CHA04 Office Chair	
<b>SERVICES AND ENVIRONMENT</b>		
<b>ENVIRONMENTAL</b>		
	Refer to C4: Future Development and Expansion and Schedule 21.	
<b>ELECTRICAL &amp; COMMUNICATIONS</b>		
	Refer to C4: Future Development and Expansion and Schedule 21.	
<b>SECURITY &amp; DETECTION</b>		
	Refer to C4: Future Development and Expansion and Schedule 21.	
<b>MECHANICAL</b>		
	Refer to C4: Future Development and Expansion and Schedule 21.	
<b>HYDRAULIC &amp; GAS</b>		
	Refer to C4: Future Development and Expansion and Schedule 21.	

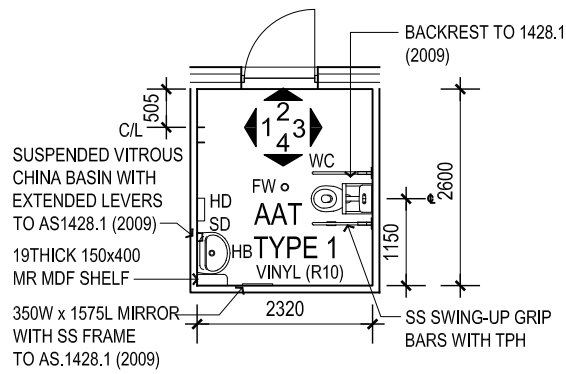
## **I4. LAYOUT DRAWINGS**

### **I4.1 AAT Type 1 (1:100 at A4)**



## LEGEND

BR	BACKREST
FW	FLOOR WASTE OUTLET
HD	HAND DRIER
HB	HAND BASIN
SD	SOAP DISPENSER
SS	STAINLESS STEEL
TPH	TOILET PAPER HOLDER
WB	WASTE BIN
WC	WATER CLOSET



## PLAN

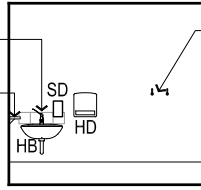
## NOTE

'FD.00' to 'FD.58' refers to Standard Primary School Furniture Details from the Primary School Brief as found on [www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)

0 1m 2m  
Scale

AAT  
TYPE 1

SUSPENDED VITROUS  
CHINA BASIN WITH  
EXTENDED LEVERS  
TO AS1428.1 (2009)  
19THICK 150x400  
MR MDF SHELF

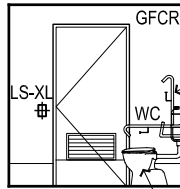


COAT HOOKS  
AT 1200 AFL

VIEW: 1

LEGEND

- BR BACKREST
- C/L CENTRELINE
- DR DOOR
- ECB EMERGENCY CALL BUTTON
- GFCR GLASS FACE CEMENT RENDER
- HD HAND DRIER
- HB HAND BASIN
- LS-XL LARGE LIGHT SWITCH
- P-XL DOUBLE GENERAL PURPOSE OUTLET WITH LARGE BUTTON
- SD SOAP DISPENSER
- SS STAINLESS STEEL
- TPH TOILET PAPER HOLDER
- WB WASTE BIN
- WC WATER CLOSET

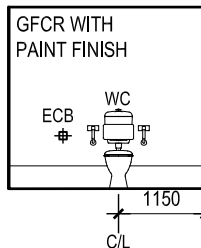


SS GRIP BARS  
WITH TPH  
C/L

810

VITREOUS CHINA  
DISABLED TOILET

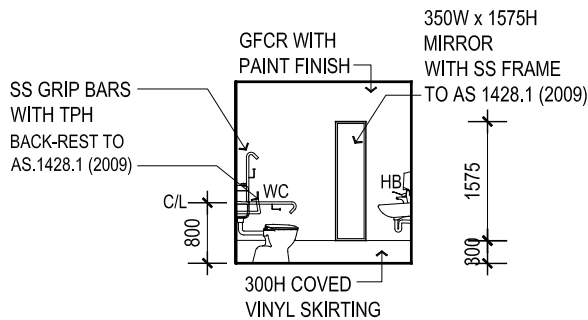
VIEW: 2



1150

700

VIEW: 3



350W x 1575H  
MIRROR  
WITH SS FRAME  
TO AS 1428.1 (2009)

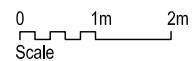
1575

800

VIEW: 4

**NOTE**  
DATA & POWER OUTLETS ARE  
INDICATIVE AND REQUIRE  
CO-ORDINATION TO 5.11.3  
ELECTRICAL TEMPLATE DRAWINGS

**NOTE**  
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School Furniture Details from the Primary  
School Brief as found on  
[www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)

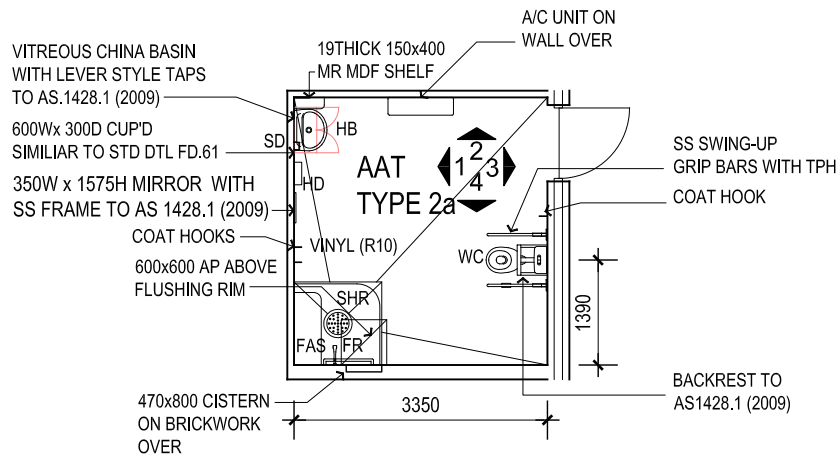


AAT  
TYPE 1

**14.2 AAT Type 2a (1:100 at A4)**

## LEGEND

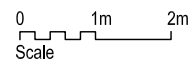
AP	ACCESS PANEL
BR	BACKREST
FAS	FOLD AWAY SEAT
FR	FLUSH RIM
FW	FLOOR WASTE OUTLET
HD	HAND DRIER
HB	HAND BASIN
SD	SOAP DISPENSER
SS	STAINLESS STEEL
SHR	SHOWER
TPH	TOILET PAPER HOLDER
WB	WASTE BIN
WC	TOILET



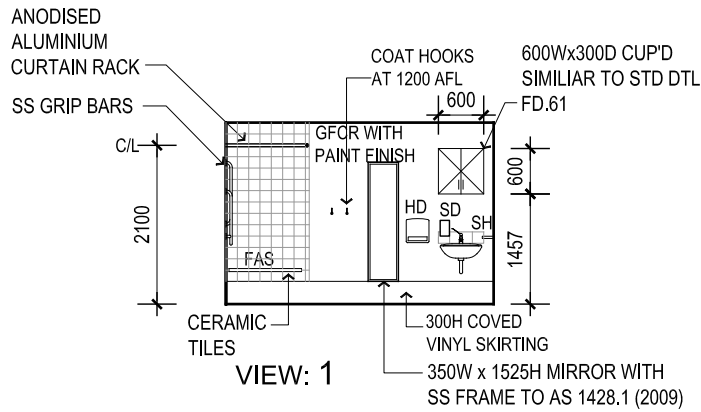
## PLAN

## NOTE

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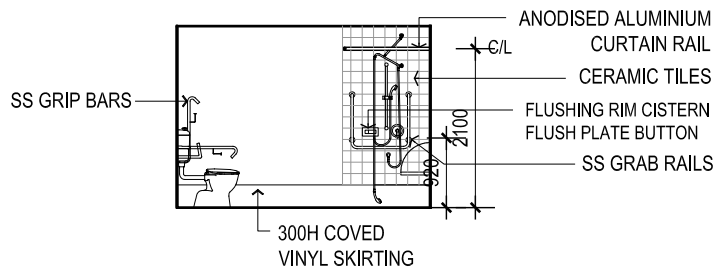
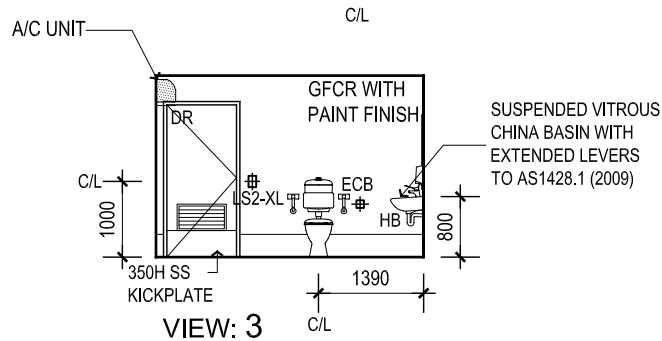
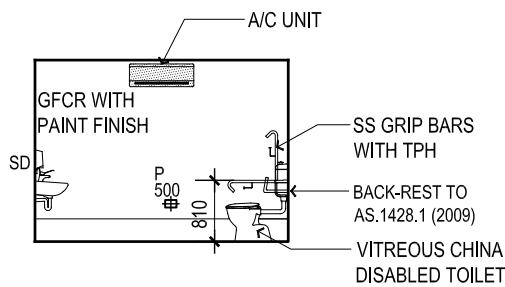


## AAT TYPE 2a



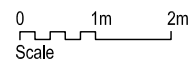
**LEGEND**

- BR BACKREST
- C/L CENTRELINE
- DR DOOR
- ECB EMERGENCY CALL BUTTON
- FAS FOLD AWAY SEAT
- FR FLUSH RIM
- GFCR GLASS FACE CEMENT RENDER
- HD HAND DRIER
- HB HAND BASIN
- LS2-XL TWO WAYLIGHT SWITCH WITH LARGE BUTTON
- P DOUBLE GENERAL PURPOSE OUTLET AS ABOVE WITH LARGE SWITCH
- SD SOAP DISPENSER
- SH SHELF
- SS STAINLESS STEEL
- TPH TOILET PAPER HOLDER
- WB WASTE BIN
- WC WATER CLOSET



**NOTE**  
 DATA & POWER OUTLETS ARE INDICATIVE AND REQUIRE CO-ORDINATION TO 5.11.3 ELECTRICAL TEMPLATE DRAWINGS

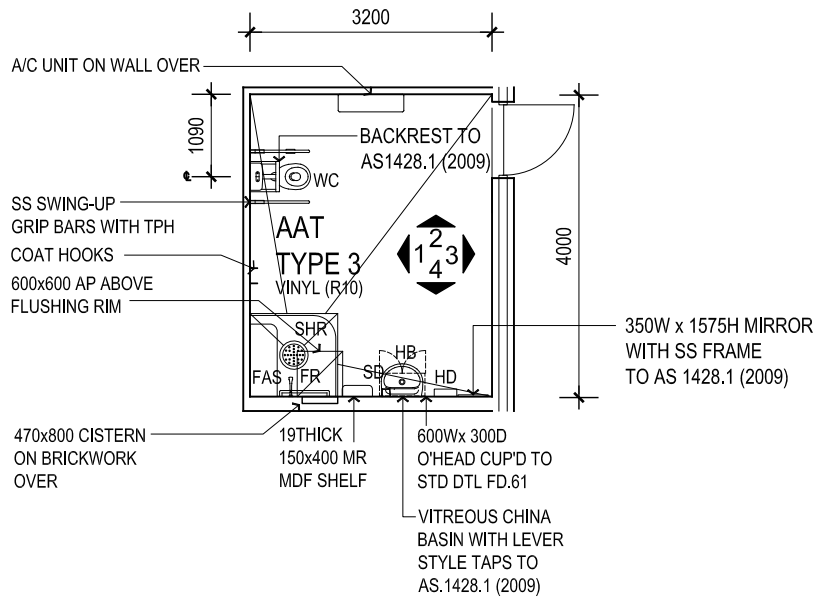
**NOTE**  
 'FD.00' to 'FD.58' refers to Standard Primary School Furniture Details from the Primary School Brief as found on [www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)



**14.3 AAT Type 3 (1:100 at A4)**

**LEGEND**

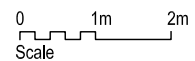
AP	ACCESS PANEL
BR	BACKREST
FAS	FOLD AWAY SEAT
FR	FLUSH RIM
FW	FLOOR WATER OUTLET
HD	HAND DRIER
HB	HAND BASIN
SD	SOAP DISPENSER
SHR	SHOWER
SS	STAINLESS STEEL
WB	WASTE BIN
WC	WATER CLOSET



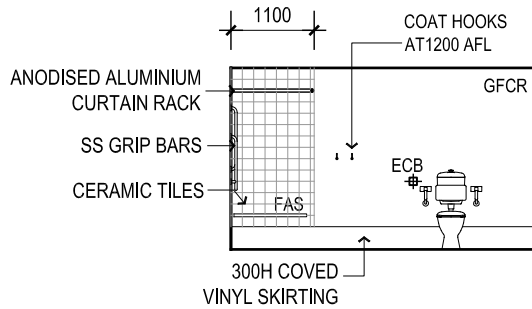
**PLAN**

**NOTE**

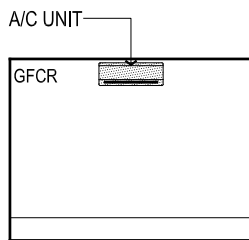
'FD.00' to 'FD.58' refers to Standard Primary School Furniture Details from the Primary School Brief as found on [www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)



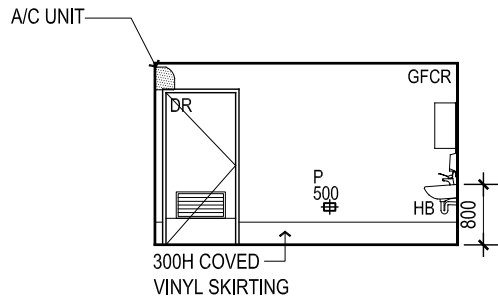
**AAT TYPE 3**



VIEW: 1

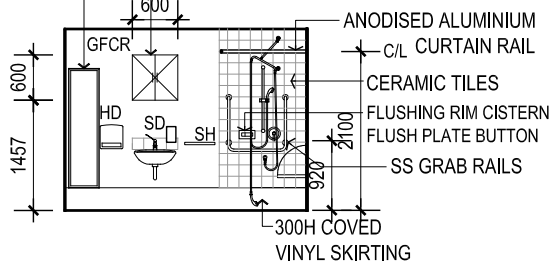


VIEW: 2



VIEW: 3

350W x 1575H MIRROR WITH SS O/HEAD CUP'D TO  
FRAME TO AS1428.1 (2009) STD DTL FD.61



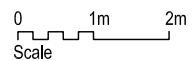
VIEW: 4

LEGEND

- BR BACKREST
- C/L CENTRELINE
- DR DOOR
- ECB EMERGENCY CALL BUTTON
- GFCR GLASS FACE CEMENT RENDER
- HD HAND DRIER
- HB HAND BASIN
- LS-XL LARGE LIGHT SWITCH
- NIC NOT IN CONTRACT
- P-XL DOUBLE GENERAL PURPOSE OUTLET WITH LARGE BUTTON
- SD SOAP DISPENSER
- SH SHELF
- SS STAINLESS STEEL
- TPH TOILET PAPER HOLDER
- WB WASTE BIN
- WC WATER CLOSET

**NOTE**  
DATA & POWER OUTLETS ARE  
INDICATIVE AND REQUIRE  
CO-ORDINATION TO 5.11.3  
ELECTRICAL TEMPLATE DRAWINGS

**NOTE**  
'FD.00' to 'FD.58' refers to Standard Primary  
School Furniture Details from the Primary  
School Brief as found on  
[www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)



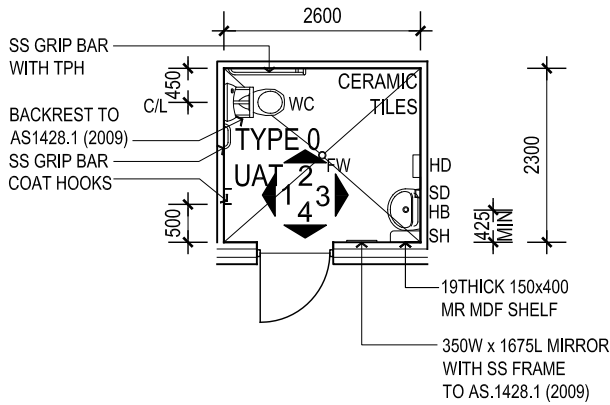
AAT TYPE 3



## **14.4 UAT Type 0 (1:100 at A4)**

**LEGEND**

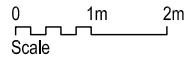
- BR BACKREST
- FW FLOOR WASTE OUTLET
- HD HAND DRIER
- HB HAND BASIN
- SD SOAP DISPENSER
- SH SHELF
- SS STAINLESS STEEL
- TPH TOILET PAPER HOLDER
- WB WASTE BIN
- WC WATER CLOSET



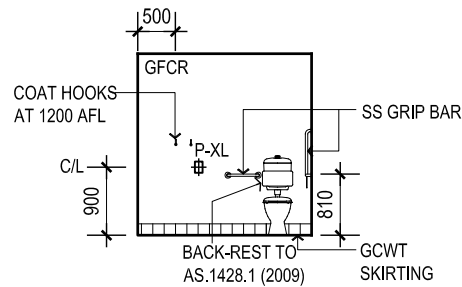
**PLAN**

**NOTE**

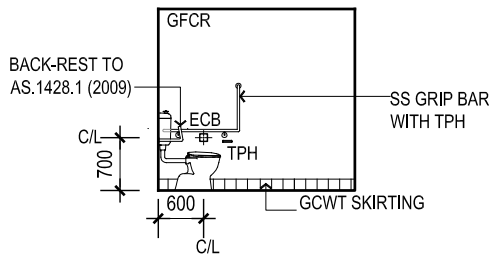
'FD.00' to 'FD.58' refers to Standard Primary School Furniture Details from the Primary School Brief as found on [www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)



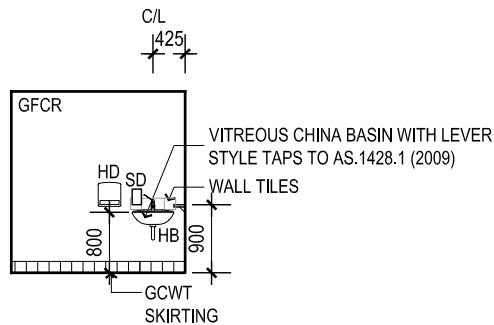
**UNIVERSAL ACCESS TOILET / TYPE 0**



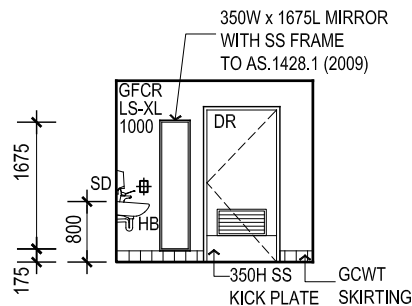
VIEW: 1



VIEW: 2



VIEW: 3



VIEW: 4

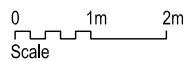
### LEGEND

BR	BACKREST
C/L	CENTRELINE
DR	DOOR
ECB	EMERGENCY CALL BUTTON
GFCR	GLASS FACE CEMENT RENDER
GCWT	150x150 GLAZED CERAMIC WALL TILES
HB	HAND WASH BASIN
HD	HAND DRIER
LS-XL	LARGE LIGHT SWITCH
P-XL	DOUBLE GENERAL PURPOSE OUTLET WITH LARGE BUTTON
SD	SOAP DISPENSER
SH	SHELF
SS	STAINLESS STEEL
TPH	TOILET PAPER HOLDER
WB	WASTEBIN
WC	WATER CLOSET

**NOTE**  
 DATA & POWER OUTLETS ARE INDICATIVE AND REQUIRE CO-ORDINATION TO 5.11.3 ELECTRICAL TEMPLATE DRAWINGS

### NOTE

'FD.00' to 'FD.58' refers to Standard Primary School Furniture Details from the Primary School Brief as found on [www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)

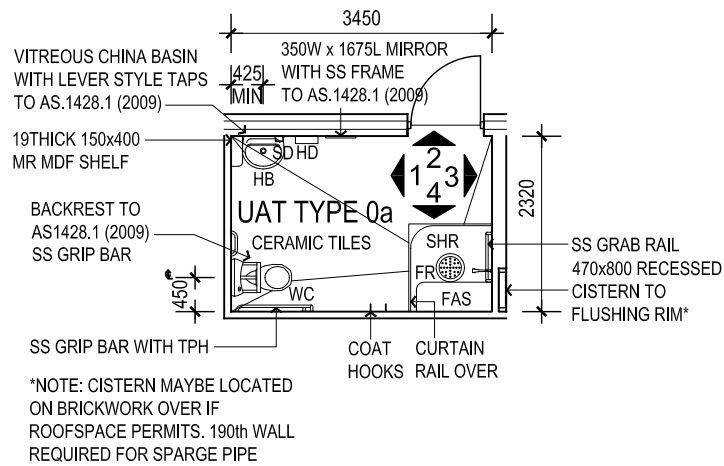


UNIVERSAL ACCESS  
 TOILET / TYPE 0

**14.5 UAT Type 0a (1:100 at A4)**

## LEGEND

FAS	FOLD AWAY SEAT
FR	FLUSH RIM
FW	FLOOR WASTE GULLY
HB	HAND BASIN
HD	HAND DRIER
PTD	PAPER TOWEL DISPENSER
SD	SOAP DISPENSER
SH	SHELF
SHR	SHOWER
SS	STAINLESS STEEL
WB	WASTE BIN
WC	WATER CLOSET



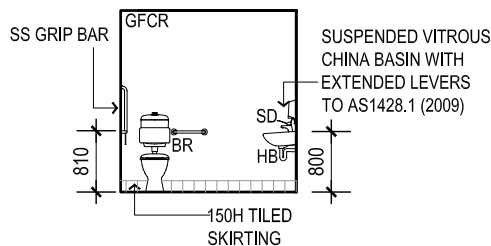
## PLAN

## NOTE

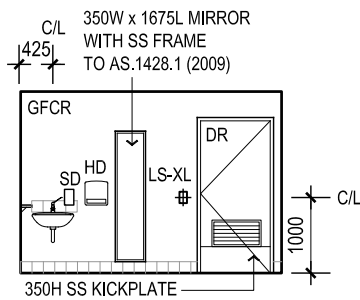
'FD.00' to 'FD.58' refers to Standard Primary School Furniture Details from the Primary School Brief as found on [www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)

0 1m 2m  
Scale

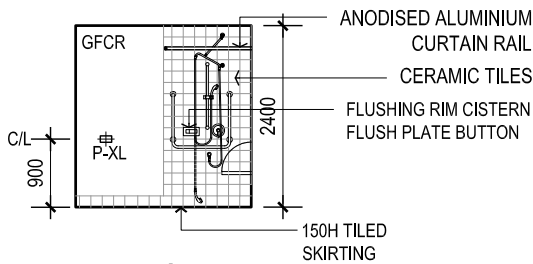
UAT TYPE 0a



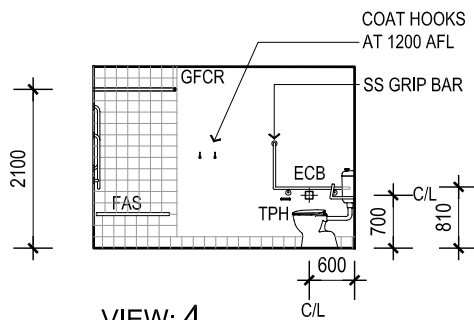
VIEW: 1



VIEW: 2



VIEW: 3



VIEW: 4

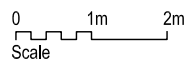
### LEGEND

BR	BACKREST
ECB	EMERGENCY CALL BUTTON LINKED TO ADMIN
DR	DOOR
FAS	FOLD AWAY SEAT
HB	HAND BASIN
HD	HAND DRIER
LS-XL	LARGE LIGHT SWITCH
P	DOUBLE GPO
PTD	PAPER TOWEL DISPENSER
P-XL	DOUBLE GENERAL PURPOSE OUTLET WITH LARGE SWITCH
SD	SOAP DISPENSER
SH	SHelf
SS	STAINLESS STEEL
TPH	TOILET PAPER HOLDER
	INSIDE HAND RAIL
WB	WASTE BIN
WC	WATER CLOSET

**NOTE**  
DATA & POWER OUTLETS ARE  
INDICATIVE AND REQUIRE  
CO-ORDINATION TO 5.11.3  
ELECTRICAL TEMPLATE DRAWINGS

### NOTE

'FD.00' to 'FD.58' refers to Standard Primary  
School Furniture Details from the Primary  
School Brief as found on  
[www.bmw.wa.gov.au/primaryschoolbrief](http://www.bmw.wa.gov.au/primaryschoolbrief)



UAT TYPE 0a

**14.6 Dental Therapy Centre**

**NOTES.**

- FURNITURE LAYOUTS REFER TO FIXED FURNITURE DRAWINGS.
- SITE PAVING LAYOUT REFER TO SITE PAVING PLAN DRAWING.
- NOTE 1. S.S. TROUGH TO BE 306 GRADE POLISHED FINISH STAINLESS STEEL.
- NOTE 2. PROVIDE METAL SECURITY SCREEN TO ALL OPENING WINDOW SASHES.
- NOTE 3. WINDOW TREATMENT TO ALL WINDOWS - REFER TO INTERIOR DESIGN 5.19
- NOTE 4. WINDOW LOCATIONS. - THE SIZE AND LOCATIONS OF WINDOWS AS SHOWN TO THE DENTAL THERAPY CLINIC ARE IMPORTANT FOR THE PROPER FUNCTIONING OF THE FACILITIES.
- NOTE 5. PROVIDE DOOR CLOSER TO EXTERNAL DOOR.
- NOTE 6. ALL WINDOW SUITES TO HAVE SLIDING SASHES.

Because this clinic is being built by DoE on behalf of the DENTAL HEALTH SERVICES the Architect is required to liaise with -

Dental Health Services  
Acting Manager Physical Resources, Mark Bryant  
Cnr Brockway Rd & Camelia Ave,  
Mt Claremont WA 6010  
Tele: 9385 4135 Fax: 9385 4977  
Email: mark.bryant@helath.wa.gov.au

- At the following stages of the works.
- Brief Finalisation/Master Planning
    - To confirm location of the DTU.
  - Design Development Drawings
    - To confirm that NO changes have been made.
- Mandatory site inspections by Dental Health, Manager Physical Resources is required
- Before the floor slab is poured.
  - Once Walls are chased and conduits placed, but prior to rendering
  - At final fixing.

Refer to 6.7 design guidelines for detailed information. THIS DRAWING IS AVAILABLE IN DWG FORMAT FROM BMW AND MUST BE REPRODUCED IN IT'S ENTIRETY IN THE CONTRACT DOCUMENTS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE HYDRAULICS, ELECTRICAL & MECHANICAL DRAWINGS.

THE PLAN LAYOUT of the DENTAL THERAPY SHALL BE BUILT AS SHOWN & SHALL NOT BE **MIRRORED**, EXCEPT WITH SPECIFIC APPROVAL FROM DENTAL HEALTH, MANAGER PHYSICAL RESOURCES.

**CONDUIT ABBREVIATIONS.**

**ELECTRICAL**  
X X-RAY CONDUIT, with DRAW WIRE.

**HYAULICS**  
C. COPPER 20 PIPE. S. SUCTION.  
M MISCELLANEOUS 32 CONDUITW. WASTE.  
P. PULL THRU CONDUIT.

**OLDFIELD KNOTT ARCHITECTS PTY. LTD.**  
The Royal Australian Institute of Architects  
567 HAY STREET, DALGLISH 6008  
P.O. BOX 849, SUBIACO, W.A. 6904  
TEL : (08) 9381 6788 FAX (08) 9381 4619  
EMAIL : oka@okarch.com.au

NO.	AMENDMENT	DATE	INIT.
19	DENTAL HEALTH SERVICES DETAILS UPDATED	26.11.14	TC
18	TROUGH REVISED TO 700H	20.10.14	TC

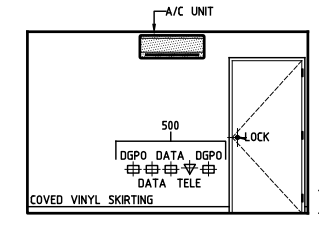
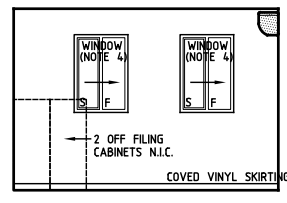
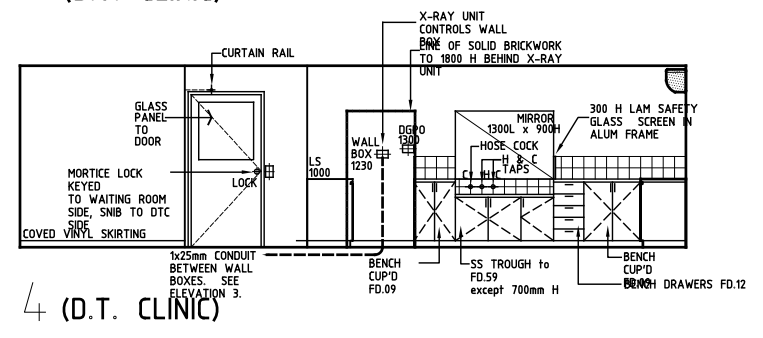
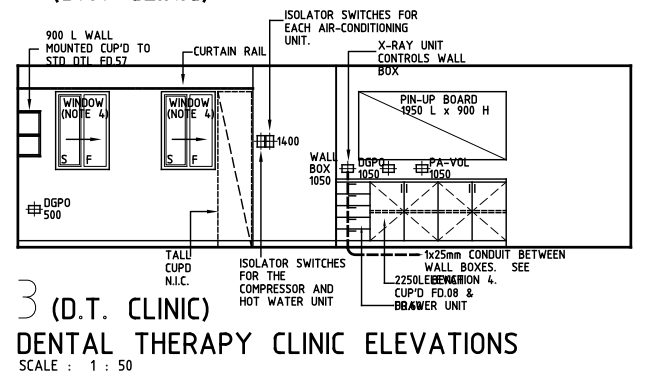
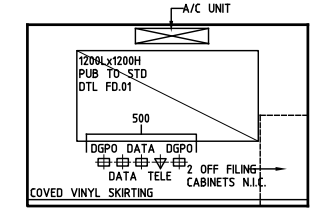
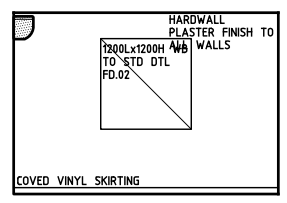
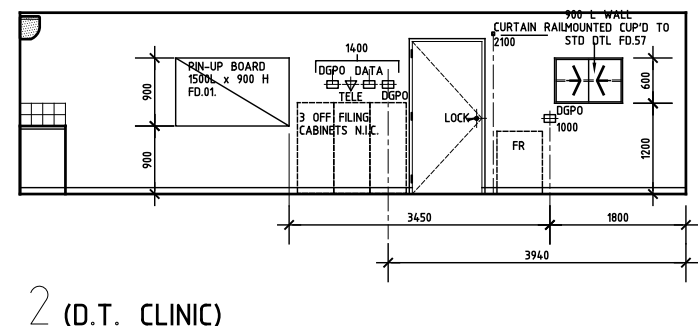
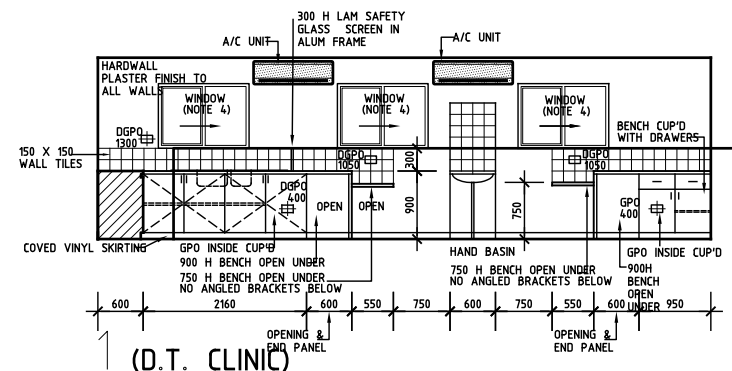


**ARCHITECTURAL BMW STANDARD**

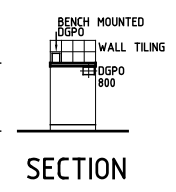
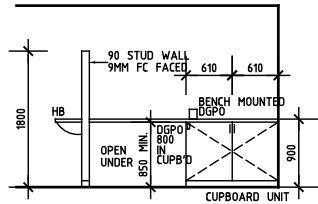
DENTAL THERAPY CLINIC FLOOR PLAN AND DETAILS

DRAWN	DESIGNED	REDUCTION
CHECKED	PRINCIPAL	0
APPROVED	SIGNATURE	25
SCALE 1:50 - A1	DATE	DRAWING No.
1:100 - A3		
DTP PROJ No.	DTP FILE No.	A.019
CAMS.No.	CAMS.FILE	

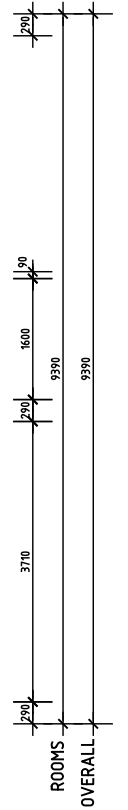
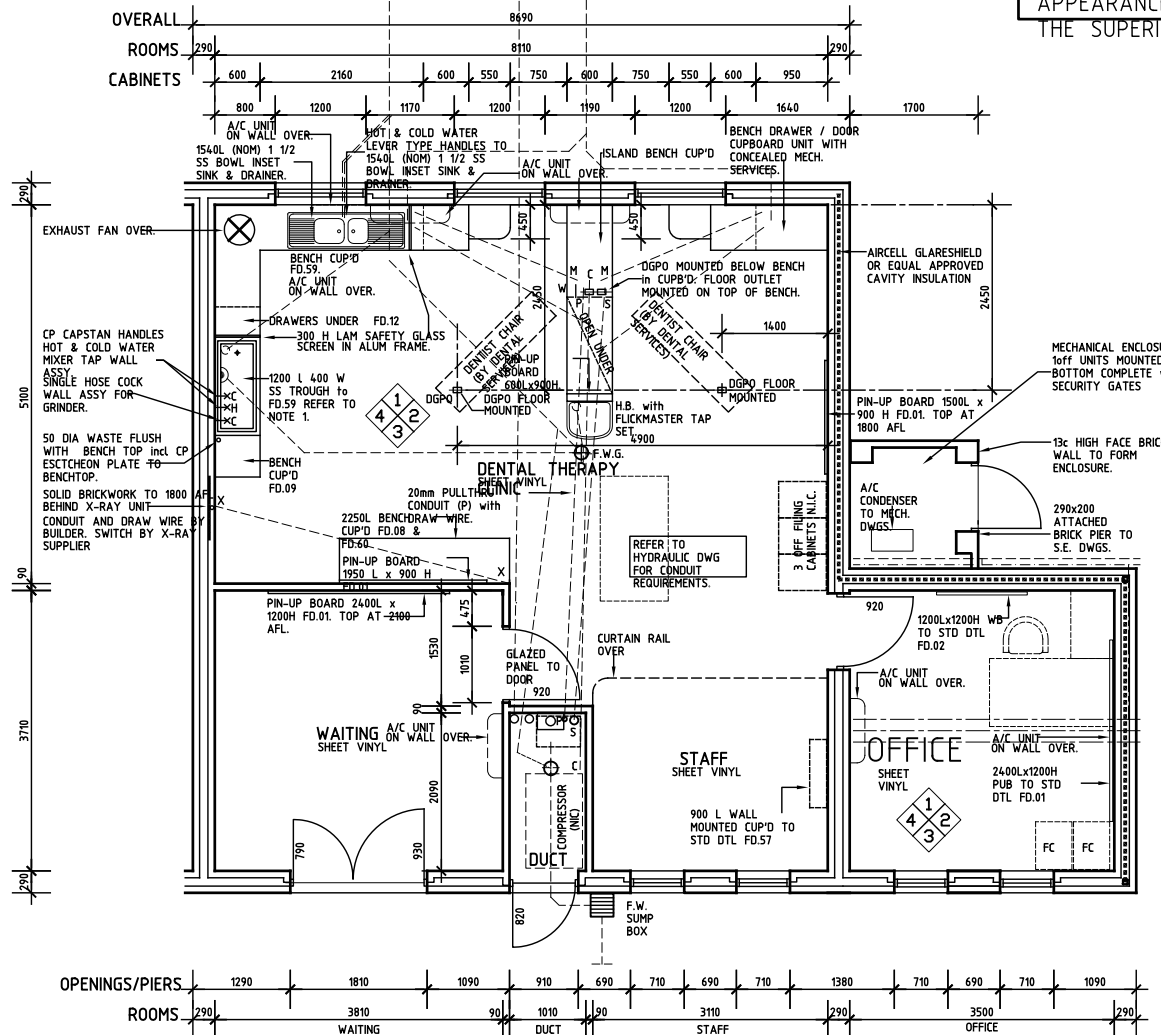
THIS IS A CADD DRAWING DO NOT AMEND MANUALLY FILENAME: DTC019A.dwg PLOTDATE: 24.09.2014 12:42 PM



**NOTE:**  
CEILING IN DENTAL THERAPY CLINIC & STAFF ROOM TO BE 1200 x 600 SUSPENDED MINERAL FIBRE ACOUSTIC TILES. (SOLATON ST721 HD OR A SIMILAR PRODUCT EQUIVALENT IN FUNCTION, QUALITY, APPEARANCE, ETC TO THE APPROVAL OF THE SUPERINTENDENT)



ELEVATION ISLAND BENCH UNIT  
NOTE: DOORS TO BE BOTH SIDES OF UNIT



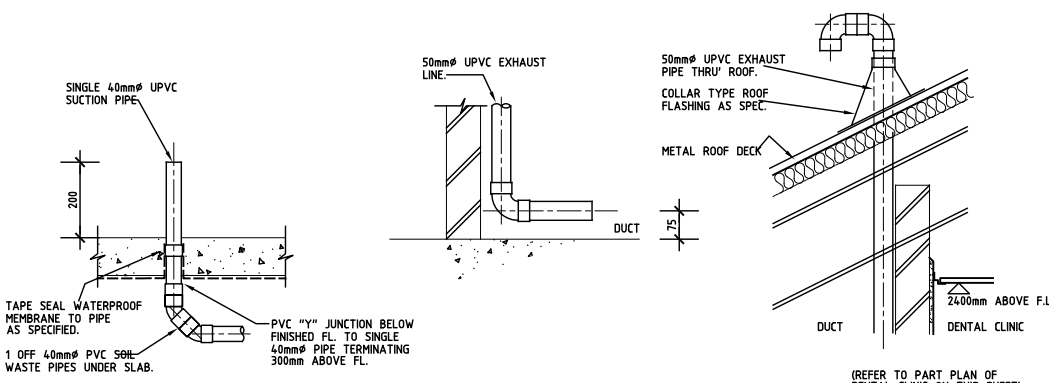
DENTAL THERAPY FLOOR PLAN  
SCALE : 1 : 50

WALL ELEV. REFERENCE.

1 DETAIL  
1:10

2 DETAIL  
1:10

3 DETAIL  
1:10

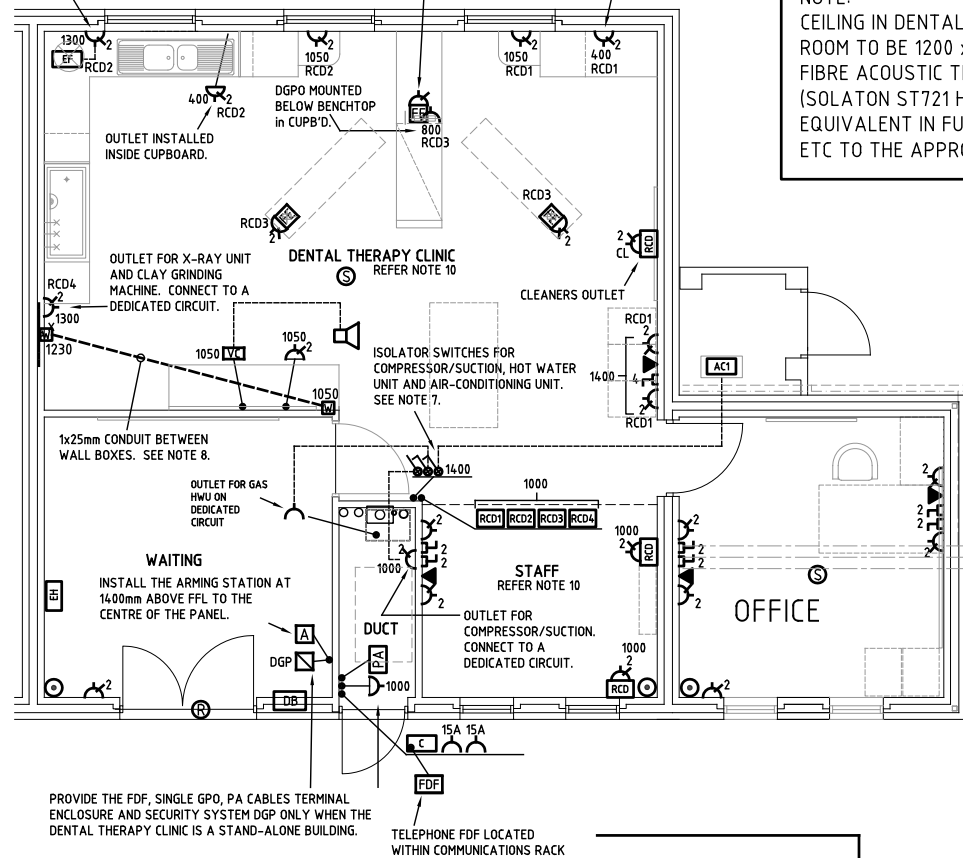




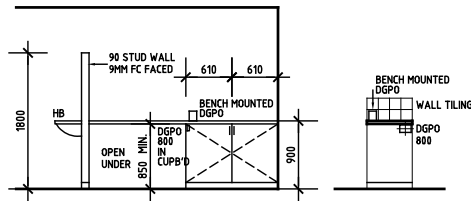
DOUBLE GPO WITH ADDITIONAL SWITCH FOR CONTROL OF THE EXHAUST FAN. THE FAN SWITCH MECHANISM SHALL BE ENGRAVE "FAN", EQUAL TO CLIPSAL "30FM".

FLOOR OUTLETS ENCLOSURE MOUNTED ON CENTRE OF TOP OF THE BENCH.

OUTLET INSTALLED INSIDE CUPBOARD.

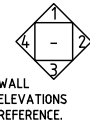


**DENTAL THERAPY FLOOR PLAN  
POWER AND MISCELLANEOUS SERVICES**  
SCALE: 1:50



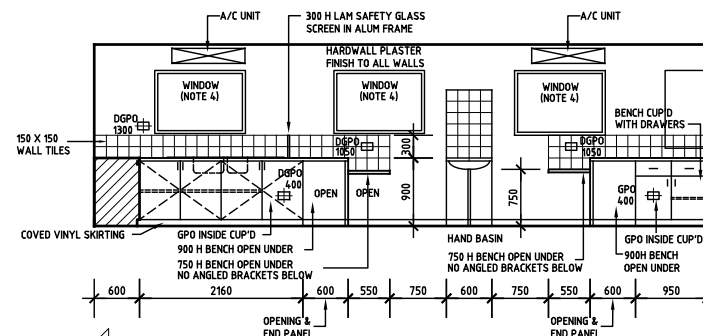
**ELEVATION  
ISLAND BENCH UNIT**

**SECTION**

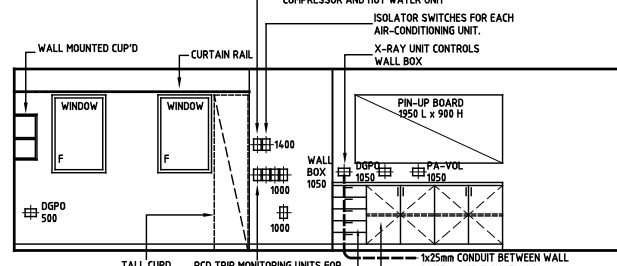


**WALL  
ELEVATIONS  
REFERENCE.**

**NOTE:**  
CEILING IN DENTAL THERAPY CLINIC & STAFF ROOM TO BE 1200 x 600 SUSPENDED MINERAL FIBRE ACOUSTIC TILES.  
(SOLATON ST721 HD OR A SIMILAR PRODUCT EQUIVALENT IN FUNCTION, QUALITY, APPEARANCE, ETC TO THE APPROVAL OF THE SUPERINTENDENT)

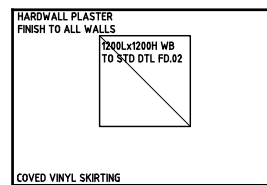


**1 (D.T. CLINIC)**

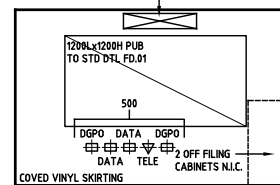


**3 (D.T. CLINIC)**

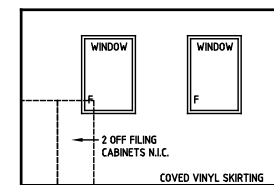
**DENTAL THERAPY CLINIC ELEVATIONS**  
SCALE: 1:50



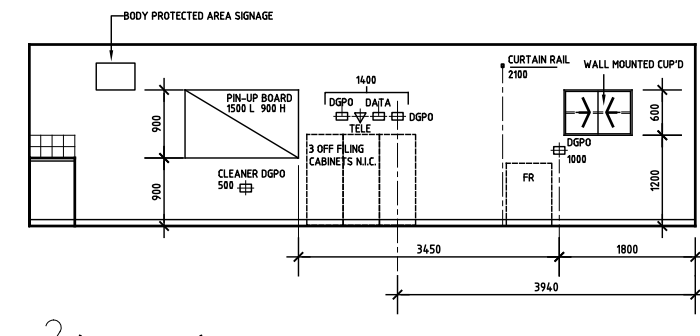
**1 (OFFICE)**



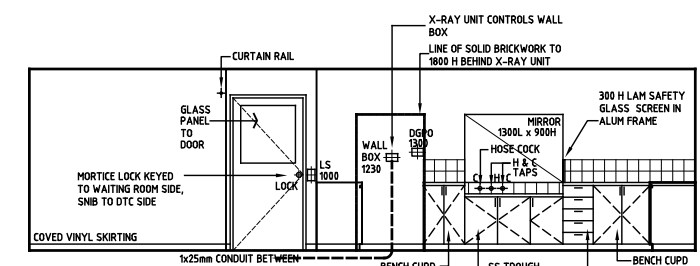
**2 (OFFICE)**



**3 (OFFICE)**



**2 (D.T. CLINIC)**



**4 (D.T. CLINIC)**

**LEGEND**

**NB:** USE CLIPSAL 2000 SERIES PLATES OR EQUAL APPROVED THROUGHOUT THIS BLOCK.

**DB:** ELECTRICAL DISTRIBUTION BOARD (OR BUILDING MAIN SWITCHBOARD IF THE DENTAL THERAPY CLINIC IS A STAND-ALONE BUILDING). SWITCHBOARD TO BE FLUSH MOUNTED WITH TRIM. PAINT COLOUR TO MATCH ADJACENT SURFACES. SWITCHBOARD/ELECTRICAL INSTALLATION TO INCORPORATE THE FOLLOWING CONTROLS AND AS FURTHER DETAILED ON BMW STD DETAILS DRAWING ED1

- EMERGENCY AND EXIT LIGHTING TEST FACILITIES
  - INTERIOR LIGHTING CONTROL (SECURITY SYSTEM INTERFACE)
  - EXTERNAL LIGHTING CONTROLS (WHEN STANDALONE BUILDING)
- POWER OUTLET CIRCUITS IN OFFICE TO BE PROVIDED WITH SURGE PROTECTION FILTER CL1499 LISTED TERCEL IP20H OR ERICO D5DF-20A-275V.

**L1:** 3x36W FLUORESCENT SURFACE MOUNTED LUMINAIRE WITH WHITE METALWORK AND WRAP AROUND CLEAR PRISMATIC DIFFUSER - SUPERLINE LIGHTING "ES6/15D".

**L2:** 2x36W FLUORESCENT SURFACE MOUNTED LUMINAIRE WITH WHITE METALWORK AND WRAP AROUND CLEAR PRISMATIC DIFFUSER - SUPERLINE LIGHTING "ES6/15D".

**L3:** 2x28W FLUORESCENT SURFACE MOUNTED LUMINAIRE WITH ULB LOUVRE

SEE NOTES 2 AND 3.

**L:** INDICATES LUMINAIRE FITTED WITH EMERGENCY BATTERY BACKUP ON 1 LAMP

**W:** WALL MOUNTED FLUORESCENT LUMINAIRE (NOMINALLY 600mm LONG) - SUPERLINE LIGHTING "WEATHERLINE IP65" OR EQUAL APPROVED. 1x14W

**C:** CEILING SWEEP FAN WITH 1200mm DIAMETER CLEAR POLYCARBONATE BLADES.

**H:** WALL MOUNTED OSCILLATING FAN (400mm DIAMETER) WITH 3 SPEED PULL-CORD & ROTARY SWITCH OPERATION. SAFETY GRILLE AND WALL MOUNTING BRACKET - MISTRAL "M1249" OR REXEL "WF400P". **NB:** PROVIDE A WALL MOUNTED FAN ONLY WHEN A LOW CEILING HEIGHT PREVENTS THE INSTALLATION OF A CEILING MOUNTED SWEEP FAN.

**S:** 1 WAY LIGHTING SWITCH 1000 ABOVE FLOOR UNLESS OTHERWISE NOTED

**CS:** CEILING SWEEP FAN CONTROLLER 1000 ABOVE FLOOR UNLESS OTHERWISE NOTED

**G:** SINGLE G.P.O. INSTALL 500 ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE STATED

**D:** DOUBLE G.P.O. INSTALL 500 ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE STATED

**15:** 15AMP OUTLET ON DEDICATED CIRCUIT MOUNTED AT COMMUNICATIONS RACK LOCATION.

**R:** REMOTE POWER SWITCH WITH RED NEON INDICATOR.

**H:** CONNECTION TO HOT WATER UNIT. LIAISE WITH THE HYDRAULIC SERVICES INSTALLER TO DETERMINE THE EXACT RATING AND LOCATION.

**A:** CONNECTION TO AIR-CONDITIONING UNIT ('N' DENOTES UNIT NUMBER). LIAISE WITH THE MECHANICAL SERVICES INSTALLER TO DETERMINE THE EXACT RATING AND LOCATION.

**EF:** CONNECTION TO EXHAUST FAN. LIAISE WITH THE MECHANICAL SERVICES INSTALLER TO DETERMINE THE EXACT RATING AND LOCATION.

**EH:** 2400W WALL MOUNTED, THERMOSTAT CONTROLLED, ELECTRIC FAN HEATER. CONNECT THE HEATER VIA A TIME DELAY SWITCH AND GPO AS PER THE "ELECTRIC FAN HEATER TIME DELAY TYPICAL CONNECTION DETAILS" ON DRAWING ED1.

**FE:** FLOOR OUTLETS ENCLOSURE - CLIPSAL "224/1", FITTED WITH OUTLETS AS INDICATED. INSTALL A BLANK FLUSHPLATE TO THE UNUSED SIDE.

**W:** SINGLE GANG WALL BOX. FLUSH HORIZONTALLY MOUNTED AND FITTED WITH A BLANK FLUSHPLATE.

**PA:** PUBLIC ADDRESS SYSTEM CABLE TERMINAL ENCLOSURE. **NB:** PROVIDE THE ENCLOSURE ONLY WHEN THE DENTAL THERAPY CLINIC IS A STAND-ALONE BUILDING.

**SP:** PUBLIC ADDRESS SYSTEM FLUSH CEILING MOUNTED SPEAKER. SEE DETAIL ON DRAWING ED3.

**VV:** PUBLIC ADDRESS SYSTEM VOLUME CONTROL UNIT.

**DF:** TELEPHONE SYSTEM FINAL DISTRIBUTION FRAME. **NB:** PROVIDE THE FRAME ONLY WHEN THE DENTAL THERAPY CLINIC IS A STAND-ALONE BUILDING.

**U:** TELEPHONE OUTLET. SEE NOTE 9. 500 ABOVE FLOOR UNLESS OTHERWISE NOTED. INSTALL FLUSH WALLBOX AND 32mm CONDUIT TO DDF FOR CABLING.

**DG:** INTRUDER ALARM SYSTEM DATA GATHERING PANEL. **NB:** PROVIDE THE PANEL ONLY WHEN THE DENTAL THERAPY CLINIC IS A STAND-ALONE BUILDING.

**A:** INTRUDER ALARM SYSTEM ARMING STATION.

**R:** INTRUDER ALARM SYSTEM PASSIVE INFRA RED DETECTOR.

**S:** INTRUDER ALARM SYSTEM RED SWITCH.

**SD:** CEILING MOUNTED SMOKE DETECTOR CONNECTED TO THE INTRUDER ALARM SYSTEM.

**D:** DUAL CAT 6 DATA OUTLET INSTALLED 500 ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE NOTED. CABLING TO BE INSTALLED BY DET SPECIALIST COMMUNICATIONS CONTRACTOR. PROVIDE FLUSH WALLBOX AND 32mm CONDUIT TO COMMUNICATIONS RACK LOCATION.

**C:** COMMUNICATIONS RACK PROVIDED BY DET SPECIALIST COMMUNICATIONS CONTRACTOR. RACK TO BE MOUNTED APPROX 2000 ABOVE FINISHED FLOOR. CONFIRM EXACT LOCATION WITH DET SPECIALIST COMMUNICATIONS CONTRACTORS PRIOR TO INSTALLATION OF CONDUIT AND POWER OUTLET.

**RCD1:** 10 mA RCD TRIP MONITORING UNITS ('N' DENOTES UNIT NUMBER). INDIVIDUAL RCD UNITS PROTECT GPO'S AS NUMBERED ON FLOOR PLAN. CLIPSAL ML2031VRC10.

**RCD2:** 10 mA RCD TRIP MONITORING UNIT COMBINED WITH DOUBLE GPO IN BEIGE COLOUR AS PER CLIPSAL ML2025RC10C.

**RCD3:** 10 mA RCD TRIP MONITORING UNIT COMBINED WITH DOUBLE GPO AS PER CLIPSAL ML2025RC10.

Because this clinic is being built by DoE on behalf of the DENTAL HEALTH SERVICES, the Architect is required to liaise with -

Dental Health Services  
Acting Manager Physical Resources, Mark Bryant  
Cnr Brockway Rd & Camelia Ave,  
Mf Claremont WA 6010  
Tel: 9385 4135 Fax: 9385 4977  
Mob: 0419 158 643  
Email: mark.bryant@helath.wa.gov.au

At the following stages of the works.

1. Brief Finalisation/Master Planning
  - To confirm location of the DTU.
2. Design Development Drawings
  - To confirm that NO changes have been made.

Mandatory site inspections by Dental Health, Manager Physical Resources is required

1. Before the floor slab is poured.
2. Once Walls are chased and conduits placed, but prior to rendering
3. At final fixing.

**THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL HYDRAULICS & MECHANICAL DRAWINGS.**

**THE PLAN LAYOUT of the DENTAL THERAPY SHALL BE BUILT AS SHOWN & SHALL NOT BE MIRRORED, EXCEPT WITH SPECIFIC APPROVAL FROM DENTAL HEALTH, MANAGER PHYSICAL RESOURCES. THIS DRAWING SHALL BE REPRODUCED IN DWG FORMAT FROM BMW AND MUST BE REPRODUCED IN IT'S ENTIRETY IN THE CONTRACT DOCUMENTS.**

**OLDFIELD KNOTT ARCHITECTS PTY. LTD.**  
The Royal Australian Institute of Architects  
567 HAY STREET, DAGLISH 6008  
P.O. BOX 849, SUBIACO, W.A. 6904  
TEL: (08) 9381 6788 FAX: (08) 9381 6619  
EMAIL: oka@okarch.com.au

14	UPDATED CONTACT DETAILS	26.11.14	TC
13	REVISED GENERAL NOTES	12.03.12	TC
12	ARCHITECTURAL FURNITURE REFERENCES REMOVED, GENERAL NOTES REVISED	07.03.12	TC
NO.	AMENDMENT	DATE	INIT.

**Government of Western Australia**  
Department of Finance  
Building Management and Works

**ELECTRICAL  
BMW STANDARD**

**DENTAL THERAPY CLINIC  
FLOOR PLAN AND DETAILS**

DRAWN	DESIGNED	REDUCED
CHECKED	PRINCIPAL	
APPROVED	SIGNATURE	
SCALE: 1:50 - A1 1:100 - A3	DATE: APRIL 2009	DRAWING No.: E.01 14
DTP PROJ No.: 5833	DTP FILE No.: DTUE01P4	

- NOTES.**
- 7 150 X 100 F.W.G. WITH BRASS GRATE AND SURROUND AT PAVING LEVEL. (C.P. IF INTERNAL)
  - 14 50 WASTE DROPPER INTO 100 OR 65 DRAIN.
  - 21 TRAPPED WASTE DROPPER - EXPOSED ON WALL FACE OR IN CUPBOARD.
  - 35 STOPCOCK AND VALVE BOX.
  - 39 COPP. C.W. RISER IN CAVITY AND INTO ROOF SPACE WITH DROPPERS CHASED DOWN WALLS TO ALL POINTS.
  - 44 RINNAI HD200 OR EQUAL APPROVED CONTINUOUS FLOW GAS WATER HEATER ON DUCT WALL WITH THERMOSTATIC MIXING VALVE. EXTEND 60°C HOT WATER IN CEILING SPACE TO SINK, 43°C TEMPERED WATER SLEEVED UNDER SLAB TO BASIN TROUGH.
  - 50 6mm CHARGE LINE FROM WALL SET TO DISCHARGE OVER 50mm CHROME PLATED TUNDISH IN CUPBOARD VIA 15mm CHROME PLATED ELBOW. 50mm TUNDISH TO CONNECT INTO FWG TO MAINTAIN WATER SEAL

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- Once Walls are chased and conduits placed, but prior to rendering
- At final fixing.

Refer to 6.9.Design Guidelines for detailed information.

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- CONDUIT ABBREVIATIONS.**
- ELECTRICAL**
- X X-RAY CONDUIT, WITH DRAW WIRE.
- HYDRAULICS**
- C. COPPER 20 PIPE.
  - M MISCELLANEOUS 32 CONDUIT.
  - P. PULL THRU CONDUIT.
  - S. SUCTION.
  - W. WASTE.

**HYDRAULICS DESIGN AUSTRALIA**

1/300 FITZGERALD STREET PERTH WA 6000  
Tel: (08) 9225 9300 Fax: (08) 9228 0933  
Web: hdawa.com.au Email: info@hdawa.com.au

**OLDFIELD KNOTT ARCHITECTS PTY. LTD.**

567 HAY STREET, DAGLSH 6008  
P.O. BOX 849, SUBIACO, W.A. 6904  
TEL : (08) 9381 6788 FAX (08) 9381 4619  
EMAIL : oka@okarch.com.au

NO.	AMENDMENT	DATE	INIT.
14	CONTACT INFO UPDATED	26.11.14	TC
13	WALL MOVED FOR UNIVERSAL ACCESS COMPLIANCE	30.01.13	MM
12	GENERAL NOTES REVISED	12.03.12	TC
11	ARCHITECTURAL DETAIL REFERENCES REMOVED	02.03.12	TC
10	GENERAL NOTES REVISED	05.07.11	TC
9	ARCHITECTURAL BACKGROUND UPDATED	03.06.11	MM
8	OFFICE ADDED, MECHANICAL ENCLOSURE MODIFIED	07.07.10	MM
NO.	AMENDMENT	DATE	INIT.

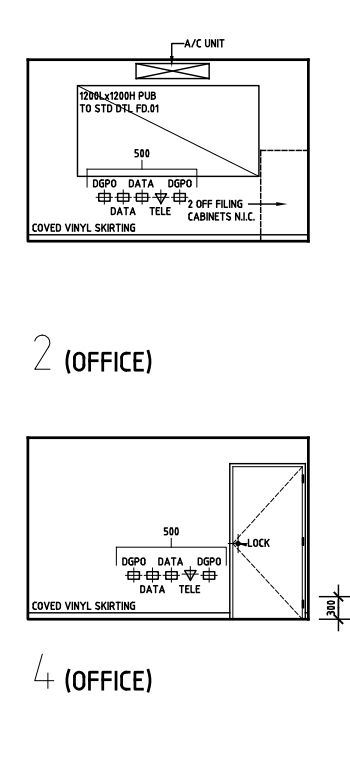
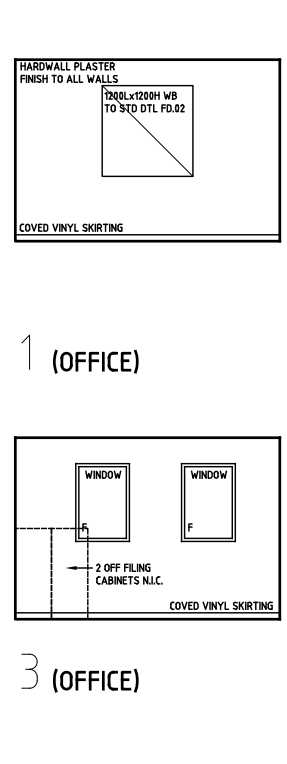
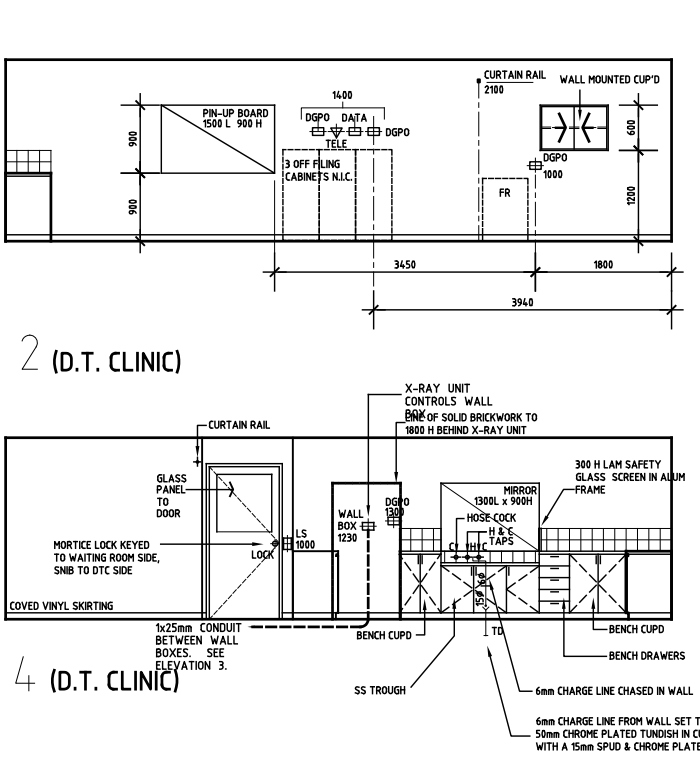
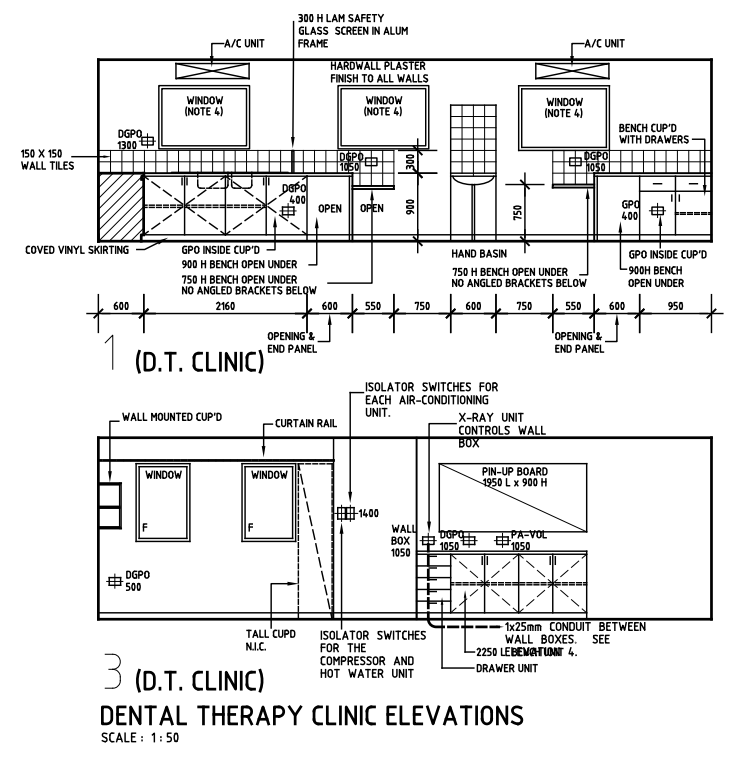
Government of Western Australia  
Department of Finance  
Building Management and Works

**HYDRAULICS BMW STANDARD**

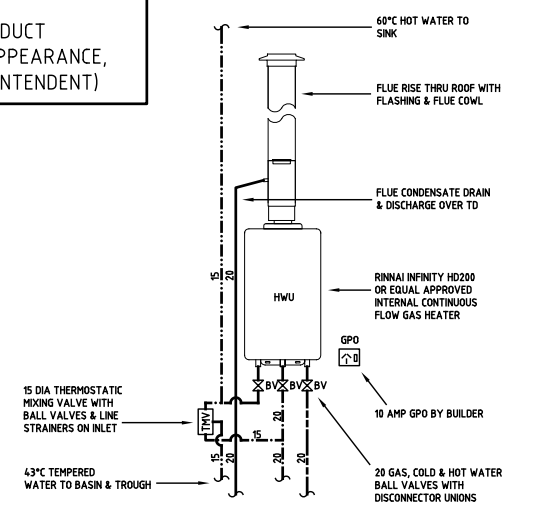
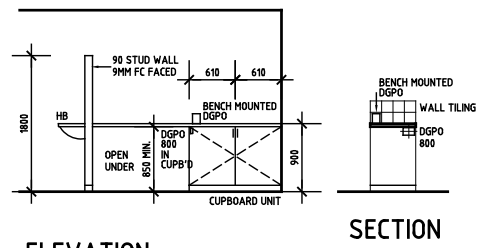
DENTAL THERAPY CLINIC FLOOR PLAN AND DETAILS

DRAWN	DESIGNED	REDUCTION
CHECKED	PRINCIPAL	0 25
APPROVED	SIGNATURE	
SCALE 1:50 - A1 1:100 - A3	DATE 30.01.13	DRAWING No. H.01 14
DTP PROJ No. CAMS.No.	DTP FILE No. CAMS.FILE	

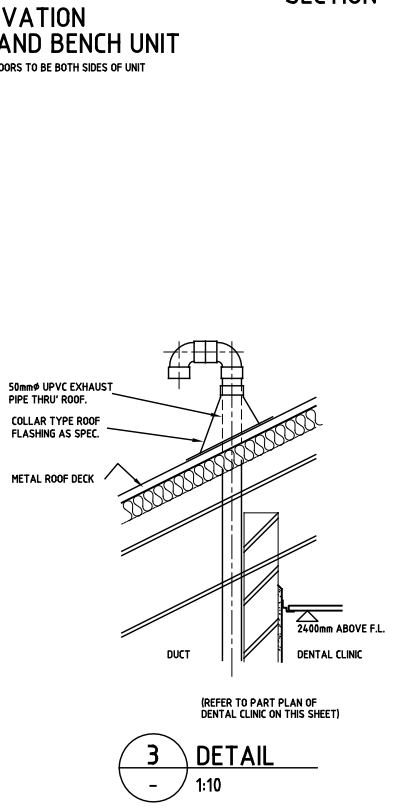
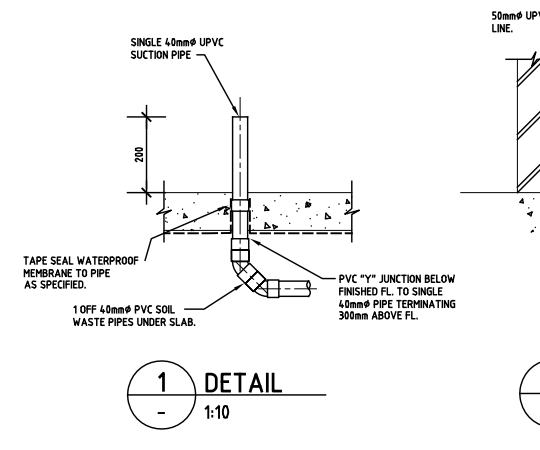
THIS IS A CADD DRAWING DO NOT AMEND MANUALLY FILENAME: DTC01P4.dwg PLOTDATE: 5.6.2008 12:00 PM



**NOTE:**  
CEILING IN DENTAL THERAPY CLINIC & STAFF ROOM TO BE 1200 x 600 SUSPENDED MINERAL FIBRE ACOUSTIC TILES.  
(SOLATON ST721 HD OR A SIMILAR PRODUCT EQUIVALENT IN FUNCTION, QUALITY, APPEARANCE, ETC TO THE APPROVAL OF THE SUPERINTENDENT)

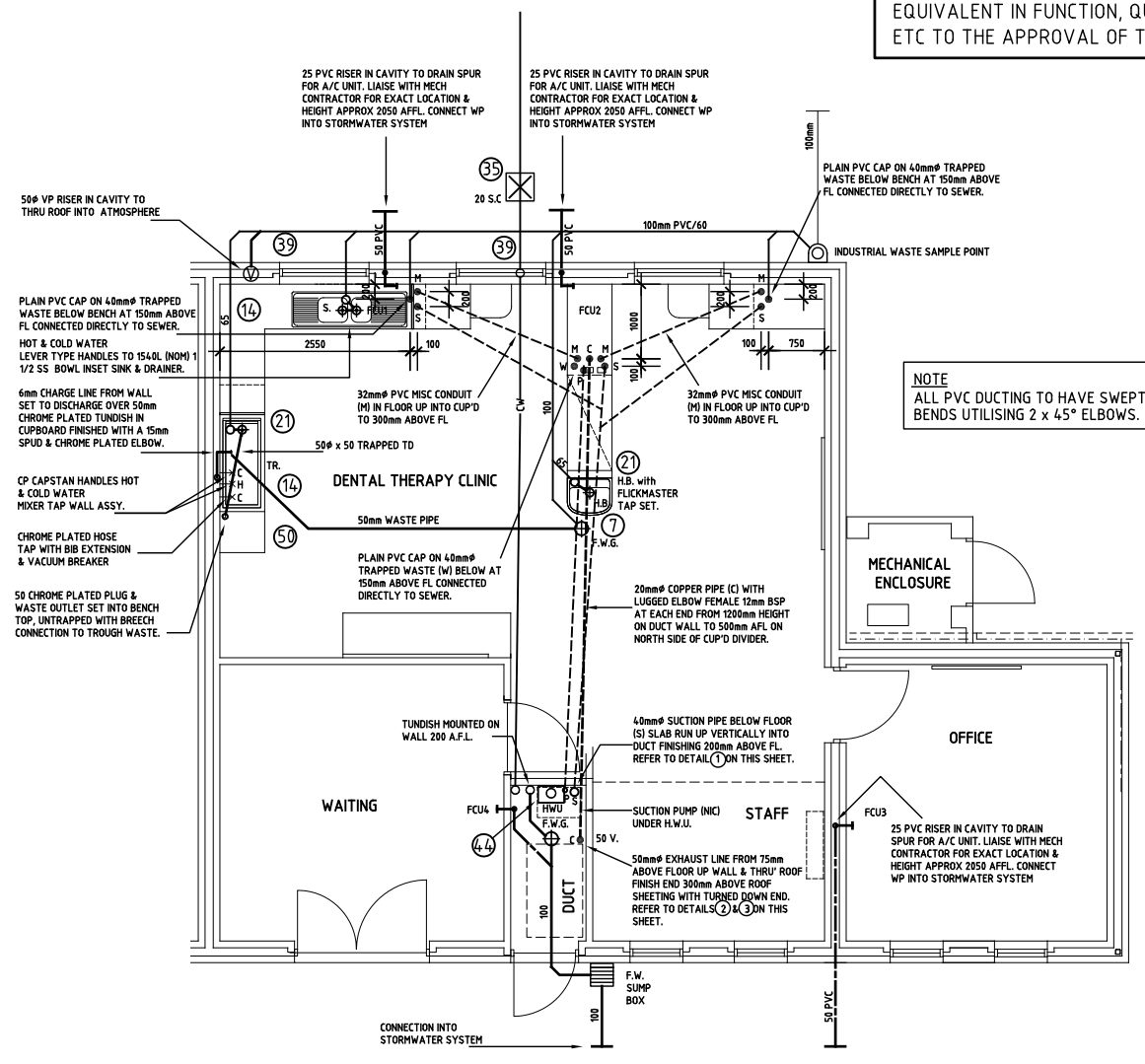


**DETAIL - CONTINUOUS FLOW GAS WATER UNIT**  
N.T.S.

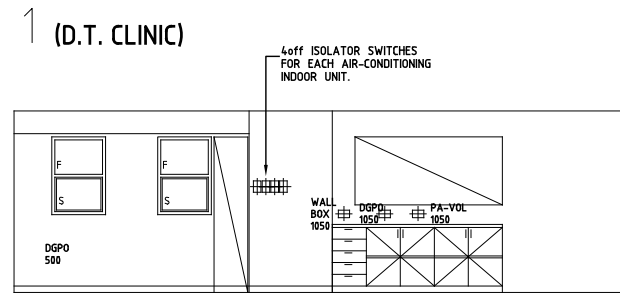
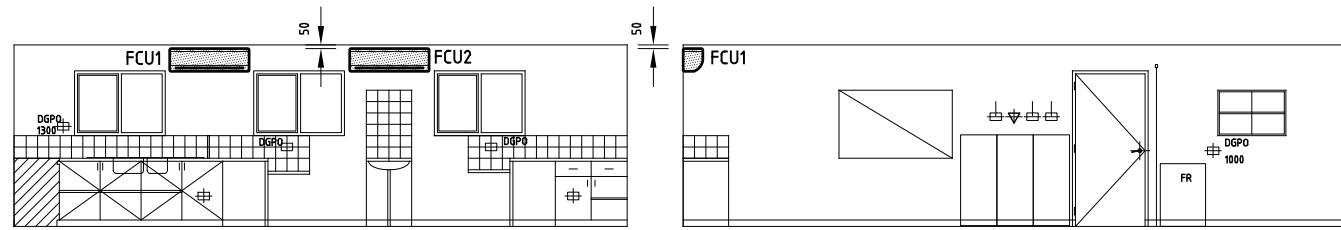


THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, ELECTRICAL & MECHANICAL DRAWINGS.

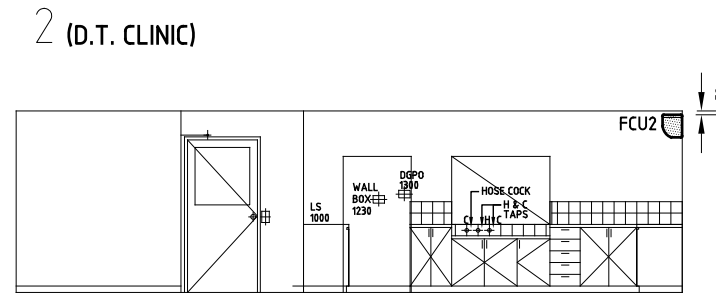
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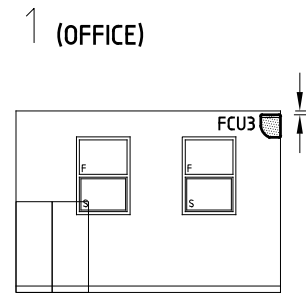
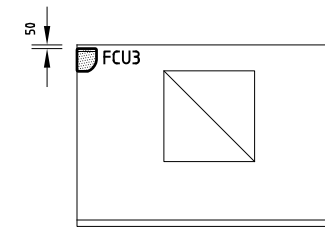
**DENTAL THERAPY FLOOR PLAN**  
SCALE: 1:50



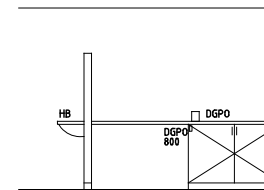
3 (D.T. CLINIC)  
DENTAL THERAPY CLINIC ELEVATIONS  
SCALE: 1:50



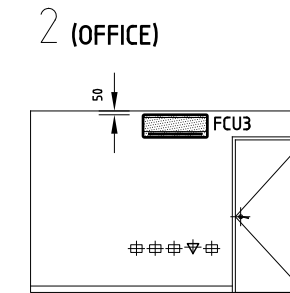
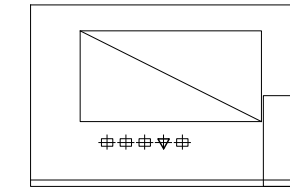
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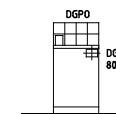
3 (OFFICE)



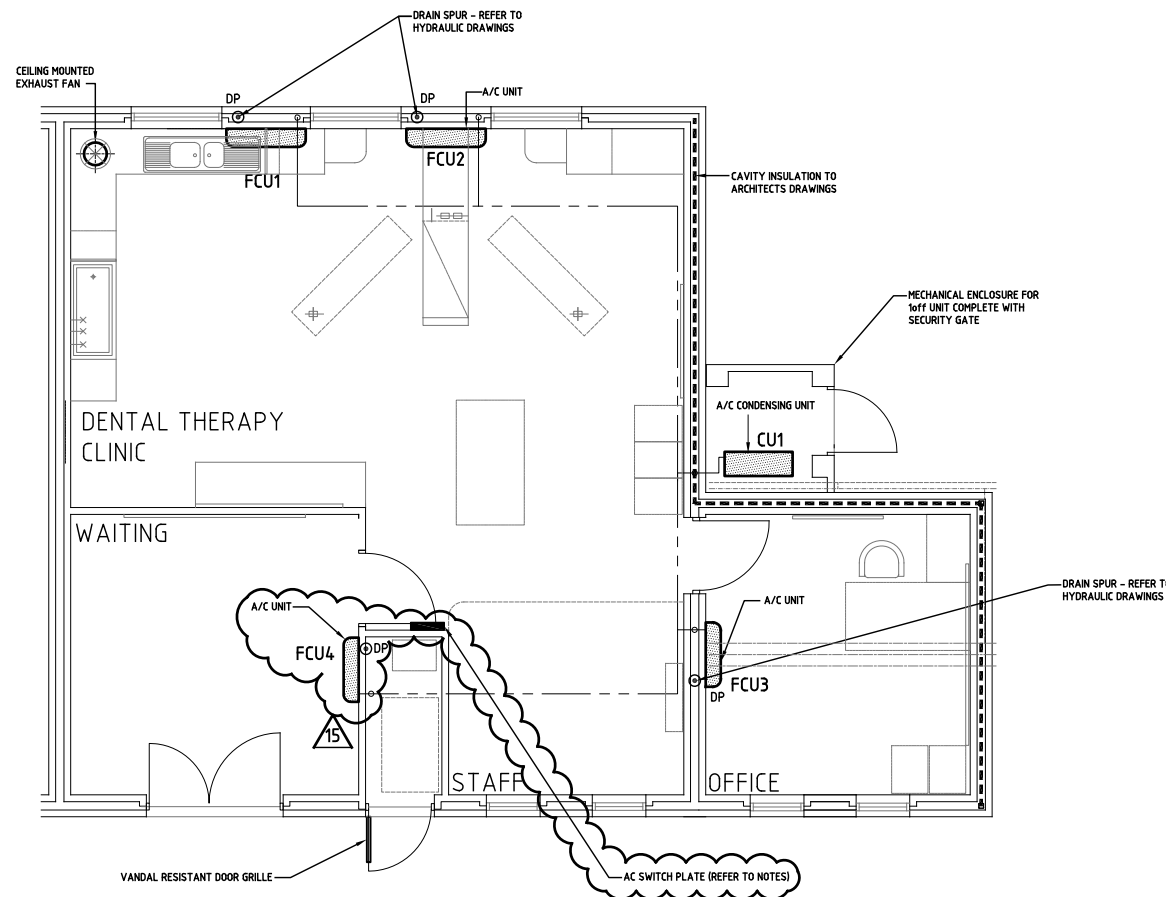
ELEVATION ISLAND BENCH UNIT  
NOTE: DOORS TO BE BOTH SIDES OF UNIT



4 (OFFICE)



SECTION



DENTAL THERAPY FLOOR PLAN  
SCALE: 1:50



WALL ELEV. REFERENCE.

NOTES.

- MECHANICAL CONTRACTOR SHALL PROVIDE 1off A/C SYSTEM AS DOCUMENTED.
- FOR AIR CONDITIONING ON/OFF SWITCH PLATE, REFER TO ELECTRICAL DRAWING
- CHECK STRUCTURAL BRACING WITHIN CAVITY FOR PASSAGE OF REFRIGERANT PIPE RISERS

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THE PLAN LAYOUT of the DENTAL THERAPY SHALL BE BUILT AS SHOWN & SHALL NOT BE **MIRRORED**, EXCEPT WITH SPECIFIC APPROVAL FROM DENTAL HEALTH, MANAGER PHYSICAL RESOURCES.

MECHANICAL CONTRACTOR SHALL NOT INSTALL A FRESH AIR INPUT SYSTEM & SHALL PROVIDE 4 (FOUR) WALL UNITS.

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EMAIL : oka@okarch.com.au

**SMW&C** CHARTERED CONSULTING ENGINEERS  
31 HAY STREET, SUBIACO, WA 6008  
TELEPHONE: (08) 9381 1899  
FACSIMILE: (08) 9388 1299  
EMAIL: smw@smw.com.au  
STEVEN MCGANN WILLOOK & COPPING PTY LTD. N 009 166 643

NO.	AMENDMENT	DATE	INIT.
16	UPDATED CONTACT DETAILS	26.11.14	
15	FCU LOCATION REVISED TO MATCH ARCHITECTURAL REVISION	25.01.13	
14	GENERAL NOTES REVISED	12.03.12	
13	GENERAL NOTES REVISED	07.03.12	
12	MECHANICAL CONTRACTOR'S NOTE REVISED	08.12.11	
11	GENERAL NOTES REVISED	05.07.11	
10	ENTRANCE DOORS AND WRITE UP BENCHES REVISED	03.06.11	
9	A/C ADDED TO WAITING; DOOR GRILLE ADDED TO DUCT. A/C RATIONALISED TO 1off OUTDOOR UNIT	09.06.10	
8	INTERNAL WALL DIM TO DENTAL THERAPY CLINIC REVISED	27.05.10	

Government of Western Australia  
Department of Finance  
Building Management and Works

MECHANICAL  
BMW STANDARD

DENTAL THERAPY CLINIC  
FLOOR PLAN AND DETAILS

DRAWN	DESIGNED	REDUCTION
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CHECKED	WVW	SIGNATURE
APPROVED		
SCALE 1:50 - A1 1:100 - A3	DATE APRIL 2009	DRAWING No. M.01 16
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