

## Schedule 7 – Completion Criteria

### 1. Stage 1 Technical Completion Criteria

The criteria set out below constitute the Stage 1 Technical Completion Criteria for the purposes of the Agreement. Unless stated otherwise, Project Co must satisfy each of the Stage 1 Technical Completion Criteria to the satisfaction of the Independent Certifier.

Stage 1 Technical Completion Criteria		
Item	Subject Matter	Stage 1 Technical Completion Criteria
1.	Stage 1 Technical Completion Plan	Project Co must have successfully carried out all activities and satisfied all training requirements in accordance with the Stage 1 Technical Completion Plan submitted in accordance with Clause 17.2 of the Agreement.
2.	Stage 1 Technical Completion Tests	Project Co must have successfully completed all of the Stage 1 Technical Completion Tests.
3.	Initial Stage 1 Technical Completion Report	Project Co must have submitted to the State and the Independent Certifier the initial Stage 1 Technical Completion Report in accordance with Clause 17.5 of the Agreement.
4.	Stage 1 Works in accordance with For Construction Documentation	Project Co must have completed the Stage 1 Works in accordance with the For Construction Documentation, the Design Requirements and other requirements of the Agreement such that the Independent Certifier is satisfied that there are no issues that would prevent the Stage 1 Facility from being Fit For Purpose.
5.	Draft Operating Documents	Project Co must have submitted a draft version of the Annual Operating Documents (as defined in Schedule 13 to the Agreement (Services Specifications)), as required by and otherwise in accordance with Schedule 13 to the Agreement (Services Specifications) and has demonstrated that it is prepared for the delivery of the Services during the Operating Phase.
6.	Plant and FF&E	Project Co must have commissioned all new Plant and Project Co FF&E, including the production or upgrade of maintenance manuals and as-installed drawings in accordance with Schedule 13 to the Agreement (Services Specifications).
7.	FF&E	Project Co must have installed and commissioned all Project Co FF&E in the Stage 1 Facility in accordance with the Agreement and received certification for operational use where relevant.
8.	Authorisations	<p>Project Co must have obtained all Authorisations and certificates of compliance required for the occupation of the Stage 1 Facility and provided copies of those Authorisations and certificates of compliance to the Independent Certifier.</p> <p>To the extent that such Authorisations contain conditions, those conditions must not in the opinion of the Independent Certifier (acting reasonably) impact on the ability for the Stage 1 Facility to be Fit For Purpose and for Project Co to otherwise satisfy the FFP Warranty.</p>

Stage 1 Technical Completion Criteria		
Item	Subject Matter	Stage 1 Technical Completion Criteria
9.	Mural Works Completion Notification	Project Co must provide the State with a notice specifying that the Mural Works have been completed in accordance with the Mural Works Subcontract including the date of completion of the Mural Works and the amount of the Mural Works Price payable.
10.	Off-Site Infrastructure Works	Project Co must have ensured that Off-Site Infrastructure Completion is achieved and provided to the Project Director and to the Independent Certifier a copy of all Authorisations required in connection with the Off-Site Infrastructure Works.
11.	Damage	Project Co must have repaired or rectified any property damage including damage on or to property adjoining the Site or the Existing Facility arising in the course of carrying out the Stage 1 Works.
12.	Door and Lock Schedule	Project Co must have provided to the Project Director: <ul style="list-style-type: none"> <li>• a completed and final Door and Lock Schedule; and</li> <li>• all keys, cylinders and key rings,</li> </ul> for the Stage 1 Facility in accordance with Section 5.12(c) of the Architectural Specification in Schedule 12 to the Agreement (Design Specifications).
13.	Safety	Project Co must have done all that is required to ensure that in using the Stage 1 Facility, all Facility Users are safe from the construction activities that are continuing at the Construction Site.
14.	Removed construction machinery	Project Co must have removed all relevant temporary site accommodation, construction machinery, equipment and materials from the Stage 1 Construction Site.
15.	Clean	Project Co must have cleaned the Stage 1 Facility so that the Stage 1 Facility is free of construction debris and rubbish.
16.	Facility Operator capable of obtaining Authorisations to perform Facility Functions	The Stage 1 Facility must be such that the State and State Associates will not be prevented from obtaining any Authorisation necessary (and which Project Co is not required by the Agreement to obtain) to enable the State, and relevant State Associates, to perform the Facility Functions.
17.	No Defects	Except for any Outstanding Items, the Stage 1 Facility must be free from all Defects.
18.	Miscellaneous	Project Co must have done all other things required by the Agreement to achieve Stage 1 Technical Completion.

## 2. Stage 1 Commercial Acceptance Criteria

The criteria set out below constitute the Stage 1 Commercial Acceptance Criteria for the purposes of the Agreement. Unless stated otherwise, Project Co must satisfy each of the Stage 1 Commercial Acceptance Criteria to the reasonable satisfaction of the Project Director.

Stage 1 Commercial Acceptance Criteria		
Item	Subject Matter	Stage 1 Commercial Acceptance Criteria
1.	Compliance with Stage 1 Commercial Acceptance Plan	Project Co must have complied with its obligations (including its training obligations) in respect of Stage 1 Commercial Acceptance in accordance with Clause 19 of the Agreement.
2.	Final Stage 1 Technical Completion Report	Project Co must have supplied the State with the final Stage 1 Technical Completion Report in accordance with Clause 17.9 of the Agreement.
3.	Certificate of Stage 1 Technical Completion	The Independent Certifier must have issued a certificate of Stage 1 Technical Completion under Clause 17.7(a) of the Agreement certifying that Stage 1 Technical Completion has been achieved.
4.	Commercial Acceptance Tests	Project Co must have successfully completed to the satisfaction of the Project Director all of the Commercial Acceptance Tests.
5.	Updated Handover Package	Project Co must have updated the Handover Package to reflect any changes to the nature or the status of the information required to be provided in the Handover Package as a condition precedent to Commercial Acceptance.
6.	Outstanding Items	The Project Director must have provided written confirmation to the State that all Outstanding Items required to be completed prior to Stage 1 Commercial Acceptance have been completed.
7.	Fit For Purpose	Project Co must have demonstrated that the Stage 1 Facility is Fit For Purpose.
8.	Operating Documents	Project Co must have submitted a final version of the Annual Operating Plans, Reports and Manuals (as defined in Schedule 13 to the Agreement (Services Specifications)), as required by and otherwise in accordance with Schedule 13 to the Agreement (Services Specifications) and has demonstrated that it is prepared for the immediate delivery of the Services.
9.	Damage	Project Co must have repaired or rectified any property damage including damage on or to property adjoining the Site, or to the Stage 1 Facility or Existing Facility arising between Stage 1 Technical Completion and Stage 1 Commercial Acceptance.
10.	Consumables	Project Co must have delivered to the Stage 1 Facility all consumables necessary for the provision by Project Co of the Services in accordance with Schedule 13 to the Agreement (Services Specifications).

Stage 1 Commercial Acceptance Criteria		
Item	Subject Matter	Stage 1 Commercial Acceptance Criteria
11.	Other documents	<p>Project Co must have provided all documents and information Project Co is required to supply to the State or Independent Certifier under this Agreement at a time before or as part of Stage 1 Commercial Acceptance that are reasonably required for the:</p> <ul style="list-style-type: none"> <li>• operation of the Stage 1 Facility;</li> <li>• provision of the Facility Functions at the Stage 1 Facility; and</li> <li>• provision of the Services.</li> </ul>
12.	Clean	<p>Project Co must have cleaned the Stage 1 Facility (including cleaning the exterior and completing a clinical clean of the clinical areas). Project Co must have cleaned and scanned the Stage 1 Construction Site with metal detectors so that the Stage 1 Facility and Stage 1 Construction Site is clean, tidy and free from rubbish, construction waste, dust, metal and scrap.</p>
13.	Insurances	<p>Project Co must have provided evidence that it has procured all Insurances required in accordance with Clause 39 of the Agreement, and complied with its obligations in accordance with Clause 39 of the Agreement.</p>
14.	Miscellaneous	<p>Project Co must have otherwise done all other things required by the Agreement to achieve Stage 1 Commercial Acceptance.</p>

### 3. Stage 2 Technical Completion Criteria

The criteria set out below constitute the Stage 2 Technical Completion Criteria for the purposes of the Agreement. Unless stated otherwise, Project Co must satisfy each of the Stage 2 Technical Completion Criteria to the reasonable satisfaction of the Independent Certifier.

Stage 2 Technical Completion Criteria		
Item	Subject Matter	Stage 2 Technical Completion Criteria
1.	Stage 2 Technical Completion Plan	Project Co must have successfully carried out all activities and satisfied all training requirements in accordance with the Stage 2 Technical Completion Plan submitted in accordance with Clause 17.2 of the Agreement.
2.	Stage 2 Technical Completion Tests	Project Co must have successfully completed all of the Stage 2 Technical Completion Tests.
3.	Stage 2 initial Technical Completion Report	Project Co must have submitted to the State and the Independent Certifier the initial Stage 2 Technical Completion Report in accordance with Clause 17.5 of the Agreement.
4.	Stage 2 Works in accordance with For Construction Documentation	Project Co must have completed the Stage 2 Works in accordance with the For Construction Documentation, the Design Requirements and other requirements of the Agreement such that the Independent Certifier is satisfied that there are no issues that would prevent the Facility from being Fit For Purpose.
5.	Authorisations	<p>Project Co must have obtained all Authorisations and certificates of compliance required for the occupation of the Stage 2 Facility and provided copies of those Authorisations and certificates of compliance to the Independent Certifier.</p> <p>To the extent that such Authorisations contain conditions, those conditions must not in the opinion of the Independent Certifier (acting reasonably) impact on the ability for the Facility to be Fit For Purpose and for Project Co to otherwise satisfy the FFP Warranty.</p>
6.	Damage	Project Co must have repaired or rectified any property damage including damage on or to property adjoining the Site, or to the Stage 1 Facility arising in the course of carrying out the Stage 2 Works.
7.	Safety	Project Co must have done all that is required to ensure that in using the Facility, all Facility Users are safe from the construction activities that are continuing on the Stage 2 Construction Site.
8.	Removed construction machinery	Project Co must have removed all relevant temporary site accommodation, construction machinery, equipment and materials from the Stage 2 Construction Site.
9.	Clean	Project Co must have cleaned the Stage 2 Facility so that the Stage 2 Facility is free of construction debris and rubbish.
10.	Facility Operator capable of obtaining Authorisations	The Project Director must have provided written confirmation to the Independent Certifier that the Facility is in a condition such that

<b>Stage 2 Technical Completion Criteria</b>		
<b>Item</b>	<b>Subject Matter</b>	<b>Stage 2 Technical Completion Criteria</b>
	to perform Facility Functions	the State and State Associates will not be prevented from obtaining any Authorisation necessary (and which Project Co is not required by the Agreement to obtain) to enable the State, and relevant State Associates, to perform the Facility Functions.
11.	Miscellaneous	Project Co must have done all other things required by the Agreement to achieve Stage 2 Technical Completion.

## 4. Stage 2 Commercial Acceptance Criteria

The criteria set out below constitute the Stage 2 Commercial Acceptance Criteria for the purposes of the Agreement. Unless stated otherwise, Project Co must satisfy each of the Stage 2 Commercial Acceptance Criteria to the reasonable satisfaction of the Project Director.

Stage 2 Commercial Acceptance Criteria		
Item	Subject Matter	Stage 2 Commercial Acceptance Criteria
1.	Stage 2 Commercial Acceptance Plan	Project Co must have successfully carried out all activities and satisfied all training requirements in accordance with the Stage 2 Commercial Acceptance Plan submitted in accordance with Clause 19 of the Agreement.
2.	Stage 2 Commercial Acceptance Tests	Project Co must have successfully completed all of the Stage 2 Commercial Acceptance Tests.
3.	Final Stage 2 Technical Completion Report	Project Co must have supplied the State with the final Stage 2 Technical Completion Report in accordance with Clause 17.9 of the Agreement.
4.	Updated Handover Package	Project Co must have updated the Handover Package to reflect any changes to the nature or the status of the information required to be provided in the Handover Package as a condition precedent to Stage 1 Commercial Acceptance.
5.	Damage	Project Co must have repaired or rectified any property damage including damage on or to property adjoining the Site, or to the Stage 1 Facility arising in the course of carrying out the Stage 2 Works.
6.	Clean	Project Co must have cleaned the Stage 2 Facility so that the Stage 2 Facility is free of construction debris and rubbish.
7.	Outstanding Items	The Project Director must have provided written confirmation to the State that all Outstanding Items required to be completed prior to Stage 2 Commercial Acceptance have been completed.
8.	Fit For Purpose	Project Co must have demonstrated that the Facility is Fit For Purpose.
9.	Miscellaneous	Project Co must have done all other things required by the Agreement to achieve Stage 2 Commercial Acceptance.

## Attachment 1

### 1. General testing requirements

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#### 1.1 Testing Personnel

- (a) Project Co must ensure that all testing is undertaken by experienced commissioning personnel of the Subcontractor that installed the relevant item of Plant or Facility FF&E and that such personnel:
  - (i) are correctly certified for the particular test applicable; and
  - (ii) have valid experience in the particular field applicable.
- (b) Without limiting paragraph (a), where required, Project Co must ensure that testing is conducted under the supervision of an accredited person of the manufacturer or supplier of the particular item of Plant or Facility FF&E.

#### 1.2 Testing instruments

Project Co must:

- (a) supply or otherwise provide all instruments and appliances necessary to conduct any Completion Tests;
- (b) ensure all test instruments have been checked and calibrated for accuracy by the manufacturer;
- (c) only use test instruments if they have been designed for the specific task for which they are used; and
- (d) provide a copy of calibration showing the degree of accuracy of each of the testing instruments to the Independent Certifier if requested by the State or the Independent Certifier.

### 2. Stage 1 Technical Completion Tests

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#### 2.1 Architectural

Project Co must carry out:

- (a) **(general)**: testing to ensure that all cell areas meet the minimum requirements in accordance with the Victorian Cell and Fire Safety Guidelines and the Design Requirements and otherwise to the reasonable satisfaction of the Independent Certifier;
- (b) **(environmental)**: testing to certify that all areas of the Facility where day lighting requirements are specified in accordance with the Design Requirements meet the specified requirements; and
- (c) **(landscaping)**:
  - (i) testing to demonstrate that all vehicle and pedestrian movement paths within the Site meet the requirements for passing and serviceability; and
  - (ii) testing to demonstrate the full functionality of the complete irrigation system,



and provide a record of all plants provided at Stage 1 Technical Completion and a report by an independent landscape consultant on the condition of all plants at Stage 1 Technical Completion.

## 2.2 Removal of Metal and other Objects from the Site

Project Co must:

- (a) ensure that all metal remaining as a result of the construction works is removed from the Facility prior to Stage 1 Technical Completion;
- (b) carry out metal scanning of the Site and provide written confirmation to the State that all metal has been removed; and
- (c) ensure that any product or material that could become a security risk in respect of the Facility Functions is removed from the Facility prior to Stage 1 Technical Completion.

## 2.3 Central Kitchen and Food Delivery System

Project Co must carry out testing to demonstrate:

- (a) the full capability of the Central Kitchen (as defined in Schedule 13 to the Agreement) (Services Specification)) to meet the specified functionality;
- (b) the food delivery system will:
  - (i) enable delivery of meals at the appropriate temperature and to the food health requirements; and
  - (ii) ensure the appropriate temperature of the food is maintained at all times.

## 2.4 Laundry

Project Co must carry out testing to demonstrate the full capability of the Laundry to meet the specified functionality.

## 2.5 Acoustics

- (a) **(Background noise level):**
  - (i) Project Co must carry out a noise level survey in each discrete room within the Facility so as to confirm that the limits specified in the Design Requirements are achieved.
  - (ii) Noise levels must be measured as Leq 30 second values in octave bands (63Hz to 8kHz). The measurement location in each space must be chosen as the highest level location, not nearer than 1m to any distinct noise source point and not nearer than 1m to any wall surface.
  - (iii) In areas of the Facility that experience significant traffic noise exposure, measurements must be made during a time period that has been shown to constitute the worst case period for traffic noise.
  - (iv) Project Co must prepare and submit as part of the initial Technical Completion Report a comprehensive listing of spaces where noise measuring was conducted, and the noise levels recorded.

- (b) **(Vibration)**: Project Co must carry out a walk through of all areas to confirm that there is no detectable vibration in floor surfaces resulting from operation of the Facility. Project Co must record any areas considered to have perceptible vibration.
- (c) **(Sound isolation)**: Project Co must carry out sound isolation testing in selected locations to confirm compliance with the scheduled 'rating classes' by testing at least 3 representative samples of each rating class. Project Co must prepare and submit a list of locations and measured values as part of the initial Stage 1 Technical Completion Report.

## 2.6 Integrated testing

- (a) **(Stage 1 Technical Completion Tests)**: The Stage 1 Technical Completion Tests must include, as a minimum, testing which spans across all services disciplines and other disciplines, as required to obtain satisfactory operation of an overall system (**Integrated Testing**) at the completion of the Stage 1 Works.
- (b) **(Integrated Testing)**: Without limiting paragraph (a), Project Co must carry out Integrated Testing, at a minimum, in respect of the following:
  - (i) critical operational tests of installations: computer rooms, control rooms, emergency generators, back-up system operation and alarming, essential services systems: fire mode operation tests, etc; and
  - (ii) performance testing of systems or situations that cover more than a single discipline: energy testing, load tests on mechanical and boiler systems, failure simulation tests, running of services systems over the unoccupied testing period.
- (c) **(Systems are operational)**: Integrated Testing must demonstrate that all systems and interfaces between systems are operating correctly, ensuring the operation of the system as a whole is successful.
- (d) **(Phases)**: Project Co must carry out Integrated Testing in phases to be agreed with the State.
- (e) **(Satisfaction of Independent Certifier)**: Each phase must be completed to the satisfaction of the Independent Certifier prior to commencement of the next phase.
- (f) **(Subcontractors)**: Project Co must ensure that all relevant Subcontractors:
  - (i) are available for each integrated test; and
  - (ii) provide the staff and resources required to:
    - A. carry out each test; and
    - B. rectify any Defects or programming faults found during Integrated Testing.
- (g) **(Artificial loads)**: Project Co must provide any artificial loads (including, if required, heat and electrical) required for a full load testing.
- (h) **(Completed systems)**: Integrated Testing must only be carried out on completed systems.
- (i) **(Building engineering systems)**: The running of the building engineering systems must be logged and controlled at the building management system.

## 2.7 Mechanical Services

All commissioning must be undertaken in accordance with the requirements of either the CIBSE Commissioning Codes or the ASHRAE Guideline 1 and Standard 111 (whichever imposes the higher or greater standard or requirement).

Project Co must:

- (a) **(acceptance testing):**
  - (i) commission, test and balance each of the mechanical systems installed;
  - (ii) ensure testing and balancing is carried out:
    - A. by technicians certified by the National Environmental Balancing Bureau (**NEBB**) and to NEBB standard; and
    - B. under the supervision of an accredited representative of the manufacturer or supplier of the particular item of Project Co FF&E;
  - (iii) ensure comprehensive pre-commissioning, commissioning, and quality monitoring are performed in accordance with either ASHRAE Guideline 1 and Standard 111 or CIBSE commissioning codes; and
  - (iv) ensure that commissioning personnel:
    - A. are correctly certified;
    - B. have valid experience in the particular field applicable; and
    - C. have verified the results in accordance with the Design Requirements;
- (b) **(testing and commissioning):** at a minimum, commission test and demonstrate the operation of the following systems for compliance with Schedule 12 to the Agreement (Design Specifications):
  - (i) heating system;
  - (ii) mechanical ventilation system;
  - (iii) natural ventilation system;
  - (iv) chilled water system;
  - (v) air conditioning systems;
  - (vi) natural gas distribution system;
  - (vii) kitchen exhaust system;
  - (viii) dishwasher exhaust system;
  - (ix) general exhaust systems;
  - (x) specialist industries systems;
  - (xi) air balancing of all air handling systems, grilles and diffusers;

- (xii) air pressurisation tests in all areas where a designated amount of air pressurisation is required or where a pressure gradient is required from one area to another;
  - (xiii) water balancing of all water circulation systems;
  - (xiv) domestic hot water system solar contribution testing;
  - (xv) systems flow and pressure testing;
  - (xvi) high-efficiency particulate air filter and housing testing and filter and housing fumigation testing;
  - (xvii) acceptance testing of all Project Co FF&E;
  - (xviii) room temperature logging and testing;
  - (xix) fire and life safety system and components testing and other essential services testing;
  - (xx) building management system;
  - (xxi) controls testing;
  - (xxii) fail safe systems testing;
  - (xxiii) room air velocity and comfort testing;
  - (xxiv) electrical system operation, including the testing of any interlock or relay type control carried out directly through the mechanical switchboards;
  - (xxv) involvement in Integrated Testing of systems such as fire mode operation, emergency generator operation, communications room system testing;
  - (xxvi) authority testing;
  - (xxvii) chemical treatment testing;
  - (xxviii) manufacturer's installed testing of Project Co FF&E;
  - (xxix) testing of main data room and communications room environmental control, monitoring and alarm systems and interfaces with the building management system;
  - (xxx) building envelope leakage testing;
  - (xxxi) test pressures and flow at all gas outlets;
  - (xxxii) testing of all safety controls to gas systems;
  - (xxxiii) metering and sub-metering testing (including the ability to measure and calculate the Pass Through Costs for Utilities in accordance with Schedule 14 (Payment Schedule) to the Agreement); and
  - (xxxiv) central plant performance on each major Plant item in order to verify manufacturers' performance data;
- (c) **(pipework)**: ensure that:

- (i) **(pressure pipework)**: as pipework proceeds, and before pipes are hidden or lagged, testing of the various systems hydrostatically to twice the maximum working pressure, as set out in AS 4041, is undertaken;
  - (ii) **(other piping)**: as pipework proceeds and before pipes are hidden or tagged, testing of the various systems hydrostatically at 1.5 times the working pressure or 1 MPa (whichever is the greater) for at least 24 hours continuously;
  - (iii) test pressures are maintained for not less than 4 hours prior to inspecting all joints; and
  - (iv) equivalent tests are carried out on each system when all pipework has been completed;
- (d) **(air quantities)**: conduct all SMACNA and AS4254 tests and submit results, regulate and adjust the volume dampers on all ductwork systems to achieve the air quantities shown on the Final Design Documents and to the satisfaction of the State;
- (e) **(water quantities)**: conduct water balancing tests and submit results, regulate and adjust the volume control valves on all piping systems to achieve the water quantities nominated and to the satisfaction of the State;
- (f) **(Government Agencies)**:
- (i) perform, at appropriate times during the D&C Phase, all tests required by Government Agencies who may from time to time have jurisdiction over the work, and obtain the necessary certificates of approval; and
  - (ii) lodge all these certificates of approval with the State;
- (g) **(automatic controls)**: effect and maintain the setting and calibration of all automatic controls, to achieve correct operation of the systems;
- (h) **(post-occupancy commissioning)**: provide post-occupancy commissioning in accordance with Schedule 13 to the Agreement (Services Specifications); and
- (i) **(Building Management System (BMS))**: test every function, connection, interface and control mechanism supported by the BMS to the satisfaction of the State, including:
- (i) point-to-point communication testing;
  - (ii) testing of control strategies;
  - (iii) calibration testing;
  - (iv) testing of temperature control and monitoring of thermal systems and air conditioning;
  - (v) testing of humidity control;
  - (vi) testing of electrical services interfaces monitoring and alarms via individual dedicated PLC systems (UPS, standby genset and the like);
  - (vii) staging of thermal and cooling plant load management, control and monitoring;
  - (viii) testing of alarming to BMS front end;

- (ix) testing of front end graphics;
- (x) testing of high level interfaces;
- (xi) monitoring of fire mode operation;
- (xii) testing and monitoring of auto changeover procedures; and
- (xiii) testing of trending capabilities and accreditation capabilities (to meet the ESD requirements described in the Output Specifications, KPI and other accreditation requirements).

## 2.8 Vertical Transportation

Project Co must complete the following testing and activities in respect of lifts and the like services:

- (a) speed operational testing;
- (b) ride quality testing;
- (c) risk assessment reporting;
- (d) emergency mode testing;
- (e) trapped person alarm testing;
- (f) security key access testing;
- (g) full traffic analysis for all installed vertical transport equipment;
- (h) full test reports; and
- (i) statement of compliance for each lift.

## 2.9 Electrical Services

Project Co must, as a minimum, test the following electrical services to the satisfaction of the Independent Certifier:

- (a) specialist industries systems.
- (b) power factor correction unit;
- (c) main switchboard;
- (d) UPS system, including alarms to building management system and SMTP interface; standby generator system;
- (e) changeover and switching operation to alternative supplies;
- (f) general lighting including compliance with all lux level requirements;
- (g) general power;
- (h) earthing system;
- (i) emergency and exit lighting;
- (j) emergency and exit lighting monitoring system;

- (k) lighting control and dimming systems;
- (l) Estate Services interfaces;
- (m) testing of all override control systems;
- (n) integrated systems testing; and
- (o) metering and sub-metering testing (including the ability to measure and calculate the Pass Through Costs for Utilities in accordance with Schedule 14 (Payment Schedule) to the Agreement);
- (p) **(earthing):**
  - (i) check that all earthing provided is installed and tested to the requirements of AS/NZS 3000 and AS/NZS 3017;
  - (ii) test the main earth and submit test results to the State;
  - (iii) check all earthing terminations, and test the resistance and continuity of all earthing and bonding conductors;
  - (iv) check that clear labels have been provided for the main earth and the communications earth; and
  - (v) provide separate test results for the lightning protection system in terms of the requirements of AS1768;
- (q) **(switch and distribution boards):**
  - (i) test the main switchboard and all distribution boards to demonstrate operational functionality;
  - (ii) test safety switches and RCDs in accordance with the requirements of AS/NZS 3000;
  - (iii) test earth loop impedance on every circuit;
  - (iv) check that correct cartridges are fitted to all fuse holders and that all overload relays have been correctly set;
  - (v) check that all interlock circuits function correctly;
  - (vi) carry out insulation tests;
  - (vii) check that all circuit breakers function correctly;
  - (viii) check that spare HRC fuse cartridges and other spare parts have been supplied and are fitted in racks provided;
  - (ix) check that all operating handles and other loose items have been supplied and are in the correct storage positions;
  - (x) touch up cabinet scratches and polish off any dirty marks; and
  - (xi) vacuum out all switchboard and control panel cabinets and refit removed covers;

- (r) **(thermographic scan):**
  - (i) provide a thermographic scan of the entire electrical (power) installation including interiors of switchboards as carried out by qualified personnel. Two scans shall be carried out at a time to be mutually agreed with the State (test 1 within 4 weeks of Stage 1 Technical Completion); and
  - (ii) provide a comprehensive report is to be submitted within 2 weeks following the completion of each scan; and
- (s) test and demonstrate the load capacity of all power points operating simultaneously across the Facility and confirm the operation of the electrical distribution infrastructure and its ability to simultaneously supply every point across the Facility.

## 2.10 Communications systems

Project Co must:

- (a) **(acceptance testing)** demonstrate that each communication system delivered as part of the Facility is correctly functioning and otherwise meets the Design Requirements and the functional output of the system as a whole.
- (b) **(structured cabling system):**
  - (i) ensure the information and communications technology commissioning process is closely coordinated with the information and communications technology Subcontractor and the engineering services commissioning. Major information and communications technology commissioning stages shall include:
    - A. pre-deployment bench testing;
    - B. deployment of hardware;
    - C. programming;
    - D. testing of carrier interfaces, local area networks and wide area networks links;
    - E. patching;
    - F. handset rollout;
    - G. wireless network testing and configuration; and
    - H. user acceptance testing.
  - (ii) during information and communications technology commissioning, demonstrate that the Design Requirements and the other requirements of the Agreement have been met, including;
    - A. conducting performance testing of all terminations and outlets in accordance with AS/NZS 3080, AS/NZS 3087, the system manufacturer's requirements, and compliant with Class-E;
    - B. performing testing as per the vendor's requirement; and
    - C. providing copies of the test result and the vendor's certification;



- (c) **(communications testing personnel):**
  - (i) ensure that the information and communications technology Subcontractor provides all specialist testing personnel for testing information and communications technology equipment and systems in the relevant FF&E list; and
  - (ii) allocate a project manager to managing the information and communications technology installation, testing, commissioning and handover (and closely coordinate with the relevant Project Director or the Facility Operator's representative to ensure that all information and communications technology occupancy issues are coordinated with the services commissioning and relevant Works Program);
- (d) **(MATV):** demonstrate that the MATV:
  - (i) system provides a signal on every channel free of noise, horizontal bars, smearing, ghosting, hum, etc, scoring a grade four or above of the impairment scale described on the ITU/R Recommendation 500-1, KYOTO, 1978, Vol. XI;
  - (ii) system can provide the required level of signal to all TVs simultaneous across the Facility; and
  - (iii) system and its component satisfy the applicable Australian Standards;
- (e) **(Prisoner Information Channel):** ensure that the Prisoner Information Channel software suite is able to create media content sufficient to satisfy the State's needs;
- (f) **(Public Address System (PAS)):** demonstrate that:
  - (i) control room staff can make announcements to any zone in the Facility;
  - (ii) the PAS allows announcements to be made from any handset in the Facility;
  - (iii) announcements are integrated to the cell intercommunication system; and
  - (iv) the PAS provides the coverage required by the State;
- (g) **(Voice Telecommunication System (VTS)):** demonstrate that VTS:
  - (i) operates as a single integrated system across the Facility;
  - (ii) provides the functionality required by the State; and
  - (iii) provides the call handling abilities required by the State from each type of handset, anywhere within the Facility;
- (h) **(Audio Visual (AV) system):**
  - (i) fully test and commission all AV systems provided by Project Co following installation;
  - (ii) demonstrate all of the AV functionality of each relevant Functional Unit (as defined in Schedule 13 to the Agreement (Service Specifications));
  - (iii) include in the Completion Manual audio visual test log sheet forms;

- (iv) ensure that all testing of the audio visual system is undertaken by an experienced commissioning representative of the installation company and, where required, under the supervision of an accredited representative of the manufacturer or supplier of the particular item of FF&E;
- (i) **(video conferencing rooms):** demonstrate the functionality of each video conferencing room;
- (j) **(communications contractor manual):**
  - (i) include in the initial Stage 1 Technical Completion Report a manual prepared by the information and communications technology Subcontractor including:
    - A. all relevant data relating to the information and communications technology systems, equipment and their interfaces;
    - B. details of the configuration and programming of equipment;
    - C. information on operation and maintenance of the information and communications technology system and equipment; and
    - D. cabling infrastructure drawings (including all cables installed by Project Co) including the following details:
      - 1) fibre optic cabling infrastructure;
      - 2) horizontal cabling;
      - 3) patching records;
      - 4) cable risers;
      - 5) cabling redundancy;
      - 6) building distributor rack layouts and rack elevations; and
      - 7) PABX Comms Room rack layouts and elevations; and
  - (ii) ensure that the manual is in plain English and able to be understood by non-technical personnel; and
- (k) **(ICT components):**
  - (i) all network equipment such as switches and routers;
  - (ii) all telephony and VoIP equipment;
  - (iii) all storage area network (SAN) equipment including data storage and backup tapes;
  - (iv) all data centre servers;
  - (v) all desktop computers;
  - (vi) all videoconferencing and AV system equipment;

- (vii) all multimedia streaming system;
- (viii) all mobile wireless devices;
- (ix) all wireless 3G devices;
- (x) all wireless IP handsets; and
- (xi) any other ICT hardware, software, applications, systems and other components of the Project Co Network that is required by the Independent Certifier to be demonstrated and tested.

## 2.11 Fire Engineering

Project Co must obtain from a registered fire safety engineer and building surveyor, a statement that the Facility complies with the NCC and all other applicable Laws and Quality Standards.

## 2.12 Fire Protection Services

Project Co must demonstrate the following system operations at completion:

- (a) fire alarm system operation including point testing and operation of all interfaced systems for fire mode operation;
- (b) multi point aspirating smoke detection system operation;
- (c) sprinkler and fire hydrant system flow testing to prove water supply;
- (d) occupancy warning system testing to the satisfaction of the applicable Quality Standards;
- (e) verification of fire and life safety systems including Integrated Testing;
- (f) fire pump operational tests;
- (g) fire hydrant and hose reel systems testing; and
- (h) testing of installation of fire extinguishers.

## 2.13 Hydraulic Services

Project Co must:

- (a) prior to Stage 1 Technical Completion:
  - (i) ensure all systems operate to satisfy the full requirements set out for each service;
  - (ii) commission and test, at a minimum:
    - A. air and flow test all sewer drainage and trade waste drainage systems;
    - B. air and flow test all sanitary plumbing systems;
    - C. air and flow test all downpipes systems;
    - D. in drain camera inspection of all gravity drainage lines;

- E. pressure test all cold and heated water pipe lines;
  - F. temperature control at all hot water outlets;
  - G. operation of all fixtures, taps and points of demand;
  - H. flow rates all fixtures fittings and points of demand;
  - I. operational test of all fixtures and fittings simultaneously;
  - J. temperature within the heated water reticulation systems;
  - K. operation of all water pumps;
  - L. operation of all sewerage pumps;
  - M. operation of all rainwater pumps;
  - N. operation and temperature settings of hot water generation systems;
  - O. operation and temperature settings of solar systems;
  - P. operation of all valves, backflow devices, pressure devices temperature and controls and systems under operational conditions;
  - Q. BAS connections to building management systems;
  - R. schedules for all equipment, valves and operational items;
  - S. tank control systems testing; and
  - T. metering and sub-metering testing (including the ability to measure and calculate the Pass Through Costs for Utilities in accordance with Schedule 14 (Payment Schedule) to the Agreement); and
- (b) demonstrate the capacity of the hydraulics systems to ensure it is able to continuously provide sufficient water to every tapping (eg basins, showers and toilets) when operating simultaneously across the Facility.

## 2.14 Civil Engineering

Project Co must:

- (a) **(acceptance testing):**
  - (i) test all stormwater management systems in accordance with applicable discharge requirements; and
  - (ii) prior to Stage 1 Technical Completion undertake camera test inspections of all storm water drainage lines;
- (b) **(certification):**
  - (i) obtain from an independent design consultant a Form 11 Certificate of Compliance under the NCC for all elements of civil testing; and

- (ii) provide proof that the design and construction of all civil works meets the Technical Specification, complies with all applicable Laws and that it satisfies the Design Requirements in respect of design life, flexibility and sustainability.

## 2.15 Structural Engineering

Project Co must provide:

- (a) evidence that the materials used and construction undertaken comply with the Final Design Documents;
- (b) a complete set of as-built structural documentation in approved electronic format; and
- (c) evidence that all variations and alterations made to the certified documentation have been evaluated and approved.

## 2.16 Security

- (a) Project Co must:
  - (i) test the Security System on a component by component basis and as a complete system to demonstrate compliance with the requirements set out in Schedule 12 to the Agreement (Design Specifications); and
  - (ii) test the Security System to demonstrate that all elements of the Security System, including equipment are fully functioning, configured correctly and interface correctly with other systems in accordance with the requirements set out in Schedule 12 to the Agreement (Design Specifications).
- (b) Without limiting paragraph (a), Project Co must:
  - (i) test all elements of the Security System (as defined in Schedule 13 to the Agreement (Services Specifications)), equipment and devices in accordance with the manufacturers' recommended test procedures and requirements set out in Schedule 12 to the Agreement (Design Specifications);
  - (ii) test the function and operation of each and every point and device;
  - (iii) test alarm response and annunciation of each point and device;
  - (iv) check logging and recording of activity for each alarm point and device;
  - (v) test required interfaces with other systems for each alarm point and devices;
  - (vi) conduct all tests necessary to ensure and otherwise demonstrate:
    - A. each Security System (as defined in Schedule 13 to the Agreement (Services Specifications)) is time synchronised to a central Network Time Protocol (as defined in Schedule 13 to the Agreement (Services Specifications));
    - B. all interlocking doors function as required, including all override commands;

- C. the functionality and integration of all systems within the primary ICR and secondary ICR;
  - D. the functionality and integration of all systems within the Security Office/Collator's Functional Unit (as defined in Schedule 13 to the Agreement (Services Specifications));
  - E. the functionality of the MCR in the ability to be able to convey information and alarms effectively to an operator; and
  - F. all individuals within the Visits (Main) room (as defined in Schedule 13 to the Agreement (Services Specifications)) can be monitored individually when the room is at full capacity;
- (vii) with respect to the Security Management System (**SMS**), conduct all testing necessary to ensure and otherwise demonstrate:
- A. the ability of the SMS to handle all alarms as stated;
  - B. all interfacing to the SMS allowing a central control platform;
  - C. all redundancy of the SMS including that there is no single point of failure anywhere in the system;
  - D. the ability for any report to be generated from an audit;
  - E. all user interface abilities and control as specified;
  - F. the receipt of alarm times from the furthest point of the prison;
  - G. the response procedure and all corresponding actions for the receipt of alarms;
  - H. the ability of a Facility User to be able to logon within specified time frames and authority levels;
  - I. that all high and low level interfaces within the SMS are functional and interface correctly with the all systems;
  - J. testing the security reporting interface and exportability;
  - K. testing of redundant pathways and redundancy practices;
  - L. testing of all high and low level interfaces within the SMS to ensure that they function and interface correctly, including:
    - 1) Access Control System;
    - 2) Intruder Detection System;
    - 3) Door Interlocking System;
    - 4) Perimeter Detection System;
    - 5) CCTV System;
    - 6) RFID System;
    - 7) Mobile phone Detection System;

- 8) UPS/Generators; and
  - 9) Fire and Building Automation Systems;
- (viii) with respect to the SCN, conduct all testing necessary to ensure and otherwise demonstrate:
- A. the SCN is cable of communicating on every line simultaneously with no slowdown in transmission;
  - B. the SCN is safe from internal and external breaches;
  - C. all redundancy of the SCN including that there is no single point of failure anywhere in the system;
  - D. the ability for any report to be generated from an audit; and
  - E. Testing of redundant pathways and redundancy practices;
- (ix) with respect to the Access Control System (**ACS**), conduct all testing necessary to ensure and otherwise demonstrate:
- A. the integration of all ACS components into the SMS for the monitoring of all door functions and alarms;
  - B. the functionality of each component associated with a door;
  - C. the ability of the ACS to allow an operator to acknowledge an event and review all associated data, including external systems;
  - D. the ability of the ACS to control users based on the stated restrictions;
  - E. the ability of the ACS to remain fully operational in the case of a loss of communication to the master panel;
  - F. the ability of Facility Staff to create and program access control cards; and
  - G. testing that audit trails and system event logs record all system event history;
- (x) with respect to the Door Interlocking System (**DIS**), conduct all testing necessary to ensure and otherwise demonstrate the functionality and control of the DIS at all points installed;
- (xi) with respect to the Intruder Detection System (**IDS**), conduct all testing necessary to ensure and otherwise demonstrate:
- A. the integration of all IDS components into the SMS for the monitoring of all alarms;
  - B. the functionality of each component associated with an alarm;
  - C. the ability of the IDS to allow an operator to acknowledge an event and review all associated data, including external systems;

- D. the ability of the IDS to control users based on the stated restrictions; and
  - E. the ability of the IDS to remain fully operational in the case of a loss of communication to the master panel;
- (xii) with respect to the Perimeter Detection System (**PDS**), conduct all testing necessary to ensure and otherwise demonstrate:
- A. the perimeter cannot be traversed in any way without an alarm being activated at all times of the day and weather conditions and its resistance to nuisance alarms;
  - B. the Gatehouse cannot be penetrated from the inside or exterior of the Gatehouse;
  - C. the integration of all PDS components into the SMS for the receipt of an alarm for each zone and component;
  - D. the receipt and all corresponding subsequent actions (across every linked system) undertaken from the receipt of any alarm associated with the PDS;
  - E. that an intruder within any zone can be identified from the CCTV system (and subsequent control of the CCTV system) at all times of the day and weather conditions;
  - F. the CCTV system can respond to the PDS alarm without hindering the use of CCTV cameras assigned to the internal grounds;
  - G. all tests detailed above can be conducted simultaneously for a minimum of three (3) breaches at distant points around the Facility;
  - H. the continued operational ability of the PDS and operator alerts if the entire SMS fails; and
  - I. the ability to review all information across systems on review of a PDS alarm;
- (xiii) with respect to the Closed Circuit Television (**CCTV**), conduct all testing necessary to ensure and otherwise demonstrate:
- A. the CCTV system architecture allows all cameras to be controlled, monitored and recorded simultaneously without any slowing of the system;
  - B. the integration and functionality of all existing cameras has been retained;
  - C. each camera has been adjusted and commissioned in the environment it is in (including PTZ presets);
  - D. each camera achieves the view required and can perform its to its requirements under all conditions;
  - E. the recording system can provide footage of the quality, speed and time periods requested;



- F. the recording system is capable of providing redundant storage as specified;
  - G. a Prisoner in a camera fitted cell can be monitored 24hr at any point within the cell;
  - H. the monitors utilised provide an accurate reproduction of the camera outputs;
  - I. all CCTV cameras are accessible from the GUI and SMS;
  - J. flat panel display screens are configured and numbered correctly, adjusted to similar brightness and contrast settings;
  - K. Recordings are stored at resolution and frame rate for evidentiary purposes, watermarked for certification;
  - L. the MCR operator(s) can perform all functions with the Keyboard Controller; and
  - M. all audit trails and system event logs record all system event history;
- (xiv) with respect to Cell Intercommunication System, conduct all testing necessary to ensure and otherwise demonstrate:
- A. all intercom points can call through to a local Officer Post and the MCR;
  - B. the ability of the CIS to handle call diversion;
  - C. the CIS can accommodate calls from each intercom simultaneous while continuing to function with no degradation;
  - D. the operation of all technical requirements of the MCR and local Officer Post units including the switching of an associated CCTV camera;
  - E. the ability to covertly listen to any intercom point;
  - F. all functionality of each component as detailed; and
  - G. the recording and playback ability of the CIS;
- (xv) with respect to Mobile Duress Alarm System, conduct all testing necessary to ensure and otherwise demonstrate:
- A. the ability to identify an individual anywhere in the Facility to the accuracy stipulated;
  - B. the activation of an alarm and all corresponding actions taken;
  - C. the MDAS ability to respond to multiple alarms; and
  - D. testing of all audit trails and system event logs to ensure they record all system event history;
- (xvi) with respect to the Mobile Radio Communication System: conduct all testing necessary to ensure and otherwise demonstrate all cabling in infrastructure provided complies with DCS requirements;

- (xvii) with respect to the Weapons and Contraband Detection Systems, conduct all testing necessary to ensure and otherwise demonstrate:
  - A. the screening areas can process the required number of individuals. Tests are to include for individuals not familiar with the systems and carrying contraband objects;
  - B. the ability of the WCDS to be able to detect contraband items of any type;
  - C. the ability of the hand held metal detectors to be able to detect contraband items; and
  - D. the ability of the contraband detection unit to detect, clean & recalibrate, and then detect again;
- (xviii) with respect to Anti-Vehicle Ramming System, conduct all testing necessary to ensure and otherwise demonstrate:
  - A. the operation of the AVRS; and
  - B. the interface and override controls of the AVRS;
- (xix) with respect to the Under Vehicle Detection System, conduct all testing necessary to ensure and otherwise demonstrate:
  - A. the operation of the UVDS;
  - B. the ability of Facility Staff to detect contraband on a vehicle; and
  - C. the creation and filing of separate reports containing information from all components;
- (xx) with respect to the RFID, conduct all testing necessary to ensure and otherwise demonstrate the functionality of the RFID;
- (xxi) with respect to the Mobile Phone Detection System, conduct all testing necessary to ensure and otherwise demonstrate:
  - A. that legitimate phones can be utilised while illegal phones are discovered;
  - B. the ability to locate a phone to a building; and
  - C. the functionality of the Mobile Phone Detection System; and
- (xxii) with respect to Offsite Monitoring, conduct all testing necessary to ensure and otherwise demonstrate the functionality of the of the Offsite connection.

### **3. Stage 1 Commercial Acceptance Tests**

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The Stage 1 Commercial Acceptance Tests must include:

- (a) tests of Plant and Facility FF&E;
- (b) air quality tests;

- (c) a test to be carried out at the commencement of the Stage 1 State Access Period to demonstrate the Stage 1 Facility will operate fault free for a period of 14 days;
- (d) background noise level survey so as to confirm that the limits specified in the Design Requirements are achieved;
- (e) each of the other tests set out in the approved Stage 1 Commercial Acceptance Plan in respect of Stage 1 Commercial Acceptance; and
- (f) such other tests requested by the Project Director pursuant to the terms of the Agreement.

#### **4. Stage 2 Technical Completion Tests**

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The Stage 2 Technical Completion Tests must include:

- (a) all Stage 1 Technical Completion Tests (with references to Stage 1 being read as references to Stage 2) to the extent that any of the Stage 2 Works or the Stage 2 Facility requires any integration with the Stage 1 Facility or otherwise impacts on an Engineering Service which has been installed and commissioned as part of the Stage 1 Works; and
- (b) the following tests in respect of Security:
  - (i) tests of the Security System on a component by component basis and as a complete system to demonstrate compliance with the requirements set out in Schedule 12 to the Agreement (Design Specifications);
  - (ii) tests of the Security System to demonstrate that all elements of the Security System, including equipment are fully functioning, configured correctly and interface correctly with other systems in accordance with the requirements set out in Schedule 12 to the Agreement (Design Specifications); and
  - (iii) retests of all components tested during the Stage 1 Technical Completion Tests and Stage 1 Commercial Acceptance Tests to ensure no instability or loss in functionality has occurred where new components have been integrated, added or augmented to Stage 1 Security Systems as a result of the Stage 2 Works.

Without limiting paragraph (b), Project Co must:

- (a) test all elements of the Security System, equipment and devices in accordance with the manufacturers' recommended test procedures and requirements set out in Schedule 12 to the Agreement (Design Specifications);
- (b) test the function and operation of each and every point and device;
- (c) test alarm response and annunciation of each point and device;
- (d) check logging and recording of activity for each alarm point and device;
- (e) test required interfaces with other systems for each alarm point and devices; and
- (f) conduct all Stage 1 Technical Completion Tests and Stage 1 Commercial Acceptance Test on each individual System as required for Stage 1 Technical Completion.

## **5. Stage 2 Commercial Acceptance Tests**

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The Stage 2 Commercial Acceptance Tests must include:

- (a) all Stage 1 Commercial Acceptance Tests (with references to Stage 1 being read as references to Stage 2) to the extent that any of the Stage 2 Works or the Stage 2 Facility require integration with the Stage 1 Facility or otherwise impact on an Engineering Service which has been installed and commissioned as part of the Stage 1 Works;
- (b) a test to be carried out at the commencement of the Stage 2 State Access Period to demonstrate the Facility will operate fault free for a period of 7 days; and
- (c) tests required to demonstrate that all redundant services and utilities supporting the Existing Facility have been decommissioned, capped and removed.

## **6. Post Completion Testing**

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Without limiting Section 1 of Appendix A to this Schedule 7, Project Co must perform any post Completion Tests required by the Independent Certifier (acting reasonably) or as described within any initial Technical Completion Report.