Schedule 21 – Transportable Units

1. OVERVIEW

The purpose of this Schedule 21 is to set out the requirements for the Transportable Units which may be required by the State during the Operating Phase.

2. REQUIREMENTS FOR TRANSPORTABLE UNITS

2.1 Interface Requirements

(a) Transportable Units will be provided by the State in accordance with Clause 29 (Transportable Units). All works associated with the delivery/removal, installation and connection/disconnection of the Transportable Units at a School Facility will be carried out by the State's nominated contractor. Any works associated with the installation of the Transportable Units which will be performed by the State's nominated contractor, may include:

(i) connection of all associated Engineering Services from the connections points provided;

(ii) earthworks;

(iii) pad and footing preparation and construction;

(iv) paving, steps, ramps and other access pathways to the Transportable Unit;

(v) covered walkways, verandas and patios; and

(vi) balustrades and handrails.

(b) The *Transportable Building (Unit) Relocation Services* located in Annexure A of this Schedule 21 (as updated from time to time), sets out the works which may be undertaken by the State's nominated contractor when installing Transportable Units to a School Facility.

2.2 Services Requirements

(a) Project Co must provide all necessary Services to all Transportable Units, and associated works, which are constructed or installed by the State so as to meet the Services Requirements.

(b) Most of the Transportable Units provided to School Facilities will have previously been used at other School Facilities and their condition may reflect this usage. In these instances, the State will endeavour to refurbish the Transportable Units to an acceptable standard prior to, or immediately after, delivery to the School Facility. If the State does not perform these rectification and refurbishments works, the provisions of Clause 29(f) (Transportable Units) will apply.

(c) Annexure B of this Schedule 21 contains *Transportable Unit Drawings* (as updated from time to time) which identify typical examples of Transportable Units which the State may supply and install.

(d) Annexure C of this Schedule 21 contains *Typical Transportable Unit Finishes Schedule* (as updated from time to time) which contains information on the internal and external materials with which the State's Transportable Units are typically constructed.

(e) Typical sizes of Transportable Units are outlined in the table below.

Table 1: Typical Transportable Unit Sizes

Type of Transportable Unit	Area sqm
Pre Primary (ECE)	100.00
Primary School General Learning Area	70.00
Secondary School General Learning Area	70.00
Secondary School Specialist TU	100.00

(f) Specialist Transportable Units include Science Lab, Design and Technology, Home Economics, IT Lab and Art.

Annexure A

Government of **Western Australia**
Department of **Finance**
Building Management and Works

Request

REQUEST TITLE:

Transportable Building Relocation Services

REQUEST NUMBER:

1284710

CLOSING TIME:

2:30 PM 3 August 2011 Perth, Western Australia

ISSUED BY:

Building Management and Works

Department of Finance

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PART A – REQUEST NO 1284710

1. INTRODUCTION

1.1 BACKGROUND

Building Management and Works is seeking to establish a Panel of Contractors to provide transportable building relocation services. This Panel is intended to provide services for a period of five years, and will replace the existing panel arrangement with a similar scope of services.

Expenditure through the existing arrangement has averaged approximately $11,000,000 per year, and it is expected that this will be representative of the volume of work which will be processed through the panel contract to be established.

The scope of works which will be covered by the Head Agreement and Customer Contracts include:

- The disconnection of services and facilities;
- The loading, transporting, unloading and positioning of transportable and demountable buildings;
- The reconnection of services and facilities; and
- Any required maintenance, refurbishments and upgrades to buildings and sites.

DESCRIPTION OF THE WORKS UNDER THE PANEL ARRANGEMENT

Works under this panel arrangement will involve the relocation of transportable or demountable buildings ("**Transportables"**) together with any required disconnection and/or reconnection of associated site services and facilities. Works may involve the relocation of Transportables to and from sites located anywhere within the state of Western Australia. It may be necessary to travel through South Australia and/or the Northern Territory in order to access remote locations.

It is expected that the Contractor will work in partnership with all relevant stakeholders including Building Management and Works, the Contract Authority and its Representatives, the Customer and its Representatives, Government Agencies, and site representatives to ensure the smooth execution of works, and amicable resolution of any issues that may arise. As part of the culture of partnership, it is expected that the Contractor will engage in effective communication with all parties to ensure that there is mutual understanding of each others roles and responsibilities before, during and at the completion of the relocation process.

Works carried out under this panel arrangement will be awarded in accordance with the Buying Rules specified in the Head Agreement Details.

1.2 SUBMISSION OF OFFER

1.2.1 The Respondent may submit the Offer by hand at:

Tenders Office
Optima Centre
Building Management and Works
Ground Floor, 16 Parkland Road
OSBORNE PARK WA 6017

Or by post to:

Tenders Office
Locked Bag 44
Cloisters Square
PERTH WA 6850

A CD or DVD containing an electronic copy of the Offer should be included with the submission.

If the Respondent submits the Offer by hand or by post, the Respondent must provide five (5) copies, with one copy marked “original” and four (4) copies marked “copy”.

In the event of any inconsistency between the hard copy marked “original” and the electronic copy on CD or DVD, the hard copy shall be considered as the accurate version.

1.2.2 Offers may not be submitted by facsimile.

1.2.3 Offers may not be submitted electronically.

1.2.4 Conditions regarding the submission of Offers (including late lodgement and mishandling) are contained in the Request Conditions.

1.3 OFFER VALIDITY PERIOD

The Offer Validity Period is for a period of 6 months.

1.4 BRIEFING

A non-mandatory briefing to Respondents will be conducted at:

Date: 20 July 2011

Time: 11:00 AM Perth, Western Australia

Location: Ground Floor Optima Centre
16 Parkland Rd
OSBORNE PARK WA 6017

The Respondent is requested to confirm its attendance by no later than 12 July 2011 at 11:00AM, Perth, Western Australia by contacting Jin Han Liew (Ph: (08) 6551 1735 Email: jinhan.liew@bmw.wa.gov.au).

1.5 CONTACT PERSONS

Different enquiries can be best dealt with by the most appropriate contact, shown below.

The Respondent must not contact any other person within Government or any consultant engaged in relation to this Request to discuss this Request.

CONTRACTUAL AND ROUTINE ENQUIRIES:

Name: Jin Han Liew

Title: Procurement Manager

Telephone: (08) 6551 1735

E-mail: jinhan.liew@bmw.wa.gov.au

TECHNICAL / CUSTOMER ENQUIRIES:

Name: Gary Cox

Title: Senior Project Manager

Telephone: (08) 6551 1744

E-mail: gary.cox@bmw.wa.gov.au

ADVICE ON DELIVERING TENDERS:

Name: Tenders Office

Telephone: (08) 6551 2345

1.6 REQUEST & GENERAL CONDITIONS

The "Request Conditions" are contained in the Part A and the "General Conditions" are contained in Part B of the *Request Conditions and General Conditions of Contract* [August 2010] located at www.dtf.wa.gov.au (select Government Procurement, then select "Templates, guides and conditions of contract" from the Quick Links menu) and contain important provisions regarding the nature of this Request and the consequences of the Respondent submitting an Offer. The Respondent is deemed to have read and considered the Request Conditions prior to submitting an Offer, and in submitting its offer agrees to be bound by its terms. Unless the contrary intention appears, the terms and conditions and the meanings and definitions contained in the *Request Conditions and General Conditions of Contract* [August 2010] shall apply to this Request.

2. SELECTION PROCESS

2.1 SELECTION PROCESS

Value for Money is a key State Supply Commission policy objective to ensure that when purchasing products and/or services Public Authorities achieve the best possible outcome for every dollar spent by assessing the costs and benefits of, and the risks inherent in, an Offer rather than simply selecting the lowest Offered Price.

In determining Value for Money, the Contract Authority will:

a) Apply relevant State Supply Commission and Government policies to the assessment of Offers;

b) Assess Offers against the Compliance and Disclosure Requirements in Section 3 in Part B;

c) Assess Offers against the Qualitative Requirements in Section 4 in Part B;

d) Assess Offers against the Insurance Requirements in Section 5 in Part B; and

e) Assess the Offered Prices which includes assessing the Offered Price and Pricing Requirements in Section 6 in Part B and Schedule 3.

The determination of Value for Money will require a consideration of all of the above factors and any other matters that the Contract Authority or Customer considers relevant.

2.2 STATE SUPPLY COMMISSION AND GOVERNMENT POLICIES

The following State Supply Commission policies apply to this Request:

a) Value for Money;

b) Probity and Accountability;

c) Open and Effective Competition; and

d) Sustainable Procurement.

The following Government policies apply to this Request

a) Buy Local Policy; including the December 2009 Addendum.

These policies can be viewed and down loaded at www.ssc.wa.gov.au or copies of these policies are available from the State Supply Commission (telephone (08) 6551 1500).

PART B – CONTENT REQUIREMENT AND RESPONDENT'S OFFER

PART B SHOULD BE COMPLETED BY THE RESPONDENT AND RETURNED TO THE CONTRACT AUTHORITY OR CUSTOMER (REFER 'SUBMISSION OF OFFER' REQUIREMENTS OF CLAUSE 2.1 IN THE REQUEST CONDITIONS).

1. NOTE TO RESPONDENT

In preparing its Offer, the Respondent must:

a) Address each requirement in the form set out in this Part B;

b) Take into account the Head Agreement and Customer Contract requirements, as explained in the Head Agreement and Customer Contract Details. The Respondent must read these in conjunction with the General Conditions;

c) In respect of the Qualitative Requirements in Section 4 in this Part B, provide full details of any claims, statements or examples;

d) Assume that the Contract Authority or Customer has no knowledge of the Respondent, its activities, experience or any previous work undertaken by the Respondent for the Contract Authority, Customer or any other Public Authority; and

e) Nominate any Offer Information that the Respondent wishes to expressly and reasonably nominate as confidential for the purposes of the Request Conditions.

2. IDENTITY OF RESPONDENT

The Respondent must provide the following details:

RESPONDENT TO COMPLETE:

a) Name of Legal Entity:	.....
b) ACN (if a company):	.....
c) Registered address or address of principal place of business:	....
d) Business Name:	.....
e) ABN:	.....
f) Contact Person:	.....
g) Builders Registration Number	.....
h) Contact Person Position Title:	.....
i) Email:	.....
j) Telephone:	.....
k) Facsimile:	.....
l) Address and facsimile number for service of contractual notices:	.....

3. COMPLIANCE AND DISCLOSURE REQUIREMENTS

The Contract Authority or Customer reserves the right to reject any Offer that does not properly address any of the Compliance and Disclosure Requirements, and/or which contains material departures from the Head Agreement Details, Customer Contract Details and/or General Conditions.

a) **COMPLIANCE**

(i). Head Agreement Details

The Respondent must confirm whether it will comply with the Head Agreement Details. If the Respondent will not comply with any clause of the Head Agreement Details, the Respondent must set out:

(A). The clause(s) of the Head Agreement Details with which it will not comply;

(B). The extent of non-compliance – including the alternative clause, if any, or a description of any changes it proposes to the Head Agreement Details; and

(C). The reason for non-compliance.

RESPONDENT TO COMPLETE:.

Does the Respondent agree to the Head Agreement Details?

(Yes / No)

If no, provide details.

(ii). Customer Contract

The Respondent must confirm whether it will comply with the Customer Contract. If the Respondent will not comply with any clause of the Customer Contract, the Respondent must set out:

(A). The clause with which it will not comply;

(B). The extent of non-compliance – including the alternative clause, if any, or a description of any changes it proposes to the Customer Contract; and

(C). The reason for non-compliance.

RESPONDENT TO COMPLETE:

Does the Respondent agree to the Customer Contract?

(Yes / No)

If no, provide details.

(iii). General Conditions / Schedules

The Respondent must confirm whether it will comply with the General Conditions and Schedules. If the Respondent will not comply with any of the General Conditions and Schedules, the Respondent must set out:

(A). The General Condition / Schedules with which it will not comply;

(B). The extent of non-compliance – including the alternative clause, if any, or a description of any changes it proposes to the General Conditions / Schedules; and

(C). The reason for non-compliance.

RESPONDENT TO COMPLETE:

Does the Respondent agree to the General Conditions / Schedules?

(Yes / No)

If no, provide details.

(iv). Licensing as a Registered Builder

The Respondent must confirm it is a Registered Builder under the *Builders' Registration Act 1939 (WA)*.

RESPONDENT TO COMPLETE:

Is the Respondent a Registered Builder under the *Builder's Registration Act (WA) 1939*?

(Yes / No)

Builder's Registration Number: .....

(v) Recipient Created Tax Invoice

Respondents must complete, execute and lodge with the Contract Authority along with the Response the "Recipient Created Tax Invoice Agreement" provided in Schedule 5 of this Response.

b) **DISCLOSURES**

(i) Criminal Convictions

The Respondent must confirm that neither the Respondent nor any person included in the Specified Personnel has been convicted of a criminal offence that is punishable by imprisonment or detention.

RESPONDENT TO COMPLETE:

Has the Respondent or any person included in the Specified Personnel been convicted of a criminal offence that is punishable by imprisonment or detention?

(Yes / No)

If yes, provide details.

(ii) Conflict of Interest

The Respondent must declare and provide details of any actual, potential or perceived conflict of interest.

RESPONDENT TO COMPLETE:

Does the Respondent have any actual, potential or perceived conflict of interest in relation to the performance of the Head Agreement and Customer Contract (if awarded) by the Respondent?

(Yes / No)

If yes, the reasons why.

4. QUALITATIVE REQUIREMENTS

The Contract Authority, in its Value for Money assessment, will consider the extent to which the Offer satisfies the following Qualitative Requirements. The Contract Authority reserves the right to reject any Offer that does not properly address and satisfy any of the Qualitative Requirements.

The Qualitative Requirements are not weighted equally. Refer to the % weighting for each Requirement listed below.

a) **MANAGEMENT CAPACITY & SPECIFIED PERSONNEL** (30% WEIGHTING) [37% if Buy Local Policy does not apply, see below]

The Respondent must:

(i) Identify key proposed Specified Personnel who will be involved in the management and delivery of services, together with a brief curriculum vitae for each of them;

(ii) Describe the industry experience of all proposed Specified Personnel;

(iii) Provide a list of personnel who are licensed tradespersons, along with their corresponding license numbers;

(iv) Provide details of its ability to maintain its capacity and capability to deliver services at an acceptable level for the duration of the panel;

(v) Detail what capital equipment (e.g. trucks, trailers, cranes etc) the Respondent owns or has available to it, which would be used in the provision of services under this Panel;

(vi) Detail the company management structure; and

(vii) Provide a copy of their job safety analysis (JSA) sheets and safety management plans.

RESPONDENT TO COMPLETE:

Respondent to provide the Specified Personnel information required under this clause.

b) **METHODOLOGY** (20% WEIGHTING) [26% if Buy Local Policy does not apply, see below]

The Respondent must provide details of their methodology which will be used to undertake requirements as set out in Schedule 2 – Specifications / Statement of Requirements.

Details of the methodology should include:

(i) How the organisation and transport of buildings will be managed;

(ii) How any building refurbishments and upgrades will be managed; and

(iii) How communication for any given Order will be managed.

RESPONDENT TO COMPLETE:

Respondent to provide the methodology information required under this clause.

c) **DEMONSTRATED EXPERIENCE** (30% WEIGHTING) [37% if Buy Local Policy does not apply, see below]

The Respondent must provide details of contracts for similar services it has provided for other clients. The Respondent must detail:

(i) the services provided;

(ii) Similarities between the previous contract and this Request;

(iii) When the previous contract was performed; and

(iv) The outcome of the previous contract.

The Respondent must also provide a minimum of 2 referees in respect of each of the contracts detailed above. Referee details must include:

(i) The referee's name and position;

(ii) Company name;

(iii) The contact telephone number; and

(iv) The contract or project title.

RESPONDENT TO COMPLETE:

Respondent to provide the demonstrated experience information required under this clause.

d) **BUY LOCAL POLICY** (20% WEIGHTING)

Details regarding the regional price preferences and how they are applied are documented in the Western Australian Government's "Buy Local" Policy. This policy can be viewed and downloaded at www.ssc.wa.gov.au or copies of this policy are available from the State Supply Commission (telephone (08) 6551 1500).

When a bid is received from:

- A business that is located in another state or territory of Australia, or in New Zealand under the Australia New Zealand – Government Procurement Agreement (ANZGPA); or
- A business that is located in the United States (when the purchase is a "covered procurement" under the Australia United States Free Trade Agreement (AUSFTA)); or

- A business that is located in Chile (when the procurement is a "covered procurement" under the Australia Chile Free Trade Agreement (ACI-FTA)),

the Buy-Local weighted selection criterion will not be evaluated during the qualitative assessment. Should the local content criterion not be applicable, the 20% weighting will be divided proportionately across the remaining criteria as set out in the square brackets above.

The Respondent must otherwise address the following:

(i) the Respondent must specify the location where the following activities will be performed:

(A). Where the proposed Products will be manufactured;

(B). Where spare parts, repairs, back up support and maintenance will be sourced and provided; and

(C). Where contract management will be undertaken;

(ii) the Respondent must provide details of how the Respondent supports other Western Australian businesses through subcontracting or material supply arrangements;

(iii) the Respondent must provide details of how the Respondent supports Indigenous Enterprises or Indigenous Persons whether as an Indigenous sole trader, partnership, firm, corporation or joint venture or as an Indigenous Employer;

(iv) the Respondent must estimate the percentage of the total Offered Price as to the amount which represents Contract activities performed in Western Australia, in other Australian States or Territories, New Zealand, the United States and overseas, in accordance with the following table:

	Western Australian Content	**Other Australian States, New Zealand, United States and Chile**	**Imported Overseas Content**	**TOTAL**
%	%	%	%	100%

(v) the Respondent must estimate the employment creation and retention and industry and skills development initiatives which may arise if a contract is awarded to the Respondent; and

(vi) the Respondent must provide details of any other economic, social or environmental benefits to Western Australia.

RESPONDENT TO COMPLETE:

Respondent to provide the local content information required under this clause.

5. HEAD AGREEMENT AND CUSTOMER CONTRACT INSURANCE REQUIREMENTS

HEAD AGREEMENT INSURANCE REQUIREMENTS

The Respondent must demonstrate that it has the insurances required under Schedule 1 – Head Agreement Details. The Respondent must provide a corresponding certificate of insurance and policy documents for each of the insurances required under Schedule 1 – Head Agreement Details.

RESPONDENT TO COMPLETE:

Does the Respondent have the insurance required under Schedule 1 – Head Agreement Details?

(Yes / No)

If yes, the Respondent must complete the following table:

	Insurer	ABN	Policy No	Insured Amount	Expiry Date	Exclusions, if any
Public Liability Insurance						
Workers' Compensation including common law liability of $50 million						

OR

If no, does the Respondent confirm that if it is awarded the Head Agreement, then it will obtain the insurance policies specified prior to the Contract Commencement Date?

(Yes / No)

If no, the reasons why.

CUSTOMER CONTRACT INSURANCE REQUIREMENTS

The Respondent must demonstrate that it has or is prepared to obtain the insurances required under Schedule 1 – Customer Contract Details. The Respondent must provide in due course a corresponding certificate of insurance for each of the insurances required under Schedule 1 – Customer Contract Details.

RESPONDENT TO COMPLETE

Does the Respondent have the insurance requirements set out in Schedule 1 – Customer Contract Details?

(Yes / No)

If yes, the Respondent must complete the following table:

	Insurer	ABN	Policy No	Insured Amount	Expiry Date	Exclusions, if any
1. Contract / Construction Works Insurance (Naming the Customer/Contract Authority as jointly insured)						
2. Public and Product Liability Insurance						
3. Workers' Compensation including common law liability of $50 million						
4. Motor Vehicle Third Party Liability						

OR

If no, does the Respondent confirm that if it is awarded a contract, then it will obtain the insurance policies set out in Schedule 1 – Customer Contract Details prior to any given Customer Contract Commencement Date?

(Yes / No)

If no, the reasons why.

6. OFFERED PRICE AND PRICING REQUIREMENTS

The Respondent must include in the Offer the completed Schedule 3 – Pricing.

The Contract Authority or Customer will, in its Value for Money assessment, consider the extent to which the Offer satisfies the Offered Price and Pricing Requirements. The Contract Authority or Customer reserves the right to reject any Offer that does not properly address and satisfy any of the Offered Price and Pricing Requirements specified in Schedule 3 - Pricing.

SCHEDULE 1 - HEAD AGREEMENT DETAILS AND CUSTOMER CONTRACT DETAILS

HEAD AGREEMENT DETAILS

1. Contract Authority	Minister for Works
2. Contract Authority's Representative	As appointed by the Contract Authority from time to time.
3. Contractor	The Respondent, if the Respondent's Request is accepted by the Contract Authority.
4. Contractor's Representative	As appointed by the Contractor from time to time.
5. The Term of the Head Agreement	The Term of the Head Agreement is 3 years. For the purposes of Clause 3.8 of the General Conditions the Contract Authority has the option to extend the Term for a period of 2 years.
6. Commencement Date of the Head Agreement	The Contract Authority will notify the successful Respondent of the Commencement Date of the Head Agreement in the Letter. In the absence of a date being specified, then the date the Letter was delivered to the Contractor shall be the Commencement Date of the Head Agreement.
7. Panel Arrangement	The Contractor is a Panel Member for the purposes of Clause 4 of the General Conditions, the Head Agreement establishing a Panel Arrangement. The Contractor agrees to be bound by the terms of operation of the Panel contained in the Head Agreement. For the avoidance of doubt, Clauses 4.1 to 4.24 inclusive of the General Conditions shall apply to this Head Agreement.
8. Works	"Works" means the whole of the work to be executed in accordance with the Customer Contract including variations provided for by the Contract, which by the Contract is to be handed over to the Customer.
9. Price	The Price for Works and Products and/or Services under any Customer Contract formed pursuant to this Head Agreement shall be determined by the Letter of Award issued the Customer to the Contractor in respect of a Quotation for the Works and Products and/or Services provided by the Contractor. The Price for any Additional Works shall be determined by the formula or method specified in Schedule 3 of Request and as accepted by the Contract Authority (**"Price Schedule"**).
10. Quotations and Letters of Award	(a) The Contractor may receive from a Customer, in accordance with the Buying Rules contained in Item 12 of the Head Agreement Details, requests for a Quotation for the provision of Works and Products and/or Services from the Contractor using the form contained in Schedule 4 of the Request (**"Quotation Form"**). (b) If the Contractor receives a Quotation Form it must complete and return Part B of the Quotation Form within 7 days to the Customer, thereby providing a quotation for the Works and Products and/or Services referred to in that Quotation Form (**"Quotation"**). (c) A Customer Contract shall be formed for Works and Products and/or Services the subject of a Quotation when the Customer accepts that Quotation in writing by a Letter of Award. That Letter of Award shall be considered an Order for the purposes of the General Conditions (**"Letter of Award"**).
11. Additional Works Variation of Price Schedule	(a) The Contractor may make a written application between 60 days before and 21 days before an anniversary of the Head Agreement Commencement Date to the Contract Authority seeking that the Price Schedule in relation to Additional Works be varied in accordance with the percentage change between the Consumer Price Index (Consumer Price Index, Australia (Cat No 6401.0): 1 All Groups, Index Numbers – Perth) (**"CPI"**) on the date 3 calendar months before the anniversary and the CPI on the date 3 calendar months before the anniversary of the

	immediately preceding year (**"Price Schedule Variation Request"**). (b) If and only if a Price Schedule Variation Request is received in accordance with (a) above, the Contract Authority may exercise its sole and absolute discretion to accept or reject any Price Schedule Variation Request and in exercising this discretion may request from the Contractor and the Contractor must provide documentary evidence to justify the Contractor's Price Schedule Variation Request. (c) The Contract Authority shall communicate its acceptance or rejection of a Price Schedule Variation Request in writing to the Contractor. The Price Schedule shall not be varied unless written acceptance of a Price Schedule Variation Request is received by the Contractor. (d) If the Contract Authority accepts a Price Schedule Variation Request received in accordance with (a) above then, the Price Schedule shall be varied in accordance with the Price Schedule Variation Request effective on the later of: (i) the anniversary of the Head Agreement Commencement Date which immediately follows the Price Schedule Variation Request (provided that Price Schedule Variation Request complied with (a) above); and (ii) the date specified in the Contract Authority's written communication of acceptance of the Price Schedule Variation Request as being the date from which the Price Schedule Variation Request will take effect, This date will be no later than 21 days following the Contract Authority's acceptance of the Price Schedule Variation Request. (e) If the Contract Authority accepts a Price Schedule Variation Request, that variation shall not affect the Price of any Works or Products and/or Services or Additional Works the subject of an Order already issued by the Contract Authority or Quotation already provided by the Contractor prior to the date the Price Schedule Variation Request becomes effective under (d) above. (f) Price Schedule Variation Requests received outside of the time periods specified in (a) shall not be accepted by the Contract Authority.
12. Buying Rules	(a) A Customer may issue a Quotation Form to the Contractor at any time during the Term of the Head Agreement and the Contractor must respond with a Quotation pursuant to the terms contained in Item 10 of the Head Agreement Details above. (b) Without limiting a Customer's discretion under (a) above, should the Contract Authority estimate the value of an Order (including GST) to exceed $150,000.00 then the Customer may issue Quotation Forms to all Panel Members before issuing a Letter of Award to any Panel Member(s). (c) Without limiting the Customer's discretion under (a) above, should the Customer estimate the value of the Order (including GST) to exceed $5,000.00 but not exceed $150,000.00 then the Customer may issue Quotation Forms to certain Panel Members selected in the Customer's sole discretion before issuing a Letter of Award to any Panel Member(s). (d) Nothing in (b) or (c) above shall be construed to fetter the Customer's discretion to issue Quotation Forms or Letters of Award to any given Panel Member in the manner it sees fit. (e) This Item shall be considered the Buying Rules referred to in Clause 4.23 of the General Conditions.
13. Public Liability	Public liability insurance covering the legal liability of the Contractor and the Contractor's Personnel for an amount of not less than **$20 million** for any one occurrence; and unlimited in the aggregate.
14. Workers' Compensation	Workers' compensation insurance in accordance with the provisions of the *Workers' Compensation and Injury Management Act 1981* (WA), including cover for common law liability for an amount of not less than **$50 million** for any one occurrence in respect of workers of the Contractor. The insurance policy

	must be extended to cover any claims and liability that may arise with an indemnity under section 175(2) of the *Workers' Compensation and Injury Management Act 1981.*
15. Outstanding Orders Reporting	(a) The Contractor must submit to the Contract Authority or Contract Authority's Representative written reports every calendar fortnight in a form specified by the Contract Authority, setting out clearly the status of: (i) all Orders yet to be invoiced or covered by a Payment Claim by the Contractor; (ii) all Orders for which invoices have yet to be paid to the Contractor; (iii) all Orders for Works and Products and/or Services yet to be Practically Completed by the Contractor; and (iv) all Orders for which invoices have been issued or Payment Claims made since the last fortnightly report; in a form approved by the Contract Authority. (**"Outstanding Orders Report"**) (b) For each Order referred to in the Outstanding Orders Report, the Contractor must include: (i) Transportable Building Number(s); (ii) TAG Number (where applicable); (iii) Pick-Up Site; (iv) Set-Down Site; (v) Building Type; (vi) Project Priority; (vii) Date For Practical Completion; (viii) Date of availability of Transportables at Pick-Up Site; (ix) Contractor's estimated Date Of Practical Completion; (x) Date of commencement of Works at Pick-Up Site; (xi) Date of completion of Works at Pick-Up Site; (xii) Date of commencement of Works at Set-Down Site; (xiii) Date of Practical Completion (if applicable); and (xiv) Outstanding items and comments.
16. Meetings	The Contractor's Representative must attend meetings with the Contract Authority's Representative as and when required by the Contract Authority's Representative to address: (a) the day to day management of Orders and Customer Contracts; (b) Outstanding Orders Reports; (c) the Contract Authority providing instructions to the Contractor; (d) evaluating the Contractor's performance both in the short term and on an annual basis pursuant to the Head Agreement; and (e) any other purpose the Contract Authority's Representative may require. The Contractor must comply with any directions given by the Contract Authority at those meetings, such directions to be confirmed in writing.
17. Access to Contractor's Records	Upon request by the Contract Authority's Representative, the Contractor must make available to the Contract Authority's Representative as soon as practicable any information, data or records in the possession, custody or control of the Contractor.
18. Key Performance Indicators	(a) The Contract Authority will in its sole discretion assess the Contractor on the performance of each Order with reference to key performance indicators, including but not limited to: (i) safety; (ii) quality of communication with the Contract Authority, Contract Authority Representative, Customers and Customer's

	Representatives; (iii) conditions of the Pick-Up Sites and Set-Down Sites left by the Contractor; (iv) quality of Products and/or and Services; (v) timeliness in providing Works and Products and/or Services and achieving Dates For Practical Completion; (vi) timeliness in correcting any defects; (vii) timeliness and accuracy of invoices, Outstanding Orders Reports, and as constructed drawings; (viii) adherence to procedures and protocols and instructions from the Contract Authority; and award an average percentage satisfaction rating on the performance of that Order by the Contractor. (b) The Contractor must maintain an average 85% satisfaction rating across the above key performance indicators for any given yearly period. (c) Without limiting the Contract Authority's unfettered discretion under Item 12(a) (Buying Rules) of the Head Agreement Details, the Contract Authority may consider the Contractor's average satisfaction rating above when deciding if and when to issue an Order to the Contractor.
19. Confidential Information	**Confidential Information** means the terms of the Head Agreement, Customer Contract, any information that concerns the business, operations, finances, plans or clients of the Customer and is disclosed to or acquired by the Contractor and which: (a) by its nature is confidential; (b) is designated by the Contract Authority, Customer or the Customer's Representative as confidential; or (c) the Contractor knows or ought to know is confidential; but does not include information which: (i). is in the public domain other than through a breach of the Head Agreement or Customer Contract; (ii). was in the possession of the Contractor without any restriction on its disclosure prior to the disclosure of the information; or (iii). has been independently developed by the Contractor.
20. Police Clearance	The Contractor must provide to the Contract Authority police clearances as referred to in Clause 18.4 of the General Conditions for all Contractor Personnel on or before the Commencement Date of the Head Agreement and otherwise comply with Clause 18.4 again upon any future request by the Contract Authority.
21. Publicity	For the purposes of Clause 25.4 of the General Conditions, the Contractor has no role in any promotional or publicity purposes in favour of the Contract Authority.
22. Government Policy	For the purposes of Clause 33 of the General Conditions, the Contractor's obligations are recited in Part A and Schedule 3 of the Request.

CUSTOMER CONTRACT DETAILS

1. Customer	The Customer is the Minister for Works.
2. Customer's Representative	As appointed by the Customer from time to time, in relation to any given Quotation Form.
3. Contractor	The Respondent, if as a Panel Member it receives a Quotation Form from the Customer and the Customer issues a Letter of Award pursuant to the Head Agreement.
4. Contractor's Representative	As appointed by the Contractor from time to time, in relation to any given Quotation Form.
5. Contract Term	The Term will commence on the Customer Contract Commencement Date and will expire at the end of the Defects Liability Period.
6. Customer Contract Commencement Date	The date the Letter of Award is issued by the Customer to the Contractor.
7. Date For Practical Completion	The date specified as the Date For Practical Completion contained in the Quotation Form, or as varied pursuant to the Customer Contract Details below.
8. Date Of Practical Completion	The date the Customer certifies in writing to the Contractor that the Works and Products and/or Services are Practically Complete.
9. Practical Completion	The term Practical Completion and any reference to the work being Practically Complete shall be reference to the stage in the provision of Works and Products and/or Services and the execution of the work pursuant to the Customer Contract when: (a) the Works and Products and/or Services have been delivered and provided by the Contractor to the Customer in accordance with the Customer Contract; (b) the Works are complete except for minor omissions and minor defects- (i) which do not prevent the Works from being reasonably capable of being used for their intended purpose; (ii) which the Customer determines the Contractor has reasonable grounds for not promptly rectifying; and (iii) rectification of which will not prejudice the convenient use of the Works; (c) those tests which are required by the Customer Contract to be carried out and passed before the Works reach Practical Completion have been carried out and passed; and (d) documents and other information required under the Customer Contract which, in the opinion of the Customer, are essential for the use, operation and maintenance of the Works have been supplied, including but not limited to "as constructed drawings"; (e) the Contractor has given the Customer an additional undertaking in writing to finish any outstanding work during the Defects Liability Period; and for the avoidance of doubt Practical Completion is achieved when the Customer has issued a certificate of Practical Completion certifying the Date Of Practical Completion.
10. Works	"Works" means the whole of the work to be executed in accordance with the Customer Contract including variations provided for by the Contract, which by the Contract is to be handed over to the Customer.
11. Price	The Price for Works and Products and/or Services for the purposes of the Customer Contract shall be as determined by acceptance by Letter of Award from the Customer to the Contractor of a quotation for the Works and Products and/or Services the subject of a request for Quotation in the form contained in Schedule 4 of the Request. The Price for any Additional Works shall be determined by the formula or method specified in Schedule 3 of Request and as accepted by the Contract

	Authority and as varied from time to time pursuant to the Head Agreement (**"Price Schedule"**).
12. Payment Claims	(a) Within 42 days of the Date of Practical Completion, the Contractor must provide to the Customer a written claim for payment (**"Payment Claim"**) which must: (i) Provide the Quotation number; (ii) Include a list of the Works and Products and/or Services provided under the Order and relevant Customer Contract; (iii) Include an itemised breakdown of costs detailing labour, materials, and any other costs such as the hiring of sub-contractors; (iv) Identify fees and/or percentage mark-ups associated with material costs; (v) Identify any works charged for the subject of a variation of the Customer Contract approved by the Customer (if any); (vi) Include a payment claim number, date, Pick-Up Site and Set-Down Site, Date Of Practical Completion, Date For Practical Completion, and GST statement; (vii) Include the transportable building number(s) and any building tag numbers; (viii) Include the Contractor's full address, Australian Business Number, postal and contact details; and (ix) Be accompanied with all as constructed drawings and any other documents required by the Customer in writing. (b) If: (i) The Customer has received a Payment Claim in accordance with (a) above; (ii) The amount claimed by the Contractor is consistent with the Customer Contract and otherwise acceptable to the Customer; (iii) The Works and Products and/or Services have been certified as being Practically Complete by the Customer; and (iv) All documents required by the Customer in writing have been provided by the Customer; then the Customer shall issue a Recipient Created Tax Invoice pursuant to the Recipient Created Tax Invoice Agreement (**"RCTI"**) for the Works and Products and/or Services supplied pursuant to the Order to which the Payment Claim relates. (c) If Additional Works: (i) have been authorised pursuant to the relevant Customer Contract; and (ii) those Additional Works are certified as being Practically Complete by the Customer; and (iii) the Additional Works Sum as defined in the Customer Contract has been agreed; then the Contractor may make a Payment Claim in respect of those Additional Works. (d) If: (i)The Customer has received a Payment Claim for Additional Works in accordance with (c) above; (ii) The amount claimed by the Contractor is consistent with the Customer Contract and otherwise acceptable to the Customer; and (iii) The Additional Works have been certified as being Practically

	complete by the Customer; then the Customer shall issue a RCTI for the Additional Works to which the Payment Claim relates. (e) Multiple progress claims during the term of any Customer Contract are not permitted unless an express written progress claim schedule has been presented by the Customer to the Contractor in relation to any particular Order or Customer Contract. (f) If Payment Claims are not made in accordance with this Clause or any documents required by the Customer are not provided then the Customer is entitled to withhold issuing an RCTI or payment in relation to the relevant Work and Products and/or Services.
13. Price Variation	For the purposes of the Customer Contract, the Price cannot be varied.
14. Additional Work	(a) If in the reasonable opinion of the Contractor, additional works not contemplated by the Order are needed to achieve Practical Completion (**"Additional Works"**) then the Contractor must obtain written authorisation from the Customer before carrying out the Additional Work, subject to Sub-Item (c) below. (b) Subject to (c) below, without limiting its sole discretion, the Customer is not obliged to provide authorisation for Additional Works under (a) above unless it is immediately provided with: (i) a reasonable estimate of the additional costs of the Additional Work; (ii) an itemised breakdown of the estimated costs of the Additional Works; (iii) reasonable justification from the Contractor why the Additional Works do not fall within the scope of the works contemplated by the Order in any event; (iv) full and detailed information as may be required by the Customer identifying the Additional Works required. (c) The Contractor may proceed with Additional Works without authorisation by the Customer if and only if the Contractor has made all reasonable attempts to contact the Customer to request authorisation, but is unable to do so, and in the Contractor's reasonable opinion: (i) the total costs of the Additional Works to the Customer will not exceed $1,500.00 including GST; or (ii) failure to proceed with the Additional Works will adversely affect the achievement of Practical Completion by the Date For Practical Completion. The Contractor must inform the Customer of any Additional Works pursuant to this Clause as soon as it is reasonably practicable to do so. (d) Without limiting its sole discretion, the Customer is not liable for any Payment Claim by the Contractor for Additional Works unless: (i) the Additional Works were authorised by the Customer in writing, or permitted by (c) above; (ii) the Additional Works have been completed; (iii) the Contractor provides the Customer with an itemised break down of the actual costs and margins applied in relation to the Additional Works and all documents, receipts, quotes, invoices or other documentary evidence in support; (iv) the Contractor has provided all information and evidence as may be requested by the Customer; (v) the Customer deems the claim for payment for Additional Works to be reasonable and consistent with the Pricing Schedule where appropriate; and (vi) the Customer agrees the sum payable for the Additional Works with the Contractor in writing (**"Additional Works Sum"**).

	(e) Once the Additional Works Sum has been agreed, the Contract Authority or Customer may render a tax invoice for payment of the Additional Works Sum in accordance with the terms of the Head Agreement.
15. Pick-Up Site	(a) The "Pick-Up Site" means that Premises identified in the Quotation Form as the Pick-Up Site, being any location where the Contractor is directed by the Customer to remove any Transportables or anything else, or provide any Works and Products and/or Services in that regard. (b) Any reference to "Premises" in the General Conditions shall be construed as far as it is cognisant to do so as a reference to the Pick-Up Site. (c) Without limiting the scope of Works or Products and/or Services that may be included in any given Quotation Form, the Contractor must when working at a Pick-Up Site carry out Works and provide Products and/or Services in accordance with the Specifications.
16. Set-Down Site	(a) The "Set-Down Site" means that Premises identified in the Quotation Form as the Set-Down Site, being any location where the Contractor is directed by the Customer to deliver any Transportables or anything else, or provide any Works and Products and/or Services in that regard. (b) Any reference to "Premises" in the General Conditions shall be construed as far as it is cognisant to do so as a reference to the Set-Down Site. (c) Without limiting the scope of Works and Products and/or Services that may be included in any given Quotation Form, the Contractor must when working at a Set-Down Site carry out Works and provide Products and/or Services in accordance with the Specifications.
17. Variation of Customer Contract	(a) The terms and conditions of the Customer Contract may only be varied in writing by an instrument executed by both the Contractor and the Customer and in accordance with the terms of this Customer Contract. (b) Clause 4.27 of the General Conditions shall not apply to this Customer Contract.
18. Construction or Contract Works Insurance	The Contractor must maintain construction or contract works insurance for the value of the Works and Products and/or Services under the Customer Contract, with the Contractor and the Customer being named as jointly insured parties to that insurance policy.
19. Public and Product Liability	The Contractor must maintain public and products liability insurance covering the legal liability of the Contractor and the Contractor's Personnel arising out of the Products and / or Services for an amount of: 1. not less than **$20 million** for any one occurrence; 2. unlimited in the aggregate in respect of public liability; and 3. limited in the annual aggregate to **$20 million** in respect of products liability.
20. Workers' Compensation	The Contractor must maintain workers' compensation insurance in accordance with the provisions of the *Workers' Compensation and Injury Management Act 1981* (WA), including cover for common law liability for an amount of not less than **$50 million** for any one occurrence in respect of workers of the Contractor. The insurance policy must be extended to cover any claims and liability that may arise with an indemnity under section 175(2) of the *Workers' Compensation and Injury Management Act 1981*.
21. Motor vehicle third party	The Contractor must maintain motor vehicle third party insurance covering legal liability against property damage and bodily injury to, or death of, persons (including bodily injury gap protection) caused by motor vehicles used in connection with the Works and Products and/or Services for an amount of not less than $20 million for any one occurrence and unlimited in the aggregate.
22. Compulsory third party	The Contractor must maintain compulsory third party insurance as required under any statute relating to motor vehicles used in connection with the Works and Products and/or Services.
23. Licensing and Registration	The Contractor must inform itself of and ensure the Contractor, Contractor's Representative and Contractor's Personnel immediately obtain and maintain for

Requirements	all licences, memberships, registrations, qualifications, accreditations, authorisations, permissions or approvals as required by any Federal, State or Local legislation, regulations, by-laws, government authority, agency, department, professional or trade association or other body or person that may be required to be obtained by the Contractor, the Contractor's Representative or any of the Contractor's Personnel in order to properly and lawfully carry out and provide the Works and Products and/or Services, including but not limited to those required: (a) under the *Builders' Registration Act 1939 (WA);* (b) by Main Roads Department and Police for transport of Transportables; (c) by planning and development agencies and bodies; (d) under the Customer Contract or Head Agreement for Police Clearances; (e) WorkSafe, Western Power, Alinta Gas, or Water Corporation or equivalent bodies; at the Contractor's sole cost and expense. The Contractor hereby indemnifies the Customer and Contract Authority against any direct or indirect loss, damage, claim, costs or action howsoever arising from the Contractor's failure to comply with this Item.
24. Meetings	The Contractor's Representative must attend meetings with the Customer's Representative as and when directed by the Customer's Representative for: (a) the day to day management of the Customer Contracts; (b) providing instructions from the Customer to the Contractor; (c) evaluating the Contractor's performance in the short term; (d) any other purpose the Customer's Representative may require; and comply with any directions given by the Customer's Representative.
25. Confidential Information	**Confidential Information** means the terms of the Customer Contract, any information that concerns the business, operations, finances, plans or clients of the Customer and is disclosed to or acquired by the Contractor and which: (a) by its nature is confidential; (b) is designated by the Contract Authority, Customer or the Customer's Representative as confidential; or (c) the Contractor knows or ought to know is confidential; but does not include information which: (i) is in the public domain other than through a breach of the Customer Contract; (ii) was in the possession of the Contractor without any restriction on its disclosure prior to the disclosure of the information; or (iii) has been independently developed by the Contractor.
26. Site Identification and Sign In	(a) The Contractor's Personnel shall wear photo identification badges (created and issued by the Contractor) and comply with any other additional security measures required at all times while on Government Premises as may be directed by the Customer. (b) The Contractor's Personnel must sign in and out with registrars or administration staff of Government sites as required by the Customer from time to time. (c) Failure to comply with these requirements may prevent entry to site and any delays or costs arising as a result are the responsibility of the Contractor.
27. Police Clearance	The Contractor must provide to the Customer with Australia-wide police clearances as referred to in Clause 18.4 of the General Conditions for all Contractor Personnel on or before the Commencement Date of the Customer Contract and otherwise comply with Clause 18.4 again upon any future request by the Customer.
28. Confidential Declaration –	The Contractor must provide to the Customer in writing a confidential declaration as referred to in Clause 18.5 of the General Conditions to the

Prevention of Paedophilia	satisfaction of the Customer on or before the Commencement Date of the Customer Contract.
29. Payment of Workers and subcontractors.	The Customer may require the Contractor to make and deliver to the Customer a statutory declaration that all workers and subcontractors who are or at any time have been engaged on the work under the Customer Contract have been paid in full all moneys due and payable to them in respect of any Works and Products and/or Services under the Customer Contract.
30. Defects Liability Period	(a) In addition to any other rights the Customer may have in relation to the quality of Works and Products and/or Services under the General Conditions, the Contractor shall be liable for defects as set out below. (b) The Defects Liability Period shall be a period of 8 calendar weeks (**"Defects Liability Period"**) and shall commence on the Date Of Practical Completion as certified by the Customer pursuant to the Customer Contract. (c) As soon as possible after the Date Of Practical Completion, the Contractor shall rectify any defects or omissions in the Works and Products and/or Services under the Customer Contract existing at the Date Of Practical Completion at the Contractor's cost and expense. (d) At any time prior to the 14th day after the expiration of the Defects Liability Period, the Customer's Representative may direct the Contractor to rectify any omission or defect in the Works and Products and/or Services under the Customer Contract existing at the Date Of Practical Completion or which becomes apparent prior to the expiration of the Defects Liability Period. The direction shall identify the omission or defect and state a date by which the Contractor shall complete the work of rectification and may state a date by which the work of rectification shall commence. The direction may provide that in respect of the work of rectification there shall be a separate Defects Liability Period of a stated duration not exceeding a period of 8 calendar weeks. The separate Defects Liability Period shall commence on the date the Contractor completes the work of rectification. This Item of the Customer Contract shall apply in respect of the work of rectification and the Defects Liability Period for that work of rectification. (e) If the work of rectification is not commenced or completed by the stated dates, the Customer may have the work of rectification carried out at the Contractor's expense, but without prejudice to any other rights that the Customer may have against the Contractor with respect to such omission or defect and the cost of the work of rectification incurred by the Customer shall be a debt due from the Contractor. (f) If it is necessary for the Contractor to carry out the work of rectification, the Contractor shall do so at times and in a manner which causes as little inconvenience to the occupants or users of the site as is reasonably possible.
31. Warranties	The Contractor must give, or ensure the Customer has the express benefit of all warranties including but not limited to the following items of work, new materials or equipment: a) Electrical equipment; b) Mechanical equipment; c) Resilient finishes; d) Roofing and roof plumbing; and e) any other part of the Works and Products and/or Services as required by the Customer. All new materials and equipment are to be covered by the manufacturers' warranties and the Customer expressly provided by those manufacturers with the benefit of those warranties.
32. Publicity	For the purposes of clause 25.4 of the General Conditions, the Contractor has no role in any promotional or publicity purposes in favour of the Customer.
33. Government Policies	For the purposes of Clause 33 of the General Conditions, the Contractor's

	obligations are recited in Part B of the Request.
34. Special Conditions of Contract	The Special Conditions of Contract contained in Schedule 6 of this Response shall form part of this Customer Contract as if they were recited in full in this Item.

SCHEDULE 2 - STATEMENT OF REQUIREMENTS

1.0 Statement of Requirements

1.1 DESCRIPTION OF THE WORKS UNDER THE PANEL ARRANGEMENT

Works under this panel arrangement will involve the relocation of transportable or demountable buildings ("**Transportables")** together with any required disconnection and/or reconnection of associated site services and facilities. Works may involve the relocation of Transportables to and from sites located anywhere within the state of Western Australia. It may be necessary to travel through South Australia and/or the Northern Territory in order to access remote locations.

It is expected that the Contractor will work in partnership with all relevant stakeholders including Building Management and Works, the Contract Authority and its Representatives, the Customer and its Representatives, Government Agencies, and site representatives to ensure the smooth execution of works, and amicable resolution of any issues that may arise. As part of the culture of partnership, it is expected that the Contractor will engage in effective communication with all parties to ensure that there is mutual understanding of each others roles and responsibilities before, during and at the completion of the relocation process.

Works carried out under this panel arrangement will be awarded in accordance with the Buying Rules specified in the Head Agreement Details.

The following categories of work may be required as part of any Orders awarded under this Contract:

a) Site Works

This includes any work required to remove and reinstate Transportables, either single or multiple section units, including the disconnection and reconnection of all electrical, mechanical, communication, security, reticulation and plumbing services and capping off and making safe those services at the Pick-Up Site and connection of those services at the Set-Down Site.

b) Transportation of Buildings

This includes all transportation, jacking and lifting requirements, raising of powerlines and the provision of security for the building and its components during the transportation process. The nature of Transportables which the Contractor may be required to relocate under the contract include (but are not limited to):

- Classrooms (Various types, such as Home Economics, Pre Primary, Science, etc);
- Toilet facilities;
- Office accommodation; and
- Residential Units.

Transportables may vary in size, height, width and weight. The Contractor will be required to make provision to relocate any Transportable regardless of its size, height, width or weight.

c) Maintenance, Refurbishments, Upgrades and Other Requirements

The Contractor may be required to repair, refurbish, modify or otherwise upgrade Transportables as required. Other services such as the provision of landscaping may also be required as part of any awarded Orders.

1.2 COMMUNICATION

The Contractor is required to report, consult and communicate effectively with all relevant stakeholders.

Relevant stakeholders may include (but are not limited to):

- The Customer's Representative;
- representatives of State Government agencies at the Pick-Up Site;
- representatives of State Government agencies at the Set-Down Site;
- Building Management and Works;
- Planning and Local Government; and
- Other State Government agencies.

Communication between all parties is necessary to ensure that all are kept informed of progress of the works.

The Contractor is expected to engage in a culture of partnership and maintain an amicable relationship with all relevant parties. The Contractor should aim to resolve any issues that may arise during the relocation process.

1.3 DRAWINGS

A catalogue of drawings of the Transportables which Contractors may be required to relocate under this panel arrangement have been provided in the attachment *1284710 – Drawings – Transportable Building Relocation Services*.

These drawings are provided for information purposes only, and should not be taken as a complete catalogue of Transportables which may be relocated under this panel arrangement.

SCHEDULE 3 – PRICE SCHEDULE

(For Additional Works)

The Contract Authority will, in its Value for Money assessment, consider the extent to which the Offer satisfies the following Offered Price and Pricing Requirements. The Contract Authority or Customer reserves the right to reject any Offer that does not properly address and satisfy any of the Offered Price and Pricing Requirements.

OFFERED PRICE AND PRICE SCHEDULE

(i) The Respondent must include in the Offer this completed Schedule 3 – Price Schedule.

(ii) The Respondent must state the basis of its Offered Price in Australian Dollars and any price variation provision, arrangement or mechanism applicable to the Offered Price.

(iii) The Offered Price will be deemed to include the cost of complying with this Request (including the Head Agreement and Customer Contract Details) and the General Conditions and the cost of complying with all matters and things necessary or relevant for the due and proper performance of the Customer Contract. Any charge not stated as being additional to the Offered Price will not be payable by the Customer.

(iv) If the Offered Price is consideration for a taxable supply under the GST Act, the Offered Price will be deemed to be inclusive of all GST applicable to the taxable supply at the rate in force for the time being.

RESPONDENT TO COMPLETE

The Respondent must provide a Schedule of Rates which will be used to price all Additional Works. All rates and fees are maximum rates, and the Contractor may offer discounted rates for any given Additional Works.

Please fill in the table for any service descriptions which are applicable or provide other service descriptions which apply.

SCHEDULE OF RATES FOR ADDITIONAL WORK & VARIATIONS		
DESCRIPTION OF SERVICE	**HOURLY RATE (EX GST)**	**HOURLY RATE (INCL GST)**
Electrical Services	$	$
Mechanical Services	$	$
Painting	$	$
Other	$	$
Note: Categories provided within the Schedule of Rates are provided as examples only. The Respondent should add/remove categories as required.		

MATERIALS AND SERVICE FEES (FOR VARIATIONS AND ADDITIONAL WORK)	
[1]Service Management Fee	%
[2]Margin charged for replacement equipment/materials	%

[1] The Contractor may charge a Service Management Fee when hiring Sub Contractors for Variations and Additional Work. The Service Management Fee will be the maximum percentage charge applied to the cost of hiring Sub Contractors.

[2] The Contractor may charge a margin on new equipment, materials, products and other items provided in the course of completing variations and additional work.

Any Additional Works that may be required pursuant to any Customer Contract that are not covered by any of the rates above or is an item that requires individual costing shall be carried out by the Contractor in any event. The Contractor shall be entitled to payment at a rate agreed between the Contractor and the Customer in writing. If the Customer and Contractor cannot agree a rate within a reasonable time then the value of the Works and Products and/or Services in question shall be valued by an independent quantity survey appointed by the Contract Authority.

SCHEDULE 4 - QUOTATION FORM

Transportable Building Relocation Services Panel Number 1284710

Quotation Form (3 pages)

QUOTATION PROCESS:

Step 1 - Customer selects the preferred Contractor(s) from the list of pre-qualified Contractors.

Step 2 - Customer completes the **Quotation Form – Part A**.

Step 3 - Customer attaches their Project Brief and other requirements relating to this engagement, to the **Quotation Form – Part A** and forwards to the Contractor(s).

Step 4 - Contractor(s) complete **Quotation Form – Part B** and returns signed form to the Customer for consideration.

Step 5 - The Customer considers the completed and returned Quotation Form (s) – Part B and confirms its Order with the selected Contractor by a Letter of Award.

Step 6 - Contractor delivers services.

Transportable Building Relocation Services

QUOTATION FORM – PART A

Customer completes this part, including Scope of Work and forwards to one or more Contractors

PART A: REQUEST FOR QUOTATION		
The Customer requests that the Contractor provides a quotation for the performance of the Works referred to below, this Quotation incorporating the Department of Finance General Conditions of Contract (August 2010), the Panel Arrangement (Panel Number 1284710) and the Customer Contract (formed if and when the Contractor's quote is accepted by Letter of Award).		
Transportable Building Number(s): (if applicable)	**Date of Request for Quote:**	
Customer :		
Customer's Address :		
Customer's Representative:		
Customer's Representative's Address:		
Phone:	Fax:	Email:
Quote Closing Date:		
Date For Practical Completion:		
Scope of Work / Other Requirements (or attached): [Brief description of Order] **Please see Project Brief (attached) for further details.**		
Customer Billing Address		
Address:		
Suburb:	**Postcode:**	
Authorised Purchaser Signature or Accountable Officer:		

TRANSPORTABLE BUILDING RELOCATION SERVICES ORDER FORM – PART B

Contractor completes this part and returns to Customer

PART B : QUOTATION BY CONTRACTOR		
TO: _____ (name of contact and department)		
Name of Contractor:		
ABN Number:		
Address of Contractor:		
Name of Contractor's Representative:		
Contractor's Representative's Address:		
Phone:	Fax:	Email:

TRANSPORTABLE BUILDING RELOCATION SERVICES QUOTATION COST BREAKDOWN (Inc GST)	
Earthworks & Siteworks	$
Electrical Services	$
Drainage & Plumbing	$
Mechanical Services	$
Carpentry	$
Roofing & Stormwater	$
Structural Steel	$
Joinery & Cabinetwork	$
Hardware	$
Concrete	$
Metalwork	$
Painting	$
Resilient Finishes	$
Glasswork	$
Landscape & Irrigation	$
Demolition	$
Transport	$
Furniture Supply	$
Other	$
Disbursements **(if applicable provide details)**	$
Total Price	$

Name of Contractor:	
Authorised Signature:	
Date:	

SCHEDULE 5 – RECIPIENT CREATED TAX INVOICE AGREEMENT

RECIPIENT CREATED TAX INVOICE AGREEMENT

This Agreement is submitted in relation to Tender RFT No:1284710 for:
(ENTER RFT NUMBER)

Transportable Building Relocations Services _____

(STATE CORRECT TITLE OF THE WORKS AS GIVEN IN THE TENDER DOCUMENTS)

In accordance with the Australian Tax Office's (ATO's) Goods and Services Tax Ruling (GSTR) 2000/10 paragraph 13(e) the following is agreed between the Department of Finance – WABMA acting for and on behalf of The Principal (The Minister for Works) and

_____
(ENTER THE FULL NAME OF THE CONTRACTOR)

1. Department of Finance will issue tax invoices to the Contractor in respect of the payment certificates issued by the Superintendent to the Principal under this Contract;
2. The Contractor shall not issue tax invoices in respect of claims for payment issued by the Contractor under this Contract;
3. The Contractor is registered for the GST at the time of this agreement and will notify Department of Finance if it ceases to be registered.
4. The Contractor's Australian Business Number (ABN) is:
(The Contractor is to enter its ABN and if applicable its GST Branch registration number)

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5. Department of Finance is currently registered for the GST and will notify the Contractor if it ceases to be registered.
6. Department of Finance's ABN is **40 122 932 289**

Name of Contractor: _____
(IN BLOCK LETTERS)

This Agreement is signed by a person authorised to do so on behalf of the Contractor.

Signature: _____

Full Name: _____
(IN BLOCK LETTERS)

Position with Contractor: _____
(IN BLOCK LETTERS)

Date: _____

SCHEDULE 6 – SPECIAL CONDITIONS OF CONTRACT

1. DEFINITIONS

1.1 Interpretation

(a) The rules of interpretation and definitions contained in the "Transportable Building Relocation Services" Panel Request Number 1284710 Request Conditions and General Conditions of Contract, Head Agreement Documents and Customer Contract Documents (issued by Building Management and Works, Department Finance on behalf of the Minister for Works) shall apply to this Schedule as far as it is cognisant to do so and in the absence of any clear intention to the contrary.

(b) References to Clause numbers in this Schedule shall be construed as references to Clauses of this Schedule except where it is not cognisant to do so.

1.2 Definitions

In addition to the definitions imported by **Clause 1.1** above, the following words shall have the following meanings;

(a) "**Contract"** means the Customer Contract.

(b) **"Constructional Plant"** means appliances and things used in the execution of the Works but not forming part of the Works.

(c) **"Separable Portion"** means a portion of the work under the Contract described in the Contract as a Separable Portion or which the Customer's Representative has determined pursuant to **Clause 16.4** shall be a Separable Portion.

(d) **"Site"** means both the Pick-Up Site and the Set-Down Site as defined in the Customer Contract Details.

(e) **"Temporary Works"** means works used in the execution of the Works under the Customer Contract but not forming part of the Works.

(f) **"Works"** means both the "Works" as defined by the Head Agreement and Products and/or Services as defined by the General Conditions.

2. LATENT CONDITIONS

2.1 Definition

Latent Conditions are –

(a) Physical conditions on the Site or its surroundings, including artificial things but excluding weather conditions, which differ materially from the physical conditions which should reasonably have been anticipated by the Contractor at the time of the Contractor's commencement of the Works if the Contractor had:

  (i) examined all information made available in writing by the Customer to the Contractor with the Order;

  (ii) examined all information relevant to the risks, contingencies and other circumstances having an effect on the Contract and obtainable by the making of reasonable enquiries; and

  (iii) inspected the Site and its surroundings; and

(b) any other conditions which the Order specifies to be Latent Conditions.

2.2 Notification

If during the execution of the Works, the Contractor becomes aware of a Latent Condition, the Contractor shall forthwith and where possible before the Latent Condition is disturbed, give written notice thereof to the Customer's Representative.

If required by the Customer's Representative, the Contractor shall provide to the Customer's Representative a statement in writing specifying –

(a) the Latent Condition encountered and in what respects it differs materially;

(b) the Additional Works and additional resources which the Contractor estimates to be necessary to deal with the Latent Condition;

(c) the time the Contractor anticipates will be required to deal with the Latent Condition and the expected delay in achieving Practical Completion;

(d) the Contractor's estimate of the cost of the measures necessary to deal with the Latent Condition; and

(e) other details reasonably required by the Customer's Representative.

2.3 Extension of Time and Cost

Delay caused by a Latent Condition may justify an extension of the Date For Practical Completion under **Clause 16.5** of this Schedule.

If a Latent Condition causes the Contractor to:

(a) carry out Additional Works;
(b) use additional Construction Plant; or
(c) incur extra cost (including but not limited to the cost of delay or disruption),

which the Contractor could not reasonably have anticipated at the at the time of the Contractor's commencement of the Works a valuation shall be made under **Clause 21.5** of this Schedule.

2.4 Time Bar

In making a valuation pursuant to **Clause 2.3** above, regard shall not be had to the value of Additional Works carried out, additional Constructional Plant used or extra cost incurred more than 28 days before the date of which the Contractor gives the written notice required by the first paragraph of **Clause 2.2** above.

3. STATUTORY REQUIREMENTS

3.1 Complying with Statutory Requirements

The Contractor shall comply with the requirements of –

(a) Acts of the Commonwealth;
(b) Acts and Ordinances of the State or Territory in which the Works or any part thereof is carried out or delivered;
(c) Ordinances, regulations, by-laws, orders and proclamations under the Acts and Ordinances;
(d) Persons acting in the exercise of statutory powers enabling them to give directions affecting the Works.

If a requirement is at variance with a provision of the Contract, as soon as the Contractor discovers the variance the Contractor shall notify the Customer's Representative in writing specifying the difference.

If a requirement necessitates a change in the Works or so much of the Temporary Works or method of working as may be specified in the Contract, the Customer's Representative shall direct a variation under **Clause 21.1** of this Schedule.

Except to the extent that the Contract provides for reimbursement in respect of a requirement referred to in **Clause 3.1** the Contractor shall bear the cost of complying with the requirement, whether the requirement existed at the time of the commencement of the Works or not.

3.2 Notices and Fees

The Contractor shall give the notices necessary to comply with the requirements referred to in **Clause 3.1**.

The Contractor shall pay any fees or charges necessary to comply with the requirements referred to in **Clause 3.1**.

If a requirement necessitates the provision or expansion of services of a municipal, public or statutory authority in relation to the Works or Temporary Works, the Contractor shall pay any fee or charge payable to the authority for the services and to the extent to which the services are not included in the Works, the fee or charge shall be reimbursed by the Customer to the Contractor.

3.3 Documents Evidencing Approvals of Authorities

The Contractor shall give the Customer copies of the documents issued to the Contractor by municipal, public or other statutory authorities in respect of the Works, and in particular, any approvals of Works.

4. PROTECTION OF PEOPLE AND PROPERTY

Insofar as compliance with the requirements of the Contract permits, the Contractor shall-

(a) provide all things and take all measures necessary to protect people and property;
(b) avoid unnecessary interference with the passage of people and vehicles;
(c) prevent nuisance and unreasonable noise and disturbance.

Without limiting the generality of the Contractor's obligations, they include the provision of barricades, guards, fencing, temporary roads, footpaths, warning signs, lighting, watching, traffic flagging, safety helmets and clothing, removal of obstructions and protection of services.

If the Contractor or the employees or agents of the Contractor damage property, including but not limited to public utilities and services and property on or adjacent to the Site, the Contractor shall promptly make good the damage and pay any compensation which the law requires the Contractor to pay.

If the Contractor fails to comply with an obligation under **Clause 4** the Customer may, in addition to any other remedy, perform the obligation on the Contractor's behalf and the cost incurred by the Customer shall be a debt due from the Contractor to the Customer.

5. CARE OF THE WORK AND REINSTATEMENT OF DAMAGE

5.1 Care of the Work Under the Contract

From and including the earlier of the Contract Commencement Date and the date on which the Contractor is given possession of the Site to 4:00pm on the Date Of Practical Completion, the Contractor shall be responsible for the care of the Works.

Without limiting the generality of the Contractor's obligations, the Contractor shall be responsible for the care of unfixed items, things entrusted to the Contractor by the Customer for the purpose of carrying out the Works, things brought on the Site by subcontractors for that purpose, the Works, Temporary Works and Constructional Plant, and the Contractor shall provide the storage and protection necessary to preserve these items and things, and the Works and Constructional Plant.

After 4:00pm on the Date Of Practical Completion the Contractor shall remain responsible for the care of outstanding work and items to be removed from the Site by the Contractor and shall be liable for damage occasioned by the Contractor in the course of completing outstanding work or complying with obligations under **Clause 11.6, 12.1 and 18**.

5.2 Reinstatement

If loss or damage (except loss or damage which is a direct consequence, without fault or omission on the part of the Contractor, of an Excepted Risk defined in **Clause 5.3**) occurs to anything while the Contractor is responsible for its care, the Contractor shall at the Contractor's own cost promptly make good the loss of damage.

5.3 Excepted Risks

The Excepted Risks are-

(a) any negligent act or omission of the Customer, the Customer's Representative or the employees, consultants or agents of the Customer;
(b) any risk specifically excepted in the Contract;
(c) war, invasion, act of foreign enemies, hostilities, (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, martial law or confiscation by order of any Government or public authority;
(d) ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel not caused by the Contractor or the Contractor's employees or agents;
(e) use or occupation by the Customer or the employees or agents of the Customer or other contractors to the Customer (not being employed by the Contractor) of any part of the Works or the Temporary Works;
(f) defects in the design of the Works other than a design provided by the Contractor.

6. DAMAGE TO PERSONS AND PROPERTY OTHER THAN THE WORKS

6.1 Indemnity by Contractor

The Contractor shall indemnify the Customer and Contract Authority against –

(a) Loss of or damage to property of the Customer or Contract Authority, including existing property in or upon which the Works are being carried out or provided; and
(b) Claims by any person against both the Customer or Contract Authority in respect of personal injury or death or loss of or damage to any property,

arising out of or as a consequence of the carrying out by the Contractor of the Works, but the Contractor's liability to indemnify the Customer and the Contract Authority shall be reduced

proportionally to the extent that the act or omission of the Customer or Contract Authority or their employees or agents may have contributed to the loss, damage, death or injury.

Clause 6.1 shall not apply to –

(i) the extent that the liability of the Contractor is limited by another provision of the Contract;
(ii) exclude any other right of the right Customer or Contract Authority to be indemnified by the Contractor;
(iii) things for the care of which the Contractor is responsible under **Clause 5.1**;
(iv) damage which is the unavoidable result of the construction of the Works; and
(v) claims in respect of the right of the Customer or Contract Authority to construct, carry out the Works on the Site.

7. CONTROL OF CONTRACTOR'S EMPLOYEES AND SUBCONTRACTORS

The both the Customer or Customer's Representative may direct the Contractor to have removed from the Site or from any activity connected with the Works, within such time as the Customer or Customer's Representative directs, any person employed in connection with the Works who, in the opinion of the Customer or Customer's Representative, is guilty of misconduct or is incompetent or negligent. The person shall not thereafter be employed on the Site or on activities connected with the Works without the prior written approval of the Customer or Customer's Representative.

8. SITE

8.1 Possession of Site

The Customer shall within a reasonable time give the Contractor or where necessary make arrangements for the Contractor to receive possession of the Site or sufficient of the Site to enable the Contractor to commence the Works. If the Customer has not given the Contractor possession of the whole Site, the Customer shall from time to time give the Contractor possession of such further parts of the Site as may be necessary to enable the Contractor to execute the Works. The Customer shall advise the Contractor in writing of the date upon which the Site or any part thereof will be available.

Notwithstanding the provisions of **Clause 8.1**, if the Contractor is in breach of Clause 27 (Insurance) of the General Conditions, the Customer may refuse to give the Contractor possession of the Site or any part of the Site until the Contractor has complied with the requirements of Clause 27 (Insurance) of the General Conditions.

Possession of the Site shall confer on the Contractor a right to only such use and control as is necessary to enable the Contractor to execute the Works.

8.2 Access for the Customer and Others

The Customer and the Customer's employees and agents may at any time after reasonable notice to the Contractor have access to any part of the Site for any purpose.

The Contractor shall permit the execution of work on the Site by persons engaged by the Customer and shall cooperate with them and coordinate the Contractor's work with their work.

If requested by the Contractor, the Customer shall provide to the Contractor the names of the persons so engaged.

The Contractor shall at all reasonable times give the Customer, the Customer's Representative and other persons authorised in writing by the Customer or the Customer's Representative access to the Work at any place where the Work is being carried out or materials are being prepared or stored.

The Customer shall ensure that the Contractor is not impeded in the execution of the Contractor's work by any persons referred to in **Clause 8.2**, whilst exercising the right of access given by **Clause 8.2**.

8.3 Delivery of Materials to and Work on Site Before Possession

Until possession of the Site or part of the Site is given to the Contractor under **Clause 8.1**, the Contractor shall not deliver materials to or perform Works on the Site or part of the Site, as the case may be, unless approval in writing is given by the Customer's Representative.

8.4 Use of Site by Contractor

Unless the Contract otherwise provides or the Customer's Representative gives prior written approval, the Contractor shall not use the Site or allow it to be used for –

(a) camping;
(b) residential purposes; or
(c) any purpose not connected with the Work under the Contract.

8.5 Finding of Minerals, Fossils and Relics

Valuable minerals, fossils, articles or objects of antiquity or of anthropological or archaeological interest, treasure trove, coins and articles of value found on the Site shall as between the parties be and remain property of the Customer. Immediately upon the discovery of these things the Contractor shall take precautions to prevent their loss or removal or damage and shall notify the Customer's Representative of the discovery.

If compliance with obligations under **Clause 8.4** above causes the Contractor to incur more or less cost than the Contractor could reasonably have anticipated at the time of tendering, the difference shall be valued under **Clause 21.5**.

9. SETTING OUT THE WORKS

9.1 Setting Out

The Customer shall supply to the Contractor the information necessary to enable the Contractor to set out the Works specified in the Contract. Upon receipt of any necessary information, the Contractor shall set out the Works in accordance with the Contract and shall provide all instructions and things necessary for that purpose.

9.2 Care of Survey Marks (if any)

The Contractor shall keep in their true positions all survey marks supplied by the Customer (if any).

If a survey mark is disturbed or obliterated, the Contractor shall immediately notify the Customer's Representative and, unless the Customer's Representative otherwise directs, the Contractor shall reinstate the survey mark.

If the disturbance or obliteration is caused by a person referred to in **Clause 8.2** above, other than the Contractor, the cost incurred by the Contractor in reinstating the survey mark shall be valued under **Clause 21.5**.

9.3 Errors in Setting Out

If the Contractor discovers an error in the position, level, dimensions or alignment of any work under the Contract, the Contractor shall immediately notify the Customer's Representative and, unless the Customer's Representative otherwise directs, the Contractor shall rectify the error.

If the error has been caused by incorrect information or data supplied by the Customer's Representative, the cost incurred by the Contractor in rectifying the error shall be valued under **Clause 21.5**.

9.4 Survey Mark Defined

"Survey mark" in this **Clause 9** means a survey peg, bench mark, reference mark, signal, alignment, level mark or any other mark for the purpose of setting out, checking or measuring work under the Contract.

10. MATERIALS, LABOUR AND CONSTRUCTIONAL PLANT

10.1 Provision of Materials, Labour and Constructional Plant

Except to the extent that the Contract otherwise provides, the Contractor shall supply everything necessary for the proper performance of the Contractor's obligations and discharge the Contractor's liabilities under the Contract.

10.2 Removal of Materials and Constructional Plant

From time to time the Customer's Representative may by written notice to the Contractor direct the Contractor not to remove from the Site Constructional Plant or materials. Thereafter, the Contractor shall not remove the materials or the Constructional Plant without the prior written approval of the Customer's Representative, which approval shall not be unreasonably withheld.

10.3 Manufacturer and Supply of Materials

The Customer's Representative may direct the Contractor to supply particulars of –

(a) the mode and place of manufacture;
(b) the source of supply;
(c) the performance capacities; and
(d) other information,

in respect of any materials, machinery or equipment to be supplied by the Contractor under or used in connection with the Contract.

11. MATERIALS AND WORK

11.1 Quality of Materials and Work

The Contractor shall use the materials and standards of workmanship required by the Contract. In the absence of any requirement to the contrary, the Contractor shall use suitable new materials.

11.2 Quality Assurance

The Contractor shall-

(a) Plan, establish and maintain a quality system which conforms to those requirements;
(b) Provide the Customer's Representative with access to the quality system of the Contractor and each of the subcontractors of the Contractor to enable monitoring and quality auditing.

Any such quality system shall be used only as an aid to achieving compliance with the Contract and to document such compliance. Such system shall not relieve the Contractor of the responsibility to comply with the Contract.

11.3 Defective Materials or Work

If the Customer's Representative discovers material or work provided by the Contractor which is not in accordance with the Contract, the Customer's Representative may direct the Contractor to:

(a) remove the material from the Site;
(b) demolish the work;
(c) reconstruct, replace or correct the material or work; or
(d) not to deliver the material or work to the Site.

The Customer's Representative may direct the times within which the Contractor must commence and complete the removal, demolition, replacement or correction.

If the Contractor fails to comply with a direction issued by the Customer's Representative pursuant to **Clause 11.3** within the time specified by the Customer's Representative in the direction and provided the Customer's Representative has given the Contractor notice in writing that after the expiry of 7 days from the date on which the Contractor receives the notice the Customer intends to have the work carried out by other persons, the Customer may have the work of removal, demolition, replacement or correction carried out by other persons and the cost incurred by the Customer in having the work so carried out shall be a debt due from the Contractor to the Customer.

11.4 Variations due to Defective Materials or Work

Instead of a direction under **Clause 11.3**, the Customer's Representative may direct a variation pursuant to **Clause 21.5**. The variation shall be valued under **Clause 21.5** and –

(a) if the variation causes an increase or decrease in the value to the Customer of the Works, regard shall also be had to the increase or decrease; and
(b) if the variation results in the Contractor incurring more or less cost than would reasonably have been incurred had the Contractor been given a direction under **Clause 11.3**, regard shall also be had to the difference.

11.5 Acceptance of Defective Material or Work

Instead of a direction under **Clause 11.3 or 30.4**, the Customer's Representative may notify the Contractor that the Customer elects to accept the material or work notwithstanding that it is not in accordance with the Contract. In that event the resulting increase or decrease in the value to the Customer of the Works and any other loss suffered by the Customer shall be valued under **Clause 21.5**.

11.6 Generally

The Customer's Representative shall give either the direction under **Clause 11.3 or 11.4** or a notice under **Clause 11.5** as soon as practicable after the Customer's Representative becomes aware that material or work is not in accordance with the Contract. The Customer's Representative may give the direction or notice at any time before the end of the Defects Liability Period.

Except to the extent that to do so would be inconsistent with a direction under **Clause 11.4** or a notice under **Clause 11.5** and notwithstanding that the Customer's Representative has not given a direction under **Clause 11.3**, the Contractor shall promptly remove, demolish, replace or correct material or work that is not in accordance with the Contract.

A progress payment, or a test or a failure by the Customer's Representative or anyone else to disapprove any material or work shall not prejudice the power of the Customer's Representative to subsequently give a direction under **Clause 11.3 or Clause 11.4** or a notice under **Clause 11.5**.

Nothing in **Clause 11** shall prejudice any other right which the Customer may have against the Contractor arising out of the failure of the Contractor to provide material or work in accordance with the Contract.

The Customer's Representative shall not be obliged to give a direction under **Clause 11.4** or a notice under **Clause 11.5** to assist the Contractor.

12. EXAMINATION AND TESTING

12.1 Customer May Order Tests

In **Clause 12** 'test' includes examine and measure.

At any time prior to the expiry of the Defects Liability Period the Customer's Representative may direct that any material or work under the Contract may be tested. The Contractor shall provide such assistance and samples and make accessible such parts of the work under the Contract as may be required by the Customer's Representative. On completion of the tests, the Contractor shall make good the work under the Contract so that it fully complies with the Contract.

12.2 Covering Up of Work

The Customer's Representative may direct that any part of the work under the Contract shall not be covered up or made inaccessible without the Customer's Representative's prior approval.

12.3 Who Conducts Tests

Tests shall be conducted as provided in the Contract or by the Customer's Representative or a person (which may include the Contractor) nominated by the Customer's Representative.

12.4 Notice of Tests

Before conducting a test under the Contract the party conducting the test, being the Customer's Representative or the Contractor, shall give reasonable notice in writing to the other of the time, date and place of the test. If the other does not then attend, the test may nevertheless proceed.

12.5 Procedure if Tests Delayed

Without prejudice to any other right, if the Contractor or the Customer's Representative delays in conducting a test, the other, after giving reasonable notice in writing of the intention to do so, may conduct the test.

12.6 Results of Tests

Results of tests shall be promptly made available by each party to the other and to the Customer's Representative.

12.7 Costs of Testing

Costs of and incidental to testing shall be valued under **Clause 21.5** and shall be borne by the Customer or paid by the Customer to the Contractor unless –

(a) the Contract provides that the Contractor shall bear the costs or the test is one which the Contractor was required to conduct other than pursuant to a direction under **Clause 12.1**;

(b) the test shows that the material or work is not in accordance with the Contract;

(c) the test is in respect of work under the Contract covered up or made inaccessible without the Customer's Representative's prior approval where such was required;
(d) the test is consequent upon a failure of the Contractor to comply with a requirement of the Contract.

Where such costs are not to be borne by the Customer, they shall be borne by the Contractor or paid by the Contractor to the Customer.

12.8 Access for Testing

If, during the Defects Liability Period-

(a) the Customer or the Customer's Representative asserts that material or work is not in accordance with the Contract; and
(b) the Contractor requests permission to test the material or work,

the Customer shall not unreasonably refuse the Contractor access to test the material or work.

13. WORKING HOURS

The working hours and working days shall be as stated in the Contract and if not so stated as notified by the Contractor to the Customer's Representative prior to commencement of work on Site and shall not be varied without the prior approval of the Customer's Representative except when in the interests of safety of the work under the Contract or to protect life or property the Contractor finds it necessary to carry out work outside the working hours or on other than the working days stated in the Contract. In such cases the Contractor shall notify the Customer in writing of the circumstances as early as possible.

All costs attributable to the contract administration by or on behalf of the Customer of work during times approved pursuant to the previous paragraph shall be borne by the Customer.

14. PROGRESS AND PROGRAMMING OF THE WORKS

14.1 Rate of Progress

The Contractor shall proceed with the work under the Contract with due expedition and without delay.

The Contractor shall not suspend the progress of the whole or any part of the work under the Contract except where the suspension is under **Clause 24.9** or is directed or approved by the Customer's Representative under **Clause 15**.

The Contractor shall give the Customer's Representative reasonable advance notice of when the Contractor requires any information, materials, documents or instructions from the Customer's Representative or the Customer.

The Customer and the Customer's Representative shall not be obliged to furnish any information, materials, documents or instructions earlier that the Customer or the Customer's Representative, as the case may be, should reasonably have anticipated at the Customer Contract Commencement Date.

The Customer's Representative may direct in what order and at what time the various stages or parts of the work under the Contract shall be performed. If the Contractor can reasonably comply with the direction, the Contractor shall do so. If the Contractor cannot reasonably comply, the Contractor shall notify the Customer's Representative in writing, giving reasons.

If compliance with the direction causes the Contractor to incur more or less cost that otherwise would have been incurred had the Contractor not been given the direction, the difference shall be valued under **Clause 21.5**.

14.2 Construction Program

For the purposes of **Clause 14**, a 'construction program' is a statement in writing showing the dates by which, or the times within which, the various stages or parts of the work under the Contract are to be executed or completed.

A construction program shall not affect rights or obligations in **Clause 14.1**.

The Contractor may voluntarily furnish to the Customer's Representative a construction program.

The Customer's Representative may direct the Contractor to furnish to the Customer's Representative a construction program within the time and in the form directed by the Customer's Representative.

The Contractor shall not, without reasonable cause, depart from-
(a) a construction program included in the Contract; or
(b) a construction program furnished to the Customer's Representative.

The furnishing of a construction program or of a further construction program shall not relieve the Contractor of any obligations under the Contract including the obligation to not, without reasonable cause, depart from the earlier construction program.

15. SUSPENSION OF WORKS

15.1 Suspension by the Customer's Representative

If the Customer's Representative considers that the suspension of the whole or part of the work under the Contract is necessary-
(a) because of an act or omission of-
  (i) the Customer, the Customer's Representative or an employee, consultant or agent of the Customer; or
  (ii) the Contractor, a subcontractor or an employee or agent of either;
(b) for the protection or safety of any person or property; or
(c) to comply with an order of a court,
the Customer's Representative shall direct the Contractor to suspend the progress of the whole or part of the work under the Contract for such time as the Customer's Representative thinks fit.

15.2 Suspension by Contractor

If the Contractor wishes to suspend the whole or part of the work under the Contract, otherwise than under **Clause 24.9**, the Contractor shall obtain the prior written approval of the Customer's Representative. The Customer's Representative may approve of the suspension and may impose conditions of approval.

15.3 Recommencement of Work

As soon as the Customer's Representative becomes aware that the reason for any suspension no longer exists, the Customer's Representative shall direct the Contractor to recommence work on the whole or on the relevant part of the work under the Contract.

If work is suspended pursuant to **Clause 15.2 or 24.9**, the Contractor may recommence work at any time after reasonable advance notice to the Customer's Representative.

15.4 Cost of Suspension

Any cost incurred by the Contractor by reason of a suspension under **Clause 15.1 or Clause 15.2** shall be borne by the Contractor but if the suspension is due to an act or omission of the Customer, the Customer's Representative or an employee, consultant or agent of the Customer and the suspension causes the Contractor to incur more or less cost than otherwise would have been incurred but for the suspension, the difference shall be valued under **Clause 21.5**.

15.5 Effect of Suspension

Suspension shall not effect the Date For Practical Completion but the cause of suspension may be ground for an extension of time under **Clause 16.5**.

16. TIMES FOR COMMENCEMENT AND PRACTICAL COMPLETION

16.1 Time for Commencement of Work on the Site

The Contractor shall give the Customer's Representative 7 days' notice of the date upon which the Contractor proposes to commence the work on the Site.

The Customer's Representative may reduce the period of notice required.

The Contractor shall commence work on the Site within 14 days after the Customer has given the Contractor possession of sufficient of the Site to enable the Contractor to commence work.

The Customer may extend the time for commencement of work on the Site.

16.2 Time for Practical Completion

The Contractor shall execute the work under the Contract to Practical Completion by the Date For Practical Completion.

Upon the Date Of Practical Completion the Contractor shall give possession of the Site and the Works to the Customer.

16.3 Separable Portions

The interpretations of-

(a) Date For Practical Completion;
(b) Date Of Practical Completion;
(c) Practical Completion,

and **Clauses 5, 16, 18, 19, and 23.1** shall apply separately to each Separable Portion and references therein to the Works and to work under the Contract shall mean so much of the Works and the work under the Contract as is comprised in the relevant Separable Portion.

If the Contract does not make provision for the amount of security, retention moneys, liquidated damages or bonus applicable to a Separable Portion, the respective amounts applicable shall be such proportion of the security, retention moneys, liquidated damages or bonus applicable to the whole of the work under the Contract as the value of the Separable Portion bears to the value of the whole of the work under the Contract.

16.4 Use of Partly Completed Works

If a part of the Works has reached a stage equivalent to that of Practical Completion but another part of the Works has not reached such a stage and the parties cannot agree upon the creation of Separable Portions, the Customer's Representative may determine that the respective parts shall be Separable Portions.

In using the Separable Portion that has reached Practical Completion, the Customer shall not hinder the Contractor in the performance of the work under the Contract.

16.5 Extension of Time for Practical Completion

When it becomes evident to the Contractor that anything, including an act or omission of the Customer, the Customer's Representative or the Customer's employees, consultants, other contractors or agents, may delay the work under the Contract, the Contractor shall promptly notify the Customer's Representative in writing with details of the possible delay and the cause.

When it becomes evident to the Customer that anything which the Customer is obliged to do or provide under the Contract may be delayed, the Customer shall give notice to the Customer's Representative who shall notify the Contractor in writing of the extent of the likely delay.

If the Contractor is or will be delayed in reaching Practical Completion by a cause described in the next paragraph and within 28 days after the delay occurs the Contractor gives the Customer's Representative a written claim for an extension of time for Practical Completion setting out the facts on which the claim is based, the Contractor shall be entitled to an extension of time for Practical Completion.

The causes are-

(a) events occurring on or before the Date Of Practical Completion which are beyond the reasonable control of the Contractor including but not limited to-
    industrial conditions;
    inclement weather;
(b) any of the following events whether occurring before, on or after the Date For Practical Completion-
    (i) delays caused by-
        - the Customer;
        - the Customer's Representative;
        - the Customer's employees, consultants, other contractors or agents;
    (ii) latent conditions;
    (iii) variations directed under **Clause 21**;
    (iv) repudiation or abandonment by a subcontractor;
    (v) changes in the law;

(vi) directions by municipal, public or statutory authorities but not where the direction arose from the failure of the Contractor to comply with a requirement referred to in **Clause 3***;*
(vii) delays by municipal, public or statutory authorities not caused by the Contractor;
(viii) claims referred to in **Clause 6.1(v)**;
(ix) any breach of the Contract by the Customer; or
(x) any other cause which is expressly stated in the Contract to be a cause for extension of time for Practical Completion.

Where more than one event causes concurrent delays and the cause of at lease one of those events, but not all of them, is not a cause referred to in the preceding paragraph, then to the extent that the delays are concurrent, the Contractor shall not be entitled to an extension of time of Practical Completion.

In determining whether the Contractor is or will be delayed in reaching Practical Completion regard shall not be had to-
- whether the Contractor can reach Practical Completion by the Date For Practical Completion without an extension of time;
- whether the Contractor can, by committing extra resources or incurring extra expenditure, make up the time lost.

With any claim for an extension of time for Practical Completion, or as soon as practicable thereafter, the Contractor shall give the Customer's Representative written notice of the number of days extension claimed.

If the Contractor is entitled to an extension of time for Practical Completion the Customer's Representative shall, within 28 days after receipt of the notice of the number of days extension claimed, grant a reasonable extension of time. If within the 28 days the Customer's Representative does not grant the full extension of time claimed, the Customer's Representative shall before the expiration of the 28 days give the Contractor notice in writing of the reason.

In determining a reasonable extension of time for an event causing delay, the Customer's Representative shall have regard to whether the Contractor has taken all reasonable steps to preclude the occurrence of the cause and minimise the consequences of the delay.

Notwithstanding that the Contractor is not entitled to or has not applied for an extension of time the Customer's Representative may at any time and from time to time before the Date Of Practical Completion by notice in writing to the Contractor extend the time for Practical Completion for any reason.

A delay by the Customer or the failure of the Customer to grant a reasonable extension of time or to grant extension of time within 28 days shall not cause the Date For Practical Completion to be set at large but nothing in this paragraph shall prejudice any right of the Contractor to damages.

17. DELAY OR DISRUPTION COSTS

Where the Contractor has been granted an extension of time under **Clause 16.5** for any delay caused by any of the events referred to in **Clause 16.5(b)(i)**, the Customer shall pay to the Contractor such extra costs as are necessarily incurred by the Contractor by reason of the delay.

Where the Contractor has been granted an extension of time under **Clause 16.5** for any delay caused by any other event for which payment of extra costs for delay or disruption is provided for in the Contract, the Customer shall pay to the Contractor such extra costs as are necessarily incurred by the Contractor by reason of the delay.

Nothing in **Clause 17** shall-
(a) oblige the Customer to pay extra costs for delay or disruption which have already been including in the value of a variation or any other payment under the Contract; or
(b) limit the Customer's liability for damages for breach of contract.

18. DEFECTS LIABILITY

The Defects Liability Period shall be as defined in the Contract Details.

As soon as possible after the Date Of Practical Completion, the Contractor shall rectify any defects or omissions in the work under the Contract existing at Practical Completion.

At any time prior to the 14th day after the expiration of the Defects Liability Period, the Customer's Representative may direct the Contractor to rectify any omission or defect in the work under the Contract existing at the Date Of Practical Completion or which becomes apparent prior to the expiration of the Defects Liability Period. The direction shall identify the omission or defect and state a date by which the Contractor shall complete the work of rectification and may state a date by which the work of rectification shall commence. The direction may provide that in respect of the work of rectification there shall be a separate Defects Liability Period of a stated duration not exceeding the period stated in the Contract. The separate Defects Liability Period shall commence on the date the Contractor completes the work of rectification. **Clause 18** shall apply in respect of the work of rectification and the Defects Liability Period for that work of rectification.

If the work of rectification is not commenced or completed by the stated dates, the Customer may have the work of rectification carried out at the Contractor's expense, but without prejudice to any other rights the Customer may have against the Contractor with respect to such omission or defect and the cost of the work of rectification incurred by the Customer shall be debt due from the Contractor.

If it is necessary for the Contractor to carry out work of rectification, the Contractor shall do so at times and in a manner which causes as little inconvenience to the occupants or users of the Works as is reasonably possible.

19. CLEANING UP

The Contractor shall keep the Site and the work clean and tidy. The Contractor shall regularly remove rubbish and surplus material.

Within 14 days after the Date Of Practical Completion the Contractor shall remove Temporary Works and Constructional Plant.

The Customer's Representative may extend the time for removal of Temporary Works or Constructional Plant necessary to enable the Contractor to perform remaining obligations.

Notwithstanding the provisions of **Clause 24**, if the Contractor fails to comply with any obligation imposed on the Contractor by **Clause 19**, the Customer's Representative may, after the Customer's Representative has given reasonable notice in writing to the Contractor, have the work of cleaning and tidying up carried out by other persons and the reasonable cost incurred by the Customer in having the work so carried out may be recovered by the Customer as a debt due from the Contractor to the Customer. The rights given by this paragraph are in addition to any other right.

20. URGENT PROTECTION

If urgent action is necessary to protect the work under the Contract, other property or people and the Contractor fails to take the action, the Customer may take the necessary action. If the action was action which the Contractor should have taken at the Contractor's cost, the cost incurred by the Customer shall be a debt due from the Contractor to the Customer.

If time permits, the Customer shall give the Contractor prior written notice of the Customer's intention to take action under **Clause 20**.

21. VARIATIONS

21.1 Variations of the Work

The Customer's Representative may direct the Contractor to-

(a) increase, decrease or omit any part of the work under the Contract;
(b) change the character or quality of any material or work;
(c) change the levels, lines, positions or dimensions of any part of the work under the Contract;
(d) execute additional work; and/or

(e) demolish or remove material or work no longer required by the Customer.

The Contractor shall not vary the work under the Contract except as directed by the Customer's Representative or approved in writing by the Customer's Representative under **Clause 21**.

21.2 Proposed Variations

Upon receipt of a notice in writing from the Customer's Representative advising the Contractor of a proposed variation under **Clause 21**, the Contractor shall advise the Customer's Representative whether the proposed variation can be effected. If the variation can be effected, the Contractor shall-

(a) advise the Customer's Representative of the effect which the Contractor anticipates that the variation will have on the construction program and time for Practical Completion; and
(b) provide an estimate of the cost (including delay costs, if any) of the proposed variation.

The Customer shall reimburse the Contractor for the reasonable costs of complying with the requirements of **Clause 21.2**.

21.3 Pricing the Variation

Unless the Customer's Representative and the Contractor agree upon the price for a variation, the variation directed or approved by the Customer's Representative under **Clause 21.1** shall be valued under **Clause 21.5**.

The Customer's Representative may direct the Contractor to provide a detailed quotation for the work of a variation supported by measurements or other evidence of cost.

21.4 Variations for the Convenience of the Contractor

If the Contractor requests the Customer's Representative to approve a variation for the convenience of the Contractor, the Customer's Representative may do so in writing. The approval may be conditional.

Unless the Customer's Representative otherwise directs in the notice approving the variation, the Contractor shall not be entitled to-

(a) an extension of time for Practical Completion; or
(b) extra payment,

in respect of the variation or anything arising out of the variation which would not have arisen had the variation not been approved.

The Customer's Representative shall not be obliged to approve a variation for the convenience of the Contractor.

21.5 Valuation

Where the Contract provides that a valuation shall be made under **Clause 21.5**, the Customer shall pay or allow the Contractor or the Contractor shall pay or allow the Customer as the case may require, an amount ascertained by the Customer as follows-

(a) if the Contract prescribes specific rates or prices to be applied in determining the value, those rates or prices shall be used;
(b) to the extent that **Clause 21.5(a)** does not apply, reasonable rates or prices shall be used in any valuation made by the Customer;
(c) in determining the deduction to be made for work which is taken out of the Contract, the deduction shall include a reasonable amount for profit and overheads;
(d) if the valuation is of an increase or decrease in a fee or charge or is a new fee or charge under **Clause 3.3**, the value shall be the actual increase or decrease or the actual amount of the new fee or charge without regard to overheads or profit;
(e) if the valuation relates to extra costs incurred by the Contractor for delay or disruption, the valuation shall include a reasonable amount for overheads but shall not include profit or loss of profit;
(f) if the valuation relates to extra costs incurred by the Contractor for delay or disruption, the valuation shall include a reasonable amount for overheads but shall not include profit or loss of profit; and
(g) Daywork shall be valued in accordance with **Clause 22**.

When under **Clause 21.3** the Customer's Representative directs the Contractor to support a variation with measurements and other evidence of cost, the Customer's Representative shall allow the Contractor the reasonable cost of preparing the measurements or other evidence of cost that has been incurred over and above the reasonable overhead cost.

22. DAYWORK

The Customer's Representative may direct that Additional Works or variations directed by the Customer's Representative under **Clause 21.1** shall be carried out as Daywork (**"Daywork"**). The Contractor shall thereafter each day record particulars of all resources used by the Contractor for the execution of Daywork and each day furnish to the Customer's Representative the particulars and copies of time sheets, wages sheets, invoices, receipts and other documents evidencing the cost of the Daywork. The Customer's Representative may direct the manner in which matters are to be recorded.

In determining the value of Daywork regard shall be had to-

(a) the amount of wages and allowances paid or payable to the Contractor at the rates obtaining on the Site at the time as established by the Contractor to the satisfaction of the Customer's Representative or at such other rates as may be approved by the Customer's representative;
(b) the amount paid or payable by the Contractor in accordance with any statute or award applicable to day labour additional to the wages paid or payable under **Clause 22(a)**;
(c) the amount of hire charges in respect of Constructional Plant approved by the Customer's Representative for use on the work in accordance with such hiring rates and conditions as may be agreed between the Customer's Representative and the Contractor or, in the absence of agreement, in accordance with such rates and conditions as may be determined by the Customer's Representative;
(d) the amounts paid for services, subcontracts and professional fees;
(e) the actual cost to the Contractor at the Site of all materials supplied and required for the work; and
(f) the charge stated in the Contract or, if no charge is stated, a charge agreed between the Customer's Representative and the Contractor to cover overheads, administrative costs, site supervision, establishment costs, attendance and profit, or, in the absence of agreement, a reasonable charge determined by the Customer's Representative.

Amounts payable for Daywork shall not be subject to adjustment for rise and fall in costs notwithstanding that the Contract may provide for adjustment for rise and fall in costs.

23. CERTIFICATE FOR PRACTICAL COMPLETION

23.1 Certificate of Practical Completion

The Contractor shall give the Customer's Representative at least 14 days notice of the date which the Contractor anticipates that Practical Completion will be reached.

When the Contractor is of the opinion that Practical Completion has been reached, the Contractor shall in writing request the Customer's Representative to issue a Certificate of Practical Completion. Within 14 days of the receipt of the request, the Customer's Representative shall give to the Contractor and to the Customer a Certificate of Practical Completion certifying the Date Of Practical Completion or give the Contractor in writing the reasons for not issuing the Certificate.

When the Customer's Representative is of the opinion that Practical Completion has been reached, the Customer's Representative may issue a Certificate of Practical Completion whether or not the Contractor has made a request for its issue.

23.2 Effect of Certificates

The issue of a payment certificate or a Certificate of Practical Completion shall not constitute approval of any work or other matter nor shall it prejudice any claim by the Customer or the Contractor.

23.3 Set Offs by the Customer

The Customer may deduct from moneys due to the Contractor any money due from the Contractor to the Customer otherwise than under the Contract and if those moneys are insufficient, the Customer may have recourse to retention moneys and, if they are insufficient, then to security under the Contract.

24. DEFAULT OR INSOLVENCY

24.1 Preservation of Other Rights

If a party breaches (including repudiates) the Contract, nothing in this clause shall prejudice the right of the other party to recover damages or exercise any other right or remedy.

24.2 Contractor's Default

If the Contractor commits a substantial breach of the Contract, the Customer may, by hand or by certified post, give the Contractor a written notice to show cause. Substantial breaches include, but are not limited to:

(a) failing to:
  (i) provide security;
  (ii) provide evidence of insurance;
  (iii) comply with a direction of the Customer's Representative pursuant to **Subclause 11.3**; or
  (iv) use the materials or standards of work required by the Contract;
(b) wrongful suspension of work;
(c) substantial departure from a construction program without reasonable cause or the Customer's Representative's approval;
(d) where there is no construction program, failing to proceed with due expedition and without delay; and
(e) knowingly providing documentary evidence containing an untrue statement.

24.3 Customer's Notice to Show Cause

A notice under **Subclause 24.2** shall state:

(a) that it is a notice under **Clause 24** of these "Special Conditions of Contract";
(b) the alleged substantial breach;
(c) that the Contractor is required to show cause in writing why the Customer should not exercise a right referred to in **Subclause 24.4**;
(d) the date and time by which the Contractor must show cause (which shall not be less than 7 clear days after the notice is received by the Contractor); and
(e) the place at which cause must be shown.

24.4 Customer's Rights

If the Contractor fails to show reasonable cause by the stated date and time, the Customer may by written notice to the Contractor:

(a) take out the Contractor's hands the whole or part of the work remaining to be completed and suspend payment until it becomes due and payable pursuant to **Subclause 24.6**; or
(b) terminate the Customer Contract, or Head Agreement.

24.5 Take Out

The Customer shall complete work taken out of the Contractor's hands and may:

(a) use materials, equipment and other things intended for work under the Contract; and
(b) without payment of compensation to the Contractor:
  (i) take possession of, and use such of the construction plant and other things on or in the vicinity of the Site as were used by the Contractor; and
  (ii) contract with such of the Contractor's subcontractors and consultants;

  as are reasonably required by the Customer to facilitate completion of work under the Customer Contract.

  If the Customer takes possession of construction plant and other things, the Customer shall maintain them and, subject to **Subclause 24.6**, on completion of the work, shall return such of them as are surplus.

  The Customer's Representative shall keep records of the cost of completing the work.

24.6 Adjustment on Completion of Work Taken Out

When work taken out of the Contractor's hands has been completed, the Customer's Representative shall assess the cost thereby incurred and shall certify as moneys due and payable accordingly the difference between that cost (showing calculations therefore) and the amount which would otherwise have been paid to the Contractor if the work had been completed by the Contractor.

If the Contractor is indebted to the Customer, the Customer may retain construction plant or other things taken under **Subclause 24.5** until the debt is satisfied. If after reasonable notice, the Contractor fails to pay the debt, the Customer may sell the construction plant or other things and apply the proceeds to the satisfaction of the debt and the costs of sale. Any excess shall be paid to the Contractor.

24.7 Customer's Defaults

If the Customer commits a substantial breach of the Contract, the Contractor may, by hand or by certified post, give the Customer a written notice to show cause.
Substantial breaches include, but are not limited to:

(a) failing to:
  (i) provide security;
  (ii) produce evidence of insurance;
  (iii) rectify inadequate Contractor's possession of the Site: or
  (iv) make a payment due and payable pursuant to the Contract; and
(b) the Customer not giving a Certificate of Practical Completion for reasons as referred to in **Subclause 23.1**.

24.8 Contractor's Notice to Show Cause

A notice given under **Subclause 24.7** shall state:

(a) that it is a notice under **Clause 24** of these "Special Conditions of Contract"
(b) the alleged substantial breach;
(c) that the Customer is required to show cause in writing why the Contractor should not exercise a right referred to in **Subclause 24.9**;
(d) the date and time by which the Customer must show cause (which shall not be less than 7 clear days after the notice is received by the Customer); and
(e) the place at which cause must be shown.

24.9 Contractor's Rights

If the Customer fails to show reasonable cause by the stated date and time, the Contractor may, by written notice to the Customer, suspend the whole or any part of the work under the Contract.

The Contractor shall remove the suspension if the Customer remedies the breach.

The Contract may, by written notice to the Customer, terminate the Contract, if within 28 days of the date of suspension under this subclause, the Customer fails:

(a) to remedy the breach ; or
(b) if the breach is not capable of remedy, to make other arrangements to the reasonable satisfaction of the Contractor.

Damages suffered by the Contractor by reason of the suspension shall be assessed by the Customer's Representative, who shall certify them as moneys due and payable to the Contractor.

24.10 Termination

If the Contract is terminated pursuant to **Subclause 24.4(b) or 24.9**, the parties' remedies, rights and liabilities shall be the same as they would have been under the law governing the Contract had the defaulting party repudiated the Contract and the other party elected to treat the Contract as at an end and recover damages.

24.11 Insolvency

If:

(a) a party informs the other in writing, or creditors generally, that the party is insolvent or is financially unable to proceed with the Contract;
(b) execution is levied against a party by a creditor;
(c) a party is an individual person or a partnership including an individual person, and if that person:
  (i) commits an act of bankruptcy;
  (ii) has a bankrupt petition presented against him or her or presents his or her own petition;
  (iii) is made bankrupt;
  (iv) makes a proposal for a scheme of arrangement or a composition; or
  (v) has a deed of assignment or deed of arrangement made, accepts a composition, is required to present a debtor's petition, or has a sequestration order made, under Part X of the *Bankruptcy Act* 1966 (Cth) or like provision under the law governing the Contract; or
(d) in relation to a party being a corporation:
  (i) notice is given of a meeting of creditors with a view to the corporation entering a deed of company arrangement;
  (ii) it enters a deed of company arrangement with creditors;

(iii) a controller or administrator is appointed;
(iv) an application is made to a court for its winding up and not stayed within 14 days;
(v) a winding up order is made in respect of it;
(vi) it resolves by special resolution that it would be wound up voluntarily (other than for a member's voluntary winding up); or
(vii) a mortgagee of any of its property take possession of that property,

then, where the other party is:

(A) the Customer, the Customer may, without giving a notice to show cause, exercise the right under **Subclause 24.4(a)**; or
(B) the Contractor, the Contractor may, without giving notice to show cause, exercise the right under **Subclause 24.9**.

The rights and remedies given by this subclause are additional to any other rights and remedies. They may be exercised notwithstanding that there has been no breach of Contract.

SCHEDULE 7 – SPECIFICATIONS

All Works and Products and/or Services to be performed by the Contractor pursuant to the Customer Contracts must be performed in strict compliance with the **"Statement of Transportable Building Relocation Specifications",** appearing in this Schedule.

Statement of Transportable Building Relocation Specifications

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GENERAL DESCRIPTION OF THE WORKS

Project Brief to be referred to for project specific scope of work (separate document to accompany individual Orders).

A1. GENERAL DESCRIPTION

The Works generally are to relocate transportable or demountable buildings together with their associated site services and facilities. work will be required to be carried out anywhere in the state of Western Australia and may also be required to travel through South Australia and the Northern Territory to gain access to remote locations.

Work at each site is anticipated to include, but not limited to:

The work required to remove and re-instate transportable buildings, single or multiple element units, including the dis-connection and re-connection of all electrical, mechanical, communication, security, reticulation and plumbing services including the capping off and making safe at the Pick-Up Site and connection of those services at the Set-Down Site. All transportation, jacking and lifting requirements, and the security of the building and its components during the transportation process. Also the provision of alterations and additions as required.

A2. AT THE PICK-UP SITE

The removal and reinstatement of fencing, adjustment of any existing fencing, including personnel gates and vehicle access gates, koppers logs etc to gain access to the site to remove the building(s).

The preparation of the access route (including temporary road base) from existing road surfaces including trimming trees, temporary removal of any structures eg: play equipment, covered walkways and reinstatement and making good on completion.

The preparation of the building for transportation including the removal of any steps and landings, access ramps, sunscreens, patios, air-conditioning ,verandas etc.

The jacking or lifting, loading and transportation of the building(s) including the provision of escorts, permits and any other approvals required for the safe and proper transportation of the building(s) anywhere in the state of Western Australia.

The removal off site and disposed of or placed in storage any building materials not required at the Set-Down Site. The filling of stump holes and vehicle tracks with clean fill.

The making good of all damage to landscape areas, kerbs, footpaths, existing buildings etc that damage resulting from the removal activity all to the satisfaction of the Superintendent and client.

The Contractor may be required at the direction of the Superintendent to attend site meetings before, during and at the completion the relocation process.

A3. AT THE SET-DOWN SITE

Preliminary preparation (levelling, cutting and filling) of the area for the transportable building(s) and associated facilities eg: pathways, play area, including clearing and retaining walls etc.

Preparation of the access route (including temporary road base) from existing road surfaces including trimming trees, temporary removal of fences and making good on completion.

Provision of new fencing, adjustment of any existing fencing, including personnel gates and vehicle access gates, any site safety fencing required during the installation period.

The un-loading, levelling and re-stumping of the building(s) in the new location. Finished floor level shall have a nominal height of 500mm above ground level to ensure ventilation under floor to reduce moisture build-up and termite infestations.

The re-fixing of any steps and landings, access ramps, sunscreens, patios, verandas, sheds, furniture, black or white boards, pin-up boards, cover strips, flashings etc removed at the Pick-Up Site or the installation of any new

components or facilities as required.

The re-installation and re-commissioning of electrical, mechanical, communication, security, reticulation and plumbing services, ready for client occupancy.

This includes any adjustments to existing site services that the re-installation and re-commissioning will require to complete the installations.

Provision of in situ concrete pathways, ramps, verandah floors, shed floors etc also any concrete paving slabs and brick paving requirements.

The repair or replacement of any damaged or missing building components where required.

The patching and paint of existing internal and external surfaces as required.

Clean all floors, replace unserviceable floor coverings where required.

The handing over of the building and associated facilities to the occupier and attend to any defects for a period of eight (8) weeks from handover and or any warranty issues on new materials for the term of the warranty.

The Contractor may be required at the direction of the Superintendent to attend site meetings before, during and at the completion the relocation process.

The Superintendent is also required to make themselves available to ensure the Contractor's needs are met in a timely manner.

A4. TRANSPORTATION ONLY REQUIREMENTS

It will be the responsibility of the Customer to certify that the building is in a sound condition before uplifting and transporting. Any concerns the Contractor may have with the ability of the building to be uplifted and transported, they are to contact the Customer to discuss those concerns and any actions needed to ensure the safe uplift and transportation of the building.

Un-bolt, remove flashings, access steps or ramps and separate the building from it's foundation.

Load the building onto transporting vehicle, and secure the building. The Contractor is responsible for ensuring that the building is protected at all times from damage by water and dust, also ensure all accessories including furniture, heaters, fans, lighting, air-conditioning etc are secure during the transportation process.

From time to time buildings may have to be side-loaded and or turned to meet the needs at the Pick-Up and Set-Down Sites. These needs should be identified in the brief and priced accordingly.

Protection is also to be provided by using appropriate protection angles under chains when tying down modules. The Contractor is to ensure that all windows, glazing and doors are secure to prevent any damage whilst in transit.

Depending on the size of the concrete footing the Contractor is to remove the steel stumps from the concrete footings and transport with the building. On agreement between the Contractor and Customer that the footings are too large or stumps too difficult to remove in a timely manner, the Contractor is instructed to supply and install suitable new or used metal stumps in their place.

The Contractor may be required at the direction of the Superintendent to attend site meetings before, during and at the completion the relocation process.

Remove all essential materials and equipment from site.

A5. OTHER INFORMATION

As the greater percentage of transportable and demountable buildings currently owned by government have been relocated before, it will be difficult to specify every requirement at time of developing the brief. Therefore the Contractor will be required to seek approval to attend to those un-known work items and claim a variation when

invoicing for the total cost of the Works.

The Contract Authority, Customer and Contractor must work in partnership to ensure all parties have a clear understanding of each other's roles and responsibilities before, during and at the completion of the relocation process.

The following is a list of (but not limited to) transportable or demountable building types that may be requested to be relocated at any given time:

- Classrooms
- Toilet facilities
- Office accommodation
- Houses
- Pre Primary classrooms etc

They may be tall, short, wide, narrow, heavy or light or a make-up of each.

Due to the nature (buildings and locations) of the Building Relocation Service, there will be from time to time when the specified Works will require varying to meet the needs of the project. The Contractor will be required to contact the Customers Representative to gain verbal approval in the first instance followed by a documented request detailing the variation and its costs and any extension of time request. The quick identification and approval of variations is paramount to ensuring a timely delivery service. Delivery on time of the works is the critical factor in delivering this service. The Contract Authority and its service providers must ensure all resources are available to complete each Contract on or before the due date.

TECHNICAL CLAUSES

B1. GENERAL REQUIREMENTS

B1.1 PRECEDENCE

Requirements of individual technical sections of the Specifications override conflicting requirements in this section.

B1.2 INTERPRETATION

- Unless the context otherwise requires, the following definitions apply:
- Supply: “Supply”, “furnish” and similar expressions mean “supply only”
- Provide: “Provide and similar expressions mean “supply and install”.
- Approved: “Approved”, “reviewed”, “directed”, “rejected”, “endorsed” and similar expressions mean “approved (reviewed, directed, rejected, endorsed) in writing by the Contract Customer’s Representative”.
- Give notice: “Give notice”, “submit”, “advise”, “inform” and similar expressions mean “give notice (submit, advise, inform) in writing to the Contract Customer”.
- Proprietary: “Proprietary” means identifiable by naming manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Samples: Includes samples, prototypes and sample panels.

B1.3 MATERIALS AND COMPONENTS

Identification of a proprietary item does not necessarily imply exclusive preference for the item so identified, but indicates the necessary properties of the item.

If alternatives are proposed, submit proposed alternatives and include samples, available technical information, reasons for proposed substitutions and cost. If necessary, provide an English translation. State if use of proposed alternatives will necessitate alteration to other parts of works and advise of consequences.

Select, if no selection is given, and transport, deliver, store, handle, protect, finish, adjust, prepare for use manufactured items in accordance with the current written recommendations and instructions of the manufacturer or supplier. Identification of a proprietary item does not necessarily imply exclusive preference for the item so identified, but indicates the necessary properties of the item.

If materials or products are supplied by the manufacturer in closed or sealed containers or packages, bring the materials or products to the point of use in original containers or packages.

For the whole quantity of each material or product use the same manufacturer or source and provide consistent type, size, quality and appearance.

B1.4 EXECUTION

The Contractor shall be responsible for the effective planning and programming of all trades, services and activities to ensure the complete co-ordination of the works.

Works completed and subsequently re-opened or otherwise affected as a result of work having been omitted or mis-programmed shall be completed at the Contractor’s expense.

Arrange services so that services running together are parallel with each other and adjacent building elements.

Connect to statutory authorities’ services or service points. Evacuate to locate and expose connection points. On completion reinstate surfaces and facilities which have been disturbed.

Interconnect system elements so that the installations perform their designated functions.

Provide UPVC sleeves formed from pipe sections, for piping penetrations through building elements.

Seal penetrations around conduits and sleeves. Seal cable within sleeves.

Do not penetrate or fix to the following without approval:

Structural building elements including external walls.

Membrane elements including damp-proof courses, waterproofing membranes and roof coverings.

B2. EARTHWORKS AND SITEWORKS

B2.1 EARTHWORKS

MATERIALS EARTHWORK

Use only clean sand or well graded granular material approved by the Customer's Representative for filling and backfilling.

PROTECTION OF NATURAL VEGETATION - EARTHWORK

Where possible, retain all natural vegetation.

SITE CLEARING - EARTHWORK

Clear areas to be occupied by building(s), verandah, paving, sheds, playing fields, fencing, areas to be excavated, areas to be filled and the like.

Clearing shall extend:

- 3 metres beyond perimeter of the building(s) and for a width of 1.2 metres where fences and drainage lines are to be constructed.
- 1.2 metres beyond paved areas.

Remove completely trees, stumps, roots, rubbish, debris and soft soil spots from areas specified above.

Remove other vegetation and obstructions to a depth of 300mm from areas specified above.

Do not disturb other areas of the site unless otherwise detailed in the brief or as discussed on site.

Remove from the site all material resulting from site clearing and make good adjacent areas.

GRADING - EARTHWORK

Cut and fill the areas to accommodate the transportable building to correspond with levels detailed in the brief or as discussed on site.

Accurately machine grade to a true, even and smooth surface.

Form gradual slopes to natural ground levels.

EXCAVATION - EARTHWORK

Excavate for underground services. Dress bottoms of trenches accurately to falls and to support barrels of pipes.

Do not excavate service trenches within an angle of 30 degrees down from bottom corners of footings.

Spread surplus excavated material on the site where directed by the Superintendent.

Note: Excavation of rock not detailed in the project brief, will be covered by a variation to the contract.

EXCESS EXCAVATION - EARTHWORK

Where excavation exceeds the depth specified or shown on drawings, backfill to the correct depth with filling material previously specified in layers not more than 200mm thick. Compact each layer to the degree specified for the area concerned.

MAINTAINING EXCAVATIONS - EARTHWORK

Keep excavations free from water, rubbish and debris.

FILLING - EARTHWORK

Fill areas to be covered by concrete slabs on ground and paving as required.

Place and compact fill in layers not more than 200mm thick.

Fill excavations for services.

Where holes resulting from the removal of stumps, roots, rubbish, debris and other obstructions occur under the building and paved areas, fill with material previously specified and compact to the degree specified for the area concerned.

COMPACTION - EARTHWORK

TRANSPORTABLE PAD PREPARATION

Cohesive Soils:

Compact cohesive soils to 8 blows/300mm measured with a standard penetrometer.

Non-Cohesive Soils:

Compact disturbed areas with a tamping compactor to the same density as the undisturbed soil.

Compaction of soil is not required where footings, floor slabs and foot paving bear on firm, undisturbed soil or clay.

Remove clay which has become soft due to wet weather or moist ground conditions together with any free water. Remove non-uniform material until uniform clay is encountered down to 400mm below the underside of footing level.

Replace material removed with uniform clay fill or concrete. Compact clay fill with a tamping compactor in layers of 200mm maximum thickness to the same density as the undisturbed clay.

Temporary Access Path for Transportable on Low Loader:

Allow for compaction of the path to sustain a 25 tonne load.

PLUMBING RELIEF GULLIES - EARTHWORK

Earthwork levels adjacent to plumbing overflow relief gullies shall be a minimum of 150mm from floor level to finished ground level.

Grade finished ground away from overflow relief gullies.

WHITE ANT TREATMENT

When requested in the brief white ant treatment is to conform to AS 3660-1993 Protection of Buildings from Subterranean Termites – Prevention, Detection and Treatment of Infestation.

B2.2 FENCING

GENERAL

NOTE: Unless otherwise noted in the brief, existing steel framework and chain link fences may be re-used if it is in good condition and of appropriate height all to the satisfaction of the Customer's Representative.

- **Australian Standard:**
  In accordance with AS 1725 - Galvanised rail-less chainwire security fences and gates.

- **Protective Treatment**:
  Tube externally, fittings and wire shall be PVC coated unless the existing fences are galvanised.

- **Galvanised Steel Tube**:
  Tube for fencing shall be extra light wall grade 350 galvanised externally.
  Tube internal surface shall be galvanised or protectively coated (Galtube super plus or equal is acceptable) to approval.
  Tube for gate posts shall be medium wall grade 200, galvanised externally and internally.

- **Fittings**:
  Tube connections shall be made using galvanised split tube fittings.

- **Chainwire**:
  Chainwire shall be galvanised or PVC coated, to match existing fencing.
  Galvanised coating on wire shall be Type A heavily galvanised.
  Chainwire for fencing shall be manufactured from 2.5mm diameter wire to form a 50mm mesh with knuckled selvedges.

- **Gate Posts:**
  Gate posts shall be as follows:

Maximum width of Opening (MM)	Post size (N.B.) (MM)
4000	50 (extra light wall grade 350)

- **Concrete for Footings**:
  Concrete for footings shall be Grade 20 with maximum aggregate size 25mm and 80mm slump.

- **Footings**:
  Footings shall finish 100mm below ground level with fall away from post to avoid pooling of water around post.
  Footings to intermediate posts, bracing stays, back stays, end posts, corner posts and gate arches shall be minimum 700mm deep x 250mm diameter.
  Set posts a minimum 600mm into concrete.
  Footings to gate posts shall be as follows:

Maximum Width of Opening	**Post Size (NB)**	**Footing Size (mm)**
4000	50	Depth Diam 1000 250

  Set gate posts a minimum 900mm into concrete.

- **Attaching Chainwire**:
  Attach chainwire to outside of posts.
  Tie chainwire to intermediate posts with tie wires spaced not more than 500mm apart.
  Twist tie wires twice and cut ends neatly off.
  Lace chainwire to top rail, bottom rail, corner posts, end posts and gate posts.
  Tie chainwire to support cables with minimum 1.6mm thick galvanised wire.

TWO RAIL CHAINWIRE FENCE
Two rail chainwire fence shall be 1200mm high or as detailed in the brief.

End posts and corner posts shall be 40mm NB Intermediate posts shall be 32mm NB at 3000mm maximum centres. Rails shall be 32mm NB.

Top rail shall be continuous.

Posts that project above top rail shall have steel top caps.

Bottom rail shall have a minimum clearance of 50mm and a maximum clearance of 150mm above ground.

CHAINWIRE GATES
Chainwire gates shall match height of fence.

Fabricate gate leaf frames in accordance with the following:

NOMINAL WIDTH OF GATE LEAF (MM)	NUMBER OF INTERMEDIATE HORIZONTAL MEMBERS	NUMBER OF INTERMEDIATE VERTICAL MEMBERS	OUTER FRAME TUBE (NB) (MM)	INNER FRAME TUBE
1000	1	0	25	20
1500:	1	0	25	20
2000:	1	1	25	20
2500:	1	1	25	20
3000:	1	1	25	20
3500:	1	2	32	25
4000:	1	2	32	25

Member connections shall be fully welded.

Connections shall be coated with inorganic zinc silicate paint.

Single gates for Pre Primary purpose shall be hung on self closing hinges and fitted with approved gate latch swimming pool type lift up catch. The gate latch shall be integral with the post (eg Smorgon 'Guardian' lift up latch or equal approved).

Fix chainwire to outside of gate.

Lace chainwire to outer frame members.

Hang double gates using clip type hinges with collar bearing surface welded to gate for either top or bottom hinge.

Double gates shall have galvanised foot drop bolt to each leaf at meeting secured to frame by welding. Provide galvanised receiver tube of suitable diameter driven 600 minimum into ground to locate each bolt. Secure top of gates with galvanised swing over bridle.

B2.3 CONCRETE PAVINGS
Provide and lay 75 thick insitu concrete paving to site paths where shown on site drawings, edge of concrete to have localised thickening. Paths shall be generally 1.5m wide or as shown on any drawings or detailed in the brief, and where required modified to complement adjacent existing paths. Closed cell foam strips as construction joints at a max of 5000mm CTS and adjacent to building line.

B2.4 SAND PIT
Excavation and form up a nominal 4200mm x 4200mm x 420mm deep sand pit. The pit shall be located where indicated on the site plan and be constructed from nominal 500mm x 240mm x 360mm concrete blocks to form an edging with coloured cemented joints.

Line the bottom of the excavation with weedmat or shade cloth carried up the sides and under the perimeter slab surround. Fill the pit with worked white sand providing sufficient quantity to allow for settlement.

B2.5 PATIO (NON CYCLONIC)
Unless otherwise advised in the brief provide a 76mm x 38mm x 1.2mm steel frame to support a mono deck or similar 3.6m long roof sheeting, with a square profile gutter and a single 100mm x 50mm RWP installed.

Patio to be installed to the full length of the building and connected to building on one side.

Material to have zincalume or galvanised finish.

Patio post to be installed in a 500mm x 500mm x 600mm deep N25 concrete footing. Footings shall finish 100mm below ground level with fall away from post to avoid pooling of water around post.

PATIO FLOOR
Provide 100 thick 20 MPA monolithic concrete patio floor slab to cover the same area as the patio roof with thickened edges 250mm deep and 300mm wide.

Line out surface at approximately 1200 centres and provide a brushed finish.

Concrete verandah floor shall finish up to the inside of verandah columns and transportable building and be insulated from them with approved HD polythene membrane.

Provide outward fall of 50mm.

B2.6 SHED FLOOR

Provide 3600 x 3600 x 100 concrete 20 MPA floor lined with 200um water proof membrane and finished as for verandah floor. Provide a fall to the door side.

Note: (a) The shed wall sheeting will overlap the floor edge and construction tolerance is +0-10 and slab must be square.

(b) Provide a 30° splayed concrete ramp at the roller door threshold for ease of entry of wheeled items. Ramp is to start at shed floor/threshold level so that there is no 'step' up into shed.

B2.7 PRE-FABRICATED SHEDS (NON CYCLONIC)

DESCRIPTION OF WORK

Design, fabricate, transport and erect prefabricated NON CYCLONIC metal framed colorbond sheeted transportable storage unit(s), to the following minimum standards and generally in accordance with the Contractor's production techniques.

SIZE

3600 x 3600 overall the frame inside the wall lining. 2400 high nominal.

WALLS

Cold formed continuously galvanised steel conforming to AS1397 minimal 75 x 35 studs, top and bottom plates and trimmers with all junctions fully welded to form each wall as a panel.

The preferred method of welding is by the metal inert gas technique (MIG).

ROOF

Skillion sloping 100mm to side opposite the door and supported on wall plates and 100 x 50C section purlin at centres to support roof sheet in accordance with the manufacturer's instructions.

CLADDING

WALLS

Colorbond trimdeck hi-ten or similar approved in single length sheets placed vertically so formed and placed that the wall sheeting wraps around the corner junctions. Fixing to be with matching colour purpose fasteners with hexagon washer heads and EDPM sealing washers.

ROOF

Zincalum trimdeck hi-ten in single length sheet.

Roofing Sundries

Barges - Colorbond matching wall sheet

Gutter to be square profile colour to match walls.

RWP to be 100 x 50 colorbond finish complete with straps and 45 degree discharge shoe into 600 long concrete surface drain set to fall away from building.

DOOR

Provide a 2100 x 2100 approved colorbond roller shutter door complete with guides. Approved rubbing strips, lifting handles, two padbolt shoots and two Lockwood Cat 234 padlocks which will be required to be keyed to a single specific key number (to be advised). The door shall adequately seal the contents from entry of vermin.

FLOOR

Provide 3600 x 3600 x 100 insitu concrete 20 MPA floor lined with water proof membrane and finished as for verandah floor.

Provide a fall to the doorside.

Note: (a) The shed wall sheeting will overlap the floor edge and construction tolerance is +0-10 and slab must be square.

(b) Provide a 30° splayed concrete ramp at the roller door threshold for ease of entry of wheeled items. Ramp is to start at shed floor/threshold level so that there is no 'step' up into shed.

The wall frames are to be positioned on the edge of the concrete floor with the wall sheeting extending down the edge of the concrete 25mm.

Bolt the wall frames to the concrete with approved fixings of minimal 10mm size. Fixings are to be either side of the door and at least within 300 of each corner and one central fixing for each of the other wall panels (ie a minimum of

3 fixings per side).

Vermin proof barrier required between new slab and walls.

Provide and fix in place profiled sponge rubber infill.

B2.8 RESPONDENTS ARE TO NOTE

Respondents shall supply sufficient drawings with their tender offer to demonstrate the fabrication they propose for the pre-fabricated sheds.

B3. CONCRETE

B3.1 GENERAL

SECTION CONTENT

Concrete work generally including precast and prestressed concrete (including alternative concrete bases), formwork, reinforcement, joints, underlays, membranes and integral finishes.

GENERAL REQUIREMENTS

Construct the concrete work in a safe manner using materials and methods complying with the relevant requirements of AS 3600 and AS 3610.

INSPECTION

Notice: Give sufficient notice so that inspection may be made of the following:

- Base or subgrade prior to covering.
- Film underlay or membrane installed on the base.
- Reinforcement fixed in place.
- Cores and embedments fixed in place.
- Completed formwork prior to concrete placing.
- Placing of concrete.
- Used formwork, after cleaning and prior to reuse.
- Surfaces or elements to be concealed in the final work prior to covering.

Minimum notice required: working 2 days

ADJOINING ELEMENTS

Requirement: Obtain the requirements for adjoining elements to be fixed to or supported on the concrete and provide for the required fixings. Where applicable provide for temporary support of the adjoining elements during construction of the concrete.

B3.2 QUALITY

QUALITY ASSURANCE

Cross reference Refer to Project Brief,

Where there is a recognised quality assurance program applicable to a specified product, provide assurance of quality under the authority of that program. The program shall be one in which the manufacturer has in place a quality control management system which is subject to continual monitoring through quality audits by a recognised independent authority.

FORMWORK DOCUMENTATION

If required: Submit formwork documentation in accordance with AS 3610 clause 4.7 together with details of proposed form linings, form coatings, release agents and, where applicable, reuse of formwork.

CONSTRUCTION PROPOSALS

If required: Submit for approval proposals for mixing, placing, finishing and curing concrete including the following:

- Sources of materials.
- Ready mixed concrete supplier.
- Site storage, mixing and transport methods and equipment, if applicable.
- Alternative source of supply in the event of breakdown of ready mixed or site mixed supply.
- Handling, placing, compaction and finishing methods and equipment.
- Temperature control methods.
- Curing and protection methods.
- Target strength, slump and proposed mix for each type and grade of concrete.

Curing compounds: The use of curing compounds is not permitted.

INSPECTION POINTS

Give sufficient notice so that inspection may be made of the following:
Compacted base or subgrade before covering.
Completed formwork, and reinforcement, cores and embedments fixed in place.
Commencement of concrete placing.
Evaluation of the finish (Concrete Bases).
Surfaces or elements to be concealed in the final work before covering.
Used formwork, after cleaning and before reuse.

REINFORCEMENT FABRICATION

Bending schedules: Submit marking plans and schedules showing location, shape, size and grade of all reinforcement.

TESTING GENERALLY

Not a requirement under this contract.

PERFORMANCE TESTING

Not a requirement under this contract, however the Superintendent may request to view delivery dockets from time

to time.

B3.3 FORMWORK

GENERALLY
Requirement: Design and construct formwork so that the concrete, when cast in the forms, will have the dimensions, shape, profile, location and surface finish required by the contract. Make provision for dimensional changes, deflections and cambers resulting from the application of prestressing forces, applied loads, temperature changes and concrete shrinkage and creep.

Standard: To AS 3610.
Openings: In vertical forms provide form openings or removable panels where necessary for inspection and cleaning.
Cleaning: Remove free water, dust, debris, stains and the like from the forms and the formed space prior to placing concrete.
Stripping of formwork: To AS 3600 clause 19.6.2 where these requirements are more stringent than the relevant requirements of AS 3610.

Release agent: Before placing reinforcement, apply a release agent compatible with the contact surfaces, to the interior of the formwork, except where the concrete is to receive an applied finish for which there is no compatible release agent. Where necessary clean the reinforcement to remove all traces of release agent.

Responsibility: The Contractor is responsible for the sufficiency of the formwork, except to the extent, if any, that formwork design is shown on the drawings or specified.

Defective formwork: If formwork fails to meet the requirements of the contract, any concrete which has been cast in it may be rejected. In that case, remove the rejected concrete, form construction joints, reconstruct the formwork and recast the concrete.

Permanent loading: Do not place permanent loads, including masonry walls, on the concrete structure while it is still supported by formwork.

DIMENSIONAL TOLERANCES
Standard: To AS 3610 clause 3.4 as applicable for formed surfaces and otherwise to AS 3600 clause 19.5.

FORMED SURFACE FINISH
Surface finish class: Use the applicable class from AS 3610 table 3.3.1.
All exposed surfaces to be Class 2 unless noted otherwise.

Evaluation: If the Customer's Representative considers that the formed surface finish of the completed work does not comply with the specification he may require evaluation of the finish in accordance with AS 3610 clause 5.6. In this case evaluation shall be carried out by the Contractor in the presence of the Superintendent.

Surface repair: To AS 3610 clause 5.6.5.
Exclusion: Repairs to Class 1 surfaces are not permitted.
Method: Before commencing repairs, submit the proposed method.

FORM TIE BOLTS
Not a requirement under this contract.

LOST FORMWORK
Requirement: Use permanent or lost formwork, if required, which does not contain chlorides, and which will not impair the structural performance of the concrete members.

B3.4 MATERIALS

GENERALLY
Standard: To AS 3600 clause 19.1.

Restrictions on chemical content: To AS 3600 clause 4.9.

Bagged cement: Do not use bagged cement more than 6 months old.

READY MIXED CONCRETE SUPPLY
Standard: To AS 1379, by the batch production process. Deliver in agitating trucks.
Addition of water: Obtain approval before adding water at the site.
Plastic cracking: Design the concrete mix to minimise plastic settlement and shrinkage cracking.

Elapsed delivery time: Concrete is liable to be rejected if the elapsed time between the wetting of the mix and the discharge of the mix at the site exceeds the criteria in the **Elapsed delivery timetable**.

Elapsed delivery time table

Concrete temperature at time of discharge (^{o}C)	Maximum elapsed time (hours)
Less than 24	2.00
24 – 27	1.50
27 – 30	1.00
More than 30	0.75

Delivery docket: For each batch, supply a docket listing the information required by AS 1379 clause 1.7.3, and the following additional information:
- The concrete element or part of the works for which the concrete was ordered.
- The total amount of water added at the plant and the maximum amount permitted to be added at the site.
- The amount of water, if any, added at the site.

SITE MIXED CONCRETE SUPPLY
Requirement: Submit for approval concrete mix design, materials (not limited to type, grading), mixing methods and equipment two days prior to placement.

GROUT
Standard: To AS 3600 clause 19.1.8.
Maximum shrinkage: 1% by volume after 24 hours.
Maximum water cement ratio: 0.45 (by weight).
Minimum compressive strength (75mm cube): 30 MPa at twenty eight days.

REINFORCEMENT GENERALLY
Standard: To AS 3600 clause 19.2.

Splicing: To AS 3600 clause 13.2.

Concrete cover: To AS 3600 clause 4.10 for coastal environments or AS 3735 clause 4.4 as applicable.

Requirement: Supply and fix reinforcement, including the necessary tie wires, support chairs and spacers.

REINFORCEMENT SUPPORTS
Support types: Use purpose-made concrete, plastic or plastic - tipped metal supports.

Supports over membranes: Prevent damage to waterproofing membranes or vapour barriers. Place a metal or plastic plate under each support to prevent puncturing.

Support spacing: Not more than 60 diameters for bars and 750 mm for fabric.

POLYMERIC FILM UNDERLAY
Material: High-impact resistant polyethylene film.
Film thickness: 200 micron

Base preparation: According to base type, as follows:
- Graded stone base: Blind with sufficient sand to create a smooth surface free from hard projections. Wet the sand just before laying the underlay.
- Concrete working base: Remove loose material and any projections above the plane surface.

Installation: Lay over the base. Lap joints not less than 200 mm. Face the laps away from the direction of concrete pour. Seal laps with adhesive tape not inferior to double sided butyl adhesive tape. Similarly seal around unavoidable penetrations such as service pipes. Take the underlay up vertical faces as far as practical to meet the needs of the concrete placement, and fix at the top by tape sealing. Arrange to have vertical laps only on vertical or inclined surfaces. Patch or seal any punctures or tears before pouring concrete.

B3.5 PLACING AND CURING

GENERALLY
Standard: To AS 3600 clause 19.1.3.
Placing: Use placing methods which minimise plastic settlement and shrinkage cracking.

Horizontal movement: Movement may be by means of suitable conveyors, clean chutes, troughs or pipes. Do not use water to facilitate the movement.

Layers: Place concrete in layers such that each succeeding layer is blended into the preceding one by the compaction process.

Rain: Concrete exposed to rain before it has set, including during mixing, transport or placing, shall be liable to rejection.

Sequence of pours: Minimise shrinkage effect by pouring the sections of the work between approved construction joints in a sequence such that there will be suitable time delays between adjacent pours.
Approval: Submit a proposed sequence and times for approval.

Compaction: Use immersion and screed vibrators accompanied by hand methods as appropriate to remove air bubbles and compact the mix. Provide not less than one reserve vibrator in working order. Use form vibrators where use of immersed vibrators is impracticable. Ensure concrete is fully compacted and entrapped air removed, but avoid over vibration that may cause segregation. Do not allow vibrators to come into contact with partially hardened concrete, or reinforcement embedded in it. Do not use vibrators to move concrete along the forms.

Placing records: If requested by the Superintendent, keep on site and make available for inspection a logbook recording each placement of concrete, including the following:
- Work Request number
- Date.

- The portion of work.
- Specified grade and source of concrete.
- Volume placed.

FIXING REINFORCEMENT
Fixing requirements: Secure the reinforcement against displacement by tying at intersections with annealed iron wire ties not smaller than 1.25mm diameter, or by approved clips. Bend the ends of wire ties away from nearby faces of forms so that the ties do not project into the concrete cover.

Mats: For bar reinforcement in the form of a mat, secure each bar at alternate intersections, and at other points as required.

Beams: Tie ligatures to bars in each corner of each ligature. Fix other longitudinal bars to ligatures at not more than 1000mm intervals.

Columns: Secure longitudinal column reinforcement to all ligatures at every intersection.

Bundled bars: Tie bundled bars together so that the bars are in closest possible contact. Use tie wire not less than 2.5mm diameter at centres not more than 24 times the diameter of the smallest bar in the bundle.

Provision for concrete placement: If spacing or cover of reinforcement does not comply with AS 3600 clauses 8.1.7 and 4.10.2 respectively notify the Superintendent and obtain instructions prior to placing concrete.

COLD WEATHER PLACING
Requirement: Maintain the temperature of the freshly mixed concrete within the limits shown in the **Cold weather placing table**. "Outdoor" air temperature applies to the air temperature at the time of mixing and to the predicted or likely air temperature at any time during the subsequent 48 hours.

Cold weather placing table

Outdoor air temperature	**Temperature of concrete**	
	Minimum	**Maximum**
Not less than 5°C	10°C	32°C
Less than 5°C	18°C	32°C

Additives: Do not use calcium chloride, salts, chemicals or other material in the mix to lower the freezing point of the concrete.

Frozen materials: Do not allow frozen materials or materials containing ice to enter the mixer, and keep free of frost and ice any forms, materials, and equipment coming in contact with the concrete.

Heating: Heat the concrete materials, other than cement, to a temperature not greater than the minimum necessary to ensure that the temperature of the placed concrete is within the limits specified in this clause. The temperature of water shall be not greater than 60°C when it is placed in the mixer.

HOT WEATHER PLACING
Requirement: The provisions of this clause apply to concreting when the surrounding shade outdoor temperature is greater than 32°C.

Mixing: Do not mix concrete when the outdoor shade temperature on the site exceeds 38°C, unless otherwise approved and then only subject to such conditions as may be imposed.

Handling: Take precautions to prevent premature stiffening of the fresh mix and to reduce water absorption and evaporation losses. Mix, transport, place and compact the concrete as rapidly as possible.

Placing: Before and during placing maintain the formwork and reinforcement at a temperature not greater than 32°C by protection, cold water spraying, or other effective means. When placed in the forms, the temperature of the concrete shall not exceed the criteria in the **Hot weather placing table**.

Hot weather placing table

Concrete element	**Temperature limit**
Normal concrete in footings, beams, columns, walls and slabs	35°C
Concrete in large mass concrete sections; or concrete of strength 40 MPa or greater, in sections exceeding 600 mm in thickness	27°C

Temperature control methods: Acceptable methods of maintaining the specified temperature of the placed concrete include
- using chilled mixing water;
- spraying the coarse aggregate with cold water;
- covering the container in which the concrete is transported to the forms;
- cooling the concrete by liquid nitrogen injection prior to placing; and
- a combination of these methods.

CURING
Standard: To AS 3600 clause 19.1.5.

Generally: Protect fresh concrete from premature drying and from excessively hot or cold temperatures. Maintain the concrete at a reasonably constant temperature with minimum moisture loss for the curing period.

Curing period (from time of placing): Commence curing immediately after finishing, and cure continuously until the cumulative number of days or fractions thereof, not necessarily consecutive, during which the air temperature in contact with the concrete is above 10°C, totals not less than 7 days.

Curing methods: Acceptable methods of curing include the following:
- Ponding or continuous sprinkling with water (moist curing).
- An impermeable membrane.
- An absorptive cover kept continuously wet.
- Steam curing.

Hot weather curing: Cure concrete placed as specified in *Hot weather placing* by one of the methods (but not curing compounds) specified in this clause under **Curing methods**. Immediately after placement cover the concrete with an impervious membrane, or hessian kept wet, until curing begins. As an alternative to immediate covering, where the temperature exceeds 25°C or where not protected against drying winds, protect the concrete with a fog spray application of aliphatic alcohol evaporation retardant.

Visually important surfaces: Produce uniform colour on adjacent surfaces by uniform curing methods.

PROTECTION
Loading: Protect the concrete from damage due to load overstresses, heavy shocks and excessive vibrations, particularly during the curing period. Do not place construction loads on structures which will overstress them. If required provide calculations to justify the adequacy of the structure to sustain any construction loads.

Surface protection: Protect finished concrete surfaces from damage from any cause, including mortar splashes and stains, timber stains, rust stains, chemical attack, additives, curing compounds, protective coatings, rain and running water.

B3.6 EMBEDMENTS, CORES AND FIXINGS

FIXINGS AND EMBEDDED ITEMS
Standard: To AS 3600 Section 14.
Lifting, bracing and fixing inserts for precast units: To AS 3850.1 clause 4.3.

Shop drawings: If the locations of embedded items (including hold down bolts) are not shown on the drawings, or are shown diagrammatically, or if it is proposed to vary the locations shown, submit for approval drawings showing the proposed locations, clearances, cover, and the like.

Structural integrity: Fix cores and embedded items to prevent movement during placing. In locating embedded items, do not cut or displace reinforcement, or cut hardened concrete, unless prior approval has been obtained.

Tolerances on placement: Maximum deviations from correct positions:
- Embedded items generally: ± 10 mm.
- Fixings, anchor bolts and the like: ± 3 mm.
- Fixings and embedded items in precast units: To AS 3610 Table 3.4.3 and AS 3850.1 clause 6.4 as applicable.

Pressure pipes: Where embedded pipes will contain liquid or vapour at a pressure of more than 10 kPa, before embedment test for leaks and furnish the test results to the Customer Representative.

PROTECTION OF FIXINGS
Requirement: For all embedded and inserted ferrous fixings (other than stainless steel) provide galvanised surface coating passivated by dipping in 0.2% sodium dichromate solution.
Threaded fastenings: To AS 1214.
Structural sections: To AS/NZS 4680.

INSERTED FIXINGS
Limitation: Use fixings inserted by drilling (including masonry anchors), or by explosive tools, only if specified or approved.

B3.7 JOINTS

CONSTRUCTION JOINTS
Standard: To AS 3600 clause 19.4.1.

Location: Not applicable to concrete pad footings.

MOVEMENT JOINTS
Movement joint types (definitions
Contraction joint: An unreinforced joint with a bond-breaking coating separating the concrete joint surfaces.
Expansion joint: An unreinforced joint with the joint surfaces separated by a compressible filler.
Control joint: A weakened plane contraction joint created by forming a groove, extending at least one quarter the depth of the section, either by means of a grooving tool, by sawing, or by inserting a pre-moulded strip.
Isolation joint: A joint without keying, dowelling, or reinforcement, which imposes no restraint on movement in any plane.

JOINTING MATERIALS
Types: Use jointing materials, including sealants, mastics, primers, gaskets, compressible fillers, and joint covers, as recommended by the material manufacturers for the location and type of joint, compatible when used together, and non-staining to concrete in visible locations.

Foamed materials (in compressible fillers): Closed-cell or impregnated types which do not absorb water.

Bond breaking: Use back-up materials for sealants, including backing rods, which do not adhere to the sealant. They may be faced with a non-adhering material.

JOINT DOWELS
Requirement: Provide galvanised steel reinforcing rod dowels in expansion and contraction joints, where required. Embed each dowel normal to the plane of the joint, so that half the dowel lies on each side of the joint. Heavily grease or bitumen coat one half and fit an expansion cap to that end.

JOINT FILLING
Preparation: Where joints are to be filled with jointing materials, including sealants, bond breakers, backing rods and preformed strips, dry and clean the joint surfaces before application, and prime if and as recommended by the joint material manufacturer.

Watertightness: Apply the jointing materials so that joints subject to ingress of water are made watertight where required.

Finish: Finish visible jointing materials neatly flush with the adjoining surfaces.

UNREINFORCED GROUND SLABS
Provide joints to un-reinforced slabs in accordance with the project brief and drawings or as discussed on site.
As a minimum:
Grooved control joints to be placed at 2000mm max centres.
Contraction Joints to be placed at 6000mm max centres.

B3.8 INTEGRAL FINISHES

TOLERANCE CLASSES FOR FINISHES AS LAID
Classes: Tolerance classes determined by a straight edge placed anywhere on the surface in any direction.
Class A: Maximum deviation from a 3 m straight edge: 3 mm.
Class B: Maximum deviation from a 3 m straight edge: 6 mm.
Class C: Maximum deviation from a 600 mm straight edge: 6 mm.

FINISHES AS LAID
Screeding: Finish slab surfaces by approved means to finished levels. Produce surfaces to Class B.

Machine floated finish: Finish the screeded surface with approved power driven equipment to a uniform smooth texture. Hand float in locations inaccessible to the machine float.

Steel trowelled finish: After screeding, produce the final finish with steel hand trowels, free of trowel marks and uniform in texture and appearance.

Wood float finish: After screeding, produce the final finish with a wood float.

Scored finish: After screeding, give the surface a coarse scored texture in the direction shown on the drawings, by drawing a broom, hessian belt, stiff brush, rake or the like, across the surface.

Sponge finish: After machine floating, obtain an even textured sand finish by wiping the surface with a damp sponge.

Granolithic topping
Topping mix: 1:1:1.5 cement: fine aggregate: coarse aggregate maximum size 5 mm.
Water: cement ratio: 0.50 maximum.
Slump: 50 mm maximum.
Topping thickness: 20 ± 5 mm.
Monolithic placing: As soon as surface water has disappeared from the newly placed base, spread the topping mix, compact, and float to the required tolerance class and surface finish.

Integral finishes schedule

	Concrete element	
Title/location	**Pathways**	**Verandah / Patio Floors**
Tolerance class	B	C
Finish as laid	Steel trowelled	Steel trowel
Non-slip finish	Wood Float	Wood Float
Surface modifiers	None	None

B4. ELECTRICAL SERVICES

B4.1 GENERALLY

EXTENT OF WORK
The electrical work is as detailed on the drawings or included in the project brief and this specification, the whole of which shall be deemed to constitute one document.

All work shall be carried out by a licenced electrical contractor and to all relevant Australian Standards unless otherwise specified.

Whether or not the words supply, install, test and commission appear in the document understand that, unless clearly excluded, material and labour for the complete installation is required. The whole of the electrical works must be supplied, installed, tested and commissioned to the approval of the Customer's Representative.

Similarly where the words "in an approved manner", "for approval", "to approval", and the like appear, understand that the approval is by the Customer or the Customer's Representative.

Provide the necessary notification to the Customer on commencement and completion of each project, a copy of all notifications are also required to be issued to the Customer's Representative, any fees payable will be paid by the Customer.

The extent of electrical works in the main, but not limited to the following:
- Disconnect power at the Pick-Up Site and make safe;
- Test existing cables for insulation resistance (500 V), polarity and continuity prior to reconnection;
- Reconnect power at the Set-Down Site;
- Replacement of damaged internal and external lighting equipment;
- Replacement of damaged internal and external power equipment;
- Upgrade existing light and power circuit breakers to residual current protection type;
- Supply and installation of public address equipment and cable;
- Supply and installation of data cable and data points;
- Supply and installation of air conditioning power requirements;
- Commissioning; and
- Defects liability.

DRAWINGS
Where pursuant to these documents, provide legible and accurate drawings, drawn by a competent person (trades person) and in accordance with AS.1100.

AS CONSTRUCTED DRAWINGS
Provide as constructed drawings as a pre-requisite to the granting of practical completion, indicating work/variations completed during the currency of the contract.

Drawings are to be signed and dated by a principal of the firm. The Customer's Representative shall counter sign and date the drawings, confirming acceptance.

Provide information on a copy of the building location site plan provided by the Customer at Order stage. Indicate in ground conduit runs and pit systems for power, data and communication and any other electrical works completed.

B4.2 MATERIALS AND WORKMANSHIP

STANDARDS
Ensure all new and old wiring, fittings and equipment are of approved type and make and comply with the relevant Australian Standards or Codes of Practice.

In particular comply with:
- AS/NZS 3000:2007 Wiring Rules
- The requirements of the local supply authority and the Public Health Department

LOCATION AND FIXING OF EQUIPMENT
Rigidly fix equipment neatly and symmetrically to rigid supports.

Ensure fixings are in accordance with good engineering practice and meet with approval.

Firmly fasten conduits in place. Ensure that there is no possibility of dislodgment of other trades.

Surface mounted conduits are only permitted in locations where there is no other means of access to the fitting. Existing surface mounted conduits are to remain unless otherwise advised.

Heights shown on drawings or specified are the heights from finished floor level to the centre of the equipment.

FABRICATED EQUIPMENT
Fabricated equipment is to be of robust, symmetrical and unwarped construction, to approval before installation.

Metalwork is to be neatly and accurately cut and free from undulations or any other distortions.

Form bends and folds in sheet metalwork with a suitable bending machine.

Neatly execute welding with the finished weld ground or filed smooth and level with the surrounding surface.

PAINTING
Ensure finished surfaces of all paintwork, not otherwise specified, are free from bubbles, runs or any other imperfections and have a high gloss finish.

METALWORK (GENERAL)
Free surfaces of fabricated metalwork, not otherwise treated, of rust, scale, oil and other foreign matter, then paint with 1 coat of etching primer, followed by 2 coats of approved colour acrylic or lacquer paint.

ENGRAVING
For engraving, use machine engraving with upper case letters.

Unless otherwise specified, size engraving as follows:

EQUIPMENT	LETTERING	LINE THICKNESS
Standard switch plates	3mm	0.4mm
Fuses	3mm	0.4mm
Main switches	10mm	1.5mm
Isolators	6mm	1.0mm
Panel identification	6mm	1.5mm
Junction box identification	6mm	1.0mm
Sub-section and miscellaneous labels	4mm	1.5mm

Where specified as engraved on flush plates and apparatus, fill the engraving with red pigment. Where engraved labels are specified use black anodised aluminium strip and fasten to the equipment with nickel plated drive pins. Embossed self adhesive labels will not be accepted.

TESTING
Prior to reconnection of any building perform the mandatory tests prescribed in AS3000 Section 8. Advise the Superintendent of any defects in writing and await further instructions before connection of the building.

Prove the efficient working of the electrical installation to the satisfaction of the Superintendent on completion.

B4.3 CABLE INSTALLATION

GENERAL
Unless otherwise specified use copper cored multistrand cables that are:
Of 450/750V (type V90) grade
New and delivered on site in unbroken reels with the makers label attached.

Mains cables to be delivered through a new or existing pit system back to the nearest available switchboard.

All mains cable is to be double insulated.

Unless otherwise advised conceal cables and conduits in ducts, hollow walls, cavities and ceilings.

CABLE RATING
Where cable size and associated protective device ratings are specified, observe derating factors when deciding the number of conduits to be installed.

CABLE TERMINATIONS
Leave adequate slack in cables at terminations behind switchboards, switches and fittings generally to facilitate their removal for replacement, inspection or adjustment.

For any single conductor up to and including 2.5 sq mm entering a terminal hole, bare the wire end and double back to ensure a robust and secure connection. For a number of conductors entering the same terminal hole, bare the ends and firmly twist together. Cut off excess length 2mm beyond the terminal.

Unless otherwise directed conceal cables and conduits in ducts, hollow walls, cavities, ceilings space and the like.

TPI CABLES
Enclose single insulated wiring in conduit, ducts and the like and install under the loop into fittings system. No joints or connectors will be permitted.

Do not draw in wiring for a particular service/conduit until the respective conduit installation has been completed, unless granted permission or directed in writing by the Superintendent.
(Note: Generally TPS cable should be used throughout).

TPS CABLES
All cables shall:

Be neatly run, kept at least 150mm clear of hot water pipes; and securely fixed with approved clips.

Be concealed in walls, ceilings or behind other building features where possible. When exposed in view install neatly square with the lines of the building.

Be installed in conduit where concealed in plastered walls when applicable.

Loop from fitting to fitting with no more than 3 cables in any 1 switch or junction box terminal. TPS junction boxes will be permitted in accessible ceiling spaces.

Minimum conductor sizes shall be:

Lighting circuits	1.5mm2
Other circuits	2.5mm2

B4.4 CABLE ENCLOSURES AND SUPPORTS

CONDUITS – GENERAL
Use conduit sized as required with a minimum size of 20mm.

Fix exposed conduits parallel to the alignments of the building structure in a neat, orderly manner.

Securely fasten conduits to rigid supports.

All conduit fittings shall match the type of conduit.

Install conduit so that wiring may be drawn in or out at the time of installation or at any other time without damage to the cable or building structure or without disruption of conduit installation.

Conduits in ground for mains supply cable are as follows:
6mm single & three phase to 16mm single phase cable installed in a 32mm conduit.
16mm three phase cable installed in 40mm conduit
25mm three phase installed in 50mm conduit
35mm three phase installed in 63mm conduit

Conduits in ground for Public Address cable are as follows:
4 core quad (telephone type) cable installed in a 20mm conduit

Conduits in ground for Communication cable are as follows:
telephone cables installed in a 32mm conduit including draw wire

Conduits in ground for Data cable are as follows:
Data cables installed in a 50mm conduit including draw wire

LIGHT DUTY RIGID PVC CONDUIT
Use frictional heat (or warm air) for medium sets and applied heat (or hot air) for sharp bends.

Install saddles so that conduits are held firmly in place yet allow for movement due to linear expansion and contraction of the conduits.

Install the conduits far enough above ceilings and below floors to avoid accidental piercing by nails and the like. Where possible, install them at least 150mm clear of the underside of roof decking.

Use screwed attachments for the joining of PVC conduits to metal conduits and boxes, eg PVC plain to screwed couplings or adaptors.

Metal wall and junction boxes may be used in PVC conduit installations provided they are separately earthed at a brass stud brazed to the box.

B4.5 POWER SUPPLY

The power supply to the installations will be 415/240 volt, +or- 6%, 3 phase, 4 wire, 50 hertz, metered at a common rate for light and power and subject to tolerances laid down in the Electricity Act 1945-1953.

All materials and equipment supplied under this Contract shall be designed for this supply, unless otherwise specified.

B4.6 SWITCHBOARDS

GENERAL
Where applicable re-use existing switchboards.

Install new switchboards as specified and when requested.

New switchboards for Transportable classrooms are to be Hager (*or a similar product equivalent in function*) 18 pole with door.

New switchboard for Demountable classrooms are to be Hager (*or a similar product equivalent in function* or

similar) 12 pole with door fitted with a 42886 solid brass pad lock.

New switchboards for other building types will be detailed in the project brief or discussed on site.

Run wiring behind switchboards in a neat and orderly manner with the circuit cable taped at intervals for easy identification.

Clearly label major components and sections of switchboards with approved plastic label describing the various functions.

Do not use embossed plastic self adhesive labels.

Label each ACB with numbered and phase coloured labels, coloured labels, coloured discs or press in type studs according to circuit identification.

a) When supplying a new switchboard with a legend. Arrange for procurement and marking up of the chart. Supply and install a legend holder as required.

b) The existing on site distribution switchboard supplying power to the transportable or demountable building may have an existing appropriate circuit breaker fitted, if not an appropriate circuit breaker shall be fitted.

c) In all cases (unless otherwise advised) each building installed shall have its own appropriate circuit breaker fitted. Where possible the new circuit breaker is to match equipment already provided in the distribution switchboard.

B4.7 ACCESSORIES AND EQUIPMENT

MINIATURE CIRCUIT BREAKERS (MCBS)
MCBS shall be miniature type to AS/NZS60898.1 C curve and have minimum interrupting capacity of : 6000 amp symmetrical at 240 volts AC single pole and 6000 amp symmetrical at 415 volts AC multi pole.

RESIDUAL CURRENT DEVICES (RCD)
If required, RCDs shall be installed to AS/NZS61008.130 mA trip setting, and operate within 100 msec. It is a requirement that all government buildings relocated under this Contract have RCDs fitted as a matter of course.

EARTH AND NUETRAL LINKS
Earth and neutral links shall be of brass and shall have a sufficient number of terminations to suit the max possible development of the switchboard.

Provide separate sets of earth and neutral links for lighting and power circuits.

Fully insulate neutral bars from switchboard metalware by non hygroscopic material.

Mount earth bars directly to switchboard metalware.

CONSTRUCTION
Switchboards to be:

Front connected type.

Capable of accepting MCB's.

Capable of withstanding the symmetrical current specified for 1 second.

The enclosure shall be of minimum 1.6mm sheet steel and adaptable for flush or surface mounting as applicable.

The base shall be of sufficient size to facilitate cabling up to the full capacity of the switchboard and shall accept cabling from the top, bottom or rear as required.

Mount equipment on mounting chassis or rails and provide sheet steel escutcheons to give dead front construction.

Provide a lockable steel door with lock keyed to Lockwood key BMW E Key.

B4.8 EARTHING AND BONDING

EARTHING AND BONDING - GENERAL
Install the earthing system in accordance with the multiple earthed neutral (MEN) system requirements. Use earthing conductors of high conductivity copper unless otherwise specified.

Directly earth luminaries, power outlet(s) and appliances.

Originate earthing conductors at the switchboard from which the associated circuits originate. Run them in the same conduits/ducts as the cables.

Bond water, waste or downpipes within a distance of 2400mm of one another using 7/0.67 copper earth conductors. Install bonding conductors so they are free from risk of accidental damage.

Carry out connections to metalwork by either brazing a brass strap or securing an earth stud by bolting or brazing.

Braze connections where they are hidden by the building finish.

Clean large pipes to expose the metal surface then wrap around a brass strap and securely bolt. Fit earth wires with crimped terminals and secure under the bolt.

Paint all external earth bonding/connections with external paint.

B4.9 POWER INSTALLATION

GENERAL
The power installation, including power outlets, circuitry, connections and appliances shall be as specified and or shown on any drawings.

CABLING
Originate final sub-circuit cabling from building main switchboard as circuited.

Unless otherwise specified or required by wiring rules considerations cabling shall be:
7/0.67 (2.5 sq mm) TPS cables

Do not install more than 2 final sub-circuits in 1 conduit.

In walls the cabling may be either TPS cable or TPI cables enclosed in rigid PVC conduit.
Mains supply cable of two (2) core and earth stranded copper conductors with double insulation.

ACCESSORIES GENERALLY
Unless otherwise specified switches and outlets generally shall be:
- Impact resistant all insulated moulded plastic type
- Coloured white electric
- Flush mounted
- Of the standard pattern horizontally mounted
- Standard size, 115 x 70mm provide circuit identification in the form of identification caps, coloured to match the flush plates, with circuit numbers coloured to the appropriate phase colour. Flush mount identification caps using PVC glue, above the toggle of each switch.

Surface mounted accessories shall either be complete with enclosure or fitted to plastic mounting blocks.

POWER OUTLETS
Where applicable re-use existing power outlets and mounting blocks.

Unless otherwise specified, for single and double power outlets provide 240 volt combination switch and 3 flat pin socket assemblies mounted horizontally.

Connect wiring in the order earth, active, neutral in a clockwise direction when viewed from the front of the outlet.

All power outlets shall have safety shutters which are secured with tamper-proof screws.

Unless otherwise specified, connect appliances eg: ceiling fans and bar heaters via a flexible lead with a three pin plug top and a wall or ceiling mounted isolator.

OUTLETS ON PARTITIONS
Where outlets occur on stud walls provide wall boxes to house the outlets fixed to robust steel or timber trimmers secured between the studs.

B4.10 CEILING FANS

GENERAL
Where applicable re-use existing ceiling fans.

Where ceiling fans are new and specified or shown on drawings they shall:
- Be GEC royal, Atkins-union, Mistral, Sales-Wattmaster, K.R.Horner-DEMC, Hunter Pacific or equivalent.
- Be colour white, with no decorative brass trim on the body or blades
- Be 1200mm diameter sweep fan
- Be continuously rated at all speeds
- Be suitable for operation with infinitely variable solid state speed controllers
- Have white painted metal suspended rods and main body
- Have totally enclosed motors
- Installed on a “J” hook

CABLING
Terminate cabling within a socket outlet with round earth pin adjacent each ceiling fan and make final connections.

INSTALLATION FANS
Suspend new or replacement fans in the position indicated, or in existing location with the bottom of the blades 2.400m above FFL at a height indicated by the Superintendent. The fan suspension rods shall be hung from the structure by a suitable length hook bolt ex 10mm galvanised MS. The mouth of the hooks shall be only sufficient to accept the fan suspension rod thimbles. Secure the hook bolts direct to the structure or fit steel trimmer as applicable. In either case lock the hook bolts to their supports using spring washer, 2 locknuts and a split pin

through the upper nut.

Where a fan suspension is visible below a false ceiling conceal it with a fan canopy.

Proprietary ball suspension types are approved also, but the bracket must be fixed by bolts, nuts and split pins.

Where fan rods protrude through false ceilings, fit a Clipsal conduit cover flange, Clipsal Cat. 269CF (or equivalent), up over the rod to the ceiling to conceal the hole.

Where Mistral fans are used, fix a locknut to the screw fixing the motor assembly to the down rod in order to prevent the screw vibrating loose.

Connect the fans to the fixed wiring via an automatic outlet mounted on the ceiling adjacent to the fan location. Fit a 3 pin plug top with round earth pin to the fan flex to suit.

INSTALLATION (CONTROLLERS)
Where applicable re-use existing fan controllers and mounting blocks.

Install controllers, each controlling the number of fans indicated, at the positions specified or shown on drawings, or in existing locations.

They shall:
- Be Clipsal 2031V500LV or similar
- Be solid state types
- Be infinitely variable
- Have capacity to control one or more fans as specified
- Be continuously rated throughout the full speed range
- Be earthed

B4.11 AIR CONDITIONING UNITS

EVAPORATIVE:
Where applicable re-use existing evaporative cooler controls and mounting blocks.

Install the evaporative cooler control station in the location as shown on drawing(s). The evaporative cooler control station shall be provided with the evaporative cooler.

Provide and install all power and control cabling in conduit.

Where applicable supply and install a 7 pin plug and socket weatherproof isolator, adjacent the condensing unit , Clipsal or similar: Base 56E2, Socket 56SO 720 LE, Switch 56SW 120 LE and Plug 56P 720.

SPLIT UNITS:
Where applicable supply and install isolators for each split unit installed, mounted on wall adjacent to condensing unit.

BOX TYPE:
Where applicable re-use existing RAC/box type air condition units.

Where applicable provide a 10 or 15amp supply connected to a isolator adjacent to unit.

B4.12 WALL MOUNTED INFRA RED HEATERS

GENERAL
Where applicable re-use existing infra red heaters, isolators and mounting blocks.
Where infra red heaters are specified or shown on drawings they shall:
- Be of 1100 watt (3402-0) or 750 watt (3405-0) depending on location of building including flex and plug. Be of approved make and colour
- Have vertical angle adjustment
- Have silica sheathed elements
- Have non corrodible reflectors
- Have mesh safety guard

INSTALLATION
Install new heaters in new locations as indicated by the Customer's Representative, replacement heaters to be installed in previous locations.

Install an automatic outlet near the end of each heater for new installations, replacement heaters use existing location.

Connect the heater to the automatic power outlets with a 3 pin side entry plug top and flex.

Control the heaters with switches in existing locations or as shown on the drawing. Engrave each new switch "HEATER".

B4.13 ELECTRIC STOVES

Where applicable re-use existing electric stove.

If required, provide and install power cabling as specified to a 32 amp single phase heavy duty isolator adjacent each stove and hard wire the stove via flexible conduit from the isolator to the stove terminals.

Electrical stove to be a Westinghouse PAK804W or a similar product equivalent in function.

B4.14 LIGHTING

GENERAL

Where applicable re-use existing lighting equipment.

New luminaries are to be Australume Aris prismatic surface fluorescent or a similar product equivalent in function with 2 x 28 watt lamps or 2 x 14 watt lamps.

Vandal Proof luminaries are to be Thorn Casalux *or a similar product equivalent in function* with a 1 x 18 watt lamp.

The lighting installation, including luminaries, circuitry and switching shall be as specified and shown on drawings. It shall be complete and operational in all respects.

CABLING

All final sub-circuit cabling to luminaries shall originate from building main switchboard as circuited.

Unless otherwise specified or required by wiring rules considerations cabling shall be:
7/0.50 (1.5 sq mm) TPS cables

Do not install more than 3 final sub-circuits in any 1 conduit.

Wire to switches and fittings in partition mullions using TPS cables with earth wire enclosed.

SWITCHES AND FLUSH PLATES

Where applicable re-use existing power outlets, switches and mounting blocks.

Switches generally shall be flush mounted miniature microbreak rocker type of 10 amp rating in single gang 115 x 70mm plates.

Unless otherwise specified switches and plates shall comply with the following:

- The colour of switches and plates shall be white electric
- A max of 3 switches may be fitted to one plate
- Flush plates shall be mounted adjacent in a horizontal plane unless otherwise specified or directed on site
- The maximum space between flush plates shall be 25mm
- The height from finished floor level to the centre line of plates shall be to suit existing location or a height of 1000mm above FFL for lighting switches and fan controllers and 450mm above FFL for power points.
- Miniature switches shall be secured to the flush plates by screws
- Provide circuit identification, in the form of identification caps, coloured to match the flush plates, with circuit numbers coloured to the appropriate phase colour. Flush mount identification caps using PVC glue above the toggle of each switch.

LUMINARIES

Where applicable re-use existing luminaries.

All luminaries shall be complete with wiring, terminals, auxiliaries, lamps and the like for immediate operation when connected to the circuit cabling.

CAPACITORS

Fluorescent luminaries shall be fitted with approved capacitors to correct power factor to 0.8 lagging.

BALLASTS

Ballasts shall continuously pass rated lamp current. Ballasts shall be of approved lowloss type and have rated watts loss, when hot, of 10 watts for 58w, 6 watts for 36w and 6 watts for 18w lamps. Noisy or otherwise defective ballasts will not be accepted.

Electronic ballasts shall be compliant with EEI A2.

A separate ballast shall be used on each fluorescent lamp.

Auxiliary equipment shall be spaced as far apart as possible within the luminaries.

STARTER SWITCHES

Starter switches shall comply with AS4111.

Neon starter shall be “cylindrical” design with a glass envelope of minimum 9.5mm in diameter and minimum length of 23mm.

ACCESSORIES, TERMINALS AND FIXINGS
Accessories, terminals and fixings shall be to approval.

Lamp holder and starter sockets shall have metal strip spring type contacts for connection by twist action of the 2 pin lamp ends and starter capsules with housings of moulded plastic.

Mount starter socket so that the starter is readily accessible by removing only the diffuser.

Provide separate starter sockets and lamp holders. Integral starter sockets and lamp holders will not be permitted.

Terminals of components may be either clip or screw fixing type. Clip terminals shall provide robust and solid mechanical and electrical connections equivalent to a screw type connection.

Mounting of components may be with either clip in or metal thread screw and nut fixings.
Clip in mounts shall be robust and solid equivalent to a bolted fixing.

WIRING WITHIN LUMINARIES
Provide fused terminal blocks within each luminary.

Luminaries shall be supplied with all internal wiring completed. Wiring shall have class V105PVC insulation. Conductors shall be of adequate size and rating for the particular duties and terminations.

Single strand conductors shall be used for clip connections and multi strand conductors for screw connections.

Arrange wiring neatly within the luminaries and clip to the metalware at intervals not exceeding 400mm.

Keep wires clear of auxiliary components. The method of clipping shall be such as to prevent damage to the insulation. Do not use adhesive tape for clipping or looming of wires.

Provide a fixed 2 terminal connector block with an adjacent earth terminal near the incoming cable entry of each luminary.

VENTILATION
Provide adequate ventilation for the auxiliary equipment.

DIFFUSERS
Where applicable re-use existing diffusers.

Diffusers shall be one piece, straight, true and unwarped, of 3mm minimum thickness.

Ensure that diffusers are readily removable from within the fixed trim whilst the fluorescent lamps are in position, without any risk of the diffuser being dislodged from position by vibration or accidental impact.

FLUORESCENT LAMPS
Where applicable re-use existing fluorescent lamps.

All new fluorescent lamps unless otherwise specified shall be:
- T5 4000^{o}K
- Of the same make throughout the installation

FIXING OF LUMINARIES
Unless otherwise specified, provide screws, battens, roses, noggings, trims, packing and the like necessary for the proper fixing of luminaries. Fit packing pieces of approved material where required to level the luminaries and to prevent distortion.

Effectively earth all luminaries having exposed metal.

Do not connect earth cable on double insulated types.

SURFACE MOUNTED LUMINARIES
Fix luminaries securely to structural members of the ceilings or walls, or to hangers, brackets or the like which are themselves securely fixed to building members. Where a building member does not exist in the position required, install a suitable fixing. Where direct fixing to soft ceiling materials cannot be avoided, use toggle bolts.

Do not support or suspend luminaries from PVC boxes or fittings.

Cabling to surface mounted luminaries unless nominated, may be by the appropriate method specified.

EXTERIOR LIGHTING
Where applicable re-use existing exterior lighting or replace on a like for like basis.

Fix security luminaries around the building in existing locations or in locations to provide maximum coverage.

Control security lighting by a common:
- Override switch

- PE cell

B4.15 PUBLIC ADDRESS SYSTEM

EXTENT OF WORK
Where applicable re-use existing public address equipment and pit system.
If required supply and install the following:
- Conduits, wall boxes and wiring
- Speaker control station
- Speaker
- All cable connections
- Connect new PA system to closest available existing PA system or connection point

CONDUITING
Install a 1 x 20mm U/G conduit from:
- The speaker control station down to FFL (with draw wire)
- The speaker control station to the speaker outlet

SPEAKER CONTROL STATION
Where applicable re-use existing speaker controller.
If required install a flush 1 gang wall box and fit a single gang speaker control station ELA 24 in location shown on drawing.

SPEAKER
Where applicable re-use existing speaker.
Install over the flush plate a wall mounted speaker EA 8PPC-ST.

Speaker control station and speaker are available from Electro Acoustic Telephone: 9242 7407. The name Electro Acoustic is provided as a contact point only, there is no requirement to purchase any equipment from this company.

CABLING
Cabling shall be 4 pair, 0.5mm dia, PVC insulated and sheathed unscreened indoor telephone cable, AT ASC Cat. No. D202 installed:
- From control station to speaker
- 1 quad cable (as above) with red and white cores to the vertical socket and blue and black cores to the horizontal socket.

B4.16 SECURITY SERVICES

Contractor is to liaise with the current security service provider (commissioned to that particular site) at the Pick-Up and Set-Down Sites and obtain a quotation before proceeding with the Works.

For the purpose of tendering a provisional sum of $1,000.00 is to be allowed for.

B4.17 DATA SERVICES (only when required)

The complete installation shall comply with all relevant regulations, by-laws and requirements, including but not limited to:
- AS/NZS 3000 Wiring Rules
- AS/NZS 3080: Telecommunications installations - Integrated telecommunications cabling systems for commercial premises
- AS 3084: Telecommunications installations - Telecommunications pathways and spaces for commercial buildings
- AS/NZS 3080: Telecommunications installations - Generic cabling systems - Specification for the testing of balanced communication cabling.
- AS/NZS 3080: Telecommunications installations - Generic cabling systems - Specification for the testing of patch cords in accordance with AS/NZS 3080
- HB 243 Communications Cabling Manual, Module 1: Australian regulatory arrangements
- AS/NZS 3080: Telecommunications installations - Integrated telecommunications cabling systems for small office/home office premises
- AS/ACIF S009 Installation Requirements for Customer Cabling (Wiring Rules)
- AS/ACIF S008 Requirements for Authorised Cabling Products
- AS/ACIF Regulations and Standards
- HB 29 Communications Cabling Manual (CCM).

(CLASSROOMS)
Sub-Enclosures:
Where applicable supply and install a wall mounted sub-enclosure (cabinet) in storeroom and shall be of swing frame design where possible to facilitate rear access. However swing frame enclosures shall only be used where adequate structural support is available for mounting.

Wall mounting enclosures shall be provided as 12RU.

Enclosures shall be with an internal depth of 550mm (ie, excluding door).

Enclosures shall have no sharp edges or protrusions that could cause injury to persons.

Wall mounting enclosures shall be fitted with:
- Front 475mm mounting rails
- Horizontal and vertical cable-tidy panels and/or loops

- Power rail providing not less than 8 outlets for 12 RU enclosure
- Keyed, lockable, smoked or clear glass front door
- Earth bar

Data outlets:
Where applicable install 8 x RJ45 data points evenly spaced on an aluminium 3 tier-skirting duct.

Skirting duct to be installed on the internal wall, under windows, storeroom side of building and run between storeroom wall and building end wall.

Connection of data cable from existing premise to sub enclosure (cabinet) will be by others.

Data power supply:
Where applicable install 8 x double GPO's on aluminium skirting duct adjacent to data outlets.

Where applicable install 1 x single GPO to supply power to wall mounted data sub enclosure (cabinet)

(OTHER BUILDINGS)
Where applicable re-use existing data outlets, mounting blocks, conduits and pit system.

If required supply and install new data outlet/s (RJ45) on internal wall in the position as indicated by the Superintendent.

Connection of data cable from existing premise to building data consolidation point will be by others.

Data Labelling
All telecommunications outlets, patch panels, enclosures, cables and conduits shall be systematically and permanently labelled.

Labels may be computer generated such as the Brother Labelling system or equivalent with the exception of telecommunications outlets. Use of Dymo label, felt tipped pen and the like shall not be acceptable. Telecommunications outlets will be labelled with moulded removable plugs to fit flush plate apertures. Eg Clipsal 30 series with 30 PID insert or similar.

The method of designation shall be in general accordance with AS/NZS 3085.

B5. DRAINAGE AND PLUMBING

B5.1 GENERALLY

WORKMANSHIP
All work shall be carried out by a licensed/insured plumbing contractor in accordance with all relevant Australian Standards, Local Authority and W.A Plumbing Licensing Board requirements unless otherwise specified.

All underslung/underslab drainage work shall be terminated approximately 350mm outside external face of building with a glued cap, ready for connection to site plumbing services reticulation.

The chosen hydraulic contractor shall allow to join necessary sections of pipework when assembly on site is carried out.

The chosen hydraulic contractor shall allow for all authority submissions, fees, permits as required to complete the works in accordance with the applicable standards/regulations pertaining to the specific works being undertaken.

APPROVED PRODUCTS, FIXTURES AND FITTINGS
Products, fixtures and fittings delivered to the project, shall be marked or stamped with the relevant Australian Standard mark and number and/or the local authority water mark.

Any products, fixtures and fittings not covered by the above marks shall have a prototype or sample submitted for W.C.W.A. & Superintendent approval.

Any sample not appearing to be acceptable shall be sent for testing to the W.C.W.A. and all costs shall be borne by the Contractor presenting the product for consideration.

CONSTRUCTION
Transportable building construction is largely steel frame with internal Gyprock wall linings and external steel or fibro sheet cladding. Floor is largely steel frame construction with particleboard (aquatite) flooring. Wet area flooring is largely 15mm compressed cement sheeting in lieu of particleboard (aquatite) flooring.

Demountable building construction is largely fridge panel walls with fibro sheeting glued to both internal and external surfaces. Floor is of a timber frame construction with T&G flooring attached.

REGULATIONS
Drainage and sanitary plumbing works shall comply with W.C.W.A. regulations , Australian Standards, W.A Plumbing Licensing Board regulations, local authority regulations and to the entire satisfaction of the Customer's Representative.

Drainage and plumbing work shall be done by or under the direct supervision of appropriately licensed or certified personnel. Definitions regarding "Direct Supervision" and "Appropriately Licensed or Certified" can be found on the W.A Plumbers Licensing Board website; http://www.plumbers.wa.gov.au/default.html.

Provide, install and fix everything necessary to comply with the applicable by-laws and regulations even though may not be shown on drawings or specifically mentioned herein.

CERTIFICATES
Provide a Notice of Intention to the W.A Plumbing Licensing Board prior to the commencement of works (except on emergency repair works) and provide certificate of completion and compliance certificate to the Superintendent and the W.A Plumbers Licensing Board within 5 working days after testing and completion of work.

DRAWINGS
Where pursuant to these documents, provide legible and accurate drawings, drawn by a competent person (Trades person and in accordance with AS.1100).

AS CONSTRUCTED DRAWINGS
Supply 3 x hard copy sets of as constructed drawings clearly showing design in A1 size and on CD in PDF format.

The Contractor shall request from the Customer's Representative a set of original design drawings that will be supplied for the purpose of recording, by figured dimensions, the location, size and invert level of all under ground and concealed services installed on the project.

TESTING
Pipework shall be tested by a licensed plumber as required by AS.3500 parts 1, 2 and 4 , the W.C.W.A., and the W.A Plumbing Licensing Board.

Request drainage, water supply and sanitary plumbing audits from the W.A. Plumbing Licensing Board with a minimum of 24 hours notice.

Give 1 working days notice to the Contractor's Representative so that he may inspect testing of pipework.

Provide necessary testing equipment, payment of any authority fees will be by the Customer on receipt of authority produced invoice.

Sections of pipework that are to be built in inaccessible positions shall be tested and passed before concealment.

CLEANING UP
On completion, check all pipe lines and flush with clean water, check all taps, valves and rectify any defective parts. Clean sanitary fixtures, pipes exposed to view and pipes located in accessible ducts.

Pipework passing through stud wall framing shall have a rubber insert between pipe and wall framing to prevent dissimilar metals contact and pipe degradation for pipe expansion and contraction.

Provide pipe fixings within stud walls with acoustic inserts between pipe and fixing/fixing and wall to prevent noise transferring to the surrounding structure.

Fix pipes terminating at wall mounted fittings with suitable anchor flanges fixed to pipe and secure to wall trimming.

CONCEALMENT
Unless otherwise directed conceal pipework in ducts, hollow walls, cavities and the like.

INTERNAL PIPING AND FITTINGS EXPOSED TO VIEW
Exposed internal wastes vent pipes and fittings shall be polypropylene unless otherwise advised. Provide polypropylene flanges where pipes pass through walls and floors.

Exposed internal grates to UPVC floor wastes and floor waste gullies shall be polypropylene unless otherwise advised.

All exposed pipe work and fittings is to be painted to match wall colour.

COPPER PIPING
Fabricate pipe runs out of the longest lengths practicable. Short piecing up will not be accepted.

Form bends and fabricate junctions in the tube. Preformed copper fittings may be used. Alternatively, cast brass bends and junctions suitable for use with copper tube may be used, except in hot, cold, and rainwater water services.

Conetite fittings may be used only with approval by the Customer's Representative, and local authority.

Where unions are required they shall be flare type.

Copper piping built into stud walls, cavities or in any inaccessible positions shall be covered with kemlag, polylag or equal precoated material precoated piping shall have joints sealed as recommended by the manufacturer.

Copper or other metallic pipes passing through metal roof decking shall be wrapped with one layer of denso 510, Taki-wrap or equal approved tape overlapped 10mm and extending 100mm either side of point of contact.

Apply tape in accordance with the manufacturers instructions.

Join copper pipes by brazing with silver brazing alloy. Bronze welding will not be permitted. Remove residual flux from completed joints.

POLY PIPE (Blueline)
Fabricate in-ground cold water services pipe runs out of 25mm blueline poly pipe to the longest lengths practicable. Short piecing up will not be accepted.

Use preformed poly pipe fittings.

Install in accordance with manufacturers instructions.

Note: Poly pipe is for use <u>in-ground only</u>; all water services above ground are to be fabricated using copper pipe.

UPVC PIPING
Use coloured primer/cleaner prior to the application of solvent. Use primer/cleaner and solvent in accordance with the manufacturers instructions.

UPVC piping penetrating walls shall have a 6mm thick non setting mastic surround or a UPVC wall sleeve.

B5.2 SANITARY FIXTURES

GENERAL
Provide and fix tested sanitary fixtures in positions shown on drawings or instructed by the Superintendent including brackets, fixings, bolts and the like, waste outlets, overflows where required and connect to services.

Unless otherwise specified stainless steel in sanitary fixtures shall be grade 302, no 4 (satin) finished.

Where stainless steel fixtures are specified to be 316 grade, supply the Superintendent with a certificate from the manufacturer certifying the grade of stainless steel used.

WASTE OUTLETS AND PLUGS
Unless otherwise specified waste outlets required to sanitary fixtures shall be approved combined pressed stainless steel with polypropylene body and grate.

When requested provide plugs to sanitary fixtures having waste outlets, plugs shall be chromium plated brass for

stainless steel fixtures and rubber elsewhere.

SANITARY FIXTURE OVERFLOWS
Sinks, basins and the like situated in areas without floor wastes shall be fitted with overflows. All vitreous china fixtures shall be white.

PEDESTAL
Pans to both Adult and Child W.C. shall be full size 'Caroma Concorde' 'S' Trap (or similar) Vitreous China wash down pedestal pan with closed front solid moulded plastic seat without flap.

B5.3 MATERIALS

GENERAL
Where required by by-laws, materials shall be tested and marked by the W.C.W.A., and applicable Australian Standard Water Mark.

PIPES
Unless otherwise specified, soil waste pipes and vent pipes shall be UPVC piping.

Water supply pipe (unless otherwise advised) for potable water shall be copper tubing with copper tubing branch lines to fixtures within buildings.

Pipes shall comply with the following:

PIPE MATERIAL	USE	CLASS OR QUALITY
Copper	Up to 50mm diam	Type B
Copper	50mm diam and over	Type A
UPVC	Sewage drains	Class SH
UPVC	Stormwater drains	Class SH
UPVC	Soil waste and vent	Class SWV
Precast concrete	Stormwater	Class S

SILVER BRAZING ALLOY
Silver brazing alloy for capillary joining of copper and copper alloy pipes and fittings shall comply with AS.1167.1 alloy classification B3 or B4 of table 2 containing a minimum of 4.75% silver and 4.50% phosphorus. Colour identification silver or tan.

Silver brazing alloys for capillary jointing of copper and copper alloy pipes and fittings shall comply with AS.1167.1 alloy classifications B4 of table 2 containing a minimum of 14.5% silver and 4.50% phosphorus. Colour identification tan.

UPVC FITTINGS, SOLVENT AND PRIMER
UPVC fittings, solvent and primer shall be of the same manufacture as the UPVC pipes used.

BRASS FITTINGS
All brass fittings used in domestic water supplies (hot and cold) shall be dezincification-resistant (DR) grade.

B5.4 WORKMANSHIP

SETTING OUT
Set out pipe runs before doing other work. Make provision for pipes or sleeves to avoid cutting holes in finished permanent work.

PROTECTION
Protect the work from damage and ingress of foreign material.

FIXING AND SUPPORTING PIPES
Fix pipework with clips, brackets and pipe supports of similar material to the piping used wherever practicable.

Where metal clips, brackets and pipe supports are of dissimilar metal to the pipe used, completely insulate the piping at such points with at least 4 layers of 50mm wide black polyethylene tape applied before fixing piping in position.

Space fixings at not more than 1800mm centres for vertical pipework and 1200mm centres for horizontal pipework.

Fix pipe runs clear of walls, slabs and each other to provide easy access to each section.
Do not braze pipes to each other.

Unistrut galvanised inserts and clips will be permitted in locations approved by the superintendent.

CISTERN
Cistern to pedestal pan shall be 6/3 litre dual flush approved polypropylene low level type.

Provide flush pipes to pedestal pans complete with flanges at junctions with walls.

'Caroma Duo-Set' or similar dual flush plastic cistern and seat combination.

BASIN (CHILD'S) (cold water only) (pre primary classroom only)
Basin shall be Fowler 'Mini' or similar vitreous china wall basin without shroud and with one tap hole and supported on concealed galvanised steel brackets.

Other installations will be detailed in the brief.

BASIN (STAFF) (cold water only) (pre primary classroom only)
Basin shall be Fowler 'Regent' or similar vitreous china wall basin with two tap holes and supported on concealed galvanised steel brackets.

Other installations will be detailed in the brief.

SINK AND DRAINER (hot and cold water)
Sink and drainer shall be 914mm x 457mm inset type stainless steel sound proofed combination/unit with single bowl and with overflow, 1 bossed up tap hole and fixing tiles. Position of bowl (left or right hand) to best suit position of cupboard.

ABLUTION TROUGH (cold water only)
'Simcraft' or similar approved 900mm long x 450mm wide x 200m deep BMA pattern stainless steel wall mounted ablution trough with tile skirt to back and mounted on wall upon galvanised mild steel gallows brackets.

B5.5 SOIL WASTE AND VENT PIPES

GENERAL
Fix soil waste and vent pipes of sizes and materials required and complying with regulations, to sanitary fixtures.

Waste and vent pipes shall be complete with necessary bends, junctions, cleaning and inspection openings.

Unless otherwise specified or shown on drawing, soil waste and vent pipes and fittings shall be UPVC with solvent welded joints and fittings.

Provide expansion joints in UPVC waste and vent pipe systems in accordance with W.C.W.A. regulations.

FLOOR WASTES
Floor wastes shall have 50mm diam UPVC combination floor waste outlets connected to waste pipes discharging externally with UPVC flap valves at outlets.

Floor waste flap valves less than 20mm above finished ground level shall discharge into an approved floor waste sump.

FLOOR WASTE GULLY TRAP
Floor waste gully shall be 80mm x 65mm with 80mm diam riser and removable polypropylene grate in a polypropylene body.

VENT PIPES
Fix vent pipes, combined where required and extend through roof to correct height. Fit weather proof/water tight/insect proof cowl or basket as required.

FLASHINGS
Extend vent pipes through roof penetration and weatherproof with appropriate flashing such as "Dektite" flexible flashing or acceptable alternative, silicone sealer/screw fixed to roof deck and weathered to vent pipe.

B5.6 TRAPS

GENERAL
Provide traps to sanitary fixtures as required.
Unless otherwise specified, traps shall be double union type.
Traps shall be polypropylene.

B5.7 DOMESTIC COLD WATER SERVICES

COPPER PIPES
Unless otherwise advised, use copper piping for branch lines from domestic water supply and connect to building services and the like.

Unless otherwise specified no more than 1 fixture or tap shall be supplied from a 15mm diameter copper branch line.

BUILDING ISOLATING VALVES
Fit isolating stop cocks in each transportable or demountable building if not already installed from previous installation. Install a type 1 valve box concrete with metal lid and identification plate to protect isolation valve from damage.

Isolating stop cocks up to and including 50mm diameter shall be fitted by screwing a tube bush brazed to pipe on inlet side and a flare type boiler union on outlet side.

Do not braze stop cocks to pipes.

B5.8 DOMESTIC HOT WATER SERVICE

GENERALLY
Supply and install domestic hot water heating equipment complete with all necessary ancillaries as specified below and copper distribution pipework to provide hot water to the points shown on the drawings.

All piping installations shall meet the requirements of the Water Corporation, Australian Standard and Local Authority, requirements.

HOT WATER SERVICE
Use copper piping for branch lines from hot water unit and connect to facilities when instructed by the Superintendant. Provide an 'R.M.C.' tempering valve on outlet side of hot water unit set at 45°C for standard facilities and thermostatic mixing valve to disabled facilities.

INSTANTANEOUS HOT WATER UNIT
"Stiebel Eltron 10 litre SNU "10" or similar single phase mains pressure unit mounted inside a cupboard or wall mounted, HWS is supplied complete with mixer tap. This installation will service a single sink type installation eg: Department of Education and Training pre primary kitchen facility.

Other instances where larger volumes of hot water are required eg: shower blocks, laundry facility and the like will be specified in the brief and or advised by the Superintendent.

In all instances hot water units will be electric unless otherwise advised.

STORAGE HOT WATER UNITS - ELECTRIC
The units shall be full flow mains pressure type of "Rheem", "Braemar" or approved equivalent manufacture incorporating corrosion protected fabricated steel storage cylinder of 25 litres capacity nominal. Other size units will be detailed in the brief.

The steel storage cylinder shall be internally coated with a homogenous lining of vitreous enamel or polyamide (nylon) material. Cylinders shall be fully insulated and encased in galvanised sheet steel cladding finished in gloss enamel paint.

The units shall have the storage capacity and electrical ratings as detailed in the brief.

Units shall be designed for operation on 250V, single phase, 50HZ, A.C. supply.

The units shall be complete with all necessary manifolding, pressure relief valves, temperature/pressure relief valves, isolating valves, swing check valves, electric heating elements and controllers.

The control thermostat shall be set for a maximum storage temperature of 60 deg.c on vitreous enamel lined cylinders and polyamide (nylon) lined cylinders.

An over temperature cut-out shall automatically isolate the electricity supply if control thermostat becomes inoperative.

The installation shall be in general accordance with the manufactures instructions and shall be complete with all associated fittings and pipework. The units shall comply with the requirements of AS 1056, AS 1357, AS 1529 and those of local Authorities.

A drain line shall run through the outside wall near the unit to a discharge point 300mm above ground level and connect to both pressure relief and temperature/pressure relief valves. Valves shall discharge in a location that will not impair or endanger public health or safety.

MOUNTING DRIP TRAYS
COPPER or HDPE DRIP TRAYS shall be installed, under hot water units, with 15mm plywood base supported on galvanised gallows brackets 2000 above floor level where indicated.

Drip trays shall be turned up 75mm on all sides with folded safety edges and suitable stiffened to the approval of the Superintendent. The drip tray shall be rigidly fixed and allow access to the hot water unit and valves. All drip trays shall be drained to waste.

A 3mm thick neoprene mat shall be placed in the tray to prevent galvanic reaction with the hot water unit.

PIPEWORK:
Pipework for domestic hot water service shall be type "B" solid drawn de-oxidised copper tunes of standard commercial lengths in accordance with AS 1432 and to sizes shown on the drawings.

After cutting ends pipes shall be reamed to full bore.

Pipes shall be brazed, with joints as shown on standard detail MS 3/1. No flux shall be used.

Pipes shall be supported by standard pipe clips at not more than 1800mm centres.

Pipes shall be bent where possible to minimise the number of joints.

"Bends in pipes shall be formed, with the use of springs or by filling pipes with sand, in such a manner that the cross section of the pipe is maintained throughout the bend.

All pipework shall be sealed with wooden, rubber or plastic plugs at the end of each days work.

Where pipes are in cavity walls or chased into walls they shall be prefabricated and with fittings attached subjected to a hydrostatic pressure test of 2070KPA before installation.

B5.9 TAPS, VALVES AND OUTLETS

Install taps, valves and outlets as specified by the Customer's Representative.

Taps, valves and outlets shall be all brass tested quality.

Taps and valves shall be loose jumper type. No ceramic discs to be used.

Exposed taps, valves and outlets shall be 'Donson' or similar anti-vandal chromium plated brass with anti-vandal type handles.

Set taps, valves and outlets level and in line with adjacent taps and symmetrical over tile joints where tiles occur. Tap spindles shall be 90° to wall/tiling.

Position hot water taps on the left and cold water taps on the right when facing fixtures.

CISTERNS

15mm right angle M and F stop cock with flange at wall and 15mm copper connector.

ABLUTION TROUGH (cold water)

2 x 15mm chromium plated brass hose cock on 50mm x 15mm chromium plated brass flanged bib extension.

BASINS (COLD WATER)

15mm upswept cold pillar cock and 15mm copper connector flanged at wall (Children's Toilet). 15mm upswept hot and cold pillar cocks and 15mm copper connector flanged at wall (Staff Toilet).

SINK AND DRAINER (HOT AND COLD WATER)

Grohe or similar open vented mixer tap as supplied with SNU 10 hot water system.

B6. MECHANICAL SERVICES

B6.1 GENERALLY

SCOPE OF WORK

This section of the specification covers the scope of mechanical services work involved in the relocation of transportable buildings within the state of Western Australia. Care shall be taken to ensure all systems are supported and fixed such that they can withstand the effects of vibration due to transportation.

The mechanical services shall comprise the decommissioning of all systems, partial removal of systems to accommodate building division for transportation (where applicable), demolition and disposal of redundant or obsolete systems (where applicable), securing systems for transportation, manufacture, supply and installation of new materials and equipment (where applicable), reconnection of all systems, testing and commissioning in full on site once the buildings are reassembled, and maintenance during the warranty period.

The scope of work associated with the mechanical services shall be determined on the basis of the proposed geographic location of the transportable and the anticipated climatic conditions in such a location. The Contractor shall be responsible for liaison with the Customers Representative, to determine which Scope of Works (A or B), shall be applicable in the given instance. Also refer to any accompanying drawings.

Scope of Works (A) – Relocation Between Temperate Locations (With Suitable Water Supplies)

- Evaporative Cooling installations – Check age and condition of existing units to determine suitability for relocation and reuse. Remove units from roof or adjacent plinth/frame, suitable for transportation and reuse. Seal open ends of ductwork protruding from the building weather and vermin proof. Return units to roof or ground mounting in new location and reconnect all services. Units identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site. Where the new locality is in an area where below $0^{o}C$ temperatures can be experienced, ensure above ground cold water supply is insulated and is provided with the facility to be drained at the end of the cooling season to prevent pipe bursts due to the contents freezing.
  Ensure evaporative cooling systems serving habitable rooms are fitted with normally closed motorized dampers to comply with Section J of the current edition of the Building Code of Australia.

- Wall/window mounted fan installations - Secure operable louvres for duration of transportation. Fans identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site.

- Roof mounted fan installations - Remove fans from roof mountings, suitable for transportation and reuse. Seal open ends of ductwork protruding through the building weather and vermin proof. Return units to roof mountings in new location and reconnect all services. Fans identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site.

- Workshop installations - Remove fans, dust extractors, compressed air plant and any other external equipment from roof or adjacent plinth/frame, suitable for reuse and transportation. Seal open ends of ductwork and pipework weather and vermin proof. Return units to roof or ground mounting in new location and reconnect all services. Plant identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site.

Scope of Works (B) – Relocation between Goldfields and Northwest Locations (and those with unacceptable water supplies)

- Reverse cycle split type air conditioning units – Decommission and reclaim refrigerant in accordance with EPA requirements prior to transportation. Provide additional rigid fastenings to condensing units mounted on wall brackets for duration of transport. Remove ground mounted units, suitable for transportation and reuse. Seal equipment and all pipe work open ends airtight to prevent moisture ingress. Return units to ground mounting and reconnect all services following relocation. Pressure test, evacuate and recharge refrigerant systems. Where existing systems utilise R22 refrigerant direction shall be obtained from the Customer's Representative as to whether the systems are suitable for reuse of if they are to be decommissioned, removed (refrigeration pipe work included) and disposed of and replaced with plant operating on R410A refrigerant.

- Wall/window mounted fan installations. Secure operable louvres for duration of transportation. Fans identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site.

- Roof mounted fan installations. Remove fans from roof mountings, suitable for reuse and transportation. Seal open ends of ductwork protruding through the building weather and vermin proof. Return units to roof mountings in new location and reconnect all services. Fans identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site.

- Workshop installations - Remove fans dust extractors, compressed air plant and any other external equipment from roof or adjacent plinth/frame, suitable for reuse and transportation. Seal open ends of ductwork and pipe work weather and vermin proof. Return units to roof or ground mounting in new location and reconnect all services. Plant identified for replacement shall be approved by the Customer's Representative prior to implementation and disposal of redundant equipment off site.

General

- Provision of condition report, complete with photographs, on all existing mechanical services for review by the Customer's Representative.
- Division of the systems to accommodate transportation, reassembly once delivered to the new site.
- Making good all services and paint finishes damaged during the relocation process.

- Painting and identification of new systems.
- Final connection of water supply and drain pipework to/from all evaporative coolers.
- Reconnection of all power supplies (from isolators provided adjacent) and control wiring serving the existing systems.
- Provision of control wiring and final connections of power supplies from isolators provided adjacent to serve new systems.
- Testing and commissioning of all systems.
- Construction, As Installed drawings and Operating Manuals (new or upgraded installations).
- Warranty and maintenance of systems during the defects liability period.

All work is to be carried out by licensed tradesmen and be of the highest quality.

ASSOCIATED WORK
The following work associated with the mechanical services is specified elsewhere and shall be provided by other trades.

BUILDING WORK:
All cutting, patching, framing up, furring in and making good associated with the building structure for the removal of existing and/or installation of new mechanical services.

Provision of concrete plinths and equipment enclosures (where applicable) to accommodate plant mounted on ground.

ELECTRICAL WORK:
Provision of 415/240V, 50Hz, 4 wire power supply system terminating with weatherproof isolators adjacent to condensing units, evaporative coolers and any other external items of equipment.

Power and controls wiring of all exhaust systems, including the wiring of speed controllers (where applicable) supplied by mechanical services subcontractor.

Provision of a GPO adjacent to each rangehood.

HYDRAULIC WORK:
Provision of water supplies and drain tundishes adjacent to evaporative coolers.

Provision of suitable filtration on evaporative cooler water supplies where inferior water qualities dictate.
Provision of condensate drain discharge points serving air conditioning units (drain piping run within the buildings to be insulated in north-west locations).

ENGINEERING LIAISON
The Contractor and Customer's Representative if required may meet with a Mechanical Engineer, before commencing any work under the Contract to discuss any issues related to the installation of any Mechanical Services equipment under the contract, and if required liaise with that person during the currency of the contract.

WARRANTIES
All new work, equipment, materials, labour and travel shall be covered by the Contractor or the manufacturer's warranty for a minimum warranty period of twelve months from the date of practical completion.

All existing equipment and materials re-used shall be covered by a minimum 2 months defect period from the date of practical completion. The Contractor shall be required to attend to any defects reported during this period and arrange the repair or replacement of any equipment or materials, all costs to be borne by the Customer. However if in the opinion of the Customer's Representative the defect is by neglect of the Contractor, the Contractor may be required to attend to those defects at their own expense.

The warranty on equipment or portions of equipment or materials replaced or repaired during the warranty period shall be renewed for a period of twelve months from the date of such repair or replacement.

INSPECTION
The Customer reserves the right of entry to all premises at reasonable times, to inspect the Plant and supervise, examine and test manufacturing processes and materials and workmanship associated with work under the contract.

The Customer's Representative shall have the right to reject all or any portion of materials and work that in his opinion fails to fulfil the Contract requirements.

All defects becoming apparent during inspection shall be rectified by the Contractor at his own expense.

FIRE PRECAUTIONS
The Contractor is to take all necessary precautions to protect people and property from any fire hazard.

All other fire precautions shall be in accordance with AS 1674 – Safety in welding and allied processes.

B6.2 DUCTWORK

GENERAL
This section of the specification sets out the minimum standards for materials and workmanship for duct systems.

All ductwork shall be provided in accordance with AS 4254 and installed in a first class manner. The installation shall be workmanlike and shall be arranged to provide easy maintenance access to duct items such as dampers and the like and the items of other trades.

Metalwork
Galvanised steel ducts shall be constructed from Galvabond GC to AS 1397 with a zinc coating mass equal to Class Z300. Coating adhesion shall be able to meet the 180° bend test detailed in AS 1397. Ducts whose coating has cracked at bends shall be rejected.

Rolled steel angles shall be mild steel to AS/NZS 3679.1. All angles used for supporting ductwork shall be hot dipped galvanised in exposed locations and dimet treated in concealed locations.

Rivets for galvanised ductwork shall be of aluminium alloy with 5% magnesium and of the enclosed end type.

Bolts and nuts shall conform to AS 1111 and AS 1275 as appropriate. Bolts and nuts shall be zinc plated with hexagon heads, and nuts.

Duct Sealing Requirements
Ductwork shall be sealed in accordance with AS 4254 and in addition all flanged joints are to be tape gasketed.

DUCT SUPPORTS
Duct supports shall be from galvanised steel strap for small ducts, or Dimet treated steel angle, "Unistrut", or "Millstrut" sections, galvanised with cadmium plated all thread rod and galvanised steel nuts for larger ducts. Ducts may be hung from joint angles or TDF flanges.

General hanger arrangements and spacing shall conform to AS 4254.

EQUIPMENT FLEXIBLE CONNECTIONS
All evaporative coolers shall be connected to ducts or plenums with flexible connections.

They shall be of 100mm length with 25mm overlap over spigots and fastened with metal bands for circular ducts and sheetmetal channel sections for rectangular ducts fastened at 100mm centres with pop rivets.

Flexible connections shall be of neoprene coated glass fabric of density not less than 1 kg/m^2. Material shall be sealed on itself to form a continuous band.

FLEXIBLE DUCTWORK
Flexible ductwork shall be of the wire reinforced type using a spirally wound steel wire with a reinforced vinyl or other synthetic material liner fused to the wire spiral. The flexible duct shall be manufactured specifically for the air conditioning industry and shall present a smooth internal bore even when bent on a radius of twice the duct diameter.

Ductwork shall comply with the current requirements of the Building Code of Australia and AS 4254.

All components and the assembled insulated ductwork shall have the following minimum performance when tested to AS 1530 Parts 2 and 3.

SPREAD OF FLAME INDEX	0
SMOKE DEVELOPED INDEX	3
FLAMMABILITY INDEX	5

All components and the assembled insulated ductwork shall also have been tested and passed UL181 standard test for flammability.

Test certificates for proposed ductwork shall be provided.

Ductwork on 500 Pa systems shall be capable of withstanding a continuous pressure of 1500 Pa.

Flexible duct on low pressure supply, return and relief air systems shall be of the perforated acoustic type with mylar coating over the perforations.

Minimum acoustic attenuation performance shall be:

FREQUENCY (Hz)	ATTENUATION dB/M
125	5.4
250	2.8
500	4.9
1000	6.4
2000	8.2
4000	5.7
8000	2.8

Insulation shall be 25 thick and have a density of not less than 1.10 kg/sq meter and a conductivity of not greater than 0.036 w/mk at 20 degrees Celsius. The outer jacket shall form an impervious vapour barrier.

Flexible duct shall be fastened to duct or spigot via a 10 wide nylon serrated strip which shall be tightened by machine. A mastic bead shall be placed between duct and flexible before tightening the band.

Insulation shall be separately fastened by 50mm wide duct tape.

Insulated flexible duct shall have a minimum total overall R value of ‘1’ and the maximum insulated flexible duct length on any one run out shall be 3 metres. Externally insulated metal circular duct may be used to extend the effective length of flexible duct runs.

Flexible ductwork shall be supported at 1200 centres to achieve smooth bends no less than 1.0 R/D ratio, by using a 75 wide metal saddle with radiused edges supported by rods or bands to the structure.

MOTORISED DAMPERS
Motorised dampers shall be fabricated from extruded aluminium.

Dampers shall be mounted in robust extruded aluminium mounting frames, and shall be capable of operation under any operating conditions without excessive friction or distortion.

Blades shall be of extruded aluminium sections incorporating shaft fixing and rubber top seals.
Shafts shall be 12mm minimum diameter stainless steel.

Bearings shall be accessible, replaceable sintered bronze.

Blade linkages shall ensure even, ganged operation of the blades and shall be to the Customer's Representative approval.

Actuators shall be of the electronic rotary output style adequately sized to drive the connected damper. Where necessary, multiple actuators shall be employed to drive multiple damper sections.

SUPPLY AIR REGISTERS
Supply air registers shall be provided where shown on the drawings and be of plain or curved face to suit the surface mounting. Registers shall be of the double deflection style unless otherwise stated.

Frame shall be of extruded aluminium sections with welded corners for surface mounting.

Blades shall be of aerofoil extruded aluminium section with the two sets at right angles and supported in nylon friction bearings.

Cores shall be removable.

Registers shall be painted in powder coat or epoxy finish to colour samples provided by the Customer's Representative.

OPPOSED BLADE DAMPERS
Provide opposed blade dampers behind supply air registers and exhaust grilles to balance airflow. Dampers shall be of steel construction mounted in a frame with blades linked to a single allen key screw adjustment.

B6.3 PIPEWORK

GENERAL
The drawings show the desired routing of piping within the spaces. Pipe routes have been selected to avoid ducts and the Subcontractor shall ensure that the installation is co-ordinated so that piping does not conflict with other services.

Piping shall be installed to grade to provide drainage and venting and shall be run in a neat and workmanlike manner. Allowance shall be made for expansion and anchoring without overstressing piping.

The proposed layout of piping shall be submitted on shop drawings for approval.

SYSTEMS
Piping materials for the various systems shall be as follows:

REFRIGERANT	-	COPPER
COLD WATER AND AIR CONDITIONER DRAINS	-	COPPER
EVAP.COOLER DRAINS	-	PVC

COPPER PIPING
Copper piping shall be seamless from grade 122A phosphorous deoxidised copper to AS/NZS 1279 and complying with the relevant sections of AS 1432 and AS 1572. Wall thickness shall be type B for pressure duty and type C for vents and drains.

Fittings shall be of the copper capillary type with a smooth uniform bore. Tees may be formed by drilling and opening out the hole to form a saddle, either by manual or machine means.

Unions shall be bronze ground joint type with solder or screw connections.

Soldered joints shall be made with silver solder SBA 115 without flux for copper to copper joints and Harrington P47 for copper to brass joints.

Screwed fittings shall be brass with threads to match that of equipment and specials. Screwed joints shall be coated with a proprietary jointing compound recommended for the temperature of the service.

PVC PIPING
PVC - U drain piping and fittings shall be to AS/NZS 1260 suitable for solvent welding.

Pipework exposed to sunlight shall be UV stabilised drain, waste and vent grade.

REFRIGERANT PIPING
Copper piping shall be seamless from grade 122A phosphorous deoxidised copper to AS/NZS 1279 and complying with the relevant sections of AS/NZS 1571.

Fittings shall be of the copper capillary type of Heldon or equivalent manufacture for refrigeration duty with a smooth

uniform bore. Tees may be formed by drilling and opening out the hole to form a saddle, either by manual or machine means. Diameter reduction in horizontal pipe runs shall be via eccentric reducers - bottom flat.

Refrigerant tubing shall be supplied new and capped. Tubing not sealed will be rejected. Fittings shall be grease free, new and in sealed bags.

JOINTS – REFRIGERANT PIPING
Joints in tubing of 20 diameter and less may be flared compression type to AS D26 and AS/NZS 1677. Otherwise all joints shall be silver soldered in accordance with AS 4041 and AS/NZS 1677.

Soldered joints shall be made with silver solder SBA 115 without flux for copper to copper joints and Harrington P47 for copper to brass joints.

Qualified tradesmen or apprentices under direct supervision of qualified tradesmen shall perform all refrigeration work. Substandard work will be rejected.

Connection to flanged equipment or components shall be by brass flanges of socket weld configuration silver soldered as above.

Flange bolts and nuts shall be cadmium plated steel to AS 2528 with insulating sleeves and washers.

OIL RETURN – REFRIGERANT PIPING
Suction lines shall not be graded upwards in the direction of flow. Lines shall be run truly flat or downward in the direction of flow with vertical risers of adequate velocity, including double risers, to ensure oil return to the compressors.

PRESSURE TESTING - REFRIGERANT PIPING
All refrigerant tubing shall be tested for leakage while isolated from the equipment it connects.
Test pressures shall be as follows:

R410A Systems	3800 kPa
R22 Systems	2300 kPa
R407C Systems	3200 kPa

Test medium shall be dry nitrogen or dry industrial air for a period of 24 hours without pressure loss except for temperature correction.

Leakage shall be detected by soap solution and brush at the joints or by the introduction of some refrigerant into the test gas and the use of a leak detector. Joints found to be defective shall be remade and the test reapplied until satisfactory tightness is achieved.

EVACUATION - REFRIGERANT SYSTEMS
Following pressure testing the piping systems shall be connected to equipment and flushed with dry nitrogen and evacuated to an absolute pressure of 0.2mm hg and valved off. The pressure rise during the 2 hours following evacuation shall not be more than 0.1mm. Leaks shall be corrected before proceeding.

The system shall be flushed with dry nitrogen, compressor oil added, controls connected, dryer elements fitted and the system evacuated again to 0.2mm hg and valved off. Pressure rise during the following 12 hour period shall not exceed 0.1mm hg.

Following successful evacuation the correct charge shall be injected into the system.

The Customer's Representative shall witness tests and evacuation.

PIPING COVERS
Piping covers shall be from GSS to the Engineers approval.

GSS covers shall incorporate a U section fixed to the wall with a removable U shaped cap fitted over and fixed with screws or pop rivets. Covers shall be painted to match the surface to which they are fixed and shall extend right up to the condensing unit.

Any exposed insulated pipe at equipment connections between plant and cover ducts, where covers are impractical, shall be painted with PVC paint to reduce UV effect.

B6.4 INSULATION

GENERAL
Early Fire Hazard Ratings of insulation when tested in accordance with AS/NZS 1530.3 shall not be inferior to:

IGNITABILITY INDEX	0
SPREAD OF FLAME INDEX	0
HEAT EVOLVED INDEX	0
SMOKE DEVELOPED INDEX	3

DUCTWORK
Insulation on heating and cooling systems shall comply with the requirements of AS/ANZ 4859.1.

Thermal performance of insulation on heating and cooling systems for the respective climate zones shall comply with the following in accordance with the BCA, Section J - Specification J 5.2:

Location Of Ductwork & Fittings	Minimum Material *R* –Value In Each Climate Zone		
	1,2,3 & 5	**4, 6 & 7**	**8**
Within Conditioned Space	1.2	1.0	1.6
Exposed To Direct Sunlight	3.0	3.0	3.4
All Other Locations	2.0	2.0	2.4

The above requirements do not apply to: Air registers, diffusers, outlets, grilles and flexible fan connections or ductwork within the last room served by the system.

Insulation shall be bio-soluble glasswool or mineral fibre rigid grade with a perforated sisal facing.
Density shall be not less than 48 kg/m^3. Thermal conductivity shall be not greater than 0.031 W/mK at 20^0C.

Insulation shall be of the following minimum thicknesses to achieve the respective 'R' ratings:

30mm	-	R1.0
50mm	-	R1.6
75mm	-	R2.4

Insulation shall be cut to achieve a tight fit between duct internal surfaces. Cut edges of insulation shall be sprayed with duct adhesive to effectively bond the raw insulation.

Insulation shall be fixed to masonry by plastic star fasteners of 'Hilti In' type or equivalent, with push fit into holes drilled with masonry hammer drills. Fastenings shall be at not less than 600 centres.

Insulation shall be fixed to metal surfaces by weld on pins and plastic speed clips at centres not greater than 400mm.

Insulation shall have acoustic properties equal to or better than Bradford Glasswool 'ULTRATEL' board with 'THERMAFOIL HD' perforated sisal facing.

PIPEWORK
Refrigerant tubing insulation shall be closed cell nitrile rubber formed into a hollow tube section and sized to match the outside diameter of the copper tubing.

Insulation thickness shall be as follows:

Air Conditioning	25mm
Condensate Drains (Northwest)	13mm
Evaporative Cooler Cold Water Supply (frost prone areas)	13mm

Thermal conductivity shall be not greater than 0.0375 W/mK at 24 degrees Celsius.

Water absorption shall not exceed 3% by weight.

Insulation shall be installed over piping before installation. It shall not be cut longitudinally.

Circumferential joints shall be glued with contact adhesive and taped.

Pipe supports shall include wooden blocks. Insulation shall be glued to the wooden blocks and then taped over with 100 wide black reinforced PVC tape.

Insulated pipework exposed to weather shall be metal clad or alternatively run in a metal duct of GSS construction complete with removable weatherproof cover.

B6.5 NOISE AND VIBRATION

Equipment suppliers shall guarantee that sound emissions from the equipment offered shall comply with AS/NZS 2107 and not cause sound levels in excess of 40 dBA with the teaching or other occupied areas and 55dBA within the toilets when the equipment is installed, with the specified design system of ductwork.

Close attention shall be paid to all equipment to minimise noise and vibration and the Contractor shall be responsible for the elimination of any noise or vibration within the system and which in the opinion of the Superintendent is considered excessive.

Contractors having doubt as to their ability to guarantee noise levels with the proposed design shall indicate to the Superintendent any design modifications which they consider necessary to guarantee noise levels together with a price variation for such modifications.

B6.6 PAINTING

GENERAL
All work exposed to view, including ductwork, flues and cowls above roof. All systems shall be identified.

Apply at least one coat of each of primer, undercoat and finishing coat using approved paints suitable for the application.

Paint shall be oil and heat resistant type.

DUCTWORK
All new ductwork where visible shall be painted externally with acid etched metal primer and then with two coats of approved acrylic latex paint of selected colour.

All new welded joints shall be thoroughly cleaned of flux and painted with air drying zinc paint corrosion inhibitor, before painting. All joints shall be painted externally with two coats of approved acrylic latex paint of selected colour.

All inside surfaces of duct and dampers connecting to registers and grilles, where visible, shall be finished with two coats of flat black paint.

Note: any painting of new or existing exposed ductwork (other than touching up surfaces damaged in carrying out this Contract) will be requested in the brief, if not requested painting is not a requirement for this part of the works.

PIPEWORK
Where exposed to view all pipework shall be covered by a purpose made metal cover to suit the installation, it is to be neat in appearance and painted to match existing surrounds all to the satisfaction of the Superintendent.

B6.7 PLANT AND EQUIPMENT

GENERAL
Supply and install plant and equipment as shown on the drawings, as detailed under the section of this specification entitled "scope of work", and as further detailed in this section.

Each item of plant shall be of approved design, make and construction and shall be complete with all accessories and fittings as indicated on the drawings or contained within the specification together with any additional components or accessories necessary for its safe and efficient operation.

Respondents should note that all system resistance figures given in the specification and/or on the drawings are nominal design figures only and should be checked against the specific equipment offered by the Respondent.

Equipment selections nominated in the schedule are for design guidance purposes only. Respondents may offer units of alternative manufacture which comply with the specified requirements and meet the approval of the Customer's Representative and the Consultant.

Where equipment of alternative make is offered, Respondents shall make due allowance in their tender costs for any change in system resistances or acoustics attributable to the alternative selection and which necessitate change to the ancillary equipment and fittings.

EVAPORATIVE AIR COOLER (WET PAD TYPE)
Provide side or top discharge evaporative coolers complying with AS 2913 and the following general performance and construction criteria.

The cabinet shall be manufactured from marine grade or colorbond aluminium or UV resistant thermoplastic and shall be of bolted construction to provide easy access for maintenance. The bolts shall be of inert material or have suitable corrosion protection. Cabinets shall be selected to match the roof sheeting colour (insert colour).

Fans shall be centrifugal type with the fan drum constructed of galvanised steel and acrylic coated. The scroll housing of the fan shall be manufactured from fibreglass or thermo-plastic. The centrifugal fan shall be driven by a V-belt drive. The motor and fan assemblies shall provide infinite variable speed control (1 phase) or a minimum of two fan speeds (3 phase) and be dynamically balanced and correctly aligned. The bearings shall be sealed for life and mounted in rubber and housed in a galvanised self aligning housing. Fan discharge velocity shall not exceed 8 m/s.

The water reservoir shall be of fibreglass or thermoplastic construction and shall be complete with drain, overflow, bleed outlets and level controls.

The pad frames shall be formed from thermoplastic and positively support the pads, which shall be minimum 50mm thick CELdek 5090. The minimum pad saturation efficiency shall be 80% at the unit's specified air quantity. The pad frames shall be provided with quick release fittings but also provision to prevent removal by non-authorised personnel.

The water shall be distributed from a submersible pump through plastic pipes to a manifold, which shall incorporate flow controls.

The unit shall be fitted with a suitable water connection and ball float valve approved by the Water Corporation. Water supply and drainage systems shall comply with AS/NZS 3500. Where units are to be installed in areas that are deemed to have a harsh water supply then a Turboflow or a similar water treatment device equivalent in function, quality, etc to the approval of the Customer's Representative, shall be fitted to the cold water supply to the evaporative cooler.

The evaporative coolers shall be installed on frames as shown on the drawings. Each unit shall be connected to the cold water supply and the overflow drain and bleed valve for draining the system. The drain, bleed and overflow can discharge through the common drain line. The evaporative cooler shall be provided with isolating switches and wired to the appropriate control switch. The control station shall incorporate fan on/off, fan speed select dial, vent/cool (pump) and timer off switches. Provide an engraved label installed above the control station indicating "Ensure a window is open during cooler operation".

Evaporative coolers shall be provided with a normally closed motorised damper, powered to open when the fan is energised and fail shut on power interruption. Provide 2 minute time delay relay on the fan motor bypass, to delay the fan starting, in accordance with manufacturer's recommendations.

Evaporative coolers shall be fitted with a dump valve arrangement to drain the sump when not in use. Incorporate a 60 minute dump delay timer. Dump valve kits shall be Sump Dump manufacture or approved equivalent.

Provide an engraved sign above each system controller stating:
WHEN COOLING MODE IS REQUIRED ENGAGE 2-5 MINUTES PRIOR TO INITIATING FAN MODE. ENSURE

ADEQUATE RELIEF OPENING IS PROVIDED IN ALL ROOMS SERVED WHEN THE SYSTEM IS RUNNING.
Note: Wording of sign to be modified as required to suit actual controllers provided.

The maintenance procedure for Legionella control in accordance with AS/NZS 3666 and maintenance log sheets shall be incorporated within the maintenance manual.

The evaporative coolers shall be supplied with winter covers.

The evaporative coolers shall be Bonaire or a similar product equivalent in function, quality, etc to the approval of the Customer's Representative.

SPLIT TYPE AIR CONDITIONING UNITS
Systems shall be of the split configuration with indoor fan coil unit and remote condensing section mounted on vibration isolation and bolted to wall brackets. Condensing units shall incorporate anti-corrosion treatment to condenser coil.

Units shall be of the inverter heat pump configuration incorporating scroll compressor and be of Daikin manufacture or a similar product equivalent in function, quality, etc to the approval of the Customer's Representative. The indoor fan unit shall have individual control with the controller of the remote wireless type.

Refrigerant piping shall be run from the condensing unit to the mating fan coil unit in the sizes and configuration as recommended by the unit supplier.

The unit supplier shall provide full details and instructions for the correct installation procedures necessary.

Units shall be supplied with proprietary wireless remote controller incorporating start/stop, temperature set point, indoor fan speed, air flow direction, auto/manual mode selection and time clock operation facilities. Units shall also be compatible with wall mounted on/off switches and retain operator settings when turned off. Any necessary additional hardware shall be discretely hidden within the fan coil unit housing.

WALL/WINDOW MOUNTED EXTRACT FANS
Fan shall be constructed from impact resistant moulded plastic and be complete with safety guard and externally mounted draft proof shutters. Draft proof shutters shall not slam open/shut.

Motor shall be complete with thermal overload protection, sealed for life ball bearings and be speed controllable and suitable for 240V single phase supply. Fan shall be supplied with a speed controller.

Proprietary wall tube shall be utilised for mounting in wall.

Fan shall be Fantech Stylvent or a similar product equivalent in function, quality, etc to the approval of the Customer's Representative. Performance shall be as specified.

RANGEHOOD
Hood is to be the product of a reputable manufacturer.

It shall be of equivalent width to the unit it is to replace and be suitable for wall mounting. Exhaust shall be flued through the roof/wall/recirculating (similar to the unit it is to replace) and terminate with a weatherproof outlet to the manufacturer's approval.

Unit shall be complete with cleanable aluminium filter, high/medium/low fan speeds and light on/off switch, all wired for connection to a 240V GPO.

Rangehood shall be Robinhood Grange II or a similar product equivalent in function, quality, etc to the approval of the Customer's Representative – colour to be confirmed.

D6.9 MECHANICAL ELECTRICAL

GENERAL
The Contractor shall supply and install all controls and other instruments required for the correct operation of the air conditioning and mechanical equipment.

Controls shall be electric and electronic of approved manufacture calibrated in °C and when operating shall not cause interference in radio frequencies.

Controls shall be the supply of a single Controls Subcontractor and the installation and commissioning shall be performed by that Subcontractor.

The control descriptions give the functional requirements of the systems and Subcontractors shall allow for all the necessary components to perform the specified functions.

All components shall be complementary to provide an integrated system of controls for the project.
Controls Contractors shall be experienced in the air conditioning section of the industry and shall currently have installation, commissioning and service capacity in Perth.

All electrical work shall be carried out by licensed contractors in accordance with AS 3000 and Authority requirements. Comply with the requirements of Western Power Electrical Requirements Part II, Issue January 1993, in particular Section 16.13 Motor Starting and Table 16.4 Guide to Motor Starting.

EXTENT OF WORK
Electrical work included in this section is generally limited to the disconnection and reconnection of any equipment, control switches and panels and temperature sensors to facilitate the division and transportation of the transportable building.

Upgraded equipment will be wired and controlled to the similar intent of the existing equipment, with the addition of a shut-off damper to evaporative cooling systems not already incorporating one.

Where applicable, the scope for each system is as follows: -
- Power wiring from weatherproof isolator provided adjacent to evaporative cooler, to unit, shut-off damper and manufacturer's standard controller located in space served. Time relays shall be provided to delay the operation of the supply fan until the shut-off damper has opened completely. Water fill solenoid, drain dump solenoid and timer to be wired in to operate as described in equipment section.
- Power wiring from weatherproof isolator provided adjacent to classroom air conditioning condensing unit, to unit, fan coil unit(s) and controller. Programme the proprietary wired controller (BRC1E61) to prevent set point adjustment after commissioning and to start the fan coil units and remain on for a predetermined time, initially set for two hours. Depressing the On switch prior to the preset operating duration shall de-energise the FCU. Alternatively, a labelled latch in toggle switch, with LED run indication, interface cards (for each FCU) and run timer, will operate the FCU's as outlined above. Proprietary infrared controllers shall be used to set conditions and then be locked away in a secure location by the Client. Air conditioning unit controls shall be capable of maintaining operator settings when switched off in this manner.
- Power wiring from weatherproof isolator provided adjacent to Office or Residential air conditioning condensing unit, to unit, fan coil unit/s and controller/s. Operation of systems shall be via the manufacturer's proprietary controllers.
- Final connection and securing of power cords serving rangehoods.
- Final connection of power supplies to any other existing mechanical equipment from isolators provided adjacent.
- Supply of fan speed controllers for wiring by the Contractor's Electrician.

The Contractor's Electrician shall provide: -
- Power supplies terminating with weatherproof isolators adjacent to air conditioning condensing units, evaporative coolers and any other external equipment.
- Provision of GPO's adjacent to rangehoods.
- Power and control wiring of all existing and new exhaust systems, including the wiring of speed controllers supplied by mechanical services subcontractor.

REGULATIONS
Equipment supplied as part of this Contract shall comply with the current regulations and requirements of Western Power and/or Horizon Power and in so far as they may be applied, the relevant SAA Specifications and Codes and other Authorities having jurisdiction.

POWER SUPPLY
The supply system is alternating current, 3 phase, 415/240 volt +or- 6%, 50 hertz, 4 wire men system, as provided by Western or Horizon Power W.A.

ELECTRIC MOTORS
Electric motors shall:
- Continuously rated to meet full load requirements in ambient temperatures up to 45^{o}C.
- Comply with the performance, output and dimensional requirements of AS/NZS 1359.
- Have physical and electrical properties to suit particular locations and duties.
- Have terminal boxes on the side of the motor body.
- Be equipped with bearings of the ball or roller type with 1,000,000 hour service factor.
- Be designed and rated for full load operation with the number of starts per hour which the associated equipment and controls may require.

ELECTRICAL MOTOR STARTING EQUIPMENT
Motor starting equipment shall be, but not limited to:
- DOL up to 4kW or 66A maximum locked rotor current.
- Star Delta 4kW – 11kW.

Every motor in excess of 4kW shall be provided with an adjustable delay timer that will ensure staggered starting of the equipment in the event of power restoration.

Motor starting devices shall satisfy the voltage fluctuation and interference requirements of the Western Power regulation 263.

ELECTRICAL STANDARDS
Equipment forming part of the installation shall comply with the relevant Australian Standards and Codes of practice or, where such do not exist, with IEC Codes.

ISOLATING SWITCHES
Provide local isolating switches to all electric drives.

The isolating switch is to have an adequate number of poles so that active conductors into the unit are isolated.

The isolating switch is to be of high impact resistant plastic construction with provision for conduit entry and shall:

Be capable of carrying continuously 110% the full load current of the motor it is to control.

Be satisfactory for full load current making and breaking.

Have the capacity to carry currents corresponding to:

DOL of locked rotor conditions (6 x full load) for ten seconds. e.g. when switched on contacts to be capable of making and breaking 6 x full load inrush current relays.

B6.9 TESTING, COMMISSIONING AND MAINTENANCE

GENERALLY
This part of the specification outlines the testing and commissioning procedures for the Mechanical Engineering Services in this contract.

Perform all testing, commissioning and balancing of air systems necessary to render the installation fully operational to the satisfaction of the Customer's Representative.

When this Contract requires tests to be made, the Contractor shall give the Customer's Representative seven days' notice in writing of the date on which such tests will be made or such other period of notice as may be reasonable under the circumstances. Unless otherwise agreed the tests shall commence on such date and be carried out in the presence of the Customer's Representative.

The Contractor shall rectify to the satisfaction of the Customer's Representative all defects becoming apparent during the test and carry out adjustments as may be required.

The Contractor shall be responsible for provision of all necessary labour, equipment and instruments for testing. All measuring and recording instruments used for testing shall be calibrated and approved by the Customer's Representative for accuracy prior to use.

AIR SYSTEMS
All ducted supply air and ventilation systems shall be cleaned and checked for debris and foreign matter and balanced where necessary. After balancing, all systems shall be tested under full working conditions to the approval of the Customer's Representative.

All dampers in ducts, after balancing, shall be securely fixed in their final position and shall be clearly marked by a red line on the duct.

On completion of each air handling system and at a time suitable to enable all such work to be completed before the scheduled completion date, the Contractor shall check electrical connections to system fans, start systems fans and check fan air quantities and heads. Balance air quantities in the systems. Fan impeller pitch or fan RPM, as the case may be, shall be adjusted to bring the fan capacity to within +or- 5% of the design quantity at the final operating system resistance. Final operating points shall be indicated in the fans performance curves.

Air quantities at each air outlet shall be adjusted to within +or- 5% of the design quantity.

EQUIPMENT COMMISSIONING
All equipment shall be commissioned to the manufacturer's instructions and if appropriate, with the manufacturer's representative in attendance and to instruct the selected operator in its use.

Controls safety lockouts, overloads and the like shall be verified as being correctly set immediately upon start-up.

The manufacturer or his representative shall ensure that all services to the equipment are connected correctly before start-up and shall make all adjustments and alterations to ensure efficient functioning of the equipment under normal working conditions.

OTHER SERVICES
Any other applicable mechanical services shall be tested and commissioned as directed by the Customer's Representaitve.

NOISE LEVELS
If required, after commissioning of all services, noise level measurements may be taken in rooms as directed by the Customer's Representative. Three tabulated copies of all readings shall be signed and forwarded to the Customer's Representative for acceptance.

OPERATION AND MAINTENANCE MANUAL
Two copies of the operating and maintenance instructions are required. The manual shall be set out and contain the text as follows:
Section Index
General Information Section
Technical Information Section
Service Section (Section for each Service) and Log Sheet (sample page)

Commissioning Results, detailing all measurements of Equipment Data Sheets, Airflows, Running Currents, Pressures and Temperatures, Recordings taken during the commissioning period.

One set of "As Constructed" drawings A1 size for each manual showing the as installed services of ductwork, conditioners,

pipe work, electrical and controls diagrams. Format shall be in accordance with the specific requirements of the client's drawing protocols and archiving procedures. Confirm the specific requirement with the Customer's Representative prior to disc production.

TAKING OVER PROCEDURE

The following is the procedure for accepting the work of this section of the specification, including handing over of manuals and the like:

- All preliminary tests shall be completed as far as possible;
- Prior to practical completion the Contractor shall supply two copies of operating instructions, service manuals, spare parts catalogue, schematic and pipe diagrams (new plant and/or installations only);
- Two sets of as constructed drawings which shall include electrical as constructed drawings (new installations only);
- The selected officer of the establishment shall be instructed in the operation and maintenance of the plant; and
- The Contractor shall finally complete all work and tests as soon as possible and at the convenience of the establishment within the Contract period or such extended time as is granted.

MAINTENANCE

The Contractor shall be responsible for the maintenance of the equipment for a period concurrent with, and for the same period as the Defects Liability and Warranty Periods.

Maintenance shall mean complete maintenance of the installation in all respects and shall be carried out as necessary.

Maintenance visits shall be arranged in conjunction with the officer in charge of the establishment. On completion of an operational maintenance service, a signed report of work done or inspected shall be deposited with the officer in charge.

The Contractor shall repair or make good at his own expense any faults and damage occurring in the operational maintenance period which the Customer's Representative judges to be faulty maintenance on the part of the Contractor.

The maintenance checks to be effected at each relocation shall include the following as minimum requirements:-

Checking and adjusting as necessary all belt tensions, and alignment of all belt devices and couplings. Checking couplings and pulley wear and tightness. Lubricate all bearings.

Check condition of cooling pads and dump-valve for correct operation.

Check water reservoir for cleanliness, clean as required.

Checking all anti-vibration supports for deterioration of rubber or springs, and for freedom of movement of assembly.

Examining all flexible duct connections to fans for correct adjustment and air tightness.

Checking the operation of all air filters and cleaning as necessary.

Checking all heating elements for cleanliness and ensuring that condensate trays and drains are clear and cleaning eliminator plates.

Checking operation of all motorised and fixed dampers. Lubricating all damper bearings and linkages.

Checking equipment casings for leaks and examining fans for damage or deterioration.

Checking and adjusting as necessary all safety controls and valves.

B7. CARPENTRY

B7.1 GENERALLY

STANDARDS
Materials and workmanship shall comply with the current Australian Standards and relevant Building Codes of Australia unless otherwise specified.

MATERIALS
TIMBER
Visible timbers shall be appearance grade.

All timber at floor level and below shall be jarrah or treated for termites and painted where exposed to the weather.

Mouldings and trim shall be long length MDF.

TIMBER STUMPS
Timber stumps shall be 100mm x 100mm jarrah suitably treated for termites, fitted with ant caps and placed on 150mm x 150mm x 25mm jarrah sole plate. Approval from the Customer's Representative is required prior to the use of any other product if the specified stumps are not available. Where stumps extend above ground level by more than 1200mm, suitable 75mm x 38mm diagonal hardwood timber bracing shall be provided in both directions.

DEMOUNTABLE CLASSROOM WALL AND CEILING PANEL SETS
Provide wall and ceiling panels as scheduled in the Project Brief (separate document), constructed as follows:
Wall Panels
50mm thick polyurethane core 'Hardies' sandwich panel with a fully glued 4.5mm Hardiflex skin (no joints) each side and edge framing of 50mm x 25mm *dry* treated pine.

Ceiling Panels
50mm thick polyurethane core 'Hardies or similar sandwich panel white in colour with aluminium "C" section installed down the long edges only of the upper surface of each panel

FASTENINGS
Nails, screws and bolts used in exposed locations and in corrosive situations shall be hot-dip galvanised steel, cadmium plated steel, non ferrous metal or non magnetic stainless steel.

Nails, screws and bolts used in roof framing shall be hot-dip galvanised steel.

Elsewhere, fastenings may be unprotected steel unless otherwise specified.

Fastenings in contact with non ferrous metal components shall be compatible with that material and shall be of a type recommended by the component manufacturer.

Power fastenings shall be suitable for the materials into which the fastenings are to be anchored.

Bolts shall be complete with nuts and washers.

Fastenings for hardware shall match the hardware.

ALUMINIUM TRIM
Aluminium trim shall be extruded aluminium sections with a clear anodised finish or powdercoated to match existing.

DETAILED INSTRUCTIONS
DEMOUNTABLE CLASSROOM FLOOR PANELS & VERANDAH DECKS (FLOOR PANELS SUPPLIED BY OTHERS)
Demountable classroom internal flooring generally consists of 2490mm x 1244mm T+G timber framed panels.

Verandah flooring is generally open boards.

Where sections of internal flooring requires replacement install the same sized purpose built floor panels constructed of 100mm x 30mm galvanised channel sections with joints at 300mm centres. Whole frame to be fully welded.

Replace nominated sections of verandah flooring with 70mm x 18mm hardwood reeded decking screwed to joists.

Refer to Project Brief (separate document) for new floor and ramp panels to be supplied by the Customer.

ACCESS RAMPS
Where nominated in the Project Brief, install an access ramp that is fully compliant with the current Australian Standards (Design for Access & Mobility) constructed from 100mm x 50mm galvanised RHS floor perimeter frame with joists at 300mm centres and 75mm x 38mm galvanised RHS handrail and posts concreted into pads to provide support.

Line surface of ramp with 70mm x 18mm hardwood or treated, reeded decking screwed to joists.
It is the Contractors responsibility to ensure that the installation of the ramp is in compliance with the current Australian Standards (Design for Access and Mobility)

PARTICLEBOARD FLOORING
Particleboard shall be flooring grade Wesbord Aquatite or approved equivalent.

Sand junctions between sheets to a smooth, level surface.

Under flooring supply and install a fibreglass blanket faced on underside with perforated reflective foil laminate, supported on Bradwise or similar galvanised steel safety mesh laid across floor joists forming a sandwich under floor sheeting.

WET AREA FLOORING

Provide and lay in accordance with manufacturers instruction 15mm compressed cement sheet tightly butt jointed over floor joists with trimmer joist to support all edges as may be necessary.

Under flooring supply and install a Fibreglass blanket faced on underside with perforated reflective foil laminate, supported on Bradwise or similar galvanised steel mesh laid across floor joists forming a sandwich under floor sheeting.

B7.2 VERANDAH INFILLS

Where nominated in the Project Brief, enclose a nominated section of the verandah as specified below.

Wall to be of 90mm x 45mm pine timber frame construction with a 6mm Hardie flex or similar wall lining inside and out, exterior walls to have a 6mm ply wood backing installed prior to the installation of the 6mm Hardie Flex (or equivalent) for added security. Wall to be full height (nominal 3m) with a metal door frame and a 2040mm x 820mm flush panel solid core door fully installed with suitable lock. Suitable skirting and cornice installed to ensure a neat appearance. Walls, door and door frame to be fully painted as specified in painting section.

B7.3 ENCLOSE BASE OF BUILDINGS

Where nominated in the Project Brief , enclose base of building from ground level to underside of floor with 9mm compressed sheet supported by a suitable steel frame construction, install approved vents for under floor ventilation and painted to match building external walls.

B7.4 STEPS AND LANDINGS

On most occasions the steps and landings attached to the transportable and demountable building will be relocated with the building.

Where nominated in the Project Brief, supply and install new steps and landing that are fully compliant with current Australia Standards.

B8. ROOFING & STORMWATER

B8.1 GENERALLY

GUARANTEE
For new installations provide the Customer's Representative with a written guarantee signed by the Contractor stating that the roofing and roof plumbing are guaranteed for 2 years from the date of practical completion, against faulty workmanship, materials and associated work such as flashings and the like and covers leaks in the roofing and displacement of roofing where due to faulty workmanship or materials.

Existing roofs are to be checked for leaks and damage during the building relocation process. The Contractor to carry out any repairs to the satisfaction of the Customer's Representative and guarantee the watertightness of the relocated building for a period of 1 year from date of practical completion.

STANDARDS
Materials and workmanship shall comply with the latest edition of the following Australian Standards unless otherwise specified:

AS.1562	Design And Installation Of Metal Roofing
AS.2179	Metal Rainwater Goods
AS.2180	Code Of Practice For The Selection And Installation Of Metal Rainwater Goods

B8.2 MATERIALS

DISSIMILAR METALS
Isolate dissimilar metals.

FASTENINGS
Unless otherwise specified, threaded fasteners for roof cladding shall be electro-zinc plated yellow chromate treated steel. Other fastenings shall be non ferrous metal, cadmium plated steel or galvanised steel.

Fasteners for fixing colour pre-finished roofing sheets, flashings and accessories shall have baked enamel pre-finished heads or spurway cooke colorfix nylon heads or similar, coloured to match material being fixed.

B8.3 WORKMANSHIP

SHEET METAL ITEMS

GENERALLY
Machine form and shop fabricate sheet metal roofing accessories wherever possible.

Make up gutters, downpipes and flashings in the longest practicable lengths.

Large build-ups of silicone sealer will not be acceptable.

Jointing zincalume steel sheet.

Apply silicone rubber sealer recommended by the sheet manufacturer in a continuous line to the metal to be lapped, lap 20mm and fasten with blind pop rivets at 50mm maximum spacings.

B8.4 INSULATION (EXCEPT DEMOUNTABLE CLASSROOMS)

Insulate the hole of the roof except the eaves overhangs, roof above spaces not fully enclosed, roof lights and ventilation openings.

Insulation shall be resin bonded fibreglass blankets having a moisture absorption capacity of not more than 0.2% by volume.

For steel roof areas having non-acoustic ceilings on rake fibreglass shall have a thermal resistance of R1.8 and shall be faced on underside with Renfoil 201, Sisalation 436 or Thermofoil 731 reflective foil laminate.

B8.5 STEEL ROOFING

ROOFING SHEETS (NEW)
Transportable buildings, cover the roof with Trimdek Hi-Ten or equal roofing sheets approved by the Customer's Representative.

Demountable classrooms, cover the roof with Span-deck or equal roofing sheets approved by the Customer's Representative.

Sheets shall be formed from AZ150 zincalume coated steel sheet having a total coated thickness of 0.47mm.

Sheets shall be identified continuously along the lap edge that is covered with the following information:

Base metal thickness

Total coated thickness

Coating mass

Relevant Australian Standard

This identification shall be fully covered within the side lap.

Use single length sheets where practicable, where necessary end laps shall be 150mm minimum.
Sheets shall project a minimum of 50mm into gutters.

FIXING ROOFING SHEETS
Fix sheets to purlins using fasteners specified in the following table:

PURLIN MATERIAL – SCREW SIZE AND TYPE

Roofing Sheeting	Steel Up To 5mm Thick	Steel Up To 6.4mm Thick	Steel Up To 10mm Thick	Timber
Trimdeck Hi Ten / Span-deck or equal approved	No 12 x 55mm self drill	No 14 x 55mm self drill	No 14 x 65mm type 17 self tap	No 14 x 65mm type 17

Screws shall have hexagon washer heads and EPDM sealing washers.

Locate fasteners in every rib at supports.

ROOF CAPPINGS
Material
Form cappings from AZ150 zincalume coated steel sheet having a total coated thickness of 0.55m.

Form capping from AZ150 zincalume coated steel sheet having a total zincalume coated thickness of 0.55mm and finished with colourbond on the exposed side with grey coourbond on the concealed side.

RIDGE CAPPING
Cover ridges with plain capping formed from 450mm wide sheet. Notch capping out for ribs and turn down into trays.

Colour of ridge capping shall match roofing.

BARGE CAPPING
Finish barges with capping profiles as shown on drawings or to match existing.

Notch fascia capping out for ribs and turn down into trays. Leave short projecting lugs at alternate ribs and pop rivet and seal lugs to ribs.

Dress barge capping down into roof sheet trays to cover 2 ribs.

Fasten face of capping to supports with hexagon washer head self drilling screws having EPDM sealing washers.

Colour of barge capping shall match roofing.

B8.6 FLASHINGS

Provide flashings necessary for the watertightness of the roof and in accordance with the following schedule.

Roof Cladding	Type of Flashing	Jointing Methods	Fastening Method
Steel	0.55mm thick steel Zincalume coated (cover flashings)	Rivets and sealants	Screws and sealants

Sealant used with flashings shall be recommended by the roof sheet manufacturer.

Design and shape flashings to suit roof falls and to accommodate movement in roofing.

Flashings for pipe penetrations shall be Deck-Tights or similar approved. Dress, screw and seal Deck-Tights to suit profile of roofing to ensure complete watertightness of the roof.

B8.7 GUTTERS AND DOWNPIPES

FABRICATION
Assemble gutters and downpipes in the longest practicable lengths.

Gutters to have a suitable outlet installed to accommodate metal or UPVC downpipes.

Join gutters and downpipes to ensure no leaks and they can be replaced with ease.

EAVES GUTTERS
Provide eaves gutters in accordance with the following and as detailed on drawings.

Gutter Profile	Base Steel Thickness	Protective Coating
Squareline or Sheerline or Klipline	0.6mm 0.55mm	Colorbond over AZ150 or Zincalume

Eaves gutters shall have, stop ends and downpipe outlets on underside or end depending on location of the downpipe.

Fix gutters to fascia and/or roof sheeting with galvanised steel straps clipped to gutter and fascia at 900mm maximum spacings or to roofing with galvanised steel straps slipped to gutter and riveted and sealed to crest corrugation of roof sheeting as recommended by the roof sheet manufacturer at 900mm maximum spacing.

DOWNPIPES (TRANSPORTABLES)
Machine form downpipes from 0.55mm thick AZ150 zincalume or colorbond finish to match existing including shoe.

Downpipes shall be 100 x 50mm rectangular.

Longitudinal seams in downpipes shall be interlocking and shall face walls or columns to which the downpipes are fixed.

Fix downpipes with galvanised steel clips evenly spaced not exceeding 1500mm apart, finish to match existing.

Screw clips to wall sheeting.

Fit UPVC or galvanised steel wire leaf guard to downpipe outlets in gutters.

DOWNPIPES (DEMOUNTABLE CLASSROOMS)
Form downpipes from 90mm UPVC stormwater pipe including shoe, painted to match existing surfaces.

Fix downpipes with galvanised steel clips evenly spaced not exceeding 1500mm apart, finish to match existing.

Screw clips to corner steel sections.

Fit UPVC or galvanised steel wire leaf guard to downpipe outlets in gutters.

B8.8 STORMWATER MANAGEMENT

Stormwater from each building to be managed on site by connecting into an existing system or the installation of 600mm x 600mm PVC soakwell connected to each downpipe outlet.

Depending on ground conditions stormwater may be discharged at ground level however the Contractor must ensure this method does not cause any flooding or erosion to the site.

Details of the required management option will be contained in the Project Brief, or as discussed on site.

B9. STRUCTURAL STEELWORK

B9.1 GENERALLY

STANDARDS
Materials and workmanship shall comply with the current edition of the following Australian Standards unless otherwise specified:

AS.4100	SAA Steel Structures Code
AS/NZS.4600	Cold-Formed Steel Structures Code
AS/NZS.1163	Cold Formed Structural Steel hollows sections
AS.1554.1	SAA Structural Steel Welding Code
AS.1111	Isometric Hexagon Commercial Bolts and Screws
AS.1112	Isometric Hexagon Nuts, including Thin Nuts, Slotted Nuts and Castle Nuts
AS.1252	General Grade High-Strength Steel Bolts with Associated Nuts and Washers for Structural Engineering
AS.1627	Code of Practice for Preparation and Pre-treatment of Metal Surfaces Prior to Protective Coating. (Parts 1 to 10)
AS.1214	Hot-Dip Galvanised Coatings on Threaded Fasteners.
AS.3679.2	Structural Steel-Welded Sections.
AS.3679.1	Structural Steel-Hot Rolled Bars and Sections.
AS.3678	Structural Steel-Hot Rolled Plates, Floor Plates and Slabs.
AS/NZS.3750.15	Paints for Steel Structures – Inorganic Zinc Silicate Paint.
AS/NZS.3750.9	Paints for Steel Structures-Organic Zinc Rich Primer.
AS/NZS.3750.16	Paints for Steel Structures-Waterborne Primer and Paint for Galvanised, Zinc/Aluminium Alloy-Weld and Zinc Primed Steel.

INSPECTION BY THE CUSTOMER'S REPRESENTATIVE
Give 5 working days notice to the Customer's Representative prior to commencing work so that he may arrange inspections of the structural frame during construction.

Give 2 working days notice to the Customer's Representative so that he may inspect the completed structural frame before cladding is fixed.

The Customer's Representative shall have access, at reasonable times, to the shop where fabrication of structural steelwork is carried out.

B9.2 FABRICATION

GENERAL
Provide the Customer's Representative with a copy of the manufactures shop drawings prior to commencing fabrication.

If required ensure fabrication and erection meet requirements for installation in cyclonic regions.

Check dimensions on site before commencing fabrication.

Fabricate steel beams with natural camber up.

Welding of short lengths to make up required member lengths will be permitted provided the member has only 1 welded join. Weld shall be capable of transferring the full member strength.

Seal ends of hollow sections by welding 3mm minimum thick steel plate.

ASSEMBLY
Cut edges of members free from gouges and burrs.

Accurately fit meeting faces together before bolting or welding.

Cut tubes to fit the shape of associated members. Do not shear tubes.

Assemble members in such a manner that they are free from distortion and damage and to maintain specified chambers.

Do not field weld without the approval of the Customer's Representative.

PUNCHING AND BORING
Do not form holes in steelwork in addition to those shown on drawings, without approval.

Unless otherwise specified, form holes for bolts 2mm larger in diameter than the bolt size.

Do not flame-cut holes.

WELDING
Unless otherwise specified or shown on drawings welds should develop the full strength of the members joined. Minimum weld shall be a 6mm fillet weld.

BOLTING
Unless otherwise specified bolts shall be metric hexagon commercial bolts.

Unless otherwise specified or shown on drawings bolted connections shall develop the full strength of the members joined.

Provide washers under nuts. Provide taper washers where necessary to give uniform bearing.

Do not use slotted holes without approval.

GRINDING
Grind off flush, exposed butt welds.

FIXINGS
Drill holes and shop fix cleats, lugs, ties and other fixings before applying protective coatings.

Shop form holes unless otherwise approved.

MARKING
Distinctly mark members with identification to aid accurate erection.

Match mark in the shop all field connections.

Provide clear and adequate levelling out and centre marks on columns to enable them to be easily plumbed in 2 directions at right angles to each other and level accurately.

B9.3 PROTECTIVE TREATMENTS

GALVANISED COATING
SYSTEM:
Items specified to be galvanised shall, after fabrication, be galvanised.

LOCATION:
Bolts, nuts and washers shall be galvanised.

EPOXY COATING
SYSTEM:
Areas specified to be coated with epoxy paint shall be given 2 coats of Dulux “Amerlock 400” or equal approved Epoxy paint, having a minimum total dry film thickness of 250 micrometres.

To external side and underside of all perimeter steel floor whether galvanised or coated with inorganic zinc silicate paint shall be coated with epoxy paint, unless such portions of steelwork are encased with at least 75mm of concrete.

LOCATION:
After erection, apply 2 coats of epoxy paint to metal stumps, nuts and washers used on portions of steelwork coated with Epoxy paint. Lap coating 25mm beyond bolt washers.

COLD FORMED SECTIONS
Cold formed sections in locations specified to be coated with inorganic zinc silicate paint, may be rolled from galvanised steel strip in accordance with AS.1397.

Form sections thinner than 2.5mm from galvanised steel strip.

DAMAGED COATINGS
Remove welding slag, scale, rust and grease from damaged coating areas.

Apply a coat of zinc rich organic priming paint to damaged areas of galvanised and inorganic zinc silicate paint coatings.

Apply a coat of epoxy paint to damaged areas of Epoxy paint coatings including an area 25mm beyond damage.

B9.4 HANDLING AND ERECTION

GENERAL
Stack and protect steelwork to avoid damage during transport and water penetration into pockets and seams.

Do not erect damaged steelwork except after making goods as directed by the Customer’s Representative.

Erect steel beams with natural camber up.

Provide temporary bracings to support steelwork. When other sections of work are built up, remove braces and make good to surfaces.

Immediately on completion of erection, check bolts, nuts, washers and connections to ensure correct positions and that connections are fully tight.

PURLINS
Ensure purlins, bracing, tie rods and other items associated with purlins are securely fixed true and straight before insulation, support mesh and roof covering is fixed.

Unless otherwise shown on drawings, hanging straps, rods and bracing for supporting items suspended from cold formed purlins shall be attached to webs of purlins. Do not attach to bottom flange.

Do not support mechanical plant or ducting on/from cold formed purlins until roof sheeting is fixed to purlins.

Purlins other than BHP and Stramit Industries are to be submitted for approval.

B9.5 COLD FORM STEEL FRAMING

All sections shall be manufactured from continuously galvanised steel confirming to AS.1397.

Materials shall conform with the following:

SECTIONS	NOMINAL MASS OR GALVANISED COATING	MINIMUM YIELD (MPA)
C = Z Purlins = Girts	350	450
Wall Framing	200	300
Floor Framing	200	450
Other	300	250

All structural components shall be prefabricated into frames in the shop.

Structural components shall be cut accurately to size so that they fit firmly and squarely against abutting members and shall be held firmly in position until securely fastened.

Diagonal strap bracing to frames shall be taut and straight.

Only those splices in members as detailed on the drawings shall be permitted.

The preferred method of welding is by the metal inert gas technique (MIG). Carbon arc welding may be used. Welding to conform with AS.4600.

All welds shall be cleaned and touched up with a approved zinc rich paint.

Lifting, loading and transportation or prefabricated frames shall be accomplished without local damage to frames.

Connections between prefabricated frames shall be as shown on the drawings.

Holes for services shall not exceed 25mm diameter and shall be drilled or punched centrally in the web of sections. No other holing or notching or other weakening of sections shall be permitted without the written approval of the Customer's Representative.

Provide steel noggins where required for fixing of all fixed furniture to steel wall framing.

Permanent earthing of complete steel frames is essential and shall be carried out in accordance with the regulations of the local electricity authority. In addition, when power tools are to be used steel framing should be earthed temporarily as soon as possible during erection.

Service pipes shall be effectively separated from steel framing by laggings or similar material.

On completion of framing all debris shall be removed from cavities on members.

B10. JOINERY AND CABINETWORK

B10.1 GENERALLY

STANDARDS
Materials and workmanship shall comply with the following Australian Standards unless otherwise specified.

AS.034	Lining From Western Australian Hardwoods
AS.036	Timber Used In The Manufacture Of Joinery In Western Australia
AS.038	Mouldings From Western Australian Hardwoods
AS.2270	Plywood And Blockboard For Interior Use
AS.2271	Plywood And Blockboard For Exterior Use
AS.1859	Reconstituted wood-based panels
AS/NZS 2924	High pressure Decorative Laminates – Sheets made from resin

TIMBER SIZES
The finished size of timber as ex nominal size shall be the size normally supplied by the trade.

DIMENSIONS
Check on site dimensions for joinery and cabinetwork.

Obtain directions from the Customer's Representative in the event of discrepancy between any drawings issued, the brief and site measurements.

B10.2 MATERIALS

TIMBER
Timber specified to be clear finished shall be select grade having a uniform colour and figure.

Timber specified to be finished with pigmented paint shall be standard grade.

Use jarrah, WA blackbutt or wandoo, finger jointed or in long lengths, for mouldings specified to be finished with pigmented paint.

Use jarrah, in long lengths for mouldings specified to be clear finished.

Use seasoned jarrah or meranti for cabinetwork frames.

Use seasoned jarrah for tradesmen's work benches.

MOISTURE CONTENT
Timbers shall have a moisture content of:

- between 15% and 17% for joinery;
- 12% maximum for cabinetwork.

LAMINATED PLASTIC
Laminated plastic shall be 1.2mm thick for horizontal surfaces and 0.8mm thick for vertical surfaces.

Laminated plastic shall be free of stains and other blemishes.

Fix laminated plastic with contact or latex based adhesive.

Colour to contrast with existing surroundings or as discussed.

MELAMINE SURFACES PARTICLEBOARD
Melamine surface particleboard shall be wesbord cordillera having a melamine surface moulded to both faces.

PARTICLEBOARD
Particleboard shall be standard grade plain wesbord.

Unless otherwise specified or shown on drawings.

FASTENINGS
Fastenings exposed to weather or in contact with mortar, water paints or other corrosive situations shall be non ferrous metal, non magnetic stainless steel or galvanised steel.

Fastenings to hardware shall match the hardware.

Fastenings to aluminium shall be non magnetic stainless steel or aluminium alloy.

PLYWOODS
Bond for exterior use plywood shall be type A.

Bond for interior use plywood shall be type B.

Plywood shall be paint grade.

TIMBER MOULDINGS - SKIRTINGS AND CORNICE
If required, provide 60 x 19mm MDF skirtings to all walls of classrooms suitable for paint finish.

From time to time other mouldings may be requested to suit a particular need, these may be detailed in the brief or discussed on site.

B10.3 DOORS

GENERAL
A new door will be fitted when the existing door is replaced due to weather and or vandal damage or fair wear and tear. The replacement door will be on a like for like basis including glazing if any.

Replacement of the door(s) will be detailed in the brief.

DOOR SIZES
Internal door leave(s) shall suit the steel door frame. Nominal 2040 x 820 x 35 (hollow core).

External door leave(s) shall suit the aluminium door frame. Nominal 2040 x 900 x 40 (solid core).

External sliding door (demountable classroom). Nominal 2050 x 1030 x 40 (solid core).

Allow 2mm clearance at tops of doors.

Fit door seal to bottoms of external doors if required.

Doors without seals shall have 6mm clearance between door and finished floor surface.

FLUSH DOORS GENERALLY
The width of stiles and rails shall be increased above the standard as necessary for sliding door grooves, door closers and the like.

Additional frame members where necessary shall be provided to take fastenings of hardware such as push and kick plates, or to frame openings for panels.

Rebates, if required on edges of doors, shall be sunk into solid matching 19mm thick edge strips.

Pin and bond 10mm thick hardwood edge strips to stiles of all doors.

Door thickness shall be:
35mm to internal doors
40mm to external doors

CELLULAR PAPER INFILL FLUSH DOORS
Internal doors shall be cellular paper infill flush doors.

Stiles and rails shall be solid timber not less than 32mm wide.

The infill shall be suitably vented cullular kraft paper drawing a cell size of not more than 32mm.

SOLID CORE FLUSH DOORS
External doors shall be solid core flush doors.

Frames shall be solid timber not less than 40mm wide for stiles and doubled to form top and bottom rails not less than 84mm wide.

The infill shall be standard grade particle board fitted close to the timber frame and for full thickness of frame.

External double doors shall be rebated, of solid core construction and a minimum thickness of 40mm with hardware fitted as specified in the Hardware Section.

DOOR FACINGS
Internal door facings shall be pre-prime coated 3mm thick standard hardboard.

External door facings shall be 4mm thick paint grade exterior use plywood as specified in “plywoods”.

B10.4 PIN UP BOARDS (CANEITE)

Fabricate pin-up board with selected colour 275g/sq metre melded fibre blend of nylon and polyester (frontrunner pacific range or equal approved) fully adhered with water resistant PVA adhesive to 13mm thick ivory finished caneite, with 3.2mm particleboard back.

Fix aluminium edge trim as detailed.

New pin up boards are to be 1700 x 1200 as standard, however from time to time other sizes may be required to suit a particular need. Details will be included in the brief.

B10.5 CHALKBOARD / WHITEBOARDS

Chalkboard facing shall be chalkrite, timsonplate, or equal approved.

Whiteboard facing shall be 0.43mm thick M.S. sheet with vitreous porcelain enamel finish.

Construct new chalkboard as detailed on drawings and or included in the brief.

B10.6 BENCHING, SHELVING AND CUPBOARD WORK

If required, fabricate all new joinery as indicated on drawings and as detailed in the brief.

Standard wall mounted shelving is a set of five 19mm melamine faced particleboard (white) with timber edging, 2300 long x 300wide supported on a heavy duty Reprac (or similar) shelving system.

Any repair work to existing to be carried out on like for like basis.

All cabinet work to be first class quality.

B10.7 TOILET PARTITIONS

If required , details will be described in the brief or replace on a like for like basis.

B11. HARDWARE

B11.1 GENERALLY

Items specified in other sections:
Hinges and other hardware to aluminium framed doors and windows: metalwork section.

TESTING
Test moving parts in hardware. Ensure that locks, latches and other operative hardware are in working condition.

FINISHES
Unless otherwise specified, metal exposed to view shall be satin chrome plated.

Finish to exposed fasteners shall match the finish on the metal fastened.

KEYS AND LABELS
The Customer will endeavour to secure keys of the building to be removed for issue to the Contractor. Cases where keys are not available the Contractor is to liaise with occupier and arrange the installation of a replacement cylinder or padlock prior to the removal of the building. These replacement cylinders and padlocks will be used to gain access for the Contractor to the building for the purpose of relocation and also for use by the occupier at the new site.

Lock cylinders and padlocks removed are to be returned to the occupier for use by others.
Supply 4 keys for each individually keyed lock.

Unless otherwise advised the storeroom in standard transportable classrooms will be keyed to 42886 system. (supply extra keys only when requested)

Neatly label each set of keys to identify the building type and tag number.

Labels shall be approximately 40 x 20 mm enclosed in plastic tags fixed to keys with split rings.

POSITIONING
Where not specified or detailed, obtain instructions from the Customer's Representative for positioning of hardware.

B11.2 DOOR HARDWARE

HINGES
Hang hinged doors after application of first coat specified in paintwork section.

Doors in aluminium frames shall be hung on 3 stainless steel 100mm butt hinges secured with "rivnut".

Interfold type hinges are not acceptable.

Hinges to external doors shall have fixed pins for doors opening out and loose pins for doors opening in.

DOOR LOCKS
Locks for external door shall be Lockwood 35yz deadlocked or equal approved with Lockwood 1090/1096 furniture set.

Locks for storeroom doors shall be Lockwood 3572 vestibule lock or equal approved with Lockwood 1090/1096 furniture set.

FULL SIZE DOORS TO TOILET AREA (PRE PRIMARY ONLY)
Shall each be fitted with an EFCO or Lockwood CP hold open door closer, CP Stanco 136 pull handle with backing plate and CP push plate Stanco 259 or similar. Additionally, the Staff Toilet Door shall be fitted with an EFCO indicator latch set and door bumper.

DOOR CLOSER
When requested by the Customer's Representative each external hinged door of each unit, shall have a Lockwood 414 or similar series door closer installed.

Door closers shall have hold open facilities.

DOOR SEAL
When requested, fit to each external door a Raven RP31/29 (or equivalent) door seal assembly fixed in accordance with manufacturers instruction.

DOOR STOPS
Screw fix rubber door stops to floor where doors open against walls or furniture.

BARREL BOLTS
Provide Stanco 200mm barrel bolts (or equivalent) to top and bottom of inactive leaf of external double doors.

PARTITION SETS
Toilet partition doors shall be fitted with the following EFCO or equal approved hardware.

Hinges:	2 EFCO catalogue no. 555 hold open stainless steel spring hinges per door.
Bolt:	EFCO no. 547
Indicator:	EFCO no. 548

Staple and Bumper:	Use and EFCO staple and bumper or combined staple and bumper suitable for the application for which they are required.
Combined Bumper And Coat Hook:	EFCO no. 432

B11.3 SIGNAGE

GENERAL
When requested in the brief or by the Customer's Representative, supply and install the following:

Plastic signs shall be aluminium lettering service or equal approved extruded aluminium sign holders screw fixed to background and with laminated engraving stock adhesive fixed to holder.

ROOM NAME SIGNS
Room name signs shall be type 35mm high clear anodised aluminium sign holders with gravoply No.22 or equal approved engraving stock.

Lettering shall be 12mm high upper case helvetica medium.

EXIT SIGN (PRE-PRIMARY ONLY)
When required provide and install an approved exit sign over the rear doors of the unit fixed to the internal wall lining.

B11.4 HARDWARE FOR CABINETWORK
Supply and fix hardware for cabinetwork in accordance with the following schedule:

Hinges: Concealed or self closing hinge: Weldon 409, Warlan or equal approved flush overlay type. Hang doors not exceeding 1200mm high on 2 hinges. Hang doors exceeding 1200mm high on 3 hinges.

Catches:	Magnetic type approved by the Customer's Representative. Fit one catch to doors not exceeding 1200mm high. Fit 2 catches to doors exceeding 1200mm high.
Handles:	100mm D-type to doors of drawers.
Locks:	Lockwood 600/578 AEG or equivalent.

B11.5 HAT AND COAT HOOKS

MISCELLANEOUS HARDWARE
Hat and Coat Hooks: Provide and fix 25 number "PWD Heavy Duty Aluminium" combined hat and coat hooks installed on a 200mm x 19mm hardwood rail.

PAPER DISPENSERS

TOILET PAPER DISPENSER
When required the toilet paper dispenser shall be Bowscott 00030 polished chromium plated zinc diecast restricted feed or equal approved. Fix to wall adjacent to pedestal pan 800mm above floor.

PAPER TOWEL DISPENSER
When required the paper towel dispenser shall be Bowscott 056.0011 or Kleenex 4941 baked enamel steel or equal approved roll towel dispenser fitted to the wall with top 1350mm above floor.

B11.6 FIRE BLANKET
When required provide and install a fire blanket adjacent to each stove all as per FESA requirements.

B12. METALWORK

B12.1 GENERALLY

STANDARDS
Materials and workmanship shall comply with the following Australian Standards unless otherwise specified:

AS.1074	Steel Tubes and Tubulars Threaded Or Suitable For Threading With Piping Threads Of Whitworth Form.
AS/NZS.1163	Cold formed structural steel hollow sections.
AS.1450	Circular And Non-Circular Carbon Steel Tubes For Mechanical And General Engineering Purposes.
AS.4854	Welding consumables – covered electrodes for manual metal arc welding of stainless steel and heat-resisting steels – classification.
AS.1554	SAA Code For Welding In Building
AS.1627	Code Of Practice For Preparation And Pre-treatment Of Metal Surfaces Prior To Protective Coating.
AS.1214	Hot-Dip Galvanised Coatings On Threaded Fasteners.
AS/NZS.3750	Paints for steel structures
AS.1231	Anodic Oxidation Coatings On Aluminium For Architectural Applications.
AS.2047	Aluminium Windows for Buildings.
AS.5039	Security screen-doors and security grills.
AS.5040	Installation of security screen-doors and window grills.

B12.2 FABRICATION

GENERAL
Accurately manufacture and assemble metalwork free from warps, hammer marks, burrs, distortion and other imperfections.

Fill joints as necessary and polish to a surface to match surrounding metal.

Seal the visible ends of steel tubing.

DISSIMILAR METALS
Isolate dissimilar metals with durable non absorptive tapes, gaskets or 2 coats of tar epoxy paint to a minimum dry film thickness of 400 micrometres.

Isolate plain and anodised aluminium from concrete, mortar and plaster, avoid drainage of water from non-compatible metals on to plain and anodised aluminium.

WELDING
Unless site assembly or other factors require use of screws and bolts, weld or braze members together.

Welds on metalwork specified to be galvanised shall be full seal welds.

Welded and brazed joints of natural finished metals shall be free from weld, braze and heat blemishes.

JOINING ALUMINIUM
Assemble anodised aluminium members with aluminium alloy or stainless steel screws, nuts, bolts, washers and rivets concealed where possible. Concealed fasteners only may be galvanised steel.

B12.3 PROTECTIVE TREATMENTS

GALVANISED COATING
System:
Items specified to be galvanised shall be after fabrication.

LOCATION:
The following item shall be galvanised coated:
Steel nuts, bolts and washers
Steel brackets and cleats
Landing Supports
Balustrade
Stumps & bracing

EPOXY POWDER COATING
SYSTEM:
Steel specified to be epoxy power coated shall be free of rust, cleaned, under coated, electrostatically coated with epoxy powder and stoved in accordance with the manufacturer's recommendations.
The finished coating shall have a minimum film thickness of 130 micrometres.
Coating colour refer Finishing Schedule.

LOCATION:
The following items shall be epoxy powder coated:
Aluminium windows
Aluminium door frames (external frames only)
Aluminium insect screen frames
Aluminium trim
Aluminium cyclonic screens

B12.4 ALUMINIUM WINDOWS, DOOR FRAMES, CYCLONIC SCREENS AND DOORS – METALWORK

CONTROL SAMPLES
Before commencing production of any new items make available to the Customer's Representative a sample of each type of window, door, frames and screens. The samples to be a corner section of each frame showing the connection method and sealant.

Each approved window and door shall be accompanied with the testing authority certificates of approval.

These windows and doors will be used as control samples (except that tests for anodic coating thickness will be taken throughout production) and will make available to the Contractor towards completion of the Contract in order that they may be incorporated in the works.

TESTING GENERALLY
When requested by the Customer's Representative arrange and meet charges for the performance requirements and tests specified of a representative samples of each type of window and door, which shall be carried out by an approved testing authority.

Should any unit delivered to the site be suspect and tests are required of it, the test costs shall be borne by the Contractor.

TESTS
Arrange for the following tests to be carried out.

DEFLECTION TEST
Both positive and negative deflection factors shall be not greater than:
- Span/180 for units in buildings less than 10 metres high.
- Span/240 for uniTs in buildings greater than 10 metres high.

AIR INFILTRATION TESTS
Air infiltration shall not exceed:
- 5 litres/sec metre square for units in non air conditioned buildings.
- 1 litres/sec metre square for units in air conditioned buildings.

WATER PENETRATION TEST
No water shall penetrate beyond the interior face of the frame under the following test pressures:
- 150 pascals for units in buildings less than 10 metres high.
- 20% of the design pressure subject to a minimum test pressure of 150pa and a maximum test pressure of 300 pascals for units in buildings greater than 10 metres high.

OPERATING FORCE TEST
Proof testing
The above tests shall be in accordance with the requirements of AS.2047.

Anodic Coating Tests comprising:
- Anodic film thickness by micro section (this being a referee test, will not normally be required except in the case of dispute over eddy-current method test results).
- Sealing efficiency test.

These tests shall be in accordance with the requirements of AS.1231.

MARKING
Each window and door shall have the following information permanently stamped or indelibly marked on the frame in 3mm high letters:
(1) the manufacturers identification mark.
(2) the window rating.

Marking shall be so positioned that the unit can be identified when installed.

PERFORMANCE
Performance of windows and doors shall comply with the requirements of AS.2047.

RATING
Windows shall have a weight rating of N5 (service ability design wind pressure 2.2 kPa).

FABRICATION
Fabricate windows and external door frames from extruded aluminium sections, free from distortion and blemish, true to shape and of sizes sufficient to meet the performance requirements specified.

No part of any section of window frames shall be less than 1.6mm thick.

Joints shall be positive, mechanical or welded, without any effect that will detract from the appearance of finished surfaces. Cutting edges of members shall be matched true and even to produce a hairline joint within the allowable extrusion tolerances.

The use of exposed assembly screws shall be kept to a minimum.

The finished units after assembly shall be true to size and shape and free from distortion or imperfections.

Frames shall be designed to allow neat and positive reception of abutting building finishes as shown.
Design of frame sections shall be such as to accommodate aluminium insect screens.

HARDWARE
Provide hardware as necessary to operate, close and lock windows and doors.

Hardware shall be first quality of approved design and shall satisfactorily perform the functions for which it is intended.

Materials for hardware shall be corrosion resistant and compatible with aluminium.

Securely attach hardware with non corrosive fasteners.

Hardware that is concealed shall have provision for maintenance and replacement.

No window or door shall be operable or removable from the outside when in a locked position.

Metal thread or pk screw fixing is not acceptable unless wall of member to which fixing is made is backplated with 6mm thick aluminium extending 25mm beyond extreme holes. Secure plate to frame with rivnut or equal fixing.

Unless otherwise specified or requested in the brief, fit each hinged door with 3 stainless steel 100mm butt hinges. Hinges to external door openings out shall have fixed pins. Hinges to external doors opening in shall have loose pins. Interfold type hinges are not acceptable.

Fixing position for hardware to members shall be back plated with 6mm thick aluminium extending 25mm beyond extreme holes.

Allow for door locks and keys to be stamped with symbol or number nominated.

Refer to hardware section for description of door hardware.

GLAZING BEADS
Glazing beads shall be of sections adequate to maintain sufficient even pressure between fixings. Snap or beads will be accepted provided they snap on over a continuous extruded lug.

CAULKING
Caulking compounds shall be compatible with materials they contact and be capable of adhering to contacting surfaces throughout a temperature range of between –20 deg.C and 80 deg. C and a humidity range of 5% to 100%.

Caulking where necessary shall be approved first quality non setting butyl based caulking compound of colour to match anodising, applied with a gun.

The compound shall maintain adherence over a temperature range of –18 deg. C to 80 deg. C and relative humidity range of 5% and 100% and shall be specifically manufactured for use with aluminium components.

FLASHINGS
Unless otherwise shown or specified flashings shall be in continuous lengths, 0.6mm aluminium or 0.7mm zinc sheet machine formed wherever possible.

TIMBER DOORS
Aluminium frames for timber doors shall be slotted and back plated for fixing hinges, locks and door closers and other hardware as specified or scheduled.

B12.5 INSECT SCREENS

Provide and fix insect screens to operable and fixed open windows.

Fabricate screens from Comalco E114 extruded aluminium sections or equal sections approved by the Customer's Representative.

Fit screens with 18 x 14 fibreglass insect mesh attached to frame with a neat removable bead.

Secure insect screens to window frames with self tapping stainless steel screws spaced not more than 300mm apart.

B12.6 STEEL WALL FRAMING

Frame up walls as shown on structural engineers drawing studs, plates, noggings and bracing formed from AZ150 zincalume coated steel having a total coated thickness of 1.2mm.

Holes for electrical services shall be 25mm maximum diam fit grommets or bushes to holes.
Holes for plumbing shall be either 25mm maximum diam plain holes or 33mm maximum diam flanged hole with 5mm minimum flanges.

Separate pipes from steel framing by lagging or other suitable methods.

Temporarily earth frame during erection. Permanently earth frame of completion of erection.

Clean out debris from bottom wall plate.

B12.7 STEEL DOOR FRAMES

Provide and install cold formed steel door frames to internal door openings.

Fabricate frames from 1.2mm thick F100 zincanneal coated sheet steel. Frames shall have profiles shown on drawings with integral stops and architraves.

Mitre and continuously weld corners in frames. Grind exposed welds smooth.

Cut away frames for hinges, striker plates, rubber buffers and door closers. Where so cut, reinforce frames with steel stiffening plates for hinges and closers and with box shields for striker plates.

Drill and tape backing plates for hinges and door closers.

Striker plates shall suit hardware.

Touch up damages coating areas with cold galvanising paint.

B12.8 EXTERNAL LININGS

Framed walls (steel cladding).

Line external framed walls with 0.42mm thick colorbond finish 4 to 10mm thick low profile steel wall cladding if building is to be completely re-clad - in other instances match existing.

Attach cladding to wall framing in single lengths with flutes vertical and with overlap side lapping to achieve 850mm cover.

Fix sheets with No.10 x 22 wafer head self drilling Tek screws located at ends of sheets in every second valley, at intermediate noggings at 4 equidistant locations across the sheet fixed through the valleys, and at each location equidistant between each nogging.

Provide two No. 8 x 12mm wafer head Tek screw equidistant between each nogging along side lap.

Install screws to form a continuous horizontal line around the units.

Touch up head of all screws with paint to match colourbond finish of wall cladding.

Corner flashing:
Cover external corners with 50 x 50 x 0.6mm angle flashing Tek screwed to framing as for corner fixing for wall cladding. Colour to match external wall colour.

B12.9 SECURITY / CYCLONIC SCREENS

Provide security / cyclonic screens to windows and doors when requested.

Widows to have Crim-safe (or similar) stainless steel woven mesh screens, top hinged and one touch push release for ease of escape, unless other wised advised.

Security screen doors to be Amplimesh or similar.

All screens to be installed to the current Australian Standards.

Colour to be advised.

B13. PAINTING

B13.1 GENERALLY

STANDARDS
All painting to AS/NZS 2311
Protection of Steelwork to AS/NZS 2312

COLOURS
As per finishes schedule.

INSPECTION BY THE CUSTOMER'S REPRESENTATIVE
Give the Customer's Representative one (1) working day notice so that he may inspect the following stages of work:
Prepared substrates prior to application of 1st paint coat.
Prepared paint surfaces prior to application of subsequent coats.

B13.2 MATERIALS

GENERALLY
All paints shall be premium quality.

Paints shall be delivered to site or the Contractors depot in the manufacturers labelled and unopened containers.

Do not intermix paints from different manufacturers.

Contractors to supply the Customer's Representative with a listing of manufacturers and their products to be used prior to proceeding with the works.

GPC SPECIFICATIONS
Provide paints and other materials which are scheduled in the Australian Paint Approval Scheme "List of Approved Products" as complying with cited GPC specifications.

PRIMERS, SEALERS, UNDERCOATS
Primers, sealers and undercoats shall be suitable to the substrate and compatible with the finish coat and each other.

All coating in any one system shall be from the same manufacturer, each coating of a different tint from the preceding coating.

B13.3 WORKMANSHIP

GENERALLY
Before commencing painting, as far as practicable complete the work of other trades within the area to be painted.

Before painting in any section of the works, clean it out and protect it against dust entry.

Apply masking tape for protection to switch plates, light fittings, hardware and the like, and remove on completion of painting.

Use dust sheets, drop sheets and masking materials wherever necessary to protect finished work surfaces or fixtures liable to damage during painting.

Exhibit "Wet Paint" signs and provide protective barriers where necessary.
Remove paint spots and splashes from adjacent surfaces immediately, and restore damaged surfaces to their original condition.

During painting, maintain light levels at least equal to those to the proposed permanent artificial lighting.

Adequately ventilate the areas in which painting is being carried out.

Mix and apply paint in accordance with the manufacturers recommendations.

Thin or add paint only as recommended by the manufacturer and only if approved by the Customer's Representative.

APPLICATIONS
Apply coating to clean, dry surfaces in dry atmospheric conditions and after any previous coats have hardened.

Lightly sand priming and undercoats to a smooth surface with abrasive paper and remove dust before applying the next coat.

A suitable roller may be used to apply coatings to flat internal walls and ceilings. Apply coatings to gypsum paper board by roller. Otherwise use brushes suitable to the paint type and the substrate.
Do not use spray application unless approved by the Customer's Representative. Approval for spraying, if given, shall be conditional on the use of suitable methods and equipment for the conditions. Before spraying, mask adjacent surfaces liable to damage.

Cut in between different finishing coats neatly in straight lines.

EXTERNAL DOORS
Coat tops and bottoms of external doors and doors in wet locations before installation as specified for their external faces.

B13.4 SUBSTRATES PREPARATION

PREPARATION GENERALLY
Clean down, remove loose, projecting and foreign matter including grease, oil, dust, dirt and the like.

Fill cracks and hols, sand down and leave smooth.

Tint fillers to match colour of timber specified to be clear finished.

Unless otherwise specified, clean down ferrous metalwork and galvanised and zinc coated steel with mineral turpentine immediately prior to priming. Allow to dry.

Roughen non-ferrous metals with fine abrasive paper. Clean down with mineral turpentine, allow to dry.

B13.5 SURFACES NOT TO BE PAINTED

Do not paint the following:
Roof Sheeting
Flashing not exposed to view
Dressed timber not exposed to view
Air-conditioning duct not previously painted
Items specified to have colorbond finish
Access ramp floor panel sections, balustrade and handrails
Access steps, balustrade and handrails not previously painted

B13.6 INTERNAL FINISHES

The required specification for the paint nominated are indicated by the bracketed Australia Paint Approval Scheme number.

BACKGROUND AND FINISH COATINGS (NEW MATERIALS)
Apply internal coats in accordance with the following:

Full gloss alkyd enamel on doors.

1 coat wood primer	(APAS-0181)
1 coat undercoat	(APAS-0016/1)
2 coats interior full gloss alkyd enamel	(APAS-0015/1)

Full gloss alkyd enamel on door frames, ceiling beams, exposed steel/metalwork, furniture framing.

1 coat acrylic galvanised steel primer	(APAS-0210)
2 coats interior full gloss alkyd enamel	(APAS-0015/1)

Semi gloss acrylic latex paint on walls and ceiling.

1 coat water thinned pigmented sealer	(APAS-0172)
2 coats semi gloss acrylic latex paint	(APAS-0260/2)

Semi gloss interior polyurethane varnish on timber skirtings, coat hook backing board and cornices.

1 coat spirit based fade resistant wood stain	(APAS 0111)
2 coats single pack semi gloss interior polyurethane varnish for furniture	(APAS-0114)

BACKGROUND AND FINISH COATINGS (PREVIOUSLY PAINTED SURFACES)
Apply internal coats in accordance with the following:

Full gloss alkyd enamel on doors.

1 coat undercoat	(APAS-0016/1)
1 coat interior full gloss alkyd enamel	(APAS-0015/1)

Full gloss alkyd enamel on door frames, ceiling beams, exposed steel/metalwork, furniture framing.

1 coat interior full gloss alkyd enamel	(APAS-0015/1)

Semi gloss acrylic latex paint on walls and ceiling.

2 coats semi gloss acrylic latex paint	(APAS-0260/2)

Semi gloss interior polyurethane varnish on timber skirtings, coat hook backing board, demountable classroom cupboards and cornices.

1 coat single pack semi gloss interior polyurethane varnish for furniture	(GPC-V-114)

B13.7 EXTERNAL FINISHES

The required specification for the paint nominated are indicated by the bracketed Australia Paint Approval Scheme number.

BACKGROUND AND FINISH COATINGS (NEW MATERIALS)
Apply external coats in accordance with the following schedule:

Full gloss alkyd enamel on doors.

1 coat wood primer	(APAS-0181)
1 coat undercoat	(APAS-0016/1)
2 coats exterior full gloss alkyd enamel	(APAS-0015/1)

Full gloss alkyd enamel on balustrade, steel columns, barges

1 coat acrylic galvanised steel primer (APAS-0210)
2 coats exterior full gloss alkyd enamel (APAS-15/1)

BACKGROUND AND FINISH COATINGS (PREVIOUSLY PAINTED SURFACES)
Apply external coats in accordance with the following schedule:

Full gloss alkyd enamel on doors.
1 coat undercoat (APAS-0016/1)
1 coat exterior full gloss alkyd enamel (APAS-0015/1)

Full gloss alkyd enamel on balustrade, steel columns, barges
1 coat exterior full gloss alkyd enamel (APAS-15/1)

B14. GLASSWORK

B14.1 GENERALLY

STANDARDS
Materials and workmanship shall comply with the following Australian Standards unless otherwise specified:

AS.1170	SAA Loading Code (Part 1 Dead And Live Loads)
AS.1170	SAA Loading Code (Part 2 Wind Forces)
AS.1288	Code Of Practice For Installation Of Glass In Buildings
AS.2208	Safety Glazing Materials For Use In Buildings (Human Impact Considerations)

WORKMANSHIP
Glass shall be free from defects and cut square to a size to penetrate the rebates the distance specified in AS.1288 part 2 for the particular glass thickness and frame material used.

GLASS THICKNESS
Glass thickness shall comply with AS.1288 part 1 for a basic design wind velocity of 69 metres/sec and a terrain category of 2.

This requirement shall be reviewed where the building is being relocated to a known Cyclonic Area.

GLASS
Clear glass
Unless otherwise specified glass shall be clear

B15. DEMOLITION

B15.1 GENERALLY

SCOPE OF WORK
Demolition of work to existing buildings and/or structures identified on the project brief and drawings or contains within this specification. Demolition work to the existing site such as the removal of existing fence work and existing services as identified in the brief or the drawings.

Removal of demolished material from site.

Cleaning the site thoroughly on completion.

Examine all parts of the drawings and this Specification for requirements which affect the work of this Section. In particular, take note of related work.

The Project Brief may not identify all Demolition work. The Contractor shall allow for all other work to complete the project but seek the Customer's Representatives approval prior to proceeding.

All of the demolition works is to be staged in accordance with the timeline issued with the Project Brief . Visit site and examine all conditions which may impact the works and allow for all works 'after hours' as may be required to complete the works in a safe and secure manner.

RELATED WORK
Disconnection of all existing services by appropriate other Trades.
Excavation
Underpinning
Shoring
Temporary support structure

QUALITY ASSURANCE
If requested at time of tender, provide data indicating previous experience in such work as required by this Specification. Supply names of contacts, with telephone numbers, who can verify performance quality.

STANDARDS, CODES & REFERENCES
Comply with applicable portions of the following Australian Standards:
AS 2436 1981 Guide to Noise Control and Demolition Sites
AS 2601 1991 The Demolition of Structures
Comply also with the requirements of:
- Applicable Building Regulations
- Any Statutory Authority having jurisdiction
- Local Council
- Occupational Safety and Health Regulations 1996 – Demolition

PUBLIC AND PROPERTY PROTECTION
Provide all measures required by Municipal and State ordinances, laws, and regulations for the protection of surrounding property, footpaths, streets, curbs, the public, occupants and workmen during demolition operations. Comply with the above ordinances, laws etc. in carrying out all measures including barricades, fences, warning lights and signs, rubbish chutes, etc.

No blasting for demolition purposes will be permitted.

Exercise due care in executing this work.

Make good to original condition, all damage to structures to be retained and to adjacent property which results from demolition operations.

Perform all restoration work indicated in the brief, restoration work due to the error of the Contractor will be rectified at the Contractors expense.

AVOIDANCE OF NUISANCE
The Contractor at all times shall progressively clean up the works and site and remove all accumulated discarded and surplus materials and debris.

The Contractor shall acknowledge the rights of all adjoining owners and occupants of adjoining buildings and shall in no way vitiate or lessen such rights.

SERVICES
Before demolishing and removing any parts of building having electrical wiring, gas, sewer and water pipes, conduit or similar items embedded in them, notify the Customer's Representative, Authorities having jurisdiction, and make sure that these items are out of service so that they can be removed without danger or damage to remaining services.

B15.2 MATERIALS

DEMOLISHED MATERIALS
Material required to be demolished shall be removed from the site and dumped or placed in storage at the Contract Authority's storage facility (where one is identified).

Comply with the above ordinances, laws etc. in carrying out all measures.

All costs associated with this section excluding variations are to be included in the tender price.

EQUIPMENT

A. Supply all equipment required to perform the work of sufficient capacity to meet the stated completion date.
B. Provide disposal containers for all disposal required.
C. No containers may be located on public streets or pavements without obtaining required Municipal permits for same. Co-operate with all Sub-Contractors doing work in or near container locations to prevent uninterrupted progress of their work.

B15.3 EXECUTION

EXAMINE THE SITE CONDITIONS

Examine carefully the following site conditions:

a. location of existing services.

Start of work means total acceptance of all conditions.

EXISTING REINFORCED CONCRETE

Neatly cut back or trim to new alignment with a clean true face on material to be retained. Cut with diamond saw where necessary.

SHORING

Provide all necessary shoring of remaining structures as required to ensure a safe and stable work environment. If necessary the Customer's Representative may engage a Structural Engineer to further assist in any deliberations that may be required.

Alter, adapt, and maintain all temporary works as necessary, and strike or withdraw them progressively as the work proceeds. Obtain the written consent of the Customer's Representative if any such works are to be left in position at the completion of the work.

EXPOSED EXCAVATIONS

Leave excavations open after removal of work below ground level in a safe and proper manner until completion of inspection by the Customer's Representative if required.

METHODS AND OPERATIONS

A. Demolish and remove completely parts of structure listed and/or drawn for demolition in the brief. The methods of cutting and removal of floors, walls, and other items to be removed shall be approved by Authorities having jurisdiction.

B. Furnish all flame-cutting required to dismantle sections of equipment too large to be otherwise removed. All flame-cutting shall be performed only by experienced and qualified mechanics. Protect all combustible surfaces during flame cutting. Maintain fire extinguishers, required by the Fire Authority at hand during all flame-cutting operations.

C. Do not drop or throw material more than 5 metres. Lower by means of hoists or rubbish chutes. Wet down thoroughly during demolition to prevent nuisance of dirt and dust. Equip trucks used in hauling debris with tarpaulins to cover the loads. Do not load so excessively as to spill debris on streets.

D. Plaster removal: In general, it is intended that all existing plaster showing cracks, bulges or drumminess shall be removed. Refer to Customer's Representative if in any doubt.

E. Except as placed in approved disposal containers, do not allow combustible material and rubbish to accumulate on the site. Remove daily, or as directed. Burn no debris on site.

F. Upon completion of all wrecking and demolition and the removal of all rubbish and debris, remove all equipment used for this work.

REINSTATEMENT

Restore to original condition, without expense to the Customer or Client, any damage to remaining facilities resulting from failure to provide adequate protection.

COMPLETION

Complete all contracted work in accordance with Contract documents and written variation orders issued by the Customer's Representative.

Leave the site in an entirely clean condition, ready for the work of other trades.

B15.4 ASBESTOS REMOVAL

GENERALLY

No asbestos removal shall commence before a site meeting is held with the client agency representative, occupier, Contractor and the Customer's Representative unless otherwise advised.

Scope
The work of this Section includes but is not limited to:
removal and safe disposal of all materials containing asbestos fibres.

Related Work
Co-ordination: Co-ordinate with other trades affecting or affected by the work of this Section. Co-operate as necessary to ensure steady and satisfactory progress of the work.

Unit prices: Submit with tender a Schedule of rates for work required to be done not identified at time of tender.

Quality Assurance
Registration of Asbestos Removalists.

Submit evidence, before starting any work, of the training and experience of all those who will be performing the required work.

Comply with DOSHWA Bulletin No. 7.

References
Perform all asbestos removal in accordance with:

Health (Disposal of Asbestos Waste) Regulation 1984.

Department of Occupational Health Safety and Welfare of WA Safety Bulletin no. 7.

Code of Practice for the Safe Removal of Asbestos 2nd Edition (NOHSC:2002(2005).

Submissions
Submit as and when required all of the reports and submissions required by the Statutory Authorities referred.

Project Site Control
Note that removal of all asbestos related items is to be co-ordinated with the Demolition section of the Contract and staging of such works.

Notices and Fees
Provide notices to any Statutory Authority which needs data relating to asbestos removal.
Fees due to any Statutory Authority will be paid by the Customer.

EQUIPMENT

Decontamination Facilities
Where required by regulations of the controlling Statutory Authority, provide appropriate decontamination facilities.

General Hygiene Requirements
Where required by regulation of the controlling Statutory Authority.

Protective Clothing and Equipment
Where required by regulations of the controlling Statutory Authority, comply with Protective Clothing and Equipment as per the code of practice for the safe removal of asbestos NOHSC:2002 (2005).

Labelling and Warning Signs
Provide all necessary labels and warning signs as required.

Tools and Equipment
Provide all tools and equipment necessary for the work.

EXECUTION

Examination
Inspect all relevant site conditions.

Establish all conditions which may be discovered relevant to asbestos removal without disturbing any material containing asbestos.

Start of any work means total acceptance of all conditions.

Preparation
Prepare for asbestos removal in full accordance with the requirements.

Install Decontamination Facilities in a location agreed upon with the Customer's Representative and other relevant Parties if required.

Install all required Labelling and Warning signs.

Remove from the work area any items which may be damaged by the work of this Section.

Protect any item of furniture, surface, equipment or plant which may be damaged or soiled during the preparation for and action of asbestos removal.

Be responsible for any damage resulting from asbestos removal actions, processes and other works.

Asbestos Removal
Advise the Customer's Representative in advance of proposed removal methods.

Comply with the requirements of NOHSC:2002 (2005) and with the instructions of the Customer's Representative.

Removal techniques.
Comply with NOHSC:2002 (2005).

Field Quality Control
All work will be performed under the supervision of an authorised Supervisor.

Removal of Asbestos Material From Site
Arrange with relevant local Authorities the identification of the place to which all asbestos material is to be taken from the demolition site.

Comply with all requirements of the Authorities.

Remove all such materials to the approved location.

Cleaning
Thoroughly clean all areas in which work has been performed and those adjacent to the work area.

Remove and dispose of all traces of the asbestos removal process, protective materials, etc.

Completion
Complete all contracted work in accordance with Contract documents and written variation orders issued by the Customer's Representative.

Leave the site in a condition suitable for the work of other trades, in cooperation with Customer's Representative and Contractor.

B16. FLOOR COVERINGS

B16.1 GENERALLY

GUARANTEE
Provide the Customer's Representative with a written guarantee signed by the Contractor stating that the floor coverings and accessories are guaranteed for 2 years from the date of practical completion, against defects, flaws or faults due to workmanship and materials not in accordance with the contract.

STANDARDS
Materials and workmanship shall comply with the following Australian Standards unless otherwise specified:
AS.2454 Textile Floor Coverings
AS.2455 Textile Floor Coverings Laying Practice.

COLOURS AND PATTERNS
Unless otherwise advised the colour and pattern is indicated in the Finishes Schedule. If not give 10 working days notice to the Customer's Representative before programmed date for commencing installation of floor coverings so that he may select colours and patterns not otherwise specified.

AVAILABILITY
Ensure that sufficient quantity of floor coverings of one manufacturing batch is available to complete the whole of the work for each specified product.

BACKGROUNDS
Ensure that backgrounds are in a suitable condition to receive subsequent finishes.

Inform persons laying resilient finishes of the composition of concrete backgrounds before laying commences, including details of curing agents, parting compounds and surface treatments.

LIGHTING
Provide adequate lighting for the application and inspection of floor coverings.

Ensure that the location, type and brightness of temporary lighting is at least equal to the proposed permanent lighting.

B16.2 WORKMANSHIP

GENERALLY
Floor coverings shall be installed by competent tradesmen and in the manner recommended by the manufacturer.

Before commencing work, advise the Customer's Representative of any circumstances which could cause failure or defects in the applied finishes.

Deliver materials to the site in unbroken containers marked with the manufacturers identification and batch numbers.

Take site dimensions before ordering and making up materials.

Do not commence work until socket outlets, duct covers and other fixtures round which materials will have to be cut have been fixed.

Scribe finishes neatly up to returns, edges, fixtures, fittings and the like, finish flush with adjoining surfaces.

Accurately cut carpet with due regard to the nature of the materials, edges, after cutting, shall be neat, smooth, square and close fitting.

FIXING CONDITIONS
Bring the resilient materials to the temperature of the area by suitable means, such as stacking within the area for not less than 48 hours before fixing.

Maintain the temperature of the area within the finish manufacturer's recommended limits during fixing (or if none recommended, within 15-30 deg. C).

When using adhesives, provide adequate ventilation and take necessary fire precautions.

PREPARATION OF SURFACES
Prepare background surfaces in accordance with the recommendations of the manufacturers of the finishing materials.

Clean down background surfaces, remove grease, wax and dust and prepare surfaces to give adequate bond.

Fill irregularities, cracks and hollows with a skin of levelling compound as necessary to give a find true surface suitable to receive the specified finished materials.

Grind off high areas and projections.

FINISH AT EDGES OF RESILIENT FLOOR FINISHES
At edges otherwise exposed fix a vinyl diminishing strip to suit floor finishes.

Where built in metal dividing strips occur against finishes specified in this trade, butt the finishes neatly against the side of the strips.

Unless otherwise specified or shown on drawings, terminate edges of floor finishes under centre lines of doors.

SETTING OUT OF SHEET MATERIALS
Set out sheet materials to give the minimum number of joints, unless otherwise specified or shown, run sheet joints parallel with long sides of floor areas, vertically on walls.

Carry floor finishes continuously through door openings unless otherwise shown.

ADHESIVES
Apply adhesives and bonding agents as recommended by the manufacturers of the materials to be bonded, which shall by laid so that adhesive completely covers the back of the materials when set and with sufficient pressure for them to adhere permanently to the background.

Remove excess adhesive while still wet.

B16.3 CARPET

CARPET IN CONTRACT
Lay carpet on floors when indicated in the Project Brief.

Carpet shall be Westwools ‘Patriot’ or similar, selected from the current Governments Buyers Guide, colour to be advised.

CARPET ADHESIVE FIXED: (TRANSPORTABLE BUILDINGS)
Adhesive fix carpet direct to sub-floor with Anchor-Weld 50, Davco 9t, Jefkem J57, Pabco 87 or equal approved adhesive appropriate to the carpet used.

Spread adhesive evenly with a notched trowel or such other tool as recommended by the manufacturer and apply in accordance with the manufacturers recommendations.

Ensure secure bond at seams and cross joins.

Immediately after laying carpet on adhesive, roll lengthwise and then roll from the centre diagonally toward each edge with a multi-wheeled 68kg roller to ensure a firm continuous bond repeat rolling approximately 1 hour later.

CARPET GRIPPER BATTERN FIXING: (DEMOUNTABLE BUILDINGS)
Carpet to be laid on a Bridgestone Airstrip Cushionpad underlay or similar.

Carpet to be secured by the use of Roberts ‘Smoothedge’ gripper battern installed to the perimeter of the floor space.

Carpet to be joined to form one piece for ease of relocating at a later date.

FINISH AT EDGES OF CARPETING
Finish at edges of carpet at junction with dissimilar floor finish, or material of different thickness, in entrances, doorways and the like with “Roberts”, “Tackless” or equal approved metal mouldings (including vinyl insets) appropriate to the carpet installation (gripper batten fixed or adhesive fixed) and in accordance with the manufacturers recommendations. Colour of mouldings and inserts shall tone with colour of carpet.

PROTECTION OF CARPETING
On completion of cleaning up, the Contractor is to ensure the protection of the carpet prior to handover to the client.

B16.4 HOMEGENOUS SHEET VINYL FLOORING

VINYL SHEETING
The vinyl flooring shall be a minimum 2.0mm thick, of homogeneous construction, with a multiflecked non directional chip pattern visual, protected by a polyurethane coated surface.
Armstrong Nylex ‘Accolade Plus’ or similar, colour tba.

INSTALLATION
The vinyl floor shall be installed using adhesives and methods recommended by the vinyl manufacturer.

MAINTENANCE
The Contractor is to provide three (3) copies of a maintenance manual setting out the vinyl manufacturers recommendations for all aspects of the care and maintenance of the vinyl installed.

B16.5 WARRANTIES

All warranties supplied by provided by the product manufacturer shall be passed on to the Client by the Contractor.

B17. LANDSCAPE AND IRRIGATION

B17.1 GENERALLY

SCOPE OF WORKS
The extent and categories of Landscaping and irrigation works is indicated generally in the Project Brief or on the site plan.

B17.2 LAWNS

LANDSCAPE (GRASSING ONLY) CATEGORIES
A) Instant roll-on lawn (category indicated in the brief or on the site plan)
B) Stolons (category indicated in the brief or on the site plan)

INSTANT LAWN/STOLONS (AREA)
When requested in the Project Brief allow to provide instant lawn or stolons to the extent as indicated.

LAWN AND PREPARATION
Subsoil to be cultivated to 100mm depth, free of weeds, roots, builder's rubbish and other debris.
Soil conditioner to be placed 25mm over area and mixed with subsoil.

Instant lawn (Kikuyu/or as specified) obtained from approved grower of cultivated turf. Mix fertiliser thoroughly with topsoil before placing (Cresco or equal). Lay within 36 hours of cutting in staggered and close rutted pattern. Water and roll.

Stolons (Kikuyu/or as specified) to be established fibrous runners 50 to 100 mm in length supplied from an approved grower. Spread stolons over fertilised top soil. (Potato E mixture or equal). Rotary hoe runners and thoroughly water and roll.

LAWN MAINTENANCE
Advise Customer's Representative (or Customer's gardener) of protection, watering and cutting required prior to practical completion.

B17.3 IRRIGATION WORKS

MATERIALS
GENERALLY: All equipment, materials and accessories in this Contract shall be new, shall conform to the appropriate current Australian Standard specifications, and shall comply with Local Authority requirements.

SUBSTITUTIONS: Where a trade name or catalogue number is referred to in this Specification or on the Drawings, the Builder may substitute other materials and equipment provided that, in the opinion of the Customer's Representative, the characteristics of type, quality, finish, appearance, method of construction and performance are not less than that specified. Authorisation of any proposed substitute must be obtained from the Customer's Representative.

UNDERGROUND PIPING: All underground PVC piping, installed downstream of the master solenoid valve, shall be minimum class 9 PVC manufactured to AS 1477.1. Should PVC pipe be used upstream of the master solenoid valve, this shall be minimum Class 18.

SOLVENTS: Cleaners and solvents used for the piping connection shall be approved manufacture and shall be used in accordance with the manufacturer's recommendations. Cleaners must be coloured.

PVC FITTINGS: All PVC fittings for the installation shall be manufactured to AS 1477.2 and shall be compatible with PVC pipe produced in accordance with the Standard.

SPRINKLERS: Sprinklers shall be spring retractable, 3" pop up types preferably from the Toro, Rainbird or H.I.T range. Risers may either be threaded polythene or polythene "fully pipe".

SOLENOID CONTROL VALVES (SECTIONAL): control valves shall be Bermad 200 series 24 V A.C. (or equivalent) solenoid valves, with flow control facilities, installed in adequately sized rectangular valve boxes. Solenoid valves which control dripper stations shall be of the pressure regulating type, or have separate pressure regulators.

MASTER SOLENOID VALVE: The master valve shall be a 40mm 24V A.C. solenoid valve, stamped, tested and approved by the Water Authority of Western Australia for this application.

SOLENOID CONTROL WIRES: Active control cables shall be a minimum of $1.5mm^5$ multi-strand building wire, with the common wire being a minimum size of $2.5mm^5$. Size the cable with the minimum sizes in mind, to ensure that voltage drop is kept to a minimum, and that the operation of the solenoid valves is not affected. Adequate spare wires must be installed to strategic locations to allow for the future extensions to the system.

AUTOMATIC CONTROLLER: supply and install when required an automatic irrigation controller with the following minimum features:
- Solid state operation
- Multi-program
- Repeat cycle
- Minimum eight (8) hours per station
- Fourteen (14) day calendar
- Rain switch
- Manual, semi-auto and automatic operation
- Transformer and back-up batteries.

The exact location shall be established on site.

Allow to modify existing system where affected by the building works, with minimal changes to effectively cover grassed areas. Contractor to ensure changes are carried in a proper workmanlike manner and within established zones if applicable.
NOTE: Where irrigation mains traverse the siting of the transportable unit, the alteration to the irrigation mains on most occasions be detailed in the brief, on other occasions seek instruction from the Customer's Representative prior to changes.

EXISTING IRRIGATION SYSTEMS
Allow to modify existing system where affected by the building works, with minimal changes to effectively cover grassed areas. Contractor to ensure changes are carried in a proper workmanlike manner and within established zones if applicable.
NOTE: Where irrigation mains traverse the siting of the transportable unit, the alteration to the irrigation mains on most occasions be detailed in the brief, on other occasions seek instruction from the Customer's Representative prior to changes.

NEW IRRIGATION SYSTEMS
SCOPE: As nominated in the Project Brief:
- Design, supply and installation of a fully automatic Irrigation System to all garden beds and lawn areas.
- Utilisation of WA Water Authority (WAWA) scheme water to Garden Beds and Lawn areas.
- Supply of all pipework, fittings and accessories to complete the system.

PERMITS: Permits from relevant authorities, for tapping into the existing WAWA mains will be arranged by the Customer.

IRRIGATION PLAN: Once a Contractor is appointed, he shall be required to provide an Irrigation Plan which clearly sets out the extent and type of irrigation proposed for the site. This plan, together with accompanying information, shall be submitted to the Customer's Representative for approval two (2) weeks after notification of acceptance of tender.

EQUIPMENT LIST: The Respondent shall provide a list of all irrigation equipment which is proposed to be incorporated as part of the system. Once accepted and approved by the Customer's Representative, this equipment shall be used in the works.

RETICULATION EQUIPMENT
PIPEWORK: UPVC Class 9 to AS 1477 for main supply pipes.

WATER SUPPLY: Connect into existing WAWA scheme water supply. Allow for metering, valving and safeguards (backflow prevention) as appropriate.

AUTOMATIC CONTROLLER: If detailed in the brief provide appropriate automatic controller to suit the proposed system, including lockable weatherproof enclosure in location shown on the drawings.

PRESSURE REDUCTION: To be fitted to all drip irrigation solenoid valves.

WATERING REQUIREMENTS
LAWN AREAS: Low trajectory sprays as nominated.

GARDEN BEDS: Drippers or micro sprays as nominated.

EXECUTION
When requested supply materials and install an automatic irrigation system to garden and lawn areas connected from the existing scheme water mains or connect to existing bore including but not limited to:
- Pipework
- Fittings including timers
- Allow for all main piping and laterals, together with sprinklers to lawn area and drippers to garden bed areas.

Adjust existing reticulation system to allow for the installation of the transportable building, ensure sprinklers do not continually spray against the building.

RELATED WORK: Co-ordinate and co-operate with the following trades:
- Soil Preparation
- Plumber
- Drainer

QUALITY CONTROL: The Contractor shall be responsible for controlling the work and ensuring that the work is carried out and the quality of the finished work all conforms to this specification and the Project Brief to the approval of the Customer's Representative.

SUB-CONTRACTOR'S QUALIFICATIONS: Minimum two (2) years' experience in similar work as required by the specification. Submit evidence of completed similar work with contact names and telephone numbers.

REFERENCES: Comply with applicable portions of the following Australian Standards:
AS 1432 Copper tubes for plumbing, gas fitting and drainage applications.
AS 1477 Unplasticised PVC (UPVC) pipes and fittings for pressure applications - Parts 1, 2, 4 and 6.
AS 2032 Code of practice for installation of UPVC pipe systems.

SUBMISSIONS OF IRRIGATION PLAN: Submit for approval Irrigation Drawings clearly showing all hydraulic calculations, i.e flow rate required by the design and calculations of pressure requirement - dripper and sprinkler operating pressure, loss

through mainline, loss through submain, loss through lateral line, loss through backflow preventer, loss through master valve, loss through sectional valve, loss through filter, loss through pressure regulator, rise to highest point, etc.

PROJECT CONDITIONS: Inspect Drawings and visit site. Check aspects of required work and refer any discrepancy to the Customer's Representative for decision.

WARRANTY AND MAINTENANCE: Maintain the system against faulty workmanship and materials for twelve (12) months after Practical Completion. Replace any faulty component and restore to full operation at no cost to the Customer if due to the error or neglect of the Contractor. A further twelve (12) month period will be applied to the replacement parts and labour.

B18. TRANSPORTATION

B18.1 GENERALLY

EQUIPMENT
Transportation requirement will generally, but not limited to, providing the following equipment:
- Prime mover and low loader trailer
- Escorting requirements
- Provision of cranage
- Jacking equipment and

Any other equipment needed to complete the pick-up, removal and set-down of any transportable building type.

PROTECTION OF NATURAL VEGETATION - EARTHWORK
Where possible, retain all natural vegetation. Where practicable minimise wheel ruts to grassed play areas.

COMPLIANCE WITH CODES, REGULATIONS AND ACTS
The works associated with the transportation of transportable buildings is to be carried out in accordance with the current Main Roads Western Australia, Policy and Guidelines for over-width and long vehicle road transport requirements. Contractors may from time to time be required to cross the boarder of South Australia and the Northern Territory to gain access to sites in Western Australia, the Contractors will be required also to comply with regulations applicable to that State and Territory.

COMMUNICATION
The nature of this work and the different parties involved will require ongoing communication between all parties involved in carrying out the works. It is also critical that each party has an understanding of each others roles and responsibilities during the relocation process. Communication will increase this understanding and will ensure the works are completed on time and in a manner to meet the needs of all parties.

PLANT AND MATERIALS
The Customer will not accept any responsibility for the loss or damage of any of the Contractor's equipment or materials while carrying out work under this contract.

PROVISION OF TRANSPORTATION NEEDS
Further to the transportation needs outlined in this section the Contractor may from time to time, be requested to relocate a large number of transportable buildings in a short timeframe, the Contractor is required to arrange sufficient resources to meet the needs of the client.

WAITING TIME
Waiting time for vehicles and cranes is chargeable only if the result of the delays were caused by the Customer or Customer's Representative, and must be verified in writing from the Contractor to the Customer in writing before a claim can be made.

B18.2 LOADING AND TRANSPORTATION OF BUILDINGS TO SITE

It will be the responsibility of the Customer to certify that the building is in a sound condition before uplifting and transporting. Any concerns the Contractors may have with the ability of the building to be uplifted and transported, they are to contact the Customer to discuss those concerns and any actions needed to ensure the safe uplift and transportation of the building.

Un-bolt, remove flashings, access steps or ramps and separate the building from it's foundation. ***Note: Flashings, access steps or ramps should travel with the building.***

Load the building onto transporting vehicle, and secure the building. The Contractor is responsible for ensuring that the building is protected at all times from damage by water and dust, also ensure all accessories including furniture, heaters, fans, lighting, air-conditioning etc are secure during the transportation process.

From time to time buildings may have to be side-loaded and or turned to meet the needs at the Pick-Up and Set-Down Sites. These needs should be identified in the brief and priced accordingly.
Protection is also to be provided by using appropriate protection angles under chains when tying down modules. The Contractor is to ensure that all windows, glazing and doors are secure to prevent any damage whilst in transit.

Depending on the size of the concrete footing the Contractor is to remove the steel stumps from the concrete footings and transport with the building. On agreement between the Contractor and Customer that the footings are toO large or stumps toO difficult to remove in a timely manner, the Contractor is instructed to supply and install suitable new or used metal stumps in their place.

Remove all essential materials and equipment from site.

Transport the building to the new location.

B18.3 UN-LOADING AND PLACEMENT OF BUILDINGS

Off load building and temporally support building in its new location, re-bolt and install flashings and install metal stumps and footings. ***Note: liaise with the metro Contractor's Representative or country Contract Authority's office in relation to the removal and delivery dates and times to ensure the security of the equipment during the relocation process.***

Remove temporary supports after the concrete footings have reached their required strength.
The Contractor is to ensure the building is installed with all required fixings eg: bolts and screws. Flashings are installed to

ensure watertightness of the building.

Remove all excess materials and equipment from site and stored (if government owned) in the Customer's storage facility.

B19. CLEANING

B19.1 GENERALLY

The Contractor shall clean the building and site at completion of all works prior to handover to the client.

CLEANING: BUILDINGS

Shampoo carpet

Wash all windows inside and out

Pressure clean external of building

Remove all cobwebs

Wash tiled floors

Clean and disinfect toilet pans, basins, urinals and sinks

Clean ceiling fans

Clean light fittings

Clean and disinfect evaporative cooler water chamber

Clean split air con air filters

Clean all shelving and cupboard doors

Clean all blackboards / whiteboards and pinup boards

Clean all gutters

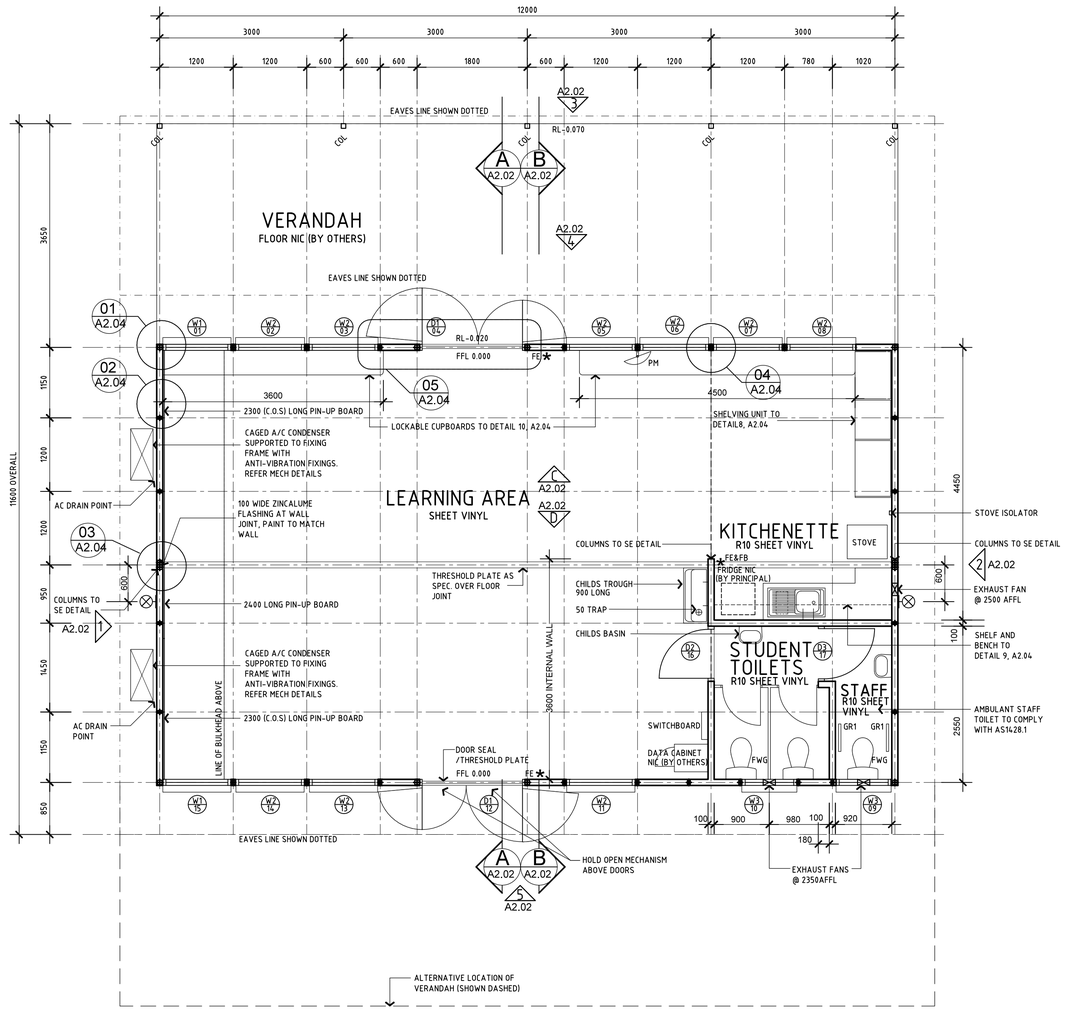
Clean skirting boards

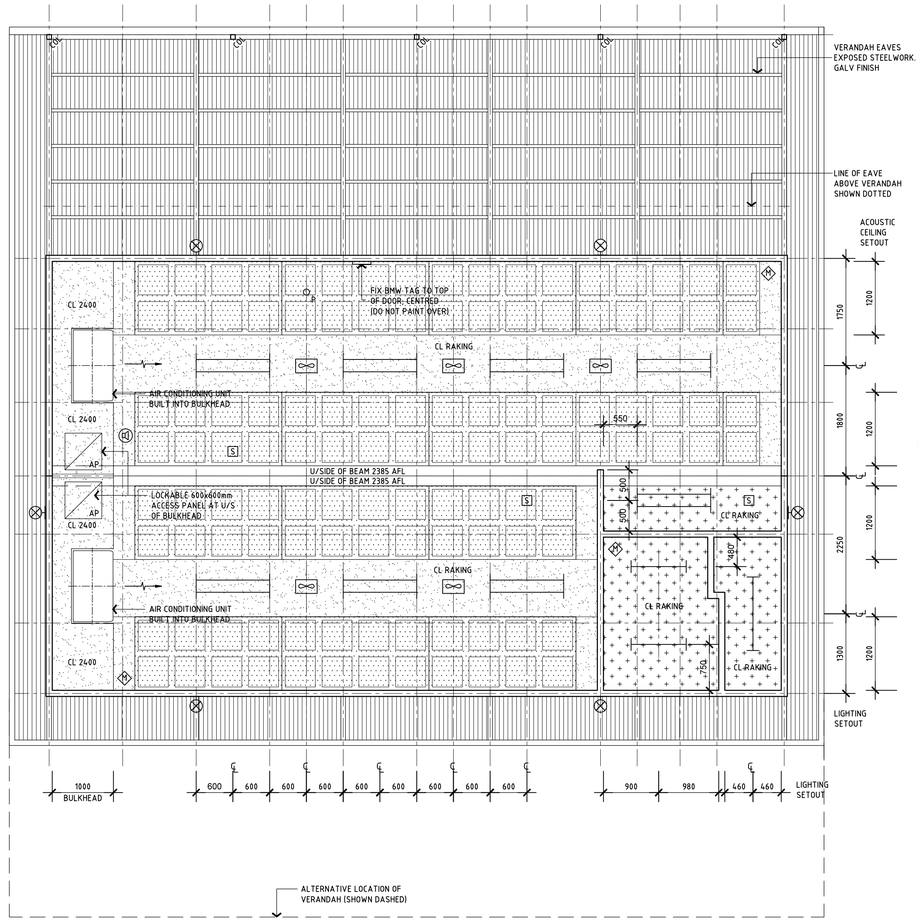
Cleaning is to be of a very high standard

CLEANING; SITE

Remove all rubbish, redundant materials and leave site in a clean, level and safe condition.

Annexure B





NOTES

1. THE VERANDAH IS TO BE FABRICATED TO ALLOW FOR ATTACHMENT TO TRANSPORTABLE IN EACH ALTERNATIVE LOCATION AS SHOWN ON THE DRAWINGS
2. LOCATION OF TRANSPORTABLE ONSITE & SITE WORKS IS NOT IN SCOPE OF WORKS
3. REFER TO DOOR & HARDWARE SCHEDULE FOR EXTENT OF THRESHOLD PLATES & HARDWARE
4. REFER TO SPECIFICATION, SCHEDULE & TABLES, FIRE EXTINGUISHER SCHEDULE FOR LOCATION & EXTENT OF FIRE EQUIPMENT.

LEGEND

P.L	PLATE LEVEL	PM	ADJUSTABLE 300ø PARABOLIC MIRROR FIXED AT HIGH LEVEL
F.L	FLOOR LEVEL	PTD	PAPER TOWEL DISPENSER
G.L	GROUND LEVEL	RWDP	HDG PAINT FINISH STEEL DOWNPIPE FIXED TO STRUCTURE
AP	ACCESS PANEL	S	SLIDING WINDOW SASH
F	FIXED WINDOW SASH	SD	SOAP DISPENSER
EF	EXHAUST FAN	SS	STAINLESS STEEL
FR	FRIDGE (NIC)	TRH	TOILET ROLL HOLDER
FWG	FLOOR WASTE GULLY	U/S	UNDERSIDE
GR1	GRAB RAIL TYPE 1	WB	WHITEBOARD
NIC	NOT IN CONTRACT	★FE	FIRE EXTINGUISHER
PB	PINBOARD	★FB	FIRE BLANKET

CEILING LEGEND

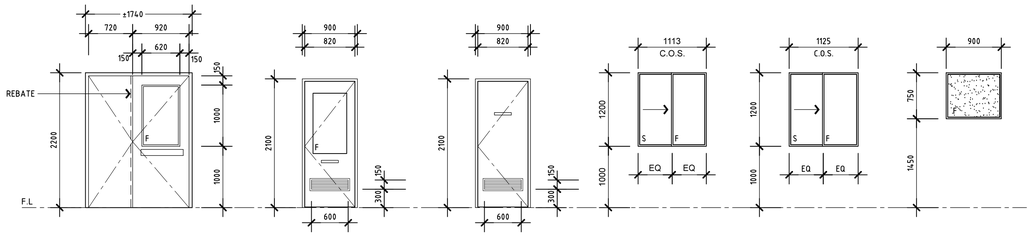
- MOISTURE RESISTANT P/BOARD CEILING, 'H' MOULD JOINTS WITH INSULATION OVER.
- FIBRE CEMENT CEILING, 'H' MOULD JOINTS WITH INSULATION OVER.
- ACOUSTIC PERFORATED FIBRE CEMENT CEILING, 'H' MOULD JOINTS PANELS WITH INSULATION OVER.
- TWI N SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
- SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
- AP — CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN
- WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES
- PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
- SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
- SPEAKER
- T — THERMOSTAT
- DAYLIGHT SENSOR
- M — MOTION SENSOR

– A2.01 FLOOR PLAN (R.H. TYPE)

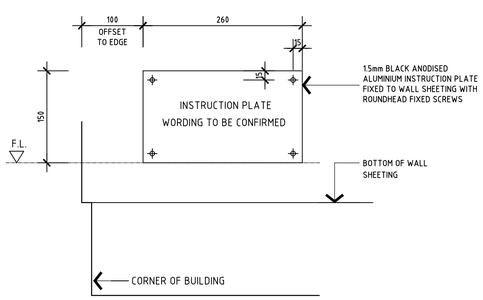
1:50

– A2.01 CEILING PLAN (R.H. TYPE)

1:50



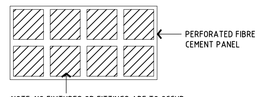
DOOR or WINDOW TYPE:	D1	D2	D3	W1	W2	W3
OPENING NUMBER:	04, 12	16	17	01, 15	02, 03, 05, 06, 07, 08, 11, 13, 14, 15	09, 10
LOCATION:	EXTERNAL	STUDENT TOILET	STAFF TOILET	EXTERNAL	EXTERNAL	EXTERNAL
FRAME:	ALUMINIUM	STEEL 1.2 ZINCANNEAL	STEEL 1.2 ZINCANNEAL	ALUMINIUM	ALUMINIUM	ALUMINIUM
WINDOW/DOOR:	40mm SOLID CORE DOOR WITH CRIMSAFE SECURITY GRILLE SCREW FIXED TO DOOR VIEWING PANEL AND WITH TAMPER RESISTANT FIXINGS	40mm SOLID CORE DOOR WITH LAMINATED SAFETY GLASS VIEWING PANEL	40mm SOLID CORE DOOR	CYCLONE RATED INSECT/ SECURITY SCREENS	CYCLONE RATED INSECT/ SECURITY SCREENS	CYCLONE RATED INSECT/ SECURITY SCREENS OBSCURE GLAZING
REMARKS:	HEAVY DUTY DOOR HARDWARE 'HOLD OPEN' DOOR CLOSER MECHANISM SET AT 110° PAINT FINISH TO ALL SIDES OF DOOR 1 OFF DOOR SIGN – LEAVE BLANK TO BE ENGRAVED BY OTHERS REFER TO SPECIFICATIONS FOR GLAZING AND CYCLONE RATED INSECT SCREEN OVER FULL WEATHER SEAL TO ALL SIDES	HEAVY DUTY DOOR HARDWARE 'HOLD OPEN' DOOR CLOSER MECHANISM SET AT 90° PAINT FINISH TO ALL SIDES OF DOOR 1 OFF TOILET DOOR SIGN REFER TO SPECIFICATIONS FOR GLAZING VANDAL PROOF STEEL POWDERCOATED 600x150 DOOR GRILLE REFER MECH	HEAVY DUTY DOOR HARDWARE LIFT OPEN HINGES FOR EMERGENCY ACCESS 'HOLD OPEN' DOOR CLOSER MECHANISM SET AT 90° PAINT FINISH TO ALL SIDES OF DOOR 1 OFF TOILET DOOR SIGN VANDAL PROOF STEEL POWDERCOATED 600x150 DOOR GRILLE REFER MECH	REFER TO SPECIFICATIONS FOR GLAZING, CYCLONE RATED INSECT SCREEN OVER AND WINDOW RATINGS	REFER TO SPECIFICATIONS FOR GLAZING, CYCLONE RATED INSECT SCREEN OVER AND WINDOW RATINGS	REFER TO SPECIFICATIONS FOR GLAZING, CYCLONE RATED INSECT SCREEN OVER AND WINDOW RATINGS



01 A2.02 DETAIL ELEVATION

1:5 / INSTRUCTION PLATE

INSTRUCTIONS TO BE AS DETAILED ABOVE AND ENGRAVED INTO PLATE IN ISONORM TYPE



NOTE: NO FIXTURES OR FITTINGS ARE TO OCCUR OVER PERFORATED SECTIONS OF CEILING (AS SHOWN HATCHED)

– A2.01 ACOUSTIC PANELS DETAIL

1:50

CONTRACT QUANTITY = 15 OFF IN TOTAL

1	ISSUE FOR TENDER	10/04/13	IPH
0	ISSUE FOR REVIEW	02/04/13	IPH
NO.	REVISION	DATE	BY

DOCUMENTATION BY: **iredale pedersen hook** architects
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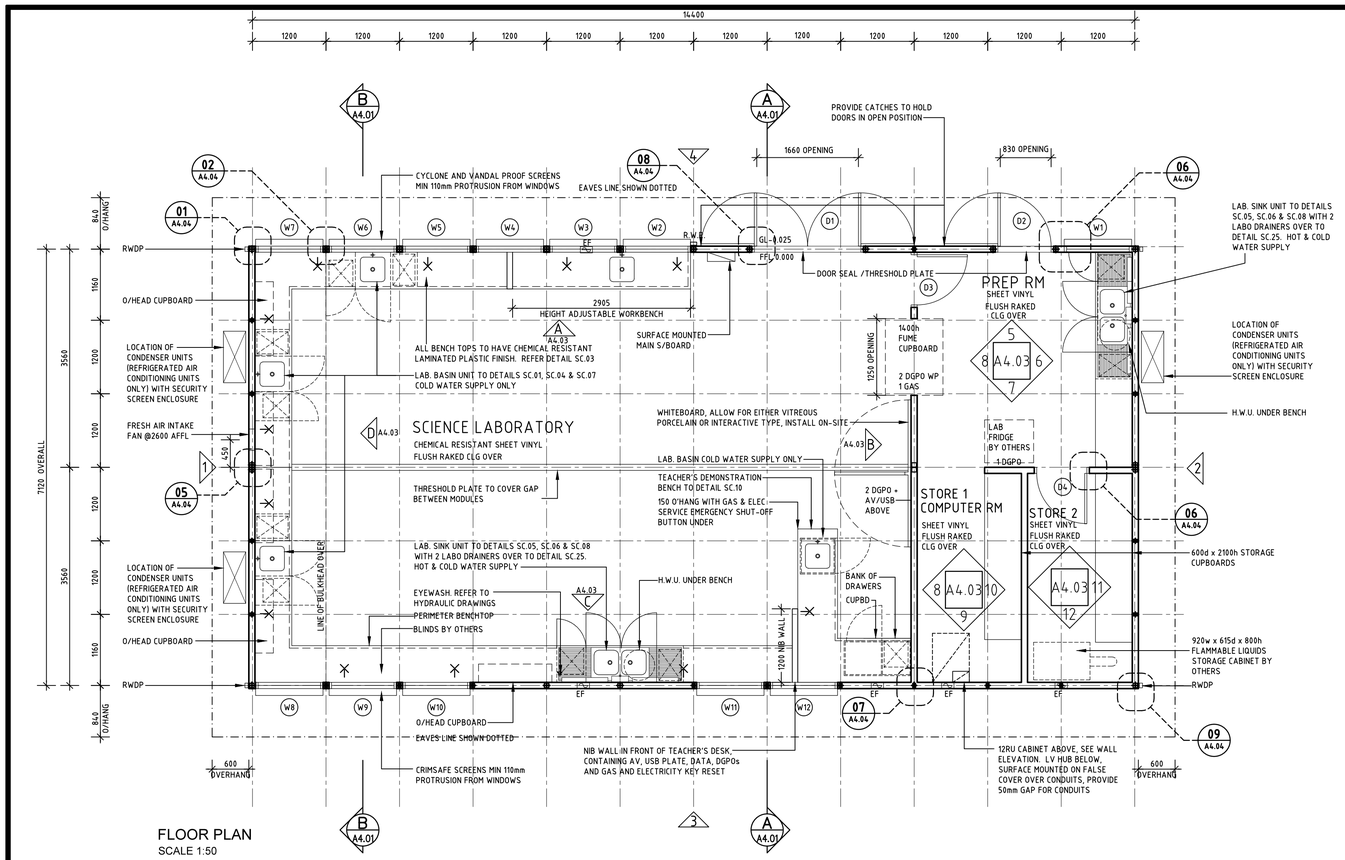
Government of **Western Australia**
Department of **Finance**
Building Management and Works

TRANSPORTABLE SCHOOL BUILDINGS

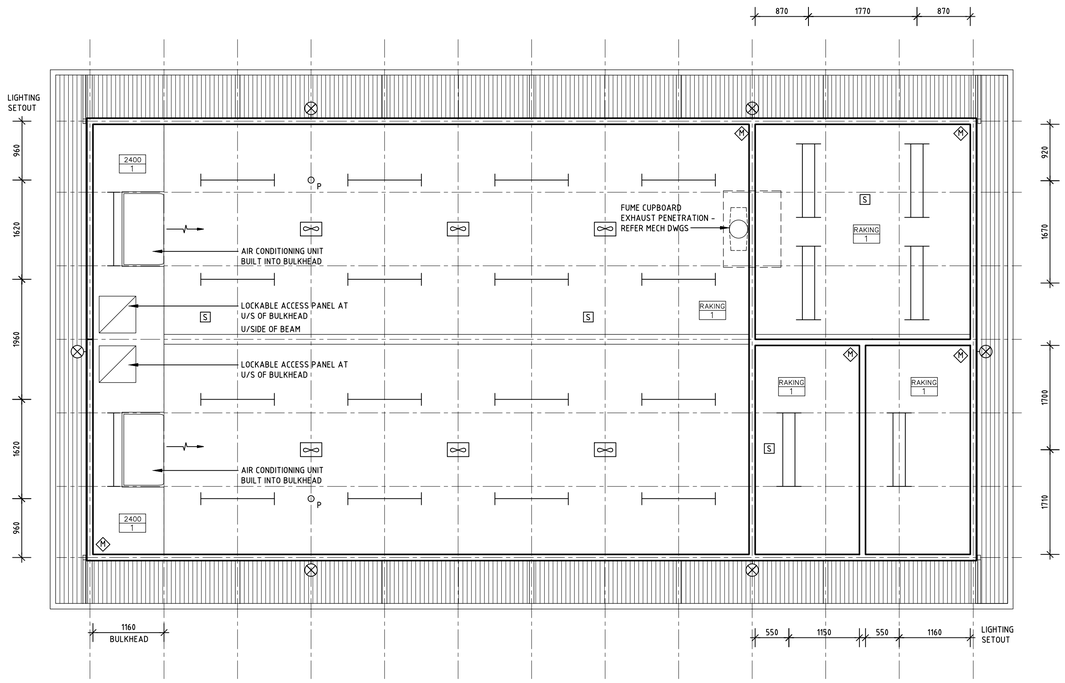
WESTERN AUSTRALIA
PRE-PRIMARY CLASSROOM
FLOOR & CEILING PLAN, D/W SCHEDULE

DRAWN IPH		DESIGNED IPH	REDUCTION 0 X
CHECKED IPH		PRINCIPAL AI	
APPROVED IPH			
SCALE 1:50 @A1 1:100@A3		DATE JAN 2013	DRAWING No. A2.01 /0
DF PROJ No. 20112820		DF FILE No. 2013/01903	

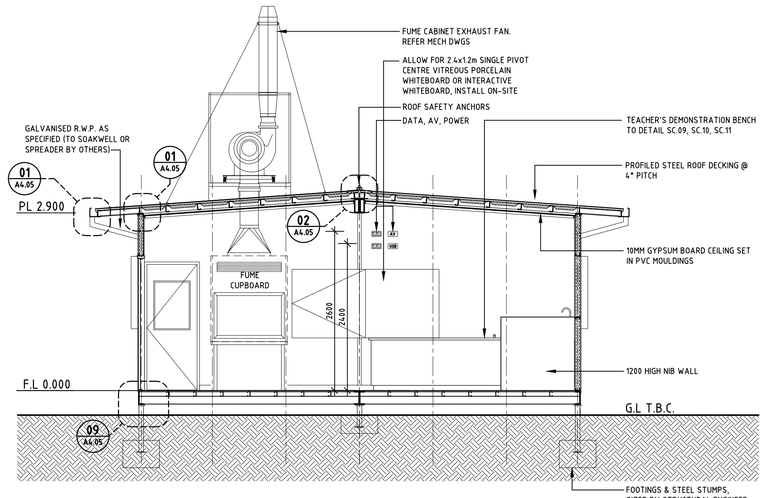
THIS IS A CADD DRAWING
DO NOT AMEND MANUALLY



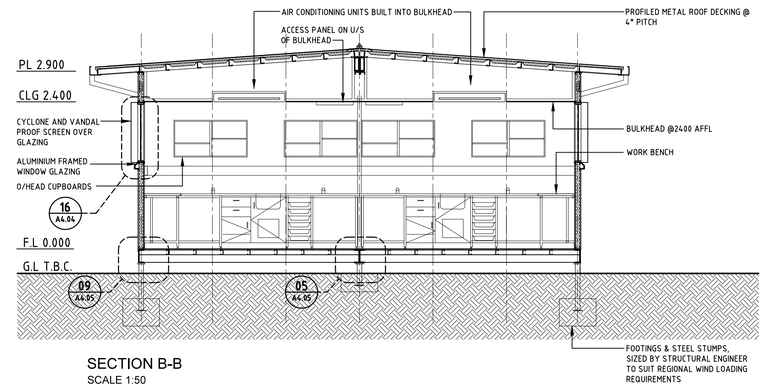
FLOOR PLAN
SCALE 1:50



CEILING PLAN
SCALE 1:50



SECTION A-A
SCALE 1:50



SECTION B-B
SCALE 1:50

NOTES

1. THIS DRAWING IS BASED ON WORKING DRAWINGS PREPARED BY PARRY AND WHYTE ARCHITECTS.
2. THE DRAWING DESCRIBES THE TRANSPORTABLE BUILDINGS TO BE FABRICATED BY THE NOMINATED TRANSPORTABLE BUILDING FABRICATOR.
3. SITE RELATED WORKS SUCH AS SOAKWELLS AND EXTERNAL WALKWAYS BY OTHERS.

LEGEND

P.L	PLATE LEVEL
F.L	FLOOR LEVEL
G.L	GROUND LEVEL
R.L	RELATIVE LEVEL
EF	EXHAUST FAN
F	FIXED
DGPO	DOUBLE GENERAL POWER OUTLET
RWP	90x45 COLORBOND RAIN WATER PIPE
S	SLIDING
U/S	UNDERSIDE
WP	WATERPROOF
	GAS OUTLETS

CEILING LEGEND

1	6mm PERFORATED FIBRE CEMENT SHEETS W/ PVC 'H' MOULD AT JOINTS WITH 75mm R1.5MIN GLASSWOOL INSULATION OVER
2	UNDERSIDE OF BEAM
AP	CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN
	WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES
M	MOTION SENSOR
P	DAYLIGHT SENSOR
	SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
SP	SPEAKER
T	THERMOSTAT
S	PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
	TWI N SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
	SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER

CONTRACT QUANTITY = 10 OFF

NO.	REVISION	DATE	BY
00	ISSUE FOR TENDER	25/10/13	IPH

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Government of **Western Australia**
Department of **Finance**
Building Management and Works

TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA
SCIENCE LAB
FLOOR & CEILING PLAN, SECTIONS

DRAWN IPH	DESIGNED IPH	REDUCTION 0 1250mm	
CHECKED IPH	PRINCIPAL AI		
APPROVED IPH			
SCALE 1:50 @A1 1:100@A3	DATE OCT 2013	DRAWING No. A4.01 /00	
DF PROJ No. 20112820	DF FILE No. 2013/11563		

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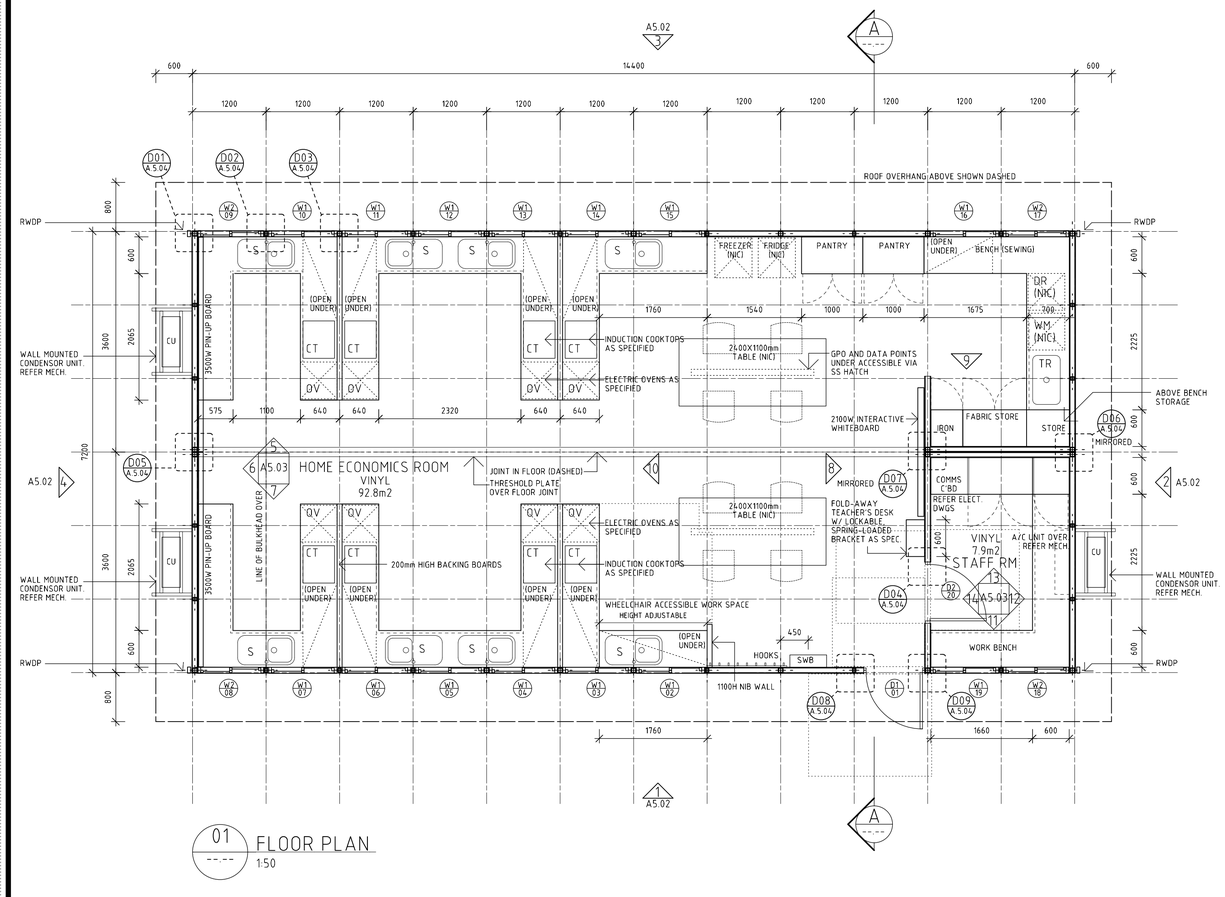
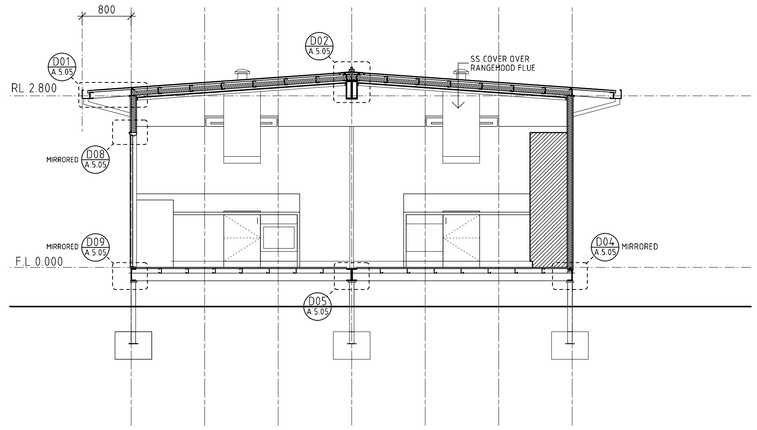
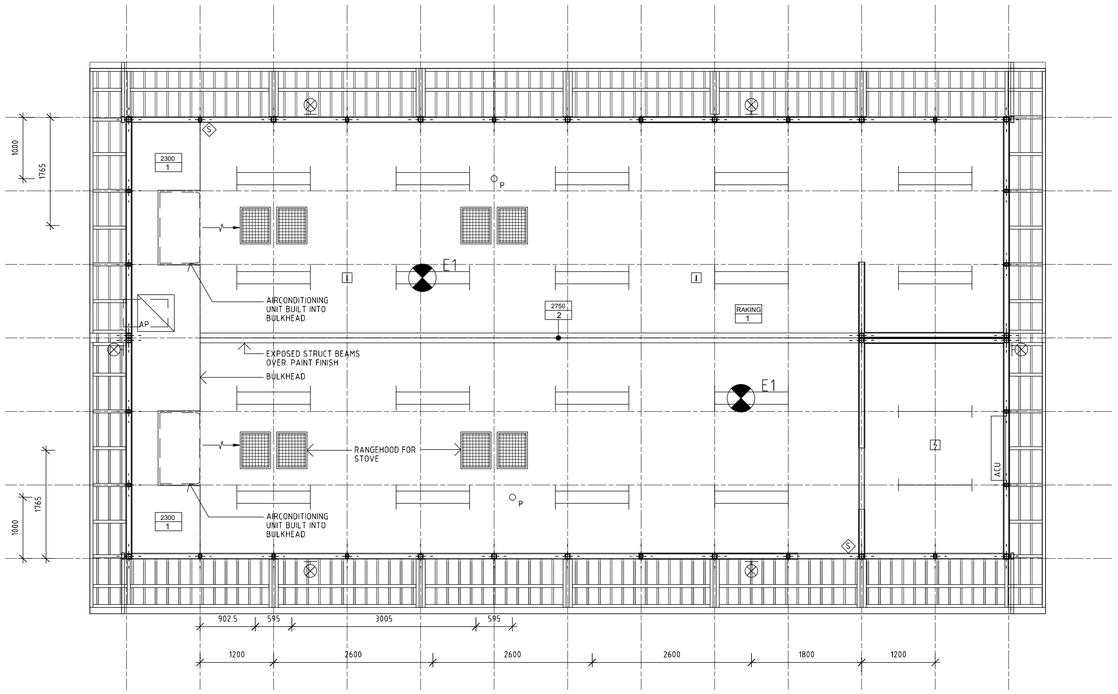


01 FLOOR PLAN
1:50



03 SECTION A
1:50



02 REFLECTED CEILING PLAN
1:50

NOTES

1. THIS DRAWING IS BASED ON WORKING DRAWINGS PREPARED BY MPS ARCHITECTS DATED 13.02.2004.

2. THE DRAWING DESCRIBES THE TRANSPORTABLE BUILDINGS TO BE FABRICATED BY THE NOMINATED TRANSPORTABLE BUILDING FABRICATOR.

3. SITE RELATED WORKS SUCH AS SOAKWELLS AND EXTERNAL WALKWAYS BY OTHERS.

LEGEND

P.L	PLATE LEVEL	NIC	NOT IN CONTRACT
F.L	FLOOR LEVEL	WM	WASHING MACHINE
G.L	GROUND LEVEL	DR	DRYER
R.L	RELATIVE LEVEL	DW	DISHWASHER
EF	EXHAUST FAN	MW	MICROWAVE
F	FIXED	TR	TROUGH
DGPO	DOUBLE GENERAL POWER OUTLET	S	SINK
RWP	90x45 COLORBOND RAIN WATER PIPE	CT	COOKTOP
S	SLIDING	OV	OVEN
U/S	UNDERSIDE	TR	TROUGH
WP	WATERPROOF	SWB	SWITCHBOARD
ACU	AIR CONDENSOR UNIT		
	GAS OUTLETS		

CEILING LEGEND

1	6mm PERFORATED FIBRE CEMENT SHEETS WITH PVC 'H' MOULD AT JOINTS WITH 75mm R1.5MIN GLASSWOOL INSULATION OVER		SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
			SPEAKER
2	UNDERSIDE OF BEAM	T	THERMAL DETECTOR
		T	THERMOSTAT
3	1200x600x16mm FINE FISSURED MINERAL FIBRE CEILING TILE WITH SQUARE LAY-IN EDGE PROFILE		PENDANT GPO
			PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
AP	CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN		
	WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES		TWIN SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
M	LIGHTING MOTION SENSOR		SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
O_P	DAYLIGHT SENSOR	E1	EMERGENCY LIGHT
S	SECURITY MOTION SENSOR		
EXIT	EXIT SIGN		

NO.	REVISION	DATE	BY
00	ISSUE FOR TENDER	25.10.13	IPH

DOCUMENTATION BY: **iredale pedersen hook** architects
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Government of **Western Australia**
Department of **Finance**
Building Management and Works

TENDER ISSUE

TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA
HOME ECONOMICS (COMPOSITE)

FLOOR & CEILING PLAN, SECTION

DRAWN	IPH	DESIGNED	AI	REDUCTION
CHECKED	AI	PRINCIPAL		0
APPROVED	AI	ADRIAN IREDALE		
SCALE 1: 50 @A1 1: 100 @A3		DATE OCT 2013		DRAWING No. /00 A. 5.01
DF PROJ No: 20112820		DF FILE No: 2013/11563		

THIS IS A CADD DRAWING
DO NOT AMEND MANUALLY

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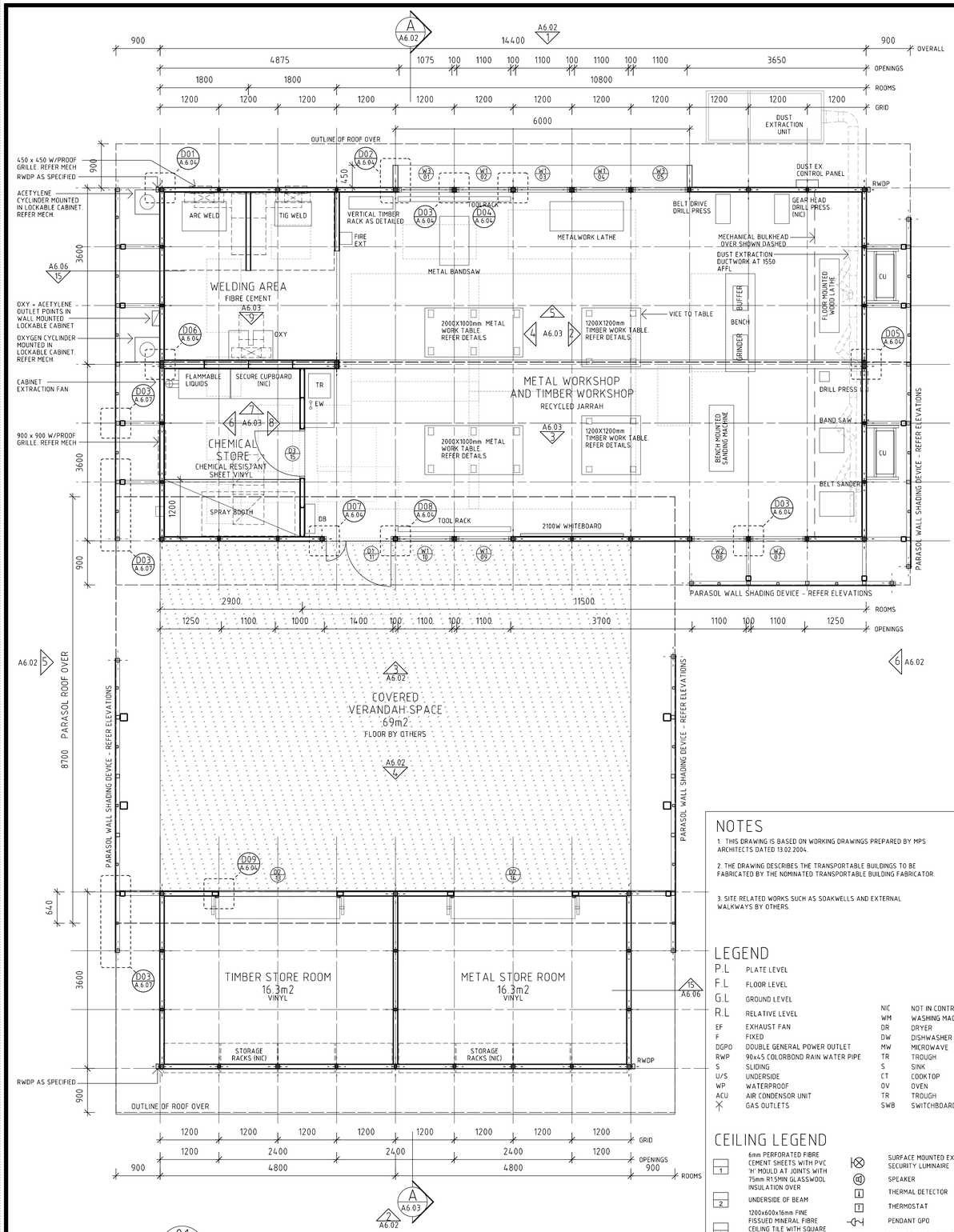
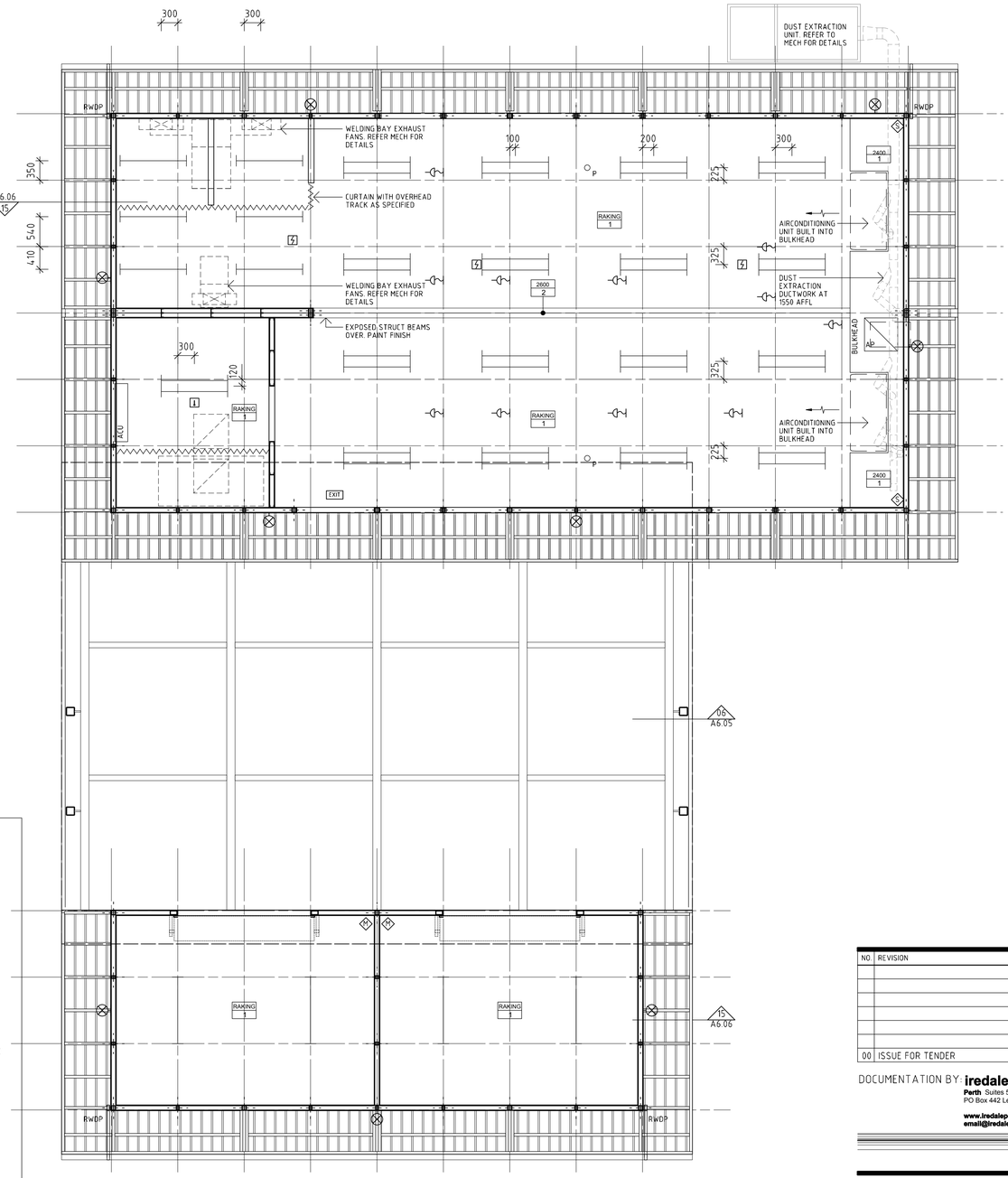


01 FLOOR PLAN
1:50



02 REFLECTED CEILING PLAN
1:50

NOTES

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3. SITE RELATED WORKS SUCH AS SOAKWELLS AND EXTERNAL WALKWAYS BY OTHERS.

LEGEND

P.L	PLATE LEVEL
F.L	FLOOR LEVEL
G.L	GROUND LEVEL
R.L	RELATIVE LEVEL
EF	EXHAUST FAN
F	FIXED
DGPO	DOUBLE GENERAL POWER OUTLET
RWP	90x45 COLORBOND RAIN WATER PIPE
S	SLIDING
U/S	UNDERSIDE
WP	WATERPROOF
ACU	AIR CONDENSOR UNIT
	GAS OUTLETS
NIC	NOT IN CONTRACT
WM	WASHING MACHINE
DR	DRYER
DW	DISHWASHER
MW	MICROWAVE
TR	TROUGH
S	SINK
CT	COOKTOP
OV	OVEN
TR	TROUGH
SWB	SWITCHBOARD

CEILING LEGEND

1	6mm PERFORATED FIBRE CEMENT SHEETS WITH PVC 'H' MOULD AT JOINTS WITH 75mm R1.5MIN GLASSWOOL INSULATION OVER
2	UNDERSIDE OF BEAM
3	1200x600x16mm FINE FISSURED MINERAL FIBRE CEILING TILE WITH SQUARE LAY-IN EDGE PROFILE
AP	CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN
	WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES
	LIGHTING MOTION SENSOR
P	DAYLIGHT SENSOR
S	SECURITY MOTION SENSOR
EXIT	EXIT SIGN
	SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
	SPEAKER
T	THERMAL DETECTOR
T	THERMOSTAT
	PENDANT GPO
	PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
	TWIN SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
	SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
E1	EMERGENCY LIGHT

NO	REVISION	DATE	BY
00	ISSUE FOR TENDER	25/10/13	IPH

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TENDER ISSUE

TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA
DESIGN AND TECHNOLOGY BLOCK

FLOOR AND CEILING PLAN

DRAWN	IPH	DESIGNED	AI
CHECKED	AI	PRINCIPAL	ADRIAN IREDALE
APPROVED	AI		
SCALE 1: 50 @A1, 1: 100 @A3		DATE	OCT 2013
DF PROJ No. 20112820		DF FILE No. 2013/11563	

REDUCTION 0 125m

DRAWING No. A. 6.01/00

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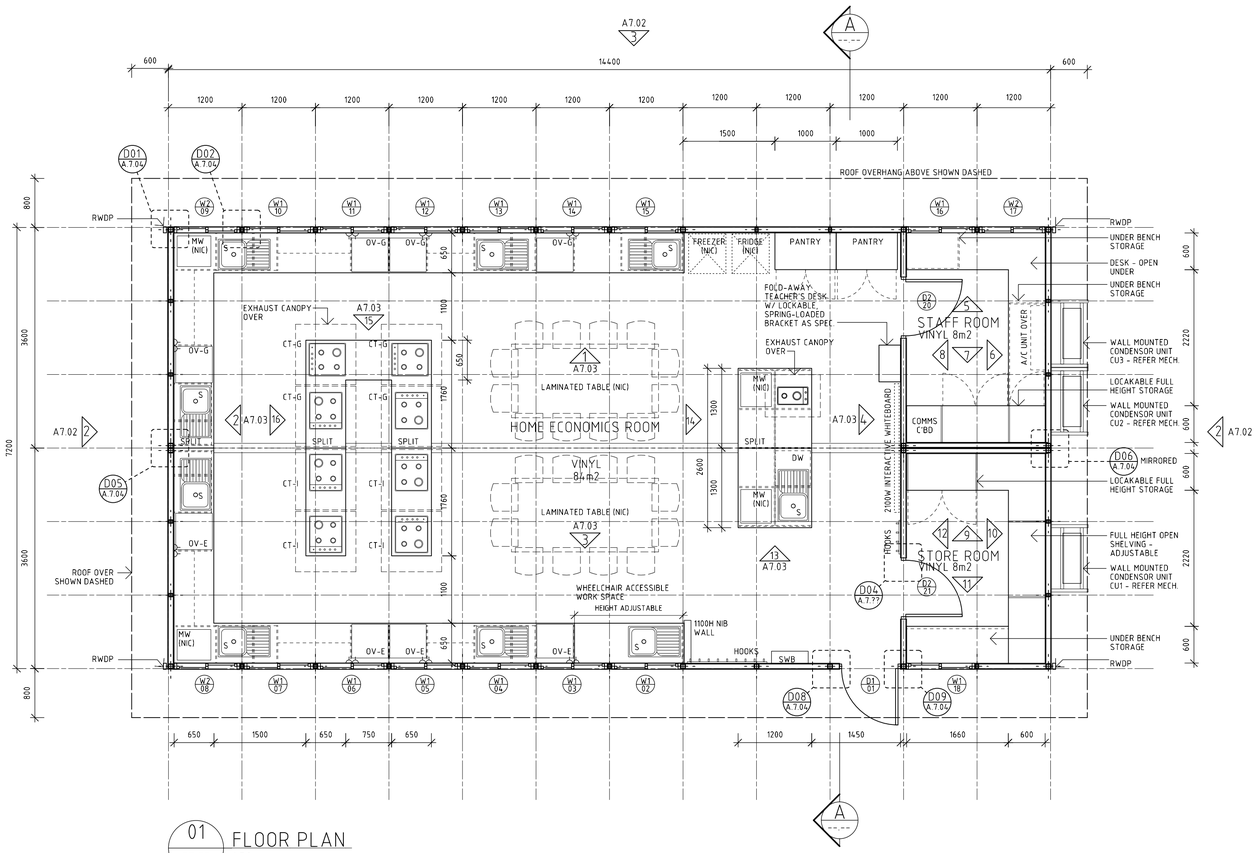
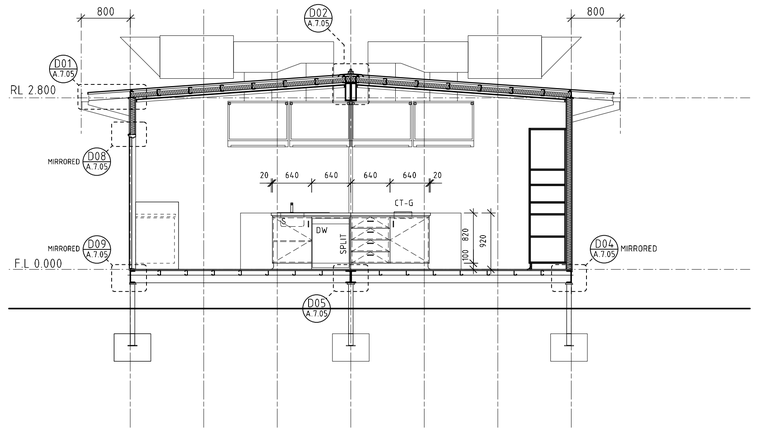
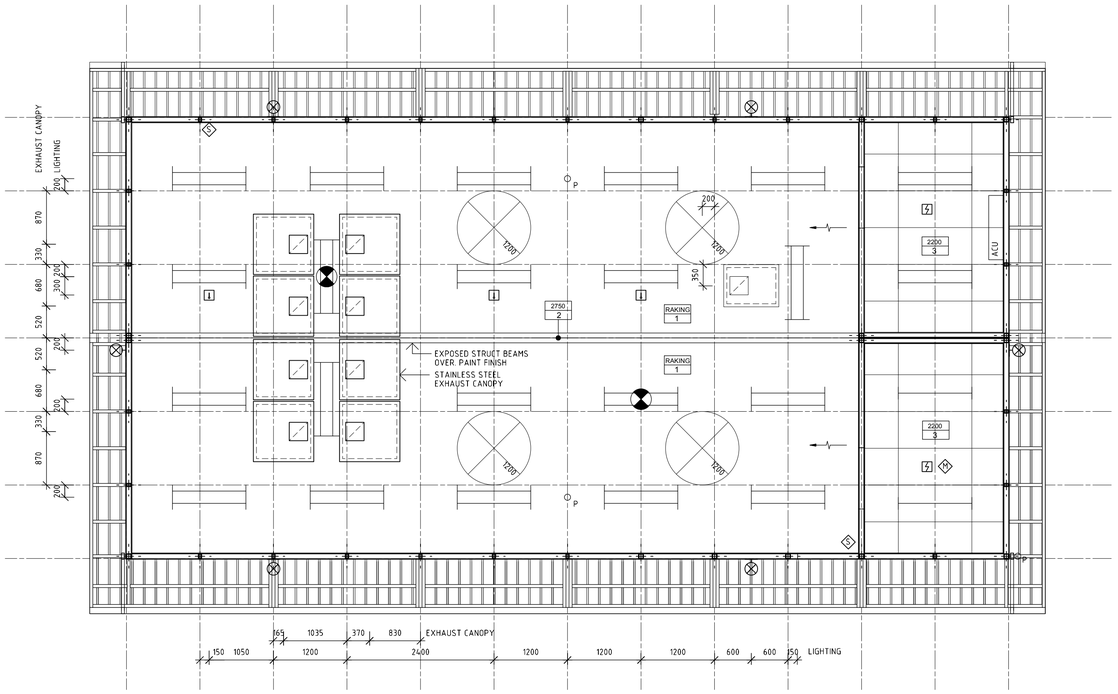


01 FLOOR PLAN
1:50



03 SECTION A-A
1:50



02 REFLECTED CEILING PLAN
1:50

NOTES

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LEGEND

P.L	PLATE LEVEL
F.L	FLOOR LEVEL
G.L	GROUND LEVEL
R.L	RELATIVE LEVEL
EF	EXHAUST FAN
F	FIXED
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RWP	90x45 COLORBOND RAIN WATER PIPE
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	GAS OUTLETS

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MW	MICROWAVE
TR	TROUGH
S	SINK
CT	COOKTOP
OV	OVEN
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SWB	SWITCHBOARD

CEILING LEGEND

1	6mm PERFORATED FIBRE CEMENT SHEETS WITH PVC 'H' MOULD AT JOINTS WITH 75mm R1.5MIN GLASSWOOL INSULATION OVER
2	UNDERSIDE OF BEAM
3	1200x600x16mm FINE FISSURED MINERAL FIBRE CEILING TILE WITH SQUARE LAY-IN EDGE PROFILE
AP	CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN
	WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES
M	LIGHTING MOTION SENSOR
P	DAYLIGHT SENSOR
S	SECURITY MOTION SENSOR
EXIT	EXIT SIGN
	SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
	SPEAKER
	THERMAL DETECTOR
T	THERMOSTAT
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	PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETECTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
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E1	EMERGENCY LIGHT

NO.	REVISION	DATE	BY
00	ISSUE FOR TENDER	25.10.13	IPH

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Building Management and Works

TENDER ISSUE

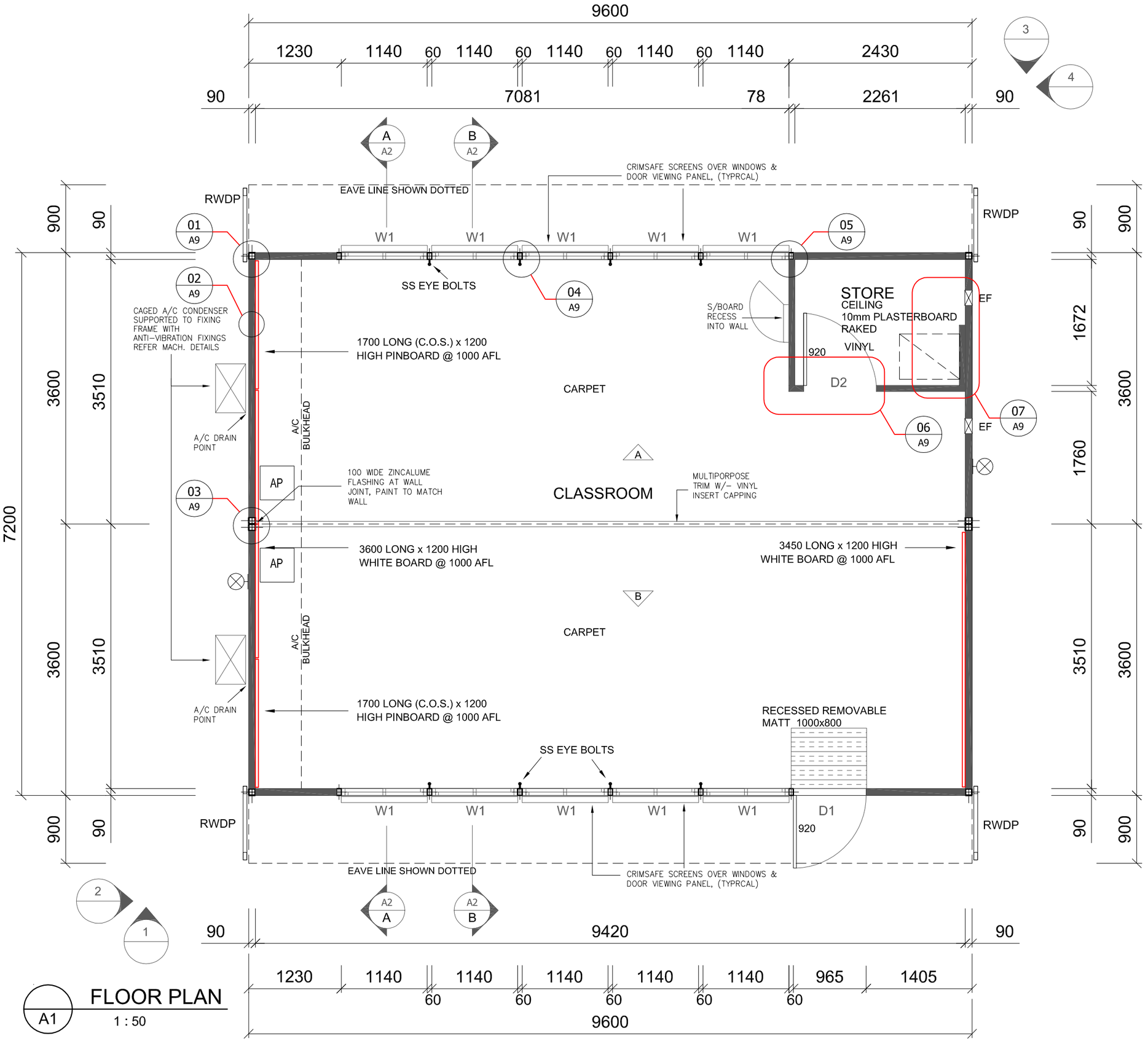
TRANSPORTABLE SCHOOL BUILDINGS
WESTERN AUSTRALIA

HOME ECONOMICS (FOOD ONLY)
FLOOR PLAN, CEILING PLAN AND SECTION

DRAWN	IPH	DESIGNED	AI	REDUCTION 0 125m
CHECKED	AI	PRINCIPAL	ADRIAN IREDALE	
APPROVED	AI			
SCALE 1: 50 @A1 / 1: 100 @A3		DATE	OCT 2013	DRAWING No. A. 7.01/00
DF PROJ No: 20112820		DF FILE No: 2013/11563		

THIS IS A CADD DRAWING DO NOT AMEND MANUALLY

TSBA701P4 10:00:57 04/07/01



LEGEND

P.L. PLATE LEVEL
F.L. FLOOR LEVEL
G.L. GROUND LEVEL

AP	ACCESS PANEL	PM	ADJUSTABLE 300Ø PARABOLIC
ACC	AIR CON CONTROL		MIRROR AT HIGH LEVEL
AV	AV WALL PLATE	PTD	PAPER TOWEL DISPENSER
DATA	DATA WALL PLATE	RWDP	HDG PAINT FINISH STEEL DOWNPIPE FIXED TO STRUCTURE
EFS	EXHAUST FAN SWITCH	S	SLIDING WINDOW SASH
EFSO	EXHAUST FAN SWITCH OVERRIDE	SD	SOAP DISPENSER
EF	EXHAUST FAN	SS	STAINLESS STEEL
F	EXHAUST FAN	TEL	TELEPHONE WALL PLATE
FWG	FLOOR WASTE GULLY	TH	THERMOSTAT
GPO	SINGLE GPO WALL PLATE	TRH	TOILET ROLL HOLDER
DGPO	DOUBLE GPO WALL PLATE	U/S	UNDERSIDE
LS	LIGHT SWITCH	USB	USB WALL PLATE
PB	PIN BOARD	WB	WHITEBOARD
		VC	VOLUME CONTROL

CEILING LEGEND

1	10mm PLASTERBOARD WITH 'H' MOULD AT JOINTS WITH 75mm R1.5 MIN GLASSWOOL INSULATION OVER		SURFACE MOUNTED EXTERNAL SECURITY LUMINAIRE
2	UNERSIDE OF BEAM		SPEAKER
AP	CEILING ACCESS PANEL LOCKABLE 600x600mm WITH DROP CHAIN	T	THERMOSTAT
	WHITE CEILING FANS WITH CLEAR POLYCARBONATE BLADES	S	PROVIDE CONDUIT AND DRAWWIRE FOR SMOKE DETCTOR, AND ENGRAVED BLANK PLATE OVER FIT OFF 'SMOKE DETECTOR'
M	MOTION SENSOR		TWIN SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER
O_P	DAYLIGHT SENSOR		SINGLE SURFACE MOUNTED LUMINAIRE WITH PRISMATIC DIFFUSER

WINDOWS

W1 - H 1200 x W 1130

Quality Builders
PO Box 303, Kalamunda WA 6926
(08) 9454 9700
www.qualitybuilders.com.au

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Building Management and Works

TRANSPORTABLE SCHOOL BUILDINGS

DESIGN & CONSTRUCT GLA CLASSROOM PACKAGE 2
FLOOR PLAN, CEILING PLAN, ELEVATIONS

DRAWN CMC		DESIGN	
CHECKED			
APPROVED			
SCALE 1 : 50			DRAWING No. QB1493/GLA/A1
DATE MARCH 2014			

BUILDING DESIGN CRITERIA
Wind Load - in Accordance with AS.1170.2:2011
REGION D, TERRAIN CATEGORY 2, IMPORTANCE LEVEL 2
Annual Probability of Exceedance 1:500
REGIONAL WIND SPEED - V500 = 88 m/s
Built To NCC: Class 9b Building

CLIMATE ZONES 1-6

EXTERNAL DIMENSIONS:	7.8m x 9.1m
INTERNAL DIMENSIONS:	7.60m x 8.90m
INTERNAL AREA:	67.64m²
CLASSROOM:	63.04m²
STORE:	4.00m²

CEILING HEIGHT
RAKED 3° w/ 2700 PITCH POINT

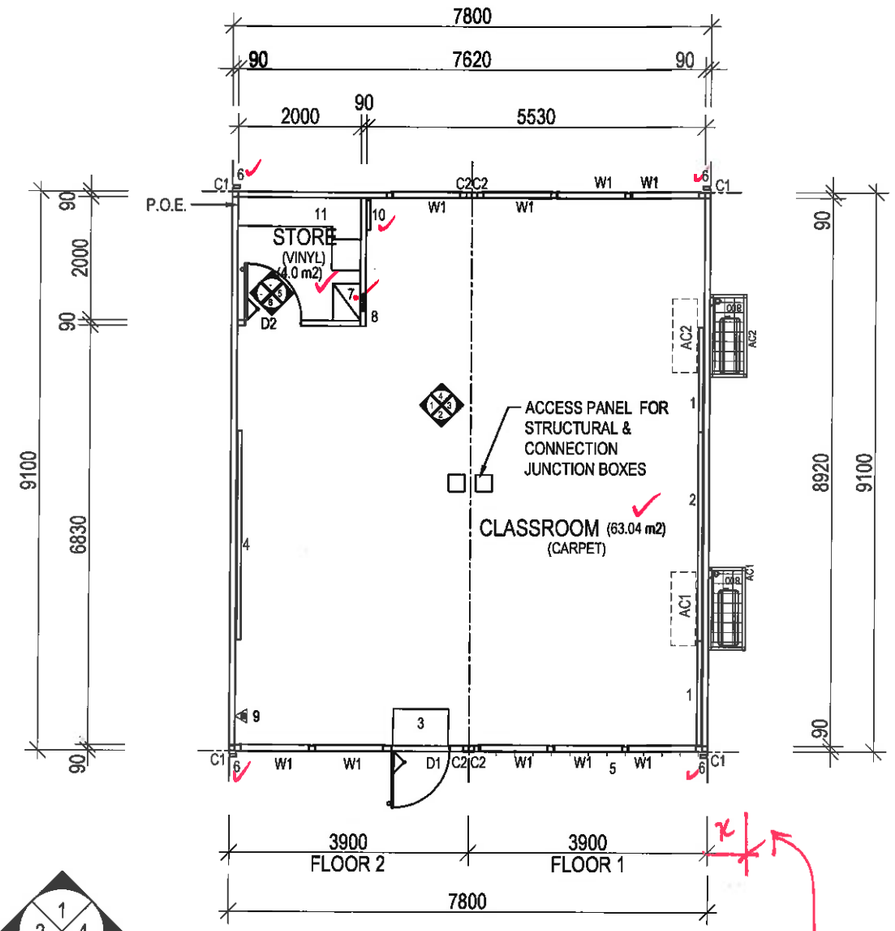
STUD WALL BUILDING SHORT SPECIFICATION - REGION D - 2013 NCC

•	CHASSIS - STEEL BEAMS c/w GALV. JOISTS C150.19 CEE SECTIONS @ MAX 600 CTRS
•	PERIMETER CHASSIS 200x75x5mm DURAGAL CHANNEL
•	FLOORING - 25mm T&G AQUATITE TERMITE TREATED PARTICLE BOARD
•	FLOOR COVERING - R10 VINYL FLOOR FINISH TO STORE- refer colour schedule
•	FLOOR COVERING - CARPET TO CLASSROOMS - refer colour schedule. SELECTION AS PER TENDER ADDENDA 03 - BMW BUYERS GUIDE
•	WALLS - 90mm STEEL STUD FRAMING
•	EXTERNAL CLADDING - 0.42 BMT STRAMIT MINIRIB, 6mm OSB (ORIENTED STRAND BOARD) BRACING
•	INTERNAL LINING WALL - WEATHERTEX - VERTICAL H-MOULD - refer colour schedule
•	INTERNAL LINING CEILING - PERFORATED ACOUSTIC PANEL IN CORRUGATED PROFILE CEILING - refer colour schedule - c/w- HESSIAN SCRIM SHEET.
•	WALL INSULATION - R2.5 HD POLYESTER BATTS to all walls 8mm ETHERM
•	FLOOR INSULATION - 75mm R1.8 `RETROTHERM`
•	ROOF INSULATION - A100-ANTICON UNDER ROOF SHEETS. R2.5 TONTINE BLANKET ON CEILING
•	ROOF & CEILING FRAME - GALV. STEEL FRAMEWORK - DURAGAL
•	ROOF CLADDING - 0.48BMT LONGSPAN SHEETING - refer colour schedule
•	CORNICE - POWERCOATED ALUMINIUM SECTIONS - refer colour schedule
•	ROOF FLASHINGS & CORNER TRIMS - COLORBOND - refer colour schedule

EQUIPMENT LIST

No.	DESCRIPTION	QTY
D1	2040h x 920w HALF GLAZED TIMBER SOLID CORE WATERPROOF FLUSH PANEL EXTERNAL DOOR IN METAL DOOR FRAME c/w CRIM-SAFE CYCLONIC IMPACT SCREEN TO GLAZING	1
D2	2040h x 920w SOLID CORE INTERNAL DOOR c/w REED SWITCH	1
W1	1100w x 1100h HORIZ. SLIDING WINDOW c/w CRIM-SAFE CYCLONIC IMPACT SCREEN	9
AC1 & AC2	DAIKIN 10kW UNDER CEILING INVERTER AIR CONDITIONER - OUTSIDE AIR FAN & DUCTING - FHQ100BVV1B	2
1	1700L x 1200H PINUP BOARD	2
2	3400L x 1200H WHITE BOARD	1
3	600Wx900L RECESSED CARPET MAT	1
4	3400L x 1200H PINUP BOARD	1
5	BOBRICK NATURAL ANODIZED ALUMINUM BAG HOOKS FIXED TO TIMBER RAILS. 18 HOOKS ON STORE SIDE SUPPLIED LOOSE FOR SITE FIX BY CLIENT	30
6	100 x 50 x 3.0 RHS HOT DIP GALVANIZED DOWNPIPES (TO BE 50mm CLEAR OF EXT. WALL)	4
7	COMMS RACK 450W x 600D x 635H	1
8	EXHAUST : WALL MOUNTED	1
9	ABE TYPE FIRE EXTINGUISHER 4.5kg	1
10	700H x 480W DISTRIBUTION BOARD (RECESSED)	1
11	1180L x 2000W x 1990H x 470D SHELVING ADJUSTABLE	1

NOTES
- RECESSED MATTING TO COMPLY WITH AS1428.1 SECTION 7.4.2
- ALL CARPETS TO COMPLY WITH AS1428.1 SECTION 7.4.1
- ALL DOORS TO PROVIDE A CLEAR OPENING OF 850mm MIN. IN ACCORDANCE WITH AS 1428.1-2009 SECTION 13.2
- ALL SWITCHES OTHER THAN GPOS TO BE BETWEEN 900mm & 1100mm AFL TO COMPLY WITH AS1428.1 SECTION 14.
- ALL DOORWAYS TO COMPLY WITH AS1428.1 SECTION13.1 - LUMINANCE CONTRAST



ELEVATION GUIDE
SHEET 02

PLAN VIEW
SCALE 1:100

Description	Colour Selection	Color Source	Fleetwood Job No.
External Walls	Dune	Colorbond Standard Colour	-
Roof Sheet	Dune	Colorbond Standard Colour	-
Roof flashings and gutters	Ironstone	Colorbond Standard Colour	-
Exposed Rafters	Ironstone	Painted to match Colorbond Standard Colour	-
Window frame	Ironstone	Powdercoat to match Colorbond colour	-
Cyclonic Window Screen Frame	Ironstone	Powdercoat to match Colorbond colour	-
Cyclonic Window Screen mesh	Black	Powdercoat	-
External Door frame	Ironstone	Painted to match Colorbond Standard Colour	-
External Door	Dune	Painted to match Colorbond Standard Colour	-
Airconditioner condensor mesh covers	Dune	Painted to match Colorbond Standard Colour	-
Internal Ceiling	Surfmist	Colorbond Standard Colour	-
Internal Walls	Cloudy Sky 2765	Solver	-
Carpet	Pisces (30)	Westwools Stonegate 3	E0002 - E0022
Carpet	Electric Blue (33)	Westwools High Tension	E0023 - E0037
Vinyl (Store)	Ceduna White	Armstrong Accolade Plus	-
Internal Door Frame	White Gloss		-
Internal Door	White Gloss		-
Skirting	White Gloss		-
Pinboard	Ironstone	Select closest available material to match Colorbond Ironstone	-
Whiteboard and Pinboard frame	Natural Anodized Aluminium		-
Cornice	Surfmist	Powdercoated to match Internal Ceiling Colour	-
Internal Distribution Board	Colour B42 Grey door		-

* CEILING PLAN - PROVIDE LOCATION OF FANS, LIGHTS, CEILING PENETRATIONS ETC FOR REVIEW.

REVIEW COMPLETED
RECEIVED ONLY
MAKE CORRECTIONS NOTED
RESUBMIT
REJECTED

Reviewed for conformance with project design intent. This review does not in any way relieve the Contractor from responsibility for correctness of dimensions, quantities, calculations, construction, fabrication techniques and co-ordination or work of other trades. Non-conformities and errors detected are noted.
Paterson Group Architects
By [signature] Date 24.02.14

CLIENT APPROVAL

CLIENT SIGNATURE DATE

NOTE: These drawings have been approved for manufacturing. Should any changes be made after the approved date, the Contract will need to be reviewed.

BUILDERS SIGNATURE DATE

REV	DESCRIPTION	INIT	DATE
A	ISSUED FOR APPROVAL	JN	18.02.14

PAGE SIZE	PAGE	SCALE
A3	1 of 8	1:100

DRAWN BY	DATE	CHECKED BY	DATE
JN	18.02.14	NW	18.02.14

DO NOT SCALE. REFER TO DIMENSIONS ONLY

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1240 ABERNETHY RD HIGH WYCOMBE W.A. 6057
PH: (08) 9281 7500 FAX: (08) 9281 7580
EMAIL: drafting@fleetwood.com.au www.fleetwood.com.au
FLEETWOOD INTERSTATE BRANCHES
58 McKINNON RD , BERRIMAH, DARWIN
N.T. 0820 PH: 8932 4900 FAX: 8932 4888

CLIENT: WA BUILDING MANAGEMENT AND WORKS
LOCATION: TBA
TITLE: BMW SINGLE CLASSROOM - FLOOR PLAN

FLEETWOOD DWG No.	FLEETWOOD JOB No.	REVISION
SQ09884-B01-01		A

Annexure C

SCHEDULE OF FINISHES

EXTERNAL	
Metal Roof	Prefinished Colorbond finish of selected colour
Metal Wall Sheeting and Flashings	Prefinished Colorbond finish of selected colour
Gutters, Eaves, Barges, Cappings, Flashings, Trims and Mouldings	Prefinished Colorbond finish of selected colour
Downpipe steel	Hot Dip Galvanised
AC Condenser Unit cages	Prefinished Powdercoat Finish of selected colour
Baseframe	Hot Dip Galvanised
Doors	Solid Core, Painted of selected colour
Door Frames and Trims	Prefinished Powdercoat Finish of selected colour
Window Frames and Trims	Prefinished Powdercoat Finish of selected colour
Security Screens	Crimsafe, Black
Roof Penetrations	Painted of selected colour
INTERNAL	
Wall Lining	Plasterboard, Painted of selected colour
Ceiling, Cornice	Prefinished preforated metal strip of selected colour
Exposed Structural Steel	Painted of selected colour
Skirtings	Timber, Painted of selected colour
Door	Hollow Core, Painted of selected colour
Door Frame	Timber, Painted of selected colour
Door Grille	Prefinished Powdercoat Finish of selected colour
Internal Window Frame	Prefinished Powdercoat Finish of selected colour
Switchboard Cover and Trim	Painted of selected colour
Benchtop/Desk	MDF with Laminate finish of selected colour
Joinery and Shelving – External and Visible Surfaces	Laminate of selected colour
Joinery and Shelving – All Internal Carcases	Melamine of selected colour
Shelving Supports	Prefinished Powdercoat Finish of selected colour
Vinyl Flooring	R10 slip rating of selected colour
Carpet Flooring	Selected carpet
Pin-up Board / Whiteboard Frame	
Pin-up Board Fabric	Selected colour
Threshold Plates	
Micro Venetians	Selected colour

COLOUR SCHEDULE

Colour Schedule to be prepared by the Superintendent based upon the Schedule of Materials / Suppliers nominated by the contractor.