



CAIRNS CITY SOUTH

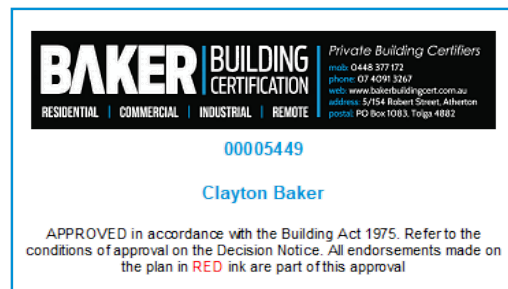
OPERATIONAL TELECOM HOSTING FACILITY (OTHF)

TECHNICAL SPECIFICATION

PREPARED BY:



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Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
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CONTRACT: CAIRNS CITY - OTHF

APPROVED in accordance with the Building Act 1993. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

PROPRIETOR: ENERGY QUEENSLAND LIMITED

SPECIFICATION CONTENTS

Sections	No. of Pages
Preliminaries and General Work	
1. Building Preliminaries	8
2. General Requirements	8
3. Adhesives, Sealants, Fasteners & Fire Stopping	6
4. Metals and Prefinishes	4
5. Termite Control	2
6. Building Access Systems	8
Site and Groundwork	
7. Demolition	4
8. Site Preparation	R/D
9. Earthwork	R/D
10. Service Trenching	R/D
Structural and Carcass Work	
11. Concrete Formwork	R/D
12. Concrete Reinforcement	R/D
13. In Situ Concrete	R/D
14. Concrete Finishes	6
15. Structural Steel	R/D
16. Light Steel Framing	R/D
17. Block Construction	8

Enclosure Work

18. Insulation and Barriers	4
19. Roofing & Glass Awning	8
20. Cladding	6
21. Doors	8
22. Linings	4
23. Ceilings	4

**Finishing Work**

24. Metalwork	6
25. Miscellaneous Items, Joinery and FF&E	6
26. Plastering	4
27. Resilient Finishes	4
28. Painting	6
29. Architectural Schedules	6

External Work

30. Landscaping	R/D
31. Irrigation	R/D

Hydraulic

32. Hydraulic Design & Installation	R/D
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Electrical, Mechanical, Gas, Comms and Security Installations

33. Design & Construct Installation	Refer Appendix A & Appendix A1
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1. Appendix A – VirtuGrp Brief Document	-
2. Appendix A1– Tender RFI-001-008 Consolidated responses	-
3. Appendix B – CACS Cables v2.2	1
4. Appendix C – Standard for Communication Equip. Instal - STMP004	33
5. Appendix D – DC Distribution Subrack Layout & construction details	1 DWG
6. Appendix E – EQL OTHF - Electronic Security Scope of Works.....	4 DWG's
(1: NV-EQL-CRNS-SEC-000 (A), 2: INV-EQL-CRNS-SEC-001 (A), 3: NV-EQL-CRNS-SEC-002 (A), 4: NV-EQL-CRNS-SEC-003 (A)	
7. Appendix F – DELETED -	-
8. Appendix G – Safe Entry to High Voltage Enclosures – 2888222	8
9. Appendix H – Hydraulic Services (Dwg's: H101 - H104)	R/D
10. Appendix I – Site-Existing Earth grid and New Conduits Layout	
(Dwg: CD-A0-03)	R/D
11. Appendix J - CACSCS TOR Panel Layouts	17 DWG's
(1. CACS +22W1 LAYOUT, 2. CACS +22W4 LAYOUT, 3. CACSCS +21A2 LAYOUT, 4. CACSCS +21A3 LAYOUT, 5. CACSCS +21A4 LAYOUT, 6. CACSCS +21A5 LAYOUT, 7. CACSCS +21A6 LAYOUT, 8. CACSCS +21A7 LAYOUT, 9. CACSCS +21A11 LAYOUT, 10. CACSCS +21B2 LAYOUT, 11. CACSCS +21B3 LAYOUT, 12. CACSCS +21B4 LAYOUT, 13. CACSCS +21B5 LAYOUT, 14. CACSCS +21B6 LAYOUT, 15. CACSCS +21B7 LAYOUT, 16. CACSCS +21B11 LAYOUT, 17. CACSCS +22W2 48V 500Ah Enclosed Batt.Panel Layout)	
12. Appendix K - Telecommunications Design Guide - STNW3393	44
13. Appendix L – WR1741507 Cairns City South Comms Materials (Excel)	1
14. Appendix M – Town Planning Decision Notice – CRC (19 th AUG22)...	29
15. Appendix M1 – Updated Town Planning Decision Notice - CRC (23rdDEC22)	5
16. Appendix N – DP Soil Test Report - 216856.00.R.001.Rev0.....	45
17. Appendix O – DP Contamination Test - 216856.00.L.001.Rev0.....	36
18. Appendix P – EQL Handover Takeover Checklist.....	6
19. Appendix Q – Asset Equipment Nameplate Data Collection.....	4
20. Appendix R – Asset Data Collection Template (Excel)	1

End of section

1.1 GENERAL

1.1.1 TENDER

Tender conditions

Refer to *Energy Queensland Limited (EQL) Conditions of Contract*.

Separate prices / Schedule of Costs

Refer to *EQL Conditions of Contract* and fill out if applicable.

1.1.2 GENERAL

General conditions

The *Form of Contract* is referenced in the *EQL Conditions of Contract* section of the project documentation.

Interpretation

Cross reference: The clause **Interpretation**, in the *General requirements* worksection, also applies.

EQL Tender Pack

Refer also to the *EQL Conditions of Contract*, which includes, but is not limited to the following:

Conditions of tendering;

- Introduction and description of contract
- Annexure to the contract
- Insurance conditions
- WH&S conditions
- Contractor induction requirements
- Fatigue Guidelines

List of drawings

Refer to *Drawing 453A-CD- A0-00*

Design and Construct Documents

The project scope requires the building to be built as per the supplied and approved documents. However, the internal fitout and some external items are of a Design and Construct (D&C) nature with compliance required to the design intent - Refer Appendix A for the Brief Document. The D&C development phase will be undertaken for this portion of the work in co-ordination with EQL having hold points at 40%, 60%, 80% and 100% - with issued/ approved before construction commencement.

Contractor-supplied documents

Number of copies required: 1 by pdf at each hold point

Documents required to be checked by Principal's Representative: 1 x by pdf at each hold point

Separate Contracts

Refer to *EQL Conditions of Contract*.

1.1.3 THE SITE

Existing infrastructure

Refer to *EQL Conditions of Contract*, and also the following:

Allow to inspect the site during the Tender Period.

Allow to record the existing site, roads, ancillary services and the like, within and adjacent to the proposed Builders Area as specified in this section, and to make good any damage caused by the works.

Nominated time for site visit

Refer to *EQL Tending for details*

1.1.4 LEGISLATIVE REQUIREMENTS

Compliance

The principal, before entering into the contract, has given the notices, paid the fees, and obtained the permits, approvals and other authorisations stated in the **Prior applications and approvals schedule**.

Schedule of prior applications and approvals		
Prior notices given and applications made	Fees paid	Permits, approvals and Authorisations received
Building Approval	By Owner	EQL is deemed self-assessable under the Queensland Building Act, and will engage and pay the fees of a third party building certifier.
Q Leave	By Owner	Refer also to the <i>EQL Tender Pack</i> .
QFES assessment fee	N/A	N/A
EQL electricity connection	By Builder	N/A – connection onto existing
EQL New Padmount	By Owner	By Owner
Water Supply	By Builder	N/A – connection onto existing
Sewage Act	N/A	N/A

Schedule of Authority conditions		
Authority	Document	Condition
Building Certifier	Building Approval	The Contractor will be advised of any conditions of approval during the Tender Period.
Local Authority	Development Application	Refer Appendix for Decision Notice from CRC. The Contractor is to comply with all conditions of approval during Construction.
Local Authority	Operational Works	Refer Appendix for Decision Notice from CRC. The Contractor is to comply with all conditions of approval during Construction. Contractor to pay all associated fees.

1.1.5 PROTECTION OF PEOPLE AND PROPERTY

Occupied premises

For the parts of the site designated as occupied premises in the **Occupied premises schedule**:

- Permit occupants to continue in secure possession and occupancy of the premises for the required period
- Make available safe access for occupants
- Arrange work to minimise nuisance to occupants and ensure their safety
- Protect occupants against weather, dust, dirt, water or other nuisance
- Proposals: Submit details of proposed methods to protect people and property 5 working days before commencement of work
- Purpose of submission: Information only

Occupied premises schedule

Occupants	Occupied premises	Period of occupancy
Energy Queensland Limited Workforce	Allow to negotiate the extent of the <i>Builders Area</i> with the <i>Energy Queensland Limited Principal Representative</i> <i>Refer Red Dashed lines on Site Plan</i>	Refer to Programming

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Location	Occupied premises	Period of occupancy
Energy Queensland Limited Staff and Visitors	All areas outside the <i>Builders Area</i> Allow to negotiate the extent of and to <i>arrange afterhours works for all areas indicated in blue dashed lines on the Site Plan.</i> <i>Proposed dates and works Must be pre-arranged and agreed with Principal's Representative a minimum of 2 weeks prior with re-confirmation 1 week prior.</i>	Normal staff times and as required (refer Energy Queensland Limited for detail)
Energy Queensland Limited Workforce	Allow to negotiate <i>access to the Existing Substation with the Energy Queensland Limited Principal Representative. Allow 14 days min. from the request to approval</i>	Refer to Programming

No smoking policy

No smoking on the premises.

Incident reporting

Report all incidents to *EQL*. This includes spills, and damage to *EQL* property and equipment.

Safety

Refer to the *EQL Conditions of Contract*.

Accidents: Promptly notify the *Principal's Representative* of the occurrence of the following:

- Accidents involving death or personal injury
- Accidents involving loss of time
- Incidents with accident potential such as equipment failure, slides and cave-ins

Accident reports: Submit reports of accidents.

- Purpose of submission: Information only

WH&S and Electrical Safety performance reports: must be provided at least monthly unless directed otherwise by the Principal's Representative.

Safety Officer

Refer to the *EQL Conditions of Contract*, and also the following:

Principal Contractor Induction:

Where *EQL* engages a Principal Contractor for Construction, or Contractor has control of the nominated work site, the Principal Contractor, or Contractor, or a nominated representative (1 person only) must complete an online Generic Contractor Worker Induction. There is no cost for the course and can be completed on any computer when given a password to access the site and will take 45 minutes to complete. This online induction must be completed regardless of the nature of the works under the contract.

Safety Management Plan and Work Method Statements

Refer to the *EQL*, and also the following:

Submit a site-specific Safety Management Plan within 2 weeks of Acceptance of Tender.

Submit a site-specific Work method Statement 1 week before commencing Works.

These plans must be reviewed and approved by *EQL* prior to commencement of works and in accordance with *EQL Conditions of Contract*.

Submit Performance Reports at least monthly, unless directed otherwise by the *EQL* Principal Representative.

Protective clothing

Clothing: The site is open, and offers limited shaded working areas or hard stands. Comply with the *EQL* Policy for protective clothing, and with AS/NZS 4602. Ensure that all persons engaged in the Works wear high visibility cotton long sleeve shirts, long cotton trousers, and hard-toe safety footwear at all times.

Safety helmets: Make available safety vests and helmets for the use of visitors.

- Standard: To AS/NZS 1801, Type 1
- Standards Mark: Required

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Adjoining property

Protection: Do not interfere with or damage property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

Notice: EQL will submit to owners and occupants of adjoining property written notice of intention to commence work and an outline description of the type and extent of work.

Conditions for work on adjoining property: Minimise damage to existing vegetation.

Records: For properties described in the **Adjoining properties to be recorded schedule**:

- Inspect the properties with Principal's Representative, before commencement of work
- Make detailed records of conditions existing within the properties
- Arrange for at least 2 copies of each record, including drawings, written descriptions, and photographs, as evidence of conditions existing before commencement of work

Endorsed copies: Submit one copy of each record. Keep the other copy on site.

- Purpose of submission: Information only

Adjoining properties to be recorded schedule

Location	Description
As required around works	All existing areas abutting the works that are outside the Builders Area

Services

General: Do not obstruct or damage roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Determine the location of such services.

Cyclone preparedness

Requirement	Keep the worksite in a state of preparedness during the official cyclone season beginning 1 st November and ending at the end of March in the following year. Maintain the worksite free of debris that could become missiles in high winds. Program this work on a regular basis, especially before worksite closures for weekends and holidays. Secure uncompleted cladding and items that could become windblown debris to the structure.
Requirement in remote areas.	Maintain an emergency kit on the site. Prepare an evacuation plan if secure shelter is not available on the site, or if the site is in a storm surge area, and have transport fuelled and ready.
On-site work when cyclone approaching	- Clean up debris. Remove building materials from the site and/or store securely. - Ensure tools, ladders, wheelbarrows and the like are removed and/or stored securely - Ensure new building materials and claddings are securely fixed to the structure. - Dismantle loose scaffolding components and store securely. - Make good the stability of Builders poles and connections. - Remove portable site amenities from the site and/or make secure. - Remove all signage from the site and/or make secure. - Keep the workforce informed of the issued cyclone advices.
Emergency kit for remote areas.	Provide an emergency kit containing food, water, radio, torch, cooking gear, and the like, as recommended in the BCC Fact Sheet – Cyclone preparedness for building contractors. www.buildingcoordinationcentre.qld.gov.au.
Cyclone "watch" and "warning",	Ensure the workforce is familiar with the Bureau of Meteorology terminology. A cyclone watch is issued when a cyclone is likely to affect communities within 24 to 48 hours, and will include an estimate of the cyclone's position, intensity, and movement. A cyclone warning is issued when a cyclone is likely to affect communities within 24 hours. Undertake cyclone preparedness measures if the worksite is in an area advised likely to be affected by the cyclone.
Cyclone categories	Ensure the workforce is familiar with the Bureau of Meteorology terminology, namely: Category 1 = wind gusts less than 125 km/hr. Category 2 = wind gusts 125 to 169 km/hr Category 3 = wind gusts 170 to 224 km/hr Category 4 = wind gusts 225 to 279 km/hr Category 5 = wind gusts more than 280 km/hr.

1.1.6 SAFE DESIGN REPORT

General: A "Safe Design – Construction Safety Report" has been prepared for the Project will be provided upon request or commencement of construction. During the Tender Period the Contractor is to review the scope of works and advise any items that are not part of normal construction practices. Tenderers are to review and allow within the tender to complete the proposed works in a safe method to comply within all current regulations and standards.

1.1.7 CARE OF THE WORK AND REINSTATEMENT OF DAMAGE

Existing services

Refer to the *EQL Conditions of Contract*, and also the following:

Attendance: Attend to existing services as follows:

- If the service is to be continued, repair, divert or relocate as required. If such a service crosses the line of a required trench, or will lose support when the trench is excavated, provide permanent support for the existing service.
- If the service is to be abandoned, cut and seal or disconnect, and make safe.

Proposals: Submit proposals for action to be taken with respect to existing services 5 working days before starting this work. Minimise the number and duration of interruptions.

- Purpose of submission: For review.

1.1.8 DAMAGE TO PERSONS AND PROPERTY OTHER THAN WORK UNDER CONTRACT

Property on the site

Repair of services: Rectify immediately any obstruction or damage to roadways and footpaths, drains and watercourses and other existing services in use on the site. Provide temporary services whilst repairs are carried out.

Repair of property: Rectify immediately any interference or damage to property which is to remain on the site, including trees.

Reinstatement

General: Clean and repair damage caused by installation or use of temporary work used during construction to original condition.

Adjoining property

Repair of services: Rectify immediately any obstruction or damage to roadways and footpaths, drains and watercourses and other existing services adjacent to the site. Provide temporary services whilst repairs are carried out.

Direction

Oral direction not permitted: Permitted only if followed up with a written direction.

1.1.9 PRINCIPAL'S REPRESENTATIVE & CONTRACT OFFICER

Principal's Representative :

Anu Perera Mob: 0400797664 / Fax: 07 3664 9826 / Email: anu.perera@energyq.com.au - unless advised otherwise

Contract Officer:

Anu Perera Mob: 0400797664 / Fax: 07 3664 9826 / Email: anu.perera@energyq.com.au – will advise nominated person

1.1.10 SITE

Refer to the *EQL Conditions of Contract*.

Possession

Approved uses not connected with WUC: The Contractors transportable office and facilities may be located on the site, subject to negotiation with the Principal's Representative.

Site restrictions

Security: Be responsible for the security of the site at all times, including the security fence and gates.

Site limitations: Comply with the following limitations on the use of the site: Allow EQL's workforce access to the site, other than the WUC Builders Area, on a 24/7 basis.

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Accession to and around the site, and use of the site for temporary works and constructional plant, including working and storage areas, location of offices, workshops, sheds, roads and parking is restricted to the site. Negotiate this area with the *Principal's Representative* prior to establishment on the site.

1.1.11 SETTING OUT THE WORKS

Schedule of surveys	
Item	Required
Setting out	Set out the new works to the set-out indicated.
Site survey	Refer to the drawings for site levels.
Boundary pegs	Allow to engage an Authorised Surveyor to locate the boundaries suitable for the new fencing. Do not remove the new pegs for the fencing. Submit the surveyors' documentation, and include in the <i>Operation & Maintenance Manuals</i> .
As-built survey	Submit <i>Record Drawings</i> of new and altered structures to the <i>Principal's Representative</i> , and include in the <i>Operation & Maintenance Manuals</i> .

Prior to works commencing all services around the work location will be identified with ground penetrating radar, survey and presented on a drawing 48 hours prior to works commencing.

Contractor is to allow for all pot holing and locating services to being undertaken with a hydraulic vacuum pump, or approved equal method.

1.1.12 CLEANING UP

Final cleaning

General: Before practical completion, clean throughout, including interior and exterior surfaces exposed to view. Clean debris from site, roofs, gutters, downpipes and drainage systems. Remove waste, surplus materials and rubbish.

Removal of temporary works and constructional plant

Time for removal: Within 10 working days of the Date of Practical Completion.

Groundworks final trimming

- Provide final grading and trimming to earthwork areas.
- Rake, compact, dress and remove all stones and debris to provide an area suitable for mowing.
- The trimmed surface of all earthwork areas shall be stable and freely draining.
- This clause refers to existing grades that have been disturbed by the building works, and by the installation of underground conduits and the like. Allow to remove excess material caused by building and trenching operations from the site totally, or as directed otherwise.

1.1.13 MATERIALS, LABOUR AND CONSTRUCTION PLANT

Items supplied by principal

General: Materials and other items identified in the **Items to be supplied schedule** will be supplied free of charge to the contractor for installation in the execution of the works. Unload and take delivery of them and inspect them for defects. If defects are found, advise. Return unused items to the principal.

Notice: Provide 5 working days notice to the *Principal's Representative* of the required delivery dates.

Schedule of items supplied by principal	
Door Hardware	Lock cylinders as specified in <i>Doors, Door Hardware</i>
Equipment	Generator (ATLAS COPCO QES 105 or similar)

Use of existing services

Existing services may be used as temporary services for the performance of the contract subject to conditions stated in the **Existing services schedule**.

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Schedule of Existing Services	
Service	Conditions of use
Water	Connection to town water is available at the site. Contractor to connect onto the existing connection as documented, and in agreement with the Principal's Representative. Note: Contractor is to provide own Temp. Water supply until permanent connection is made.
Electricity	Electricity is available at the corner of the site. Contractor to arrange temporary connection from existing Street supply or as agreed with EQL connections, and pay all fees Contractor is to connect as required to provide works in accordance with the documents – Refer Appendix A. EQL will provide and install the Transformer Padmount, kerbing and pavers. Contractor is to arrange and provide the lead-in conduits from the transformer to the New Switchboard.
Sanitary	Contractor is to provide own facilities as required to provide the works.
Phone / fax	Contractor to make own arrangements.
Lifting	Lifting equipment is not available on the site. Contractor to make own arrangements.

The Contractor **is required to provide** an on-site Office, Lunchroom, Amenities and any other requirements to provide the works - for Contractor's staff and Sub-Contractors. Contractor shall be responsible for maintaining their own on-site facilities for the full duration of the works.
Contractor to make own arrangements to apply for all fees.

Parking

Parking: Park only as directed by the *Principle Representative*.

Temporary fence

Provide as required to WH&S requirements.

Footpath usage

Contractor to make own arrangements to apply for all fees.

Contractor to provide as required to Cairns Regional Council Requirements and WH&S requirements.

Project signboard

General: A project-specific signboard is not required for this project. Provide WH&S signage as required for a construction site, and remove on completion.

Other signboards: Obtain written approval from the Principal's Representative before display of advertisements or provision of other signboards.

Run off

Prevent run-off water carrying cement or silt from entering pipes or drains both on or off the site.

1.1.14 WORKING HOURS

General

Working days and hours: Conform to the requirements of the *Local Authority*

1.1.15 PROGRAMMING

Order of work schedule

Portion of work	Order of work	Time of work
All new WUC	As required to complete works.	Negotiate with EQL

Program of work

Construction program: Within 10 working days after the date for possession of the site, submit a construction program showing the following:

- Sequence of work.
- Critical paths of activities related to the work.
- Critical deliveries of D&C items hold points at 40%, 60%, 80% and 100%

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- Allowance for holidays and RDO's.
- Activity inter-relationships.
- External dependencies including provision of access, document approvals and work by others.
- Periods within which various stages or parts of the work are to be executed.

Revisions: Revise the construction program as required by the progress of the work. Submit revisions with each progress claim. Identify changes since the previous version, and show the estimated percentage of completion for each item of work.

Program chart: Display in the contractor's site office an up-to-date bar chart and network diagram based on construction program.

Design and Construct Deliverables

The Design and Construct (D&C) components (Refer Appendix A) will be undertaken for select portions of the work in co-ordination with EQL, having hold points at 40%, 60%, 80% and 100% - being issued / approved before construction commencement.

Site meetings

General: Hold and attend site meetings throughout the contract and ensure attendance of appropriate subcontractors, the Principal's Representative, and appropriate consultants.

Frequency: As advised during the Contract.

Minutes: Keep minutes of site meetings. Within 2 working days after each meeting, submit to each party written copies of the minutes.

- Purpose of submission: Review

Contacts: At the first site meeting, submit names and telephone numbers of responsible persons who may be contacted after hours during the course of the contract.

- Purpose of submission: Information only

Progress photographs

General: Take colour progress photographs each week. At each site meeting submit 2 sets of glossy prints (when requested), otherwise as a digital record. Identify project, date, time, location and orientation.

- Purpose of submission: Information only.
- Minimum frequency: Weekly
- Minimum number: 12
- Format: JPG format

1.1.16 ENVIRONMENTAL MANAGEMENT PLAN

Refer to the *EQL Environmental Management Plan [EMP]* and comply fully with the requirements.

1.1.17 SOIL TEST

Reference: Refer to the **Soil Reports**, as included in the *Appendices*.

Refer to the *Civil Engineers documents*.

1.1.18 PAYMENT

Payment

Refer to *EQL Conditions of Contract*.

Method of measurement

General: In accordance with the principles of the Australian Standard Method of Measurement of Building Works (ASMM).

Other civil engineering work: To AS 1181.

End of section

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1 GENERAL

AIMS

Responsibilities

General: Provide finishes to formed and unformed concrete surfaces which are as follows:

- Appropriate to the importance (visual or physical) of the concrete elements.
- Slip resistant finish, if no other finishes are applied over.
- Compatible with following trades and finishes.

Drawings and extents

Drawings: Refer to the *Structural Drawings* for general requirements. Refer to the *Architectural Drawings* for the arrangement and setout of concrete.

Extent of work: The structural drawings do not necessarily show the full extent and detail of all items shown there-on. Refer also to the architectural drawings for extents of work.

CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Concrete Specification and drawings

General: Conform to the Structural engineer's specification for concrete, reinforcement, formwork and precast concrete, and the Structural engineer's drawings and specification notes thereon.

Precedence: Generally, conform to the Structural engineer's specification and drawings for general and structural requirements for insitu and precast concrete and to this worksection for finishes thereto.

Where related clauses conflict, the requirement which is more demanding and / or more stringent for the Contractor shall take precedence and shall be allowed for. Confirm requirements with the Contractors Representative before proceeding.

Associated worksections

Co-ordinate with the work of all adjoining trades including but not limited to the work of these worksections and Specifications:

- *Adhesives sealants, fasteners,*
- *Metals and prefinishes,*
- *Termite control,* for slab edges formed to allow inspection for termite activity and for barriers to be cast into concrete.
- *Block Construction,*
- *Doors,*
- *Plastering,*
- *Resilient finishes,*
- *Painting*

STANDARDS

General

Formed surfaces: To AS 3610.

Unformed surfaces: To AS 3600.

Precast concrete

Precast members: Comply with the recommendations of CIA Z48.

Precast flat panels: To AS 3850.

INTERPRETATIONS

Definitions

General: For the purposes of this worksection, the following definition applies:

- Green concrete: Concrete which has set but not appreciably hardened.

Precast concrete: For the purposes of this worksection the definitions given in AS 3850 clause 1.3 and the following apply:

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Precast units: Concrete elements manufactured in other than their final position including elements manufactured on site but excluding tilt-up panels.

INSPECTION

Notice

Inspection generally: Give notice so that inspection may be made of the following:

- Completed formwork before concrete placing.
- Evaluation of the finish.

Precast unit inspection: Give notice so that inspection may be made of the following:

- Formwork dimensions and stability.
- Panel edge details and penetrations.
- Connection materials and inserts in place.
- Reinforcement and/or prestressing tendons in place.
- All completed units prior to transportation to the site.
- Joint inserts that will be concealed including inaccessible rear seals and the like in place before final face sealing.

SUBMISSIONS GENERALLY

Shop drawings

General: Submit shop drawings for all class 2 formwork including elevations of all exposed concrete. Shop drawings shall show every detail including but not limited to:

- formwork layout;
- support methods;
- joints, angles and all other profiling;
- location of block outs for items to be built into concrete; and
- tie bolt locations.

SAMPLES

General

General: Provide sample panels satisfying the following requirements. Individual panels shall satisfy multiple requirements as applicable.

Evaluation: Do not proceed with the related work until the accepted range of surface has been determined. The approved sample panels shall act as the control reference representing the standard to be adopted throughout and shall show the expected range in variation.

Concrete floor sample panels

General: Provide in a suitable position sufficient number of sample panels to allow testing, evaluation and determination of the surface finishes of each exposed concrete floor or paving surface. Each panel shall vary in degree of surface texture. Provide additional sample panels if minimum required slip resistance is not achieved.

Samples required: All floor and paving surfaces as finished including sealers both external and internal including as follows

- Sealed concrete floors.
- Stair treads and landings.
- Including supplementary finishes and sealers as applicable.

Final samples: Allow to provide final samples of each finish incorporating all requirements from evaluation if all requirements are not met by one of the previous samples for each situation. Final samples shall show the expected range of variation in the approved finishes.

Minimum size: 1000 x 1000mm for insitu concrete elements, and as necessary to allow slip resistance testing.

Evaluation: Samples shall be evaluated for appearance, slip resistance, ease of cleaning, and suitability for purpose.

TESTING

Slip resistance

Requirement: All floor and paving surfaces as finished including sealers both external and internal shall be certified to be slip resistant.

General: Employ an independent testing laboratory to carry out testing on the concrete floor and

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paving surface finishes as finished including sealers.

Previous type test results shall not be an accepted substitute for the specified site tests on sample panels and completion tests.

Sample panel: Carry out testing in accordance with AS/NZ4586 Appendix A "Wet Pendulum Test Method" on each of the sample panels. If the minimum required slip resistance is not achieved, carry out further testing on additional sample panels until requirements are met.

Final works: Carry out completion testing in accordance with AS/NZ4586 Appendix A "Wet Pendulum Test Method" in various positions in the final installation to ensure a consistency of slip resistance and that the specified requirements have been achieved.

Criteria: The surfaces shall comply with the recommendations for various locations in HB197 "An Introductory Guide to the Slip Resistance of Pedestrian Surface Materials" and to the minimum requirements specified in the *General requirements* worksection.

TOLERANCES

Surface quality

Formed surfaces: Confirm conformance with the surface finish requirements of AS 3610 for the surface class nominated in the **Formed surface finishes schedule** and any additional requirements for each class specified in the *Structural Specification*.

Flatness

Unformed surfaces: Confirm conformance with the **Flatness tolerance classes table** for the class of finish nominated using a straight edge placed anywhere on the surface in any direction.

Flatness tolerance class table

Class	Measurement	Maximum deviation (mm)
A	3 m straight edge	3
B	3 m straight edge	6
C	600 mm straight edge	6

Falls and levels

Integral grading: Grade insitu concrete where shown on the drawings and where required for falls with finish integral in concrete.

Grading: Grade to even falls, from generally level perimeters at walls and the like, to drainage outlets without ponding:

- externally to drain away from the building perimeter and edges; and,
- internally away from room perimeters in wet areas.

Falls:

- Minimum fall for drainage 1 in 100.
- Where falls are not required lay level.

INSPECTION

Notice

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

- Evaluation of the off-form finishes.
- Evaluation of surface finish.

SURFACE TREATMENT

General

Range: Do not proceed with the related work until the acceptable range of surface treatments has been determined.

2 PRODUCTS

MATERIALS

Surface hardeners, sealants and protectors

Supply: If required by the project documentation, provide proprietary products.

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3 EXECUTION

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SURFACE MODIFIERS

General

Application: Apply to clean surfaces in accordance with the manufacturer's requirements.

UNFORMED SURFACES

General

General: Strike off, screed and level slab surfaces to finished levels, to the tolerance class noted in the **Unformed surface finishes schedule**.

Surface finishes

General: Provide surface finishes in conformance with the **Unformed surface finishes schedule**.

Surface repairs

Surface repair method: If surface repairs are required, submit proposals.

Finishing methods – primary finish

Machine float finish:

- After levelling, consolidate the surface using a machine float.
- Cut and fill and refloat immediately to a uniform, smooth, granular texture.
- Hand float in locations inaccessible to the machine float.

Broom finish: After machine floating and steel trowelling draw a broom or hessian belt across the surface to produce a coarse even-textured transverse-scored surface.

Finishing methods – supplementary finish

Painting: Refer to *Painting* for applied paint finishes.

FORMED SURFACES

General

General: Provide formed concrete finishes in conformance with the **Formed surface finishes schedule**.

Damage: Do not damage concrete works through premature removal of formwork.

Edges

Exposed external corners: Pencil round finish (formwork corner set with concave sealant bead identically tooled consistent throughout).

Drip Grooves

Provide drip grooves or alternative form to external slab soffits adjacent vertical concrete surfaces to architects details. If not shown where necessary submit proposal for approval.

Nosings and edges

Profile: Bullnose to 5 mm radius.

Cast-ins

General: Provide profiles and cast-in reglets as shown on drawings and as required for flashings and waterproof membrane terminations. Coordinate with applicable subcontractors.

Visually important surfaces

For exposed concrete of surface finish classes 1, 2 or 3, set out the formwork to detail as shown on the drawings, including for joints, bolt holes, and similar visible elements in the formed surface all to approval and as shown on the drawings, and for where not shown on the drawings:

- Matching and / or consistent with where setout is shown on drawings.

Curing

General: If forms are stripped when concrete is at an age less than the minimum curing period, commence curing exposed faces as soon as the stripping is completed.

Evaluation

If the Company 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.

The evaluation shall be carried out by the Contractor in the presence of the Company Representative.

Surface repairs

General: Surface repairs shall only be permitted where approved by the Company Representative. Otherwise

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Revised concrete not conforming with the specification.

Exclusions: Repairs to achieve Class 1 and Class 2C (colour controlled Class 2) surfaces are not permitted.

General: To AS 3610 clause 5.6.5.

Method: Before commencing repairs, submit the proposed method for each repair required throughout the works.

RECTIFICATION OF SLAB SURFACE LEVELS

General

Make good to all internal concrete surfaces and abutments with new concrete and joints before applying finishes. Allow to provide topping/ feathering etc. over existing joints, and defects in the surface etc., suitable to apply the scheduled finishes to the required tolerances.

Floors to receive paint finish

High pressure clean and acid wash slabs in preparation for applied finishes as scheduled.

Allow to repair defects with appropriate products suitable for the following applied finish.

Refer to *Painting*.

4 SELECTIONS

UNFORMED SURFACES

Schedule of unformed surface finishes

Property	Location		
Location	Interior slabs generally including slabs to receive vinyl and painted finish.	Interior Landings.	Exterior walkways, paths, hardstand and the like.
Flatness tolerance class	A	A	B
Primary finish	Machine trowel	Steel trowel	Heavy Broom finish. Refer to <i>Drawings</i> .
Supplementary finish	Refer to <i>Resilient finishes</i> & <i>Painting</i>	Refer to <i>Resilient finishes</i>	Sealer as in this worksection.

FORMED SURFACES

Schedule of formed surface finishes

Property	Location	
Location	Slab edges, underside of suspended slab.	Concrete Garden Edging
Surface finish class	2	2
Flatness tolerance class	A	A
Surface finish type	Grout floated finish to infill blow holes and imperfections.	Grout floated finish to infill blow holes and imperfections.
Supplementary finish	Paint, as specified in <i>Painting</i> .	Paint, as specified in <i>Painting</i> .

GARDEN EDGING

Type Provide continuous garden edging 150W x 150H, unless nominated otherwise.

Location: Refer Landscape Drawing for location and extent, generally to fully surround all Landscaped areas. Refer Fencing Kerbing requirements and if abutting a Fence/ Boundary then provide profile/s in accordance with the Fencing standard drawing

Profile: Provide options for standard Garden Profile edging to PR's for final approval before ordering

Requirements: Concrete with black oxide added, and clear sealed.

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CONCRETE, GREY BROOM FINISHED (CONC. BF)

Schedule of concrete pavement, grey broom finished

Code	CONC-BF
Extent	Refer to <i>Drawings</i> . Generally, to New Concrete Driveway and Parking Area
Requirement	Natural grey concrete to <i>Structural/Civil</i> details with troweled joints.
Finish	Broom finished.
Concrete supply	Refer to <i>Structural/Civil Drawings</i> .
Test panel	Refer to <i>General Requirements</i> , and above in this <i>Worksection</i> for requirement for Contractor to test and certify the slip resistance of all finished flooring.

CONCRETE PAVEMENT, GREY BROOM FINISHED, CLEAR SEALED (CONC – SL)

Schedule of broom finished concrete pavement, clear sealed

Code	CONC-SL
Extent	Refer to <i>Drawings</i> . Generally, to PLANT DECK (R1.05), GAS Rm (R1.04) and LANDING 1 (R1.06) and LANDING 2
Requirement	Natural grey concrete to <i>Structural/Civil</i> details with troweled joints.
Finish	Machine Troweled. Apply Parchem Fosroc Nitoflor FC150HP (previously known as Duraflor HP), or approved Equal, in accordance with manufacturers printed instructions. Minimum 2 coats.
Concrete supply	Refer to <i>Structural/Civil Drawings</i> .
Test panel	Refer to <i>General Requirements</i> , and above in this <i>Worksection</i> for requirement for Contractor to test and certify the slip resistance of all finished flooring.

CONCRETE PAVEMENT, COLOURED BROOM FINISHED (CF-01) & (CF-02)

Schedule of concrete pavement, coloured broom finished

Code	CF-01 & CF-02
Extent	Refer to <i>Drawings</i> . Generally, to NEW FOOTPATH (R1.08) = To Hartley Street, and NEW FOOTPATH (R1.07) = To Sheridan Street
Requirement	Coloured concrete to <i>Structural/Civil</i> details with troweled joints. Installation to meet Cairns Regional Council (CRC) requirements
Colour	CCS oxide. Refer to External colour schedule in <i>Architectural schedules</i>
Finish	Exposed Aggregate to meet CRC requirements. Apply CCS Streetscape Sealer, or approved Equal, in accordance with the manufacturers printed instructions. Minimum 2 coats, or approved equal
Concrete supply	Refer to <i>Structural/Civil Drawings</i> .
Test panel	Refer to <i>General Requirements</i> , and above in this <i>Worksection</i> for requirement of Contractor to test and certify the slip resistance of all finished flooring to meet CRC requirements.

GENERAL

All External Concrete to have fall as nominated on drawings, or above in this *Worksection*. If isolated then Crowned so as not to allow water to pond.

End of section

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1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide block construction, as documented.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following worksection(s):

- General requirements, Structural.

1.3 STANDARD

General

Materials and construction: To AS 3700.

1.4 INTERPRETATION

Definitions

General: For the purposes of this worksection the definitions in AS 3700 clause 1.5.2, AS/NZS 4455.1 and those given below apply:

- Facework: Masonry intended to be exposed in a wall.

1.5 TOLERANCES

General

Requirement: To AS 3700 Table 12.1.

1.6 SUBMISSIONS

Samples

Face units: Submit face units of each type illustrating the range of variation available, including colour, texture, surface irregularities, defective arrises, and shape.

- Number of each type: 6.

Facework sample panel: Provide, in a suitable position, a sample panel of each type of facework including face or pointing mortar and a finished vertical control joint.

- Minimum size (face of panel): 1200 mm high x 1190 mm or closest unit module long.

Sand: Submit a 2 kg sample of each type of sand required to be of a particular colour, grade or source.

Wall ties: Submit sample of wall ties if applicable.

Tests

Type tests: Submit results as follows:

- Characteristic unconfined compressive strength of masonry unit: To AS/NZS 4456.4.

1.7 INSPECTION

Notice

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

- Set out.

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- Bottoms of cavities, after cleaning out.
- Bottoms of core holes, before grouting.
- Reinforcement type and diameter.
- Positioning of reinforcing before grouting.
- Control joints, ready for insertion of joint filler.
- Damp-proof courses, in position.
- Flashings, in position.
- Lintels, in position.
- Structural steelwork, including bolts and shelf angles, in position.

2 PRODUCTS

2.1 DURABILITY

General

Exposure environment: Coastal

Exposure locations: To AS 3700 clause 5.4.

2.2 MATERIALS

Block units

Selections: As documented in the **Block construction schedule**.

Standard: To AS/NZS 4455.1 and AS/NZS 4455.3.

Salt attack resistance grade: To AS 3700 Table 5.1.

Mortar materials

Mortar class: To AS 3700 Table 5.1.

Cement: To AS 3972.

- Cement type: Refer to *Structural*

White cement: With $\leq 1\%$ iron salts content.

Lime: To AS 1672.1.

Sand: Fine aggregate with a low clay content and free from efflorescing salts, selected for colour and grading.

Water: Clean and free from any deleterious matter.

Admixtures: To AS 3700 clause 11.4.2.4.

Pigment: To BS EN 12878, and as follows:

- Integral pigment mix proportion : $\leq 10\%$ by weight of cement.

Masonry cement mortar mix proportions table: (cement:lime:sand), by volume

Mortar class to AS 3700	Clay	Concrete	Calcium silicate	Water thickener
M3	n/a	1:0:4	n/a	Yes
M4	n/a	n/a	n/a	Yes

Cement (GP/GB)mortar mix proportions table (cement:lime:sand), by volume

Mortar class to AS 3700	Clay	Concrete	Calcium silicate	Water thickener
M3	n/a	1:1:6	n/a	Optional
M3	n/a	1:0:5	1:0:5	Yes
M4	n/a	1:0.5:4.5	n/a	Optional
M4	n/a	1:0:4	1:0:4	Yes
M4	n/a	1:0-0.25:3	n/a	Optional

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Standard: To AS 3700 clause 11.7.

Minimum characteristic compressive strength: 12 MPa.

2.3 BUILT-IN COMPONENTS

General

Durability class of built-in components: To AS 3700 Table 5.1.

Steel lintels

Angles and flats: To AS/NZS 3679.1.

Cold formed proprietary lintels: Designed to AS/NZS 4600.

Corrosion protection: To AS/NZS 2699.3.

Galvanizing: Do not cut after galvanizing.

Reinforcement

Standard: To AS/NZS 4671.

Corrosion protection: To AS 3700 clause 5.9.

Minimum cover: To AS 3700 Table 5.1.

Wall ties

Standard: To AS/NZS 2699.1.

Type: Co-ordinate with stone cladding supplier for wall ties required between blockwork and cladding.

Corrosion protection: To AS/NZS 2699.1.

Connectors and accessories

Standard: To AS/NZS 2699.2.

Corrosion protection: To AS/NZS 2699.2.

Design criteria for flexible masonry ties: Co-ordinate with stone cladding supplier for wall ties required between blockwork and cladding.

Flashings and damp-proof courses

Standard: To AS/NZS 2904.

Joints

Standard: To AS 3700 clause 4.13.

Material: Refer to *Structural*.

3 EXECUTION

3.1 GENERAL

Mortar mixing

General: Measure volumes accurately to the documented proportions. Machine mix for at least six minutes.

Protection from contamination

General: Protect masonry materials and components from ground moisture and contamination.

Bond

Type: Stretcher bond.

Building in

Embedded items: Build in wall ties and accessories as the construction proceeds. If it is not practicable to obtain the required embedment wholly in the mortar joint in hollow masonry units, fill appropriate cores with grout or mortar.

Steel door frames: Fill the backs of jambs and heads solid with mortar as the work proceeds.

Clearance for timber frame shrinkage

General: In timber frame block veneer construction, leave clearances between window frames and block sill and between roof frames and the block veneer as follows:

- Additional clearance: To accommodate additional shrinkage of unseasoned floor timbers.

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Single storey frames and ground floor windows (not for slab on ground): 10 mm.
 Two storey frames and upper floor windows: 20 mm.

Construction at different rates or times

Monolithic structural action: If two or more adjoining sections of masonry, including intersecting walls, are constructed at different rates or times, rake back or tie the intersections between those sections so that monolithic structural action is obtained in the completed work.

Joining to existing

General: Provide a control joint where joining to existing structures. Do not tooth new masonry into existing work unless approved by a professional engineer.

Mortar joints

Solid and cored units: Lay on a full bed of mortar. Fill perpends solid. Cut mortar flush.

Face-shell bedded hollow units: Fill perpends solid. Cut mortar flush.

Finish: Conform to the following:

- Externally: Tool to give a dense water-shedding finish.
- Internally: If wall is to be plastered, do not rake more than 10 mm to give a key.
- Thickness: 10 mm.

Cutting: Set out blocks with joints of uniform width and the minimum of cutting.

Monolithic structural action

Header units: Except in stretcher bond facework, provide block header units to AS 3700 clause 4.11.2.

Spacing: 600 mm maximum.

Location: Place the header units in the following locations:

- At engaged piers.
- At engagement of diaphragms with the leaves in diaphragm walls.
- At intersections of flanges with shear walls.
- At intersections with supporting walls and buttresses.
- Between leaves in solid masonry construction.

Rate of construction

General: Regulate the rate of construction to eliminate joint deformation, slumping or instability.

Set out

Rod: 3 courses to 600 mm for 190 mm high units.

Protection

General: Cover the top surface of blockwork to prevent the entry of rainwater and contaminants.

Single leaf and solid walls: Moisture protection to AS 3700 clause 4.7.4.

Temporary support

General: If the final stability of the masonry is dependent on construction of (structural) elements after the blockwork is completed, provide proposals for temporary support or bracing.

3.2 FACEWORK

Cleaning

General: Clean progressively as the work proceeds to remove mortar smears, stains and discolouration. Do not use an acid solution. Do not erode joints if using pressure spraying.

Coloured blockwork: to manufacturers written recommendations.

Acid solution: Do not use.

Colour mixing

Distribution: In facework, distribute the colour range of units evenly to prevent colour concentrations and banding.

Below ground

Facework: Commence facework at least 1 full course, below adjacent finished surface level.

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Double face walls

Selection: Select face units for uniform width and double-face qualities in single-leaf masonry with facework both sides.

Preferred face: Before starting, obtain approval of the preferred wall face, and favour that face should a compromise be unavoidable.

Perpends

General: If other than vertically aligned perpends in alternate courses are proposed, provide details.

Sills and thresholds

General: Solidly bed sills and thresholds and lay them with the top surfaces draining away from the building.

Minimum size of cut unit: Three quarters full width.

3.3 CONTROL OF JOINTS

General

Location and spacing: Provide control joints to AS 3700 clause 4.8.

Control joint filling

Filler material: Provide compatible sealant and bond breaking backing materials which are non-staining to blockwork. Do not use bituminous materials with absorbent masonry units.

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

Installation: Clean the joints thoroughly and insert an easily compressible backing material before sealing.

Sealant depth: Fill the joints with a gun-applied flexible sealant for a depth of at least two-thirds the joint width.

Fire-resistance rated control joints

General: If a control joint occurs in an element of construction required to have a fire resistance rating, construct the control joint with fire stopping materials which maintain the fire resistance rating of the element.

Fire stopping: To AS 4072.1.

3.4 REINFORCED AND GROUTED BLOCKWORK

Cleaning core holes

General: Provide purpose-made cleanout blocks or machine cut a cleaning hole at the base of each grouted core.

Location: Locate on the side of the wall which is to be rendered or otherwise concealed.

Cleaning: Rod cores to dislodge mortar fins protruding from the blocks and mortar droppings from reinforcement. Remove through the clean-out blocks.

Grouting

Commencement: Do not commence until grout spaces have been cleaned out and the mortar joints have attained sufficient strength to resist blow-outs.

Height of lift: Limit the height of individual lifts in any pour to make sure that the grout can be thoroughly compacted to fill all voids and make sure bond between grout and masonry.

Compaction: Compact by vibration or by rodding.

Topping up: On the completion of the last lift, top up the grout after 10 min to 30 min, and vibrate or rod to mix with the previous pour.

3.5 LINTELS

Location

General: Refer to *Structural Drawings*.

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Insulation

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General: Do not cut on site. Keep lintels 10 mm clear of heads of frames.

Steel lintels: Pack mortar between any vertical component and supported masonry units. For angles install the long leg vertical.

Minimum bearing each end:

- Span ≤ 1000 mm: 100 mm.
- Span > 1000 mm ≤ 3000 mm: 150 mm.
- Span > 3000 mm: To structural drawings.

Propping: Provide temporary props to lintels to prevent deflection or rotation.

- Minimum propping period: 7 days.

3.6 CONNECTORS AND ACCESSORIES

Slip joints

General: Provide slip joints to top of all unreinforced masonry walls supporting concrete slabs and other concrete elements.

Protection: Keep the slip joints in place and protect from displacement.

3.7 TESTS

Mortar

Durability: Scratch index test to AS 3700 Appendix E.

Compressive strength: To AS 3700 Appendix C.

Flexural strength: To AS 3700 Appendix D.

Special masonry

Sampling and testing: To AS 3700 clause 12.7.

Performance: As documented in the **Block construction performance schedule for special masonry**.

4 SELECTIONS

4.1 BLOCKWORK, FACEBLOCK - CMB

Schedule of blockwork	
Code	CMB
Structural requirement	Refer to <i>Structural Drawings</i>
Location	Refer to <i>Drawings & Architectural Schedules</i> . Generally to all visible faces of internal blockwork, excluding where battened and sheeted
Type	Standard concrete masonry. Smooth surface.
Size	Refer to <i>Drawings</i> . 200 series units.
Manufacturer	Adbri Masonry or equal approved.
Colour	-
Fire resistance level (FRL)	-
Blockfilling	Refer to <i>Structural Drawings</i>
Mortar mix	Standard

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Schedule of blockwork

Code	CMB
Structural requirement	Refer to <i>Structural Drawings</i>
Bond	Stretcher
Coursing	Struck flush for rendering.
Exposed top of walls	-
Capping blocks	-
Finish	Refer to Interior Finishes in <i>Architectural Schedules</i> Painted as in <i>Painting</i> worksection
Progressive Cleaning	Required
Cleaning at completion	In preparation for rendered finish.
Sealer	-

4.2 BLOCKWORK, RENDERED - RBK

Schedule of blockwork	
Code	RBK (rendered blockwork)
Structural requirement	Refer to <i>Structural Drawings</i>
Location	Refer to <i>Drawings & Architectural Schedules</i> . Generally to all visible faces of external blockwork, excluding where battened and sheeted
Type	Standard concrete masonry. Smooth surface.
Size	Refer to <i>Drawings</i> . 200 series units.
Manufacturer	Adbri Masonry or equal approved.
Colour	-
Fire resistance level (FRL)	-
Blockfilling	Refer to <i>Structural Drawings</i>
Mortar mix	Standard
Bond	Stretcher
Coursing	Struck flush for rendering.
Exposed top of walls	-
Capping blocks	-
Finish	Rendered as in <i>Plastering</i> , Painted as in <i>Painting</i> .
Progressive Cleaning	Required
Cleaning at completion	In preparation for rendered finish.
Sealer	-

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18. BLOCKWORK - HONED

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Schedule of blockwork

Code	CMB-H (honed blockwork)
Structural requirement	Refer to <i>Structural Drawings</i>
Location	Refer to <i>Drawings & Architectural Schedules</i> . Generally to all visible faces of exposed blockwork
Type	Designer Masonry, Honed Finish Coloured
Size	Refer to <i>Drawings</i> . 190 series units.
Manufacturer	Adbri Masonry or approved equal.
Colour	Refer to External colour schedule in <i>Architectural schedules</i>
Fire resistance level (FRL)	-
Blockfilling	Refer to <i>Structural Drawings</i>
Mortar mix	Standard
Bond	Stretcher bond
Coursing	Tooled
Exposed top of walls	-
Capping blocks	-
Finish	Honed
Progressive Cleaning	Required
Cleaning at completion	In accord. with manufacturers requirements
Sealer	Anti-graffiti Clear Painted as in <i>Painting</i> . In accord. with manufacturers requirements

End of section

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1 GENERAL

1.1 AIMS

Responsibilities

General: Provide insulation:

- Complete for their function.
- Conforming to the detail and location drawings.
- Firmly fixed in position.
- Maintain their performance for the life of the building.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following: *Roofing, Cladding, Structural, Partitions*

1.3 STANDARDS

Installation of mineral wool insulation

Comply with the ICANZ Industry Code of Practice for the Safe Use of Glass Wool and Rock Wool Insulation.

Marking: Deliver mineral wool products to site in packaging labelled FBS-1 BIO-SOLUBLE INSULATION.

1.4 INSPECTION

Notice

Give sufficient notice so that inspection may be made of the insulation before concealment.

2 PRODUCTS

2.1 MATERIALS AND COMPONENTS

Bulk insulation

Mineral wool blankets and cut pieces: To AS/NZS 4859.1 Section 8.

Reflective insulation: To AS/NZS 4859.1 Section 9.

Fasteners and supports

General: Metallic-coated steel.

Mesh support to roof insulation

Metallic-coated wire netting: To AS 2423 Section 4.

- Size: 45 mm mesh x 1 mm diameter.

Welded safety mesh: To AS/NZS 4389.

3 EXECUTION

3.1 GENERAL

Reflective foil laminate

To steel or aluminium: Double sided pressure sensitive tape.

Overlap (minimum): 150 mm and adhesive fix.

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3.2 EXTERIOR WALL INSULATION

General

Location: as scheduled

Materials

Combined bulk insulation and foil blanket as specified

Installation

Support and fixing: as scheduled

3.3 ROOF INSULATION

General

Location: as scheduled

Materials

Combined bulk insulation and foil blanket as specified

Installation

Insulation: Install over the roof support frame and mesh support, so that the blanket is in continuous contact with the underside of the metal roofing sheets.

Mesh support to roof insulation

Locations: Provide support to the following:

- Blanket type thermal insulation laid over roof framing members.

Installing wire netting: Lay over the roof framing providing 75mm slack or sag between members to suit the application.

Fixing wire netting: wire to steel frame.

Installing welded safety mesh: To AS 4389.

4 SCHEDULES

4.1 ROOF INSULATION

Schedule of roof insulation	
Reference	Refer to Metal roof sheeting in <i>Roofing</i> worksection for the sequence of: - Roof purlins - Safety mesh - Roof insulation (with bonded vapour barrier facing downwards) - Vapour barrier - Roof sheeting
Standards	Blanket and reflective foil to AS/NZS 4859.1; Blanket and reflective foil to BCA C1.10 [AS 1530.3, <i>Spread-of-Flame Index</i> not more than 9, and if it is more than 5, <i>Smoke Developed Index</i> not more than 8]; Blanket and reflective foil to AS/NZS 4859.1 s.8, <i>FBS-1 Bio-soluble</i> products. Foil to AS 1903 Mesh to AS 2424.
Requirement	Provide bonded blanket insulation to the whole of the building roof. Blanket to be discontinuous at external wall line. Provide a separate vapour barrier over the bonded blanket to the whole of the roof including to the eaves. Vapour barrier to be turned down and taped to the external wall vapour barrier, to provide a fully insulated and sealed building space. Separate vapour barrier to be extended from wall line to gutter.
Safety mesh	Provide Waratah Roofsafe safety mesh, or equal approved, installed to AS 4389. Submit an application for consideration if the use of mid-battens instead of safety mesh is preferred.

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Schedule of roof insulation

Bonded blanket type	CSR Bradford Anticon 70 building blanket, minimum R1.4, faced with Bradford Thermofoil, Medium Duty, or equal approved. Polyester insulation will not be accepted.
Foil type	CSR Anti-glare Thermofoil 733 Medium Weight, with 150mm overlaps.
Vapour barrier materials	Adhesive = Heavy bodied solvent released synthetic rubber wallboard/flooring adhesive with gap filling properties for use on uneven surfaces. Tape = 70mm wide aluminium foil-faced, glass fibre-reinforced pressure-sensitive tape, as recommended by the membrane manufacturer. Foam = polyurethane, fast setting 2-component formulation suitable for plural nozzle spray equipment application.
Installation	Drape the bonded blanket over the safety mesh, with the foil <u>down</u> , maintaining the 150mm foil overlap, and maintaining the thickness of the blanket insulation. Repair tears and penetrations with Bradford Foil or Thermoplast tape. Drape the additional foil <u>over</u> the bonded blanket insulation, and install as a vapour barrier. Turn the additional foil down at the external walls, and tape to the external wall vapour barrier.
Vapour barrier method	Overlap the foil 75mm, and seal with one continuous run of adhesive <u>and</u> tape on the exposed side of the overlap. Ensure that no dust is present on the meeting surfaces before installation of the tape. Press the tape to the foil to ensure continuous contact. Provide a sealant adhesive to substrates that will not accept the sealing tape adequately. Make good all penetrations with adhesive, tape, and foam as required to make the barrier vapour-proof.

4.2 EXTERNAL WALL INSULATION

Schedule of insulation to all cladded external walls	
Location	To full extent of all cladded external walls
Requirement	Provide double-sided medium-duty foil sarking on the external face of the steel framing behind the cladding, to satisfy the requirements of AS/NZS 4200.2. Refer to <i>Cladding</i> for the placement of the sarking under the cladding. Provide for the full extent of the External walls.
Foil type	CSR Bradford Thermofoil, Medium Duty, or equal approved installed as vapour barrier.
Vapour barrier materials	Adhesive = Heavy bodied solvent released synthetic rubber wallboard/flooring adhesive with gap filling properties for use on uneven surfaces. Tape = 70mm wide aluminium foil-faced, glass fibre-reinforced pressure-sensitive tape, as recommended by the membrane manufacturer. Foam = polyurethane, fast setting 2-component formulation suitable for plural nozzle spray equipment application.

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18. INTERNAL WALL INSULATION

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Schedule of internal wall insulation

Location	To internal face of all External Walls. Refer to the <i>Drawings</i> for other location/s.
Standard	To AS 3999 or AS 4075.
Requirement	Provide wall insulation packed tightly between battens and studs for the full height of the wall between the top and bottom of walls
Bulk insulation type	CSR Bradford Gold 90 Hi-Performance wall batts, minimum R2.5.
Installation	Install the bulk insulation batts internally between battens and framing. Repair tears and penetrations with Bradford Foil or Thermoplast tape. Tape and seal roof vapour barrier over wall vapour barrier for continuous vapour membrane. Install the battens over the foil.

End of section

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1 GENERAL

1.1 AIMS

Responsibilities

Provide a roofing system and associated work which:

- Satisfies the product performance requirements.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following:

- General and Steelwork as noted on the Structural Drawings
- *Insulation*
- *Ceilings*

1.3 PERFORMANCE CRITERIA

Ambient climatic conditions

Design rainfall intensity (mm/h) to AS/NZS 3500.3:

Structural criteria

Provide to the requirements of **Service loads** noted on the *Structural Drawings*

Provide to the requirements of the *low-high-low* requirements of the NCC.

Manufacturers manual

Install to the requirements of the *Stramit Cyclonic Areas Roof & Wall Cladding* document.

Roof access

Type: Provide as scheduled in **Selections**

1.4 INSPECTION

Notice

Inspection: Give sufficient notice so that inspection may be made of:

- Roof supports.
- Those parts of the roofing, sarking, insulation and roof plumbing installation which will be covered up or concealed.

1.5 SUBMISSIONS

Tests

Submit results of type tests as follows:

- Metal roofing general tests: Roof sheeting and fastenings to AS 1562.1 for resistance to concentrated load and to wind pressure.
- Metal roofing in cyclonic regions AS/NZS 1170.2: Roof sheeting and fastenings to AS 1562.1 clause 5.6.

Data, Samples

Submit data of the following to indicated compliance with the specification:

- Manufacturers' data for the specified products.
- Samples of 0.48bmt colorbond roof sheeting.

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2 PRODUCTS

2.1 COMPONENTS

Fasteners

Finish: Prefinish exposed fasteners with an oven baked polymer coating to match the roofing material.

Profiled fillers

Provide: Purpose-made closed cell polyethylene foam profiled to match the roofing profile.

Locate profiled fillers under flashings to:

- Ridges.
- Eaves.

Safety mesh

Standard: To AS/NZS 4389.

2.2 SHEET METAL ROOFING

Standards

Design and installation: To AS 1562.1.

Prepainted and organic film/metal laminate products: To AS/NZS 2728.

2.3 ROOF PLUMBING

General

Standard: To AS/NZS 3500.3.

General: Provide the flashings, cappings, gutters, rainwater heads, outlets and downpipes necessary to complete the roof system.

Materials

Metal rainwater goods: To AS/NZS 2179.1.

Proprietary flashings and cappings

Standard: To AS/NZS 2904.

3 EXECUTION

3.1 INSTALLATION

Protection

General: Keep the roofing and rainwater system free of debris and loose material during construction, and leave them clean and unobstructed on completion. Repair damage to the roofing and rainwater system.

Touch up: If it is necessary to touch up minor damage to prepainted metal roofing, do not overspray onto undamaged surfaces.

Thermal movement

Provide for thermal movement in the roof installation and the structure, including movement in joints and fastenings.

Pan type sheets

Removal: Capable of being de-indexed and removed without damage.

Metal separation

Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by either:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer.

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Tolerances
 Conform to the Tolerances table.

Tolerances table

Property	Tolerance criteria: Permitted deviation (mm)
Spacing of supporting members	± 5 mm on the nominated support member spacing
Vertical or horizontal misalignment at the abutting ends of sheets	≤ 2 mm
Tops of supporting members in a plane parallel to the nominated roof slope	≤ 7 mm smooth deviation per metre length of supporting member

3.2 SHEET METAL ROOFING

Roof sheet installation

Laying start location: To the roof sheeting manufacturers' recommendations.

Eaves: Treat ends of sheets as follows:

- Generally: Close off ribs at tops and bottoms of sheets by mechanical means or with purpose-made fillers or end caps.
- At gutters: Project sheets 50 mm into gutters.

Swarf: Remove swarf and other debris as soon as it is deposited.

Accessories: Provide material with the same finish as roofing sheets.

Expansion joints: To the roof sheeting manufacturers' recommendations.

3.3 BUILDING ELEMENTS

Ridges and eaves

Treat ends of sheets as follows:

- Project sheets 50 mm into gutters.
- Close off ribs at bottom of sheets using mechanical means or with purpose-made fillers or end caps.
- Turn pans of sheets up at tops and down into gutters by mechanical means.

Bird proofing

Provide bird-proofing to the ends of all roofing accessible to birds.

- Provide pre-notched or purpose-made fillers of closed cell UV and bird-resistant polyethylene.
- To all ridges, eaves, abutments, valley gutters and the like.

Ridge and barge

Capping: Finish off along ridge and verge lines with purpose-made ridge capping or barge rolls.

End laps

General: Where end laps are unavoidable, and the sheet profile is not suitable for interlocking or contact end laps, construct a stepped type lap.

Length of lap (mm): To the roof sheeting manufacturers recommendations.

Verges: Overlap barge boards minimum 35 mm.

3.4 ROOF PLUMBING

Jointing sheet metal rainwater goods

Butt joints: Make joints over a backing strip of the same material.

Soldered joints: Do not solder aluminium or aluminium/zinc-coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Jointing system: Refer to **Selections** at the end of this section.

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Flashing

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in force shall be subject to this approval.

Installation: Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes where possible. Notch, scribe, flute or dress down as necessary to follow the profile of adjacent surfaces. Mitre angles and lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

Upstands: Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Wall abutments: Provide overflashings where roofs abut walls, stepped to the roof slope in masonry and planked cladding, otherwise raking.

- In masonry: Turn 25 mm into joints or grooves, wedge at 200 mm centres with compatible material and point up.
- To wall cladding: Continue the flashing up under the metal wall cladding above

Fixing to pipes: Solder, or seal with neutral cured silicone rubber and either of the following:

- Secure with a clamping ring.
- Provide a proprietary flexible clamping shoe with attached metal surround flashing.

Gutters

General: Form stop ends, downpipe nozzles, bends and returns. Dress downpipe nozzles into outlets. Provide overflows to prevent back-flooding.

Gutter and sump support: Provide framing and lining to support valley gutters, box gutters and sumps. Line the whole area under the gutters and sumps with continuous 18mm F14 A bond plywood, fully supported on corrugated Colorbond Ultra sheeting or similar sheeting, with hot dipped galvanised Unistrut support at 1000 max centres.

Gutter support: Provide proprietary brackets for proprietary gutters.

Expansion joints: Provide expansion joints in guttering longer than 30 m:

Valley gutters: Profile to suit the valley boarding. Turn back both edges 180 x 6 mm radius. Nail or screw to the valley boarding at the top end to prevent the gutter creeping downwards.

Valley gutter boarding: Provide continuous 18mm F14 A bond plywood supports, fixed to the trusses.

Downpipes

General: Prefabricate downpipes to the required section and shape. Connect heads to gutter outlets. Angle the downpipe feet as necessary to direct the discharge into the stormwater system indicated on the *Civil and Hydraulic drawings*.

Downpipe support

Provide stainless steel stand-off supports and fixings for downpipes as specified.

Stand-off brackets: Provide purpose made "T" brackets fabricated from 50 x 3.0mm stainless steel flat, bolted to the wall/column with 2 x 6mm stainless steel expansion bolts. Provide 50mm x 1.0mm thick stainless-steel straps around the downpipe, fixed to the cleats with 2 x 6mm stainless steel roundhead metal threads with dome head nuts. **Provide separating strip between stainless steel bracket and any dissimilar metal finishes.** Spacing of the brackets generally at 1800mm centres maximum.

316 grade stainless steel typical.

Rainwater disposal

System: Refer to the *Civil and Hydraulic drawings*.

3.5 COMPLETION

Warranties

Roofing materials: Submit the manufacturer's published product warranties.

Maintenance manual

On completion submit a manual of recommendations from the roof manufacturer or supplier for the maintenance of the roofing system including, frequency of inspection and recommended methods of access, inspection, cleaning, repair and replacement.

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1. SCHEDULES

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

4.1 METAL ROOF SHEETING – RSH-01

Schedule of metal roof sheeting	
Code	RSH-01 and RSH-02
Location	To all Roofs (RSH-01) and all Awnings (RSH-02)
Submissions	Submit samples and manufacturers' data and calculations on the sheeting and fixings to indicate conformance with the specification. Submit <u>5 working days</u> before ordering.
Substrate	Refer to the <i>Structural drawings</i> . Examine for spacing and trueness. Commencement of laying indicates acceptance of the new substrate.
Material Standards	To AS/NZS 2728, and must comply with the <i>Low High Low Test</i>
Design and installation	To AS1562.1. Design and provide to the requirements of the Structural Criteria in this section.
Product type	Stramit Monoclad, or equal approved
Thickness	0.48 BMT x G550 zincalume steel with zinc/aluminium coating to AS1397
Finish	Colourbond, standard.
Roof sheet colour	Refer to the Exterior colour schedule in <i>Architectural Schedules</i>
Purlins	Refer Structural Engineers Drawings
Sequence	the required sequence is; - Roof purlins as on the <i>Structural Drawings</i> - Safety mesh to AS/NZS 4389. - The roof insulation installed foil down as specified in <i>Insulation</i> . - Separate vapour barrier foil as specified in <i>Insulation</i> . - Roof sheeting as in this schedule.
Roof fixings	Crest fix with cyclone washers in accordance with the manufacturers printed instructions. Pre-finish to match the roof in colour.
Fixings spacing	At every sheeting crest at every purlin/batten in accordance with the manufacturers printed instructions.
Bird deterrent	Provide continuous Foam Closure Strips full length at eaves and cappings.
Roof Access Safety System	Refer to <i>Building access systems</i> worksection. Ensure consistency with the roofing manufacturers' installation and warranty requirements for weatherproof penetrations, support systems, fixings and separation of dissimilar metals and the like for the complete installation.

4.2 ROOF PLUMBING

Schedule of roof plumbing					
Component	Product	Material	Profile and size	Jointing method	Colour
Roof cappings & flashings generally	Purpose made flashings & cappings	0.60mm BMT, G300, Colorbond	As detailed, and as required	Backing, sealant, and rivet. Fix at 600 centres maximum.	Refer to Exterior colour schedule in <i>Architectural Schedules</i>
Feature custom fascia/capping	Purpose made fascias/	1.00mm BMT, G300, Colorbond	As detailed, and as	Fix at 600 centres	

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Schedule of roof plumbing					
Component	Product	Material	Profile and size	Jointing method	Colour
to Awnings	cappings		required	maximum.	
Half round eaves gutters	Purpose made eaves gutter & brackets	0.60mm BMT, G300, Colorbond	Refer to <i>Drawings</i> .	Backing, sealant, and rivet.	Refer to Exterior colour schedule in <i>Architectural Schedules</i>
Box Gutters	Purpose made box gutter & sumps with downpipe & overflow dropper	304 grade milled stainless steel, electro-polished. 0.55mm thick	Refer to <i>Drawings</i> .	Backing, sealant, and rivet.	Pre-finished
Rainwater Heads (RWH),	Purpose made	304 grade milled stainless steel, electro-polished. 0.55mm thick	Refer to <i>Drawings</i> .	Prefabricated, welded.	Pre-finished
Downpipes, 150mm Dia. (DP1)	Purpose made uPVC	uPVC, painted	Refer to <i>Drawings</i> .	Proprietary fittings & glue	Refer to Exterior colour schedule in <i>Architectural Schedules</i>
Downpipes, 150mm Dia. (DP2)	Purpose made	Hot Dipped Galvanised	Refer to <i>Drawings</i> .	Prefabricated, welded	Pre-finished
Downpipes, 150mm Dia. (DP3)	Purpose made	304 grade milled stainless steel, electro-polished. 0.55mm thick	Refer to <i>Drawings</i> .	Prefabricated, welded with mitred corners	Pre-finished

4.3 DOWNPIPE SUPPORTS

Schedule of downpipe supports	
Location	Refer to <i>Drawings</i> for downpipes.
Requirement	Provide custom fabricated downpipe supports as indicated on the <i>Drawings</i> .
Outrigger cleats	Provide 2no. steel cleats from the underside of the structural steel roof outrigger where downpipes are required.
Hangers	Provide 2no. 50x5.0EA 316 grade stainless steel hangers for each downpipe. Stainless steel M10 through bolt with cleat. Separate dissimilar metals with neoprene washers.
Downpipe brackets	Fabricate custom stainless steel heavy gauged downpipe supports to match downpipes as specified in this worksection. And spaced at 1m max centres

5 ROOF ACCESS SAFETY SYSTEM

Refer to *Building access systems* worksection.

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6. GLASS AWNING

APPROVED in accordance with the Building Code 1993. All conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

6.1 STANDARDS

General

Contractor is responsible for the design, certification and construction of the all glazed systems including glass type and thickness for consistency with the nominated design criteria. Any glazing nominated in this section is a minimum and the Contractor is to allow for increased glazing specifications as required to certify the complete system.

Selection and installation: To AS 2047.

- Building classification: Commercial

Service Loads: Provide to the requirements of **Service loads** noted on the *Structural Drawings*.

Design wind pressures for glazing [kPa]

Refer to *Structural Drawings*

Fixing

Fasteners and fastener spacing: Conform to the recommendations of the manufacturer.

Schedule of Glass Awning	
Location	Refer to Architectural and Structural <i>Drawings</i> for Details.
Requirement	Provide custom fabricated supports as indicated on the Drawings, with Structural Glazing. Glass to be UV Stable - Patterned Print onto glass.
Design Intent	Refer Structural Engineering drawings, and Architectural drawings for details
General	All glazing to be in accordance with AS1288. Manufacturer to provide glazing thickness as required for design parameters.
Glass Design	G-James Structural Glazing System, or approved equal Design calculations to be provided to determine thickness and width of silicone (Structural) bite in order to satisfy load requirements nominated by the Structural Engineer. Selection of appropriate double-sided structural tape thickness and widths to be determined by the nominated bite size of steel members provided.
Glass Type	Laminated Glass supplied by Structural Glazing system, GJ Solex Green, or equal approved
Installation	Installation strictly in accordance with manufacturers/ suppliers recommendations Installation glaziers must ensure the structural silicone being pumped into the joint totally wets both substrates being glued, filling the aluminium glass void. Allow to use temporary retainers to secure the glass into place while the silicone is curing. One part silicones will require 21 Days to reach full strength.
Glass Finish	Applied Patterned print pre-defined artistic pattern with 50% open area. UV Stable Present to EQL PR for Approval

Trade clean

Clean all frames, glazing with soft clean cloths and clean water, finishing with a clean squeegee. Do not use abrasive or alkaline materials.

Maintenance manual

General: Submit the window manufacturer's published instructions for operation, care and maintenance.

Warranty

Cross reference: *General requirements*.

End of section

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2.1 GENERAL

2.1.1 RESPONSIBILITIES

Performance

Structural: If required, provide structures, installations and components as follows:

- Fixed accessways: To AS 1657.
- Structural design actions: To AS/NZS 1170.0 and as documented in this *Worksection*. Refer also to the Notes on the *Structural Drawings*.

Structural criteria

Design and provide to the requirements detail on *STRUCTURAL DRAWINGS*.

Design

Design by contractor: If the contractor provides design, use only appropriately qualified persons and conform to all statutory requirements.

Conflict with the documents: If it is believed that a conflict exists between statutory requirements and the documents, notify the contract administrator immediately and provide a recommendation to resolve the conflict.

2.1.2 CROSS REFERENCES

Conform to associated worksections as follows:

- *Adhesives, sealants and fasteners.*
- *Metals and prefinishes.*
- *Termite control.*

Precedence

Requirements of subsequent worksections of the specification override conflicting requirements in this worksection.

2.1.3 REFERENCED DOCUMENTS

Contractual relationships

Responsibilities and duties of the principal, contractor and contract administrator are not altered by requirements in referenced documents.

Current editions

Use referenced documents which are the editions, with amendments, current 3 months before the closing date for tenders, except where other editions or amendments are required by statutory authorities.

- Site copies: One, if requested by the Principal's Representative.

2.1.4 INTERPRETATION

General

Unless the context otherwise requires, the following definitions apply:

- Approved: "Approved", "reviewed", "directed", "rejected", "endorsed" and similar expressions mean "approved (reviewed, directed, rejected, endorsed) in writing by the contract administrator".
- Geotechnical site investigation: The process of evaluating the geotechnical characteristics of the site in the context of existing or proposed construction.
- Give notice: "Give notice", "submit", "advise", "inform" and similar expressions mean "give notice (submit, advise, inform) in writing to the contract administrator".
- Maintenance period: Synonymous with "Defects liability period".
- Obtain: "Obtain", "seek" and similar expressions mean "obtain (seek) in writing from the contract administrator".
- Professional engineer: A person who is listed on the National Professional Engineers Register (NPER) in the relevant discipline at the relevant time.
- Proprietary: "Proprietary" mean identifiable by naming manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Provide: "Provide" and similar expressions mean "supply and install".

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Registered testing authority:

- The CSIRO Division of Manufacturing and Infrastructure Technology (CSIRO-MIT); or
- An authority registered by the National Association of Testing Authorities (NATA) to test in the relevant field; or
- An organisation outside Australia recognised by NATA through a mutual recognition agreement.
- Required: Means required by the contract documents, the local council or statutory authorities.
- Samples: Includes samples, prototypes and sample panels.
- Supply: "Supply", "furnish" and similar expressions mean "supply only".

Abbreviations

APAS: Australian Paint Approval Scheme.

AS: Australian Standard.

BCA: Building Code of Australia.

NATA: National Association of Testing Authorities.

NZS: New Zealand Standard.

SSL: Scientific Services Laboratory.

Technical

Metallic-coated steel: Includes zinc-coated steel, zinc/iron alloy-coated steel, and aluminium/zinc-coated steel.

Pipe: Includes pipe and tube.

Tests

Pre-completion tests: Tests carried out before completion tests.

- Type tests: Tests carried out on an item identical with a production item, before delivery to the site.
- Production tests: Tests carried out on a purchased item, before delivery to the site.
- Site tests: Tests carried out on site.

Completion tests: Acceptance tests and final tests.

- Acceptance tests: Tests carried out on completed installations or systems and, except for final tests, before the date for practical completion, to demonstrate that the installation or system, including components, controls and equipment, operates correctly, safely and efficiently, and meets performance and other requirements.
- Final tests: Acceptance tests carried out before completion of the maintenance period.

2.1.5 CONTRACT DOCUMENTS

Diagrammatic layouts

Layouts of service lines, plant and equipment shown on the drawings are diagrammatic only, except where figured dimensions are provided or calculable. Before commencing work, obtain measurements and other necessary information.

Levels

Spot levels take precedence over contour lines and ground profile lines.

Drawings and manuals for existing services

Warranty: No warranty is given as to the completeness or accuracy of drawings and/or manuals of existing services.

2.2 QUALITY

2.2.1 INSPECTION

General:

- The Contractor shall prepare an inspection test plan within 14 days of acceptance by Ergon Energy Corporation Limited. Submit 3 copies to the Principal's Representative.
- Show programmed dates for the following:
 - Submission of workshop drawings and contractors submissions
 - Inspection Hold Points.
 - Submission of installation and test certificates by the Contractor.

Mandatory Hold Points:

- Refer to schedule of Hold Points.

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The Contractor is to provide written notice of inspection prior to all works nominated in the Schedule of Hold Points.

- Work is not to proceed beyond a mandatory Hold Point, or to conceal works nominated as Hold Points without first obtaining written approval to proceed from the Principal's Representative or Clerk of Works representing the Principal.

Schedule of Mandatory Hold Points - Design Works

Disciplines:	Design and Documentation Stage:
Electrical, Mechanical, Gas and Comm's. (Refer Appendix. A)	At 40%, 60%, 80% and 100% - with issued/ approved by EQL PR before construction commencement.
Other/s (As Req'd to provide works)	As Above.

Schedule of Mandatory Hold Points - Civil Works

Building Element:	Work Stage:
Earthworks	After excavation and prior to replacement and compaction of remediated siteworks filling. Prior to placement compaction of new fill material and building platforms. Prior to placement of and compaction of pavement materials.
All Services Excavations	Prior to concealment.

Schedule of Mandatory Hold Points – Building Works

Building Element:	Work Stage:
Roadworks and paving	Prior to placement and compaction of sub-base and base material. After compaction of base course. Prior to pouring with reinforcement in place of concrete paving and drains.
All Building Slabs	Prior to concrete pour with reinforcement in place and sub floor services fixed in place.
All Slabs	Prior to concrete pour with reinforcement in place
All Masonry Walls	Prior to concrete core filling with reinforcement in place.
All Steelwork	After completion and prior to concealment.
Electrical wiring	Roughing in all wiring for general lighting and power purposes.

Notice

Witness points: If notice of inspection is to be given in respect of parts of the works, advise if and when those parts are to be concealed.

Hold points: If notice of inspection is to be given in respect of parts of the works, do not conceal those parts without approval.

Minimum notice for inspections to be made: 4 hours for on-site inspectors, otherwise 8 working days.

Concealed services: Give notice so that inspection may be made of services to be concealed.

2.2.2 TESTS

Testing authorities

Except for site tests, have tests carried out by authorities accredited by NATA to test in the relevant field, or an organisation outside Australia recognised by NATA through a mutual recognition agreement. Cooperate as required with testing authorities.

Except for site tests, have tests carried out by a Registered testing authority.

Reports

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All amendments made to the plan in RED ink are part of this approval.

General: Submit copies of test reports, including certificates for type tests, showing the observations and results of tests and compliance or non-compliance with requirements.

Number of copies of test certificates: 3

Endorsement

If tests are to be carried out on parts of the works, do not conceal those parts and do not commence further work on those parts until the tests have been satisfactorily completed and compliance verified.

2.2.3 SAMPLES

Timing

Delays: Coordinate submissions of related samples. Do not cause delays by making late submissions or submitting inadequate samples.

Quantity

General: Submit a sample of each designated item and 2 copies of supporting documentation. Include ancillary items such as fasteners, flashings and seals.

Identification

Identify the project, contractor, subcontractor or supplier, manufacturer, applicable product, model number and options, as appropriate and include pertinent contract document references. Include service connection requirements and product certification. Identify non-compliances with project requirements, and characteristics which may be detrimental to successful performance of the completed work.

Approval

General: Do not commence work affected by samples until the samples have been approved. Submit further samples as necessary.

Retention

Keep approved samples in good condition on site, until practical completion.

Incorporation

Incorporate in the works samples which have been approved for incorporation. Do not incorporate other samples.

Criteria

Match approved samples throughout the works.

2.2.4 SUBMISSIONS

Design and Construct Documents

The internal fitout and some external items are of a Design and Construct (D&C) nature with compliance required to the design intent - Refer Appendix A.

Timing

General: Submit documents in a timely manner, to suit the construction program.

The D&C development phase will be undertaken for this portion of the work in co-ordination with EQL having hold points at 40%, 60%, 80% and 100% - with issued/ approved before construction commencement.

Advise if any of the documents are to be returned.

Delays: Coordinate submissions of related items. Do not cause delays by making late or inadequate submissions.

Quantity

USB: One.

Bound documents: One.

Loose documents up to and including A3: One copy.

Loose documents larger than A3: One transparency on heavyweight plastic film the same size as the standard contract drawings.

Standard contract drawing size: A1

Identification

Identify the project, contractor, subcontractor or supplier, manufacturer, applicable product, model number and options, as appropriate and include pertinent contract document references. Include service connection requirements and product certification. Identify non-compliances with project requirements, and characteristics which may be detrimental to successful performance of the completed work.

Witness points: Give notice before commencing work affected by contractor's submissions, unless the submissions have been endorsed as satisfactory.

Hold points: Do not commence work affected by contractor's submissions until, if appropriate, the submissions have been endorsed as satisfactory,

Errors: If a document contains errors, submit a new or amended document as appropriate, indicating changes since the previous submission.

Design

General: For the parts of installation to be designed by the contractor, submit documents showing the layout and details of the installation.

All designs and documentation parts being provided **MUST** be submitted with an RPEQ Details and signed off with a Form 15 by the respective discipline being provided.

Variation documents: If it is proposed to change the installation from that shown on the contract documents, or if changes are required by statutory authorities, submit variation documents showing the proposed changes.

Shop drawings

General: Submit dimensioned drawings showing details of the fabrication and installation of services and equipment, including relationship to building structure and other services, cable type and size, and marking details.

Diagrammatic layouts: Coordinate work shown diagrammatically in the contract documents, and submit dimensioned set-out drawings.

Authorities

Authorities' approvals: If required, submit documents showing approval by the authorities whose requirements apply to the work.

Correspondence: Submit copies of correspondence and notes of meetings with authorities.

Samples

If it is intended to incorporate samples into the works, submit proposals.

Materials and components

Product data: For proprietary items, submit the manufacturer's product data including

- technical specifications and drawings;
- type test reports;
- performance and rating tables; and
- recommendations for installation and maintenance.

Proposed products schedules: For major products not specified as proprietary items, within 3 weeks of site possession submit a schedule of those proposed for use.

Product certification: If products must comply with product certification schemes, submit evidence of compliance.

Execution

Embedded services: Submit proposals for embedding services in concrete walls or floors, or chasing into concrete or masonry walls.

Acceptance of substrate: Submit installers' statements verifying that the substrate is satisfactory for receiving the installation.

Electronic submissions

File format: as agreed with Principal's Representative.

Transmission medium: as agreed with Principal's Representative.

Notice

Minimum notice: 5 working days for offsite submissions, otherwise 10 working days.

Submission points: If a submission is required for a part of the works, do not commence work on the part until the submission is endorsed that the work may proceed. Coordinate related submissions and do not cause delays by making late or inadequate submissions.

2.3 EXECUTION

2.3.1 MATERIALS AND COMPONENTS

Sources policy

Refer to Tender Pack contents by Ergon Energy Corporation Limited.

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

Corrosion resistance

Steel products: Conform to the **Corrosion resistance table** or provide proprietary products with metallic and/or organic coatings of equivalent corrosion resistance.

Manufacturers' or suppliers' recommendations

General: Select, if no selection is given, and transport, deliver, store, handle, protect, finish, adjust, prepare for use, and provide manufactured items in accordance with the current written recommendations and instructions of the manufacturer or supplier.

Project modifications: Advise of activities that supplement, or are contrary to, manufacturer's or suppliers' written recommendations and instructions.

Product certification: If products must comply with product certification schemes, provide them in accordance with the certification requirements.

Proprietary items

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

Alternatives: 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 provision of proposed alternatives will necessitate alteration to other parts of the works and advise consequent costs.

2.3.2 COMPLETION

Samples

Remove unincorporated samples on completion.

Contractor's submissions

A formal Handover Takeover process with on-site meeting between Contractor, Principal's Representative and any other relevant parties must be met to achieve Practical Completion, refer EECL Handover Takeover Document in Appendix.

'As-Constructed' drawings of the completed works will be required prior to a Practical Completion certificate being issued.

Warranties

General: Name the principal as warrantee. Register with manufacturers as necessary. Retain copies delivered with components and equipment.

Commencement: Commence warranty periods at practical completion or at acceptance of installation, if acceptance is not concurrent with practical completion.

Approval of installer: If installation is not by manufacturer, and product warranty is conditional on the manufacturer's approval of the installer, submit the manufacturer's written approval of the installing firm.

Warranty schedule

Warranty	Form	Duration
All Mechanical ventilation and A/C Equipment	Parts and labour	Extended warranty as offered by the Manufacturer
All Electrical, Hydraulic and Gas Equipment	Parts and labour	Extended warranty as offered by the Manufacturer

And as specified in the relevant specification sections.

2.3.3 DEFECT RECTIFICATION AND INSPECTION COSTS

Access: Access to the site for rectification of defects after practical completion will be by arrangement with the Principal.

Time for rectification: The contractor will be responsible for the rectification of defects in accordance with the period stated in the rectification schedule

Rectification schedule

Defect	Time for Rectification
Defects affecting occupation or operation by the Principal	5 working days
All other defects	As required by the Conditions of Contract

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval.

Inspection and acceptance: Within the period stated in the rectification schedule the Contractor will be required to provide written confirmation of the completion of any rectification works to allow inspection by the Principal's Representative and acceptance by the Principal.

In the event that the Contractor has advised completion of any defect identified by the Principal's Representative or the Principal and that defect has been found after inspection not to be rectified, then the Contractor shall be responsible for cost of re-inspection. The cost of re-inspection shall include actual costs incurred for re-inspection including but not limited to normal time charge rates for inspection and reporting plus disbursements for travel and other expenses. Costs incurred will be adjusted by the Principal's Representative against the final contract amount or taken from securities held.

2.3.4 RECORD DRAWINGS

General

For Building and Civil Works within 30 days of practical completion.

Submit record drawings. Show the "as installed" locations of building elements, plant and equipment. Show off-the-grid dimensions where applicable.

Submit surveyor certified record drawings. Show the "as installed" locations of building elements, locations and height of building platforms and site grading, plan location of fence and service connections.

Services

Show dimensions, types and location of equipment, cables and other underground services. Include relationship to building structure and other services, and changes made during commissioning and the maintenance period. Include diagrammatic drawings of each system showing piping and wiring, and principal items of equipment.

Format

Use electronic format suitable for AUTOCAD Release 2007 or previous versions.

Use the same borders and title block as the contract drawings.

2.3.5 OPERATION AND MAINTENANCE MANUALS

General

General: Submit operation and maintenance manuals for installations.

Format – hard copy

A4 size loose leaf, in commercial quality, 4 ring binders with hard covers, each indexed, divided and titled. Include the following features:

- Cover: Identify each binder with typed or printed title "*OPERATION AND MAINTENANCE MANUAL*", to spine. Identify title of project, volume number, volume subject matter, and date of issue.
- Dividers: Durable divider for each separate element, with typed description of system and major equipment components. Clearly print short titles under laminated plastic tabs.
- Drawings: Fold drawings to A4 size and accommodate them in the binders so that they may be unfolded without being detached from the rings. Provide with reinforced punched binder tabs.
- Pagination: Number pages consecutively.
- Ring size: 50 mm maximum, with compressor bars.
- Text: Manufacturers' printed data, including associated diagrams, or typewritten, single-sided on bond paper, in clear concise English.

Contents - general

Include the following:

- Drawings and technical data: As necessary for the efficient operation and maintenance of the installation.
- Equipment descriptions:
 - Name, address and telephone and facsimile numbers of the manufacturer and supplier of items of equipment installed, together with catalogue list numbers.
 - Schedules (system by system) of equipment, stating locations, duties, performance figures and dates of manufacture. Provide a unique code number cross-referenced to the record and diagrammatic drawings and schedules, including spare parts schedule, for each item of equipment installed.
- Maintenance procedures:

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All amendments made on the plan in RED ink are part of this approval.

Manufacturers' technical literature as appropriate. Register with manufacturer as necessary. Retain copies delivered with equipment.

- Safe trouble-shooting, disassembly, repair and reassembly, cleaning, alignment and adjustment, balancing and checking procedures. Provide logical step-by-step sequence of instructions for each procedure.
- Drawings:
 - Record drawings, full size.
 - Use electronic format suitable for AUTOCAD Release 2007 or previous versions.

Contents - services

Include the following in addition to *Contents - general*:

- Installation description: General description of installation.
- Equipment descriptions:
 - Manufacturers' technical literature for equipment installed, assembled specifically for the project, excluding irrelevant matter. Mark each product data sheet to clearly identify specific products and component parts used in the installation, and data applicable to the installation.
- Operation procedures:
 - Control sequences and flow diagrams for systems installed.
- Certificates:
 - Copies of test certificates for the mechanical installation and equipment used in the installation.
 - Test and balancing reports.

Timing and quantity

Final copies: Submit 3 sets of final volumes within 2 weeks after practical completion.

Incorporate feedback from review and from training of principal's staff, including preparation and insertion of additional data.

Revisions: Submit 3 sets of loose leaf amendments for insertion in the manuals, incorporating feedback from the maintenance period, within 2 weeks after completion.

2.3.6 TRAINING

Operation

Immediately after practical completion, explain and demonstrate to the principal's staff the purpose, function and operation of the installations.

Maintenance

Immediately after practical completion, explain and demonstrate to the principal's staff the purpose, function and maintenance of the installations.

2.3.7 COMPLETION TESTS

General

Carry out acceptance tests and final tests.

Hydraulic site tests

Preparation for pressure testing: Securely anchor pipes and fittings in position to prevent movement during tests. Leave pipe joints exposed to enable observation during tests.

Disconnect equipment which is not designed to carry the test pressure.

2.3.8 MAINTENANCE

General

General: During the maintenance period, carry out periodic inspections and maintenance work as recommended by manufacturers of supplied equipment, and promptly rectify faults.

Emergencies: Attend emergency calls promptly.

Maintenance records

Referenced documents: If referenced documents or technical sections require that log books or records be submitted, include this material in the maintenance records.

Certification: On satisfactory completion of the installation, submit certificates stating that each installation is operating correctly.

END OF SECTION

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APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

1 GENERAL

1.1 AIMS

Responsibilities

General: Provide lightweight external wall and soffit cladding and associated work which satisfies the product performance requirements.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following:

- Roofing
- Insulation

1.3 PERFORMANCE CRITERIA

Structural criteria

Design water penetration and wind pressure requirements for all exterior cladding to AS 1172.2, Cyclonic

Provide to the requirements of **Service loads** noted on the *Structural Drawings*

Provide to the requirements of the *low-high-low* requirements of the NCC.

1.4 INSPECTION

Notice

Inspection: Give sufficient notice so that the framing, sarking, and insulation may be inspected before they are covered up or concealed.

1.5 SUBMISSIONS

Data, Samples

Submit data of the following to indicated compliance with the specification:

- Manufacturers' data for the specified products.
- Samples of the SS flashings for the CFC wall cladding
- Samples of the SS screws for the CFC wall cladding

2 PRODUCTS

2.1 SHEET METAL CLADDING

General

Type: Provide a proprietary system of preformed sheet and purpose-made accessories.

Prepainted and organic film/metal laminate products: To AS/NZS 2728.

Design and installation: To AS 1562.1.

Clayton Baker

APPROVED in accordance with the Building Act 1975 as amended, the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

2.2 COMPRESSED FIBRE CEMENT (CFC) SHEETS

General

Requirement: Proprietary compressed fibre cement sheets.

Standard: To AS/NZS 2908.2 and the following:

- Type A Category 5.

Quality: Smooth and even with factory sealed edges, free of imperfections such as chips.

Edge profile: Square.

Sealant and bond breaking tape: To the manufacturer's recommendations.

2.3 PLASTIC SHEETS

General

Requirement: Proprietary plastic sheets.

Unplasticised polyvinyl chloride (PVC-U) sheet: To AS 4256.4.

Glass fibre reinforced polyester (GRP) sheet: To AS 4256.3.

Polycarbonate: To AS 4256.5.

2.4 COMPONENTS

Flashings

Standard: To AS/NZS 2904.

2.5 THERMAL BREAK STRIPS

Product type: Proprietary item, installed to satisfy Section J1.5 e[iii] of the NCC.

Application: Provide if insulation is not provided between corrugated cladding and steel framing or steel battens

R-value: ≥ 0.2 .

Screw fixing: Button head screws at 1 m centres.

Adhesive fixing: Wallboard adhesive 'walnuts' at 1 m centres.

3 EXECUTION

3.1 TOLERANCES

Tolerances

Conform to the following to the **Tolerances table**:

Tolerances table

Property	Tolerance criteria: Permitted deviation (mm)
Spacing of supporting members	± 5 mm on the nominated support member spacing
Vertical or horizontal misalignment at the abutting ends of cladding	≤ 2 mm

3.2 CONSTRUCTION GENERALLY

Substrates or framing

Before fixing cladding check and, if necessary, adjust the alignment of substrates or framing.

Fixing

Nail to timber framing, screw to steel framing.

Accessories and trim

Provide accessories and trim necessary to complete the installation.

Clayton Baker

Metal Separation

APPROVED in accordance with the Building Act 1992. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in red ink are subject to this approval.

Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by either:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer.

Warranty

Refer to the *General requirements* section for the manufacturers' warranty for the sheet metal.

4 SELECTIONS

4.1 EXPRESSED JOINT COMPRESSED FIBRE CEMENT (CFC) WALL CLADDING – PRE FINISHED – CLAD-1

Schedule of compressed fibre cement (CFC) wall cladding – CLAD-1	
Code	CLAD-1
Location	Refer to the <i>Elevations</i> for locations.
Requirement	Provide a proprietary pre-finished compressed fibre cement wall cladding system where noted on the elevations, complete with 9mm CFC panels, top hats, backing strips, flashings, fixings and sealants for a complete weatherproof installation. Install to the <i>CSR Cemintel Barestone External Installation Manual</i>
Standards.	To AS/NZS 2908.2
Proprietary product	CSR Cemintel Barestone, 9mm Façade Panel and fixing system, installed to the manufacturers' printed instructions. Sheet Dimensions: 1200mmWx2400mmL and 1200mmWx3000mmL
Submissions	Submit data, and shop drawings to indicate layout of sheets, connections and fixings required to satisfy the Structural criteria noted in this Section, <u>5 working days</u> before commencement of fabrication.
Perimeter flashings and trim	Provide 0.60 BMT Colorbond Ultra steel flashings to the perimeter to provide a weather-tight installation.
Preparation on concrete block	Where applicable, extend the masonry wall plaster and paint finishes behind the perimeter of the CFC cladding framing, to stop migration of water from the exterior.
Metal framing substrate	Ensure the structural framing is installed to the recommended maximum tolerance of between 3 and 4mm in any 3000mm length of framing.
Vapour barrier	Provide a vapour barrier between the steel framing and the wall cladding top hats. Bradford Enviroseal Wall Wrap or equal approved. Install in continuous lengths horizontally, with taped 150mm overlaps. Seal all laps and penetrations with vapour impermeable pressure sensitive tape, "PPC493" or equal approved. Provide a sealant adhesive to substrates that do not accept the sealing tape adequately. Tape the wall vapour barrier to the roof vapour barrier. Install the vapour barrier so as to drain to the flashings.
Blanket insulation	Refer to <i>Insulation</i> for bulk insulation to stud framed walls behind.
Top-hats	Design and provide the CSR Cemintel Express Wall system top hats to the spacing required by the manufacturer for the Structural criteria noted in this Section.
Fixings	Proprietary colour matched stainless steel rivets to the manufacturers printed instructions.
Panel joints	Provide 10mm vertical and horizontal expressed joints located as indicated. Align vertical joints with window frames, mullions and ceiling expressed joints.

Clayton Baker

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in red ink are part of this approval.

Schedule of compressed fibre cement (CFC) wall cladding – CLAD-1	
Vertical panel joints	Provide the CSR Cemintel ExpressWall gasket strips with built-in rubber gaskets, to the manufacturers' detail.
Horizontal panel joints	Provide CSR Cemintel ExpressWall backing strips, bonded to the back of the upper panel with a 6mm continuous bead of silicone sealant. Bond the lower panel to the backing strip on continuous silicone sealant, and
Horizontal bottom flashings	Provide 0.60 BMT Colorbond Ultra steel flashings along the base of all sheeting and co-ordinate with feature strip lighting infill.
Joint sealing	Continuously seal both vertical and horizontal joint with joint sealant over bond-breaker tape. Use <i>Fosroc Primer 10</i> or <i>Sikaflex MS</i> for joint sealed prior to painting.
Caulked joints	Refer to the <i>Glazing design pressures as noted on the Structural drawings</i> . Provide caulking to <u>all</u> joints to the manufacturers' recommendations. Colour match to cladding.
Finish	Pre-finished factory sealed panels with 'Original' finish
Warranties	Provide warranties for the materials and workmanship in accordance with the terms, conditions and duration specified and scheduled in <i>General Requirements</i> . 10 years for the CSR Cemintel Barestone product. 1 year for the accessories. 1 year for the installation.

EXPRESSED JOINT COMPRESSED FIBRE CEMENT (CFC) WALL CLADDING – PRE-FINISHED – CLAD-02,03 & 04

Schedule of compressed fibre cement (CFC) wall cladding – CLAD-02, CLAD-03 and CLAD-04	
Code	CLAD-02, CLAD-03 and CLAD-04
Location	Refer to the <i>Drawings</i>
Requirement	Provide a proprietary pre-finished compressed fibre cement wall cladding system where noted on the elevations, complete with 9mm CFC panels, top hats, backing strips, flashings, fixings and sealants for a complete weatherproof installation. Install to the <i>CSR Cemintel Surround External Installation Manual</i> Provide to the pattern indicated.
Standards.	To AS/NZS 2908.2
Proprietary product	CSR Cemintel Surround, 9mm Façade Panel and fixing system, or equal approved, installed to the manufacturers' printed instructions.
Submissions	Submit data and shop drawings to indicate layout of sheets, connections and fixings required to satisfy the Structural criteria noted in this Section, <u>5 working days</u> before commencement of fabrication.
Perimeter flashings and trim	Provide 0.60 BMT Colorbond Ultra steel flashings to the perimeter to provide a weather-tight installation.
Preparation on concrete block	Where applicable, extend the masonry wall plaster and paint finishes behind the perimeter of the CFC cladding framing, to stop migration of water from the exterior.
Metal framing substrate	Ensure the structural framing is installed to the recommended maximum tolerance of between 3 and 4mm in any 3000mm length of framing.

Clayton Baker

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the plan in the Decision Notice. All endorsements made on the plan in red ink are part of this approval.

Schedule of compressed fibre cement (CFC) wall cladding – CLAD-02, CLAD-03 and CLAD-04	
Vapour barrier	Provide a vapour barrier between the steel framing and the wall cladding top hats. Bradford Enviroseal Wall Wrap or equal approved. Install in continuous lengths horizontally, with taped 150mm overlaps. Seal all laps and penetrations with vapour impermeable pressure sensitive tape, "PPC493" or equal approved. Provide a sealant adhesive to substrates that do not accept the sealing tape adequately. Tape the wall vapour barrier to the roof vapour barrier. Install the vapour barrier so as to drain to the flashings.
Rigid air barrier	Not required to CM blockwork walls
Blanket insulation	Refer to <i>Insulation</i> for bulk insulation to stud framed walls behind.
Horizontal Battens	Design and provide the CSR Cemintel Express Wall system horizontal battens to the spacing required by the manufacturer for the Structural criteria noted in this Section and fixed directly to the CM blockwall. Provide the stepped detail as indicated in the Architectural drawings, and to allow installation of the feature light strip recessed under the bottom edge
Top-hats	Design and provide the CSR Cemintel Express Wall system top hats to the spacing required by the manufacturer for the Structural criteria noted in this Section.
Bottom flashings	Provide 0.60 BMT Colorbond Ultra steel flashings along the base of all sheeting and co-ordinate it with the feature strip lighting infill being recessed up behind bottom of cladding edge.
Co-ordination	Co-ordinate with recessed feature strip lighting infilled along the bottom edges, and select sides of all different cladding types. Refer Elevations and Details.
All Fixings	Proprietary colour matched stainless steel rivets to the manufacturers printed instructions.
Panel joints	Provide 10mm vertical and horizontal expressed joints located as indicated. Align vertical joints with window frames, mullions and ceiling expressed joints.
Joint sealing	Continuously seal <u>both</u> vertical and horizontal joint with joint sealant over bond-breaker tape. Use <i>Fosroc Primer 10</i> or <i>Sikaflex MS</i> for joint sealed prior to painting.
Caulked joints	Refer to the <i>Glazing design pressures as noted on the Structural drawings</i> . Provide caulking to <u>all</u> joints to the manufacturers' recommendations. Colour match to cladding.
Finish	Pre-finished factory sealed panels. Refer to the Exterior colour schedule in <i>Architectural schedules</i> .
Warranties	Provide warranties for the materials and workmanship in accordance with the terms, conditions and duration specified and scheduled in <i>General Requirements</i> . 10 years for the CSR Cemintel Surround product. 1 year for the accessories. 1 year for the installation.

4.2 HARDITEX FIBRE CEMENT (FC-F) WALL CLADDING – CLAD-05

Schedule of cellulose fibre cement (F-FC) wall cladding – CLAD-05	
Code	CLAD-05
Location	Refer to the <i>Drawings</i>
Requirement	Provide proprietary lightweight, versatile HardiTex base sheets with recessed edge to facilitate the construction of concealed joints to provide a strong impact-resistant substrate for Component 2, the texture system.

Clayton Baker

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in red ink are part of this approval.

Schedule of cellulose fibre cement (F-FC) wall cladding – CLAD-05	
Standards.	Type A, Category 2 in accordance with AS/NZS 2908.2 'Cellulose-Cement Products'.
Proprietary product	James Hardie HardiTex System, 7.5mm thick HardiTex base sheet. These sheets are recessed along their two longer sides to facilitate the construction of concealed joints. The sheets are fixed to timber or steel framing and provide a strong impact-resistant substrate for Component 2, the texture system, or equal approved, installed to the manufacturers' printed instructions.
Metal framing substrate	Ensure the structural framing is installed to the recommended maximum tolerance of between 3 and 4mm in any 3000mm length of framing.
Sarking and Insulation	Install in accordance with manufacturers written instructions, and as specified in External Wall Insulation Schedule in <i>Insulation and Barriers</i> .
Fixings	Fasteners for steel framing of thickness 0.55mm to 0.75mm BMT, 20mm Buildex FibreTEKS self drilling screws. For steel framing of thickness 0.80mm to 1.6mm. Use 8g-32mm HardiDrive® grey external grade screws. Fasteners should be screwed as close as possible to the stud corners to avoid deflection of the stud flange. Refer HARDITEX SYSTEM TECHNICAL SPECIFICATION for fastener fixing method, spacings & edge distance requirements.
Panel joints	Set (recessed edge) joints. Butt sheets hard together, except where movement joints are required.
Finish	Coating systems applied to the HardiTex base sheets must be sufficiently flexible to accommodate stresses across sheet joints. The jointing and coating systems suitable for use with HardiTex base sheets are usually 100% acrylic or pure elastomeric high build texture coatings. Use texture coating systems that have a minimum thickness of 2mm. Refer to the coating manufacturer to determine suitable coating for use with HardiTex base sheets. Refer to Specification Appendix C - Rockcote Render & Texture Coatings Specifications for approved system coating. The systems must be applied by an applicator trained and approved by the coating manufacturer. Match exterior wall render texture. Refer to the Exterior colour schedule in <i>Architectural schedules</i> .
Warranties	Provide warranties for the materials and workmanship in accordance with the terms, conditions and duration specified and scheduled in General Requirements. 10 years for the James Hardie HardiTex System product. 1 year for the accessories. 1 year for the installation.

End of section

Clayton Baker

21. DOORS

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval or the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

1 GENERAL

AIMS

Responsibilities

General: Provide doors, frames, as scheduled in **Selections**.

CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Refer to *Windows & glazed doors* for glazed doors

Associated worksections: Conform to the following: *Metals & prefinishes, Painting*.

Structural criteria

Provide to the requirements of **Service loads** noted on the *Structural Drawings*.

INTERPRETATION

Definitions

General: For the purposes of this worksection the definitions given below apply.

- Solid core door: A flush door with a solid core continuous between stiles and rails or edge strips and fully bonded to the faces.

SUBMISSIONS

Data.

Submit shop drawings and data for the door hardware to indicate conformance with the specification 10 working days before installation.

2 PRODUCTS

FRAMES

Aluminium frames - AF

General: To be assembled from aluminium sections, including necessary accessories such as buffers, pile strips, strike plates, fixing ties or brackets and cavity flashing, with suitable provision for fixing nominated hardware.

Steel frames – SF

General: To be continuously welded from metallic-coated steel sheet sections, including necessary accessories such as buffers, strike plates, spreaders, mortar guards, switch boxes, fixing ties or brackets, and cavity flashing with suitable provision for fixing hardware, and prefinished with a protective coating.

Finish: Grind the welds smooth, cold galvanize the welded joints and shop prime.

Frame size: Generally approx. 100mm from face to face, wrap around, with single rebate.

Frame base metal thickness : ≥ 1.4 mm.

Frame metallic-coated steel sheet: To AS 1397, Zinc-iron.

Hardware and accessories: Provide for fixing hardware including hinges and closers, using 4 mm backplates and lugs. Screw fix the hinges into tapped holes in the back plates.

Strike plates: Fabricate the frames to suit the Lockwood strike plates specified. "Universal" strike plates will not be accepted.

Buffers: Drill the frames to accept pin-type buffers. Stick-on buffers will not be accepted.

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APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

DOORS**Standards**

General: To AS 2688 and as follows:

- Plywood and blockboard for exterior use: To AS/NZS 2271.

General

Doors: To be proprietary products manufactured for exterior applications and for the finish required.

Flush doors

General: To be of balanced construction.

Solid core: Core plate of timber strips laid edge to edge [blockboard], class A fully bonded to each other and to facings each side of no less than two sheets of timber veneer.

Construction

Adhesives:

- External: To AS/NZS 2271.

Door thickness:

- External doors and doors over 900 mm wide: 40 mm unless noted otherwise.
- Internal doors 35mm thick unless noted otherwise.

Edge strips: All sides. HWD. Minimum thickness 10 mm.

ANCILLARY MATERIALS**Flashings**

General: To be corrosion resistant, compatible with the other materials in the installation, and coated with a non-staining compound where necessary.

Standard: To AS/NZS 2904.

3 EXECUTION**FRAMES****General**

- Frames: Install so that the frames are as follows:
- Plumb, level, straight and true.
- Adequately fixed or anchored to the building structure.
- Will not carry any building loads, including loads caused by structural deflection or shortening.
- Suitable rebate depth for fire rated door assemblies.

Frame fixing

Brackets: Metallic-coated steel:

- Width: ≥ 25 mm.
- Thickness: ≥ 1.5 mm.

Heads of fasteners: Conceal where possible, otherwise sink the head below the surface and fill the sinking flush with a material compatible with the surface finish.

Jamb fixing centres: ≤ 600 mm.

Joints

General: Make accurately fitted joints so that no fasteners, pins, screws, adhesives and pressure indentations are visible on exposed surfaces.

Weatherproofing

Flashings and weatherings: Install flashings, drips, storm moulds, caulking and pointing to prevent water from penetrating the building between the door frame and the building structure under the prevailing service conditions, including normal structural movement of the building.

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DOORS
Priming

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in RED ink are part of this approval

General: Prime timber door leaves on top and bottom edges before installation.

COMPLETION

Operation

General: Ensure moving parts operate freely and smoothly, without binding or sticking, at correct tensions or operating forces and that they are lubricated where appropriate.

Protection

Temporary coating: On or before completion of the works, or before joining up to other surfaces, remove all traces of temporary coatings used as a means of protection.

Keying

Hand over the building with standard cylinders and keys. EECL will arrange for the replacement cylinders after hand over.

Future extensions: Provide master and grandmaster group keying systems which are capable of accommodating future extensions.

Identification: Supply each key with a purpose-made plastic or stamped metal label legibly marked to identify the key, attached to the key by a metal ring.

Key material: Lever locks: Malleable cast iron or mild steel. Pin tumbler locks: Nickel alloy, not brass.

Allow to provide the number of individual keys determined by the Client in consultation with the building occupants, and in accordance with the Client policy on key issue and control.

4 SELECTIONS

FLUSH DOOR SCHEDULE

Type	Solid Core - Moisture Resistant (SC-MR)	Solid Core - Metal Clad (SC-MC)	Fire Door (FR)
Frame type	Steel	Steel	Steel. 90 minute fire rated assembly
Door type	Solid core, External grade HMR timber core, faced with 4mm A bond plywood, rotary, Class B, Plywood for paint	Solid core, Blockwood core, faced with A bond plywood, rotary, Class B, Plywood for paint,	90 minute fire rated assembly
Door thickness	45mm	45mm plus facing material	90 minute fire rated assembly
Facing material	Plywood as scheduled	Face both sides with 0.55mm BMT colorbond sheet, epoxy adhered to both faces typ. Matching mitred channel all round, [nom 20mm], lapping over the facings, adhesive fixed and bedded, and with stainless steel countersunk screw fixing all round.	A bond, rotary, Class B, Plywood for paint.
Clear opening size (mm)	Refer to <i>Drawings</i>	Refer to <i>Drawings</i>	Refer to <i>Drawings</i>
Door finish	Gloss enamel, to all faces including top and bottom edges, as in <i>Painting</i>	Colorbond.	Gloss enamel, to all faces including top and bottom edges, as in <i>Painting</i>

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 conditions of approval on the Decision Notice. All endorsements made on
 the plan in RED ink are part of this approval

5. ROLLER SHUTTER SCHEDULE

Schedule of Roller Shutters	
Door code	RS
Frequency of use (cycles per year)	Minimum approx. 250 per year, [4 cycles per Month]
Design wind speed:	Refer to the Structural criteria
Proprietary item	ARCO Q100 Roll Formed Roller Shutter, available from NQ Door Specialists, or approved equivalent. Must comply with AS/NZ 4505-2012.
Size	Refer to the drawings
Curtain type	Interlocking slats, 100mm wide
Curtain material	Steel
Curtain finish	Powder coated to the colour in the Exterior colour schedule in <i>Architectural schedules</i> worksection.
Slat thickness	1.0mm
Wind-locks	Provide cast iron wind-locks at every second slat, to 69 m/s.
Vertical guides	Steel, galvanized finish
Vertical guide fixing	Provide 25mm fillet welds at 500mm centres to both tracks.
Drum	Galvanized steel. Mount drum such that curtain extends min. 200mm past door head before radiusing to prevent vermin ingress. Infill at head as required to ensure only a 5mm max. gap.
Brackets	Galvanized steel, sized by the manufacturer to suit the scheduled wind loading.
Operation	Manually operated from exterior.
Locking	Provide sliding shute bolts to interior with no key lock to outside. Door must be openable from the exterior <u>only</u> . Provide 2 No. heavy duty hasp & staples, one each side, at the bottom of each roller shutter. Builder to provide 2 No. Lockwood code 235 padlocks keyed to Energy Queensland Limited's requirements per door.
Head seal	Provide a RAVEN RP57 brush seal, or approved equivalent, to close the gap for the full width of the head of the roller door
Certification	Submit data and certification that the roller shutter meets the Wind load requirements <u>10 working days</u> before shipment to the site.
Warranty	12 months on both materials and installation, in accordance with the terms, conditions and duration specified and scheduled in <i>General Requirements</i> .
Corner Guards	Provide Hot dip Galv. 100x6.0mm EA to exposed blockwork corners around roller shutter opening to 1800mm AFL.

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6 DOOR & HARDWARE SCHEDULE

Notes:

- 1] Architectural drawings to be read in conjunction with this schedule.
 - 2] Refer *Mechanical Final Design Drawings & Notes* for any items to co-ordinate with.
 - 3] Provide all signs required by AS 1905, the Building Act and by the regulatory authority for fire doors and exits. For Signage requirements refer to *Miscellaneous Items, Joinery and FF&E* worksection.
 - 4] All door controls to be located 900mm above floor level unless noted otherwise.
 - 5] Locate the door frame sufficiently clear of the wall for push-side door closers, to allow closer clearance. Otherwise, allow to provide a wall recess for the door closer.
 - 6] (*) Door sizes nominated on *Drawings* are approximate opening sizes and must be confirmed on-site.
- NOTE: Any dimensions on Door Schedule Drawing override the dimensions listed in schedule below.

DOOR & HARDWARE SCHEDULE

Schedule of door & hardware schedule												
Door No.	Room	Door type	Structural opening size (wxh)	Leaf Dim. (nom.)	Frame type	Hinge	Closer	Lock	Kick-plate	Door-stop	Other	Remarks
New Building												
D01-01	Clean Rm (R1.01)	SC-MC	*	920x2340	SF	H1	C1	L1	-	DS1	S2, S4, BP1, TP1	# A = Card reader access
D01-02	Clean Rm (R1.01)	SC-MC	*	2 x 920 x2340	FR	H2	C2, C3	L2	KP1	DS1	S1, S3, B1, BP1, TP1	
D01-03	Clean Rm (R1.01)	SC-MR	*	2 x 920 x2340	FR	H2	C2, C3	L1	KP1	DS1	S1, S3, B1, BP1, TP1	# A = Card reader access
D02-01	UPS/ BATT. Rm (R1.02)	SC-MC	*	2 x 920 x2340	SF	H2	C2, C3	L2	-	DS1	S1, S3, B1, BP1, TP1	
D02-01	UPS/ BATT. Rm (R1.02)	SC-MR	*	920x2340	FR	H1	C1	L1	KP1	DS1	S2, S4, BP1	# A = Card reader access
D03-01	Comms Rm (R1.03)	SC-MC	*	920x2340	FR	H1	C1	L1	-	DS1	S2, S4, TP1	# A = Card reader access
D04-01	Gas Rm (R1.03)	Roller Shutter As spec.	*	1800x 2340	-	-	-	As spec	-	-	-	# Refer R/D Spec. in section above
D02-01	SUB FLR (RG.01)	SC-MC	*	2 x 870 x1000	SF	H1	C2, C3	L2	KP1	DS1	S1, S2, S4, TP1	
D02-02	SUB FLR (RG.01)	SC-MC	*	2 x 870 x1000	SF	H1	C2, C3	L2	KP1	DS1	S1, S2, S4, TP1	
Gates (Refer also Notes A-C directly below schedule)												
G1	Landing 2 Entry and	Single gate	PC Steel gates	Refer Drawings	Match Screen	H1	C1	L3 **	-	-	BP1 Hold open catch	#A, #B and #C

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Schedule of Door & Hardware Schedule												
Door No.	Room	Door type	Structural opening size (wxh)	Leaf Dim. (nom.)	Frame type	Hinge	Closer	Lock	Kick-plate	Door-stop	Other	Remarks
G2	Plant Deck Loading	Double gates	*	Refer Drawings	Match Screen	H1	-	L3	-	-	*	#A
G3	Landing 1	Single Gate	PC Steel gates	Refer Drawings	Match Screen	H1	C1	L3	-	-	BP1 Hold open catch	#A, #B and #C
G4	Driveway	Double gates	PC Steel gates	Refer Drawings	Match Fence	H1	-	L3	-	-	*	#D
G5	Driveway	Single gates	PC Steel gates	Refer Drawings	Match Fence	H1	-	L3	-	-	*	#A, #C and #D

NOTES:

- # A = Card reader access – Allow to provide within the D & C Part for *Electrical* - Refer Appendix A
 # B = Refer to *Metalwork* Section for Screen enclosure specification and requirements.
 # C = Provide solid 10mm thick perspex sheet both sides of gates around door lock to prevent unauthorised entry.
 # D = Refer *Metalwork* Section and *Reference Drawings* provided. Fabricate as part of Screen enclosure.

DOOR HARDWARE LEGEND

Door hardware legend		
Hinges		
H1	Security hinge	4 No 100 x 100 x 2.5mm Security hinges, 304 grade satin stainless steel, fixed pin, butt hinge, security pins. 3 hinges per leaf with the middle hinge central between top and bottom hinges. Provide a 4 th hinge approx. 200mm below the top hinge.
H2	4 Hinges	4 No. stainless steel ball bearing heavy duty interfold type, fixed pin, stainless steel screw fixed to frames and jambs. 3 hinges per leaf with the middle hinge central between top and bottom hinges. Provide a 4 th hinge approx. 200mm below the top hinge.
H3	SS gate hinge	3no. heavy duty stainless steel gate hinges. Isolate dissimilar metals with neoprene strips.
Closer		
C1	As required: Pull side Push side	Options to suit door arrangement: 1. Dorma TS93B EN 1-5, pull side mount. Stainless steel – or approved equal. Option - Lockwood 2615SSS Note: <u>Locate the door frame sufficiently clear of the wall to allow closer clearance. Otherwise, allow to provide a wall recess for the door closer.</u> 2. Dorma TS93G EN 1-5, push side mount. Stainless steel. Option - Lockwood 2615SSS with 2616-104SIL angle mounting plate. Note: <u>Locate the door stop to prevent the door closer striking the wall.</u>
C2	Sequence selector	Efco sequence selector, Stainless steel, or approved equal.
C3	Hold open unit	Dorma RF hold open unit. Option - Lockwood – 2616 series

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Door hardware legend

Locks – Generally provide all satin stainless steel unless noted otherwise

L1	Electric strike	Lockwood 3582 3782SS Series short backset for ES9000 Electric strike mortice Lock. 4800/70 Series furniture, rigid lever outside, escape lever inside. On 2 leaf doors provide 200mm flush CP barrel bolt top and bottom of inactive door
L2	Plant / Dock lockset	Lockwood 3574XSC inside cylinder lock internal lever (no lever external). Rebate kit. 1807SC external plate, 1901SC internal plate with cylinder hole. Provide 200mm flush CP barrel bolt top and bottom of inactive door.
L3	Exterior & exit lockset	Lockwood 3572XZ Exterior & Exit door lockset, with 1800 Series Narrow Stile Plate Furniture, key and lever handles both sides.
L4	Padlock	Lockwood 334 Series Brass Case Padlocks. Gate with heavy duty galv. chain

Kick plate

KP1	600 high kickplate	600 high x 0.9 thick, visible fix, 304 No.4 stainless steel. Width to be 10mm clear of the door stops on the push side, and 10mm clear of the door edges on the pull side. On both sides of the door. Glue and screw fix with raised head stainless steel screws.
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Door stops

DS1	Door stop	Lockwood A250 SC floor stop. Mount on the floor minimum 300mm from hinges.
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Door seal

S1	Jamb & head door seal	Raven RP 150 self-adhesive batwing co-extruded seal, fitted into the head and jambs.
S2	Bottom door seal	Raven RP99si, or equal approved. Satin clear anodised, face mounted on the inside of the door. Ensure that the bottom seal meets the floor finish.
S3	Bottom door seal	Raven RP3 cam activated automatic door bottom seal. Anodised aluminium.
S4	Jamb & head door seal	Raven RP24si to jamb & head seal.

Blocking plates

BP1	Blocking plate	Boyd SS092 stainless steel strike shield, concealed fix. Fix to all out-swinging doors so as to protect the strike and inside lever.
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Bolts

B1	Flush bolt	150 SC recess flush bolt to one leaf.
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Threshold plates

TP1	Threshold plate	Raven RP98 150mm wide x 19mm high satin clear anodised full width aluminium threshold.
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Vision Panels – N/A

Feature handles - N/A

Push/pull plates – N/A

Cabin Hooks – N/A

NOTE: Contractor to confirm with all suppliers of all selections made in all schedule above will fit into the locations proposed, or provide an equal alternate from the supplier (or equal selection submitted for approval by EQL's PR). **Must confirm before ordering** - Any items that do not fit correctly on-site will need to be re-ordered at the Contractors expense with the items being substituted to match the original intent.

End of section

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22. LININGS

1 GENERAL

1.1 AIMS

Responsibilities

General: Provide internal framing and lining systems to the **Selections**.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following: *Insulation*

1.3 INSPECTION

Notice

Inspection: Give sufficient notice so that inspection may be made of wall battens before installation of linings.

1.4 TOLERANCES

General

Flatness, twist, winding and bow: Maximum 1.5 mm deviation from a 1.5 mm straightedge placed in any position.

2 PRODUCTS

2.1 FRAMED AND LINED PARTITIONS

Battens

General: Proprietary system Refer to Structural Drawings for details of engineering.

Sections and members: To AS/NZS 4600.

Finish: Hot dip zinc coating to AS 1397.

2.2 LINING

Plasterboard

Standard: To AS/NZS 2588

Fibre cement

Standard: To AS/NZS 2908.2.

Wall and ceiling linings: Type B category 2.

Accessories and trim

General: Provide accessories and trim necessary to complete the installation.

Adhesives

General: Provide adhesives of types appropriate to their purpose, and apply them so that they transmit the loads imposed, without causing discolouration of finished surfaces.

Sealants

Fire rated sealant: Non-hardening sealant compatible with the materials to be sealed and having a fire rating equal to that of the partition it seals.



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3. EXECUTION

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3.1 PREPARATION

Substrate

General: Prepare the substrate to receive the battens.

Set out

General: Set out in accordance with manufactures printed recommendations.

Stud service holes

Metal separation

General: Install lagging to isolate non-ferrous service pipes and accessories from the metal framing.

3.2 PLASTERBOARD LINING

Supports

General: Install proprietary cold-formed galvanized steel furring channels as follows:

- Where framing member spacing exceeds the recommended spacing.
- Where direct fixing of the plasterboard is not possible due to the arrangement or alignment of the framing or substrate.

Transverse walls: Locate noggings as follows:

- At least 150 mm from the horizontal joint.
- Ensure that noggings do not protrude beyond the face of studs.

Installation

Gypsum plasterboard: To AS/NZS 2589.1.

Framed construction: Screw or nail or combine with adhesive.

Metal stud frames: Screw using galvanized self-tapping screws or retain using proprietary clamping straps and cover trims.

Masonry wall construction:

- Direct stick: To AS/NZS 2589.1 Appendix H.
- Fix to furring channels using screw or screw and adhesive to AS/NZS 2589.1 Section 7.

Ceilings: Fix using screw or screw and adhesive to ceiling furring members. Do not fix sheets to the bottom chords of trusses.

Joints

Flush joints: Provide recessed edge sheets and finish flush using perforated paper reinforcing tape.

Ceiling butt joints: provide GSR GYP No. B500 curved battens, installed to the manufacturers data.

External corner joints: Make joints over metallic-coated steel corner beads.

Control joints: Install purpose-made metallic-coated control joint beads at not more than 12 m centres in walls and ceilings and to coincide with structural movement joints.

Level of finish

Provide Level 4 finish throughout.

3.3 FIBRE CEMENT LINING

Supports

General: proprietary cold-formed galvanized steel furring channels as follows:

- Where framing member spacing exceeds the recommended spacing.
- Where direct fixing of the fibre cement is not possible due to the arrangement or alignment of the framing or substrate.

Installation

General: Run sheets across the framing members. In flush jointed applications, stagger end joints in a brick pattern and locate them on framing members, away from the corners of large openings. Provide supports at edges and joints.

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Steel framed construction: Screw only or combined with adhesive.
Wall framing:

- Do not fix to top and bottom plates or noggings.

Masonry wall construction:

- Do not fix using adhesive direct to masonry, Fix to furring channels using screw or screw and adhesive.
- Refer to the *Room finish schedule*
- Ceilings: Fix using screw or screw and adhesive to ceiling furring members. Do not fix sheets to the bottom chords of trusses.

Wet areas: To AS 3740.

Joints

Flush joints: Provide recessed edge sheets and finish flush using perforated paper reinforcing tape.

- Movement joints in walls: Position a stud parallel to the joint on each side.
- Movement joints in ceilings and soffits: Provide framing parallel to the joint on each side. Do not fix the lining to abutting building surfaces.

External corner joints: Make joints over metallic-coated steel corner beads.

Control joints: Provide purpose-made metallic-coated control joint beads at ≤ 7.2 m centres in walls and ceilings and to coincide with structural movement joints.

Joints in tiled areas: Bed perforated paper tape in bedding compound. Do not apply a topping coat.

- Movement joints: Space to suit joints required in tiling.
- Internal corners: Reinforce with metallic-coated steel angles. In corners subject to continuous moisture, flash over the angle and under the sheeting with continuous bitumen coated aluminium flashing.

3.4 TRIMS

General

General: Provide trim such as beads, mouldings and stops to make neat junctions between lining components, finishes and adjacent surfaces.

3.5 COMPLETION

Protection

General: Protect existing work from during the installation and make good any damage. Provide temporary coverings if necessary.

4 SELECTIONS

4.1 WALL SHEET LINING SCHEDULE

Schedule of wall sheet lining		
	Flush plasterboard (PB)	Flush plasterboard fire rated (PB-F)
Location	Refer to the Room finish schedule in <i>Architectural schedules</i> . Refer also to the Floor Plans Generally adhered to battens over blockwork	
Material	Gyprock Impact resistant plasterboard	Gyprock Fyrchek resistant plasterboard
No layers	1 layer	1 layer, and 2 layers where coded on the Floor Plans. [for acoustic purposes]
Concealed Plywood Lining	Provide 1 x layer of 18mm Thick above full ceiling in COMM's Rm to strengthen for equipment hanging weights, and wherever required in walls sheeting. Provide Noggings between trusses in UPS/ Batt. Rm for Cable tray and exhaust pipework, Co-ordinate location and size with all proposed equipment	
Type	13mm thick to stud partitions, flat surface, recessed edge.	
Joint type	Flush to Finish Level 4	
Fixing	Glue and screw	
Cornice	Refer to Room finish schedule in <i>Architectural schedules</i> .	

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1.2 - TRIM SCHEDULE

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Schedule of trims – Skirtings, Reveals, Architraves & Sills

Component	Description
Skirtings	Refer to the Room finish schedule in <i>Architectural schedules</i> and <i>Drawings</i> . SKT1 – 150mmH Coved vinyl with fillet. Finish as in Interior colour schedule in <i>Architectural Schedules</i> SKT2 - 150mmH Epoxy paint coved up wall. Finish as in Interior colour schedule in <i>Architectural Schedules</i> SKT3 - Provide 0.60 BMT Colorbond Ultra steel flashing along floor, and 150mmH behind wall sheeting. Silicone seal base and to provide a weather-tight installation. Finish as in Interior colour schedule in <i>Architectural Schedules</i>
Architraves	Flush set unless noted otherwise

End of section

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23. CEILINGS

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1 GENERAL

1.1 AIMS

Responsibilities

General: Provide ceilings to the **Selections** and as follows.

- Consistent in finish treatment.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following: *Lining; Mechanical; Electrical*

1.3 STANDARDS

General

Suspended ceilings: To AS/NZS 2785.

Luminaire and air diffuser interface: To AS 2946.

1.4 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of:

- The ceiling assembly before the installation of fittings and site painting, if applicable.
- The completed ceiling.

2 PRODUCTS

2.1 LININGS

Plasterboard

Standard: To AS/NZS 2588.

Adhesives

For plasterboard: To AS 2753.

3 EXECUTION

3.1 PLASTERBOARD LINING

Installation

Gypsum plasterboard: To AS/NZS 2589.1.

Fibre reinforced gypsum plaster: To AS/NZS 2589.2.

Suspended flush ceilings: Fix using screw or screw and adhesive to ceiling members or support frame.

Multiple sheet layers

Application: Fire rated and acoustic rated walls.

Joints: Fill and flush up all joints and fixings in each layer and caulk up perimeters and penetrations before commencing succeeding layers. Stagger all sheet joints by minimum 200 mm.

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Joints
Butt joints: Provide recessed edge sheets and finish flush using perforated paper reinforcing tape.

Butt joints: Make joints over framing members or otherwise provide back blocking.

External corner joints: Make joints over metallic-coated steel corner beads.

Control joints: Install purpose-made metallic-coated control joint beads at not more than 12 m centres in walls and ceilings and to coincide with structural movement joints.

Wet areas: Install additional supports, flashings, trim and sealants as required.

Smoke compartments

Not applicable.

3.2 ACCESS PANELS

Requirement

- Generally 600 x 600, and provide 1 x in Plant Deck Ceiling where indicated, unless stated otherwise.

Types for painted ceilings:

- To Plant Deck: Provide Trafalgar Security Access Panel, or equal approved, flush set, key lock with Lockwood to match EQL keying, S/S 1.6mm concealed hinge
- To wherever required by the Hydraulic, Electrical and Mechanical trades. Allow to Provide Trafalgar Fire Rates Access panels matching ceiling FRL. Co-ordinate locations to be neatly setout in ceilings.

Finish

General: Match the access panels to the ceiling in appearance and performance.

Identification

General: Provide each access panel with an identification mark.

Non-demountable ceilings

General: Provide access panels supported and anchored to permit ready removal and refixing.

Reinforcement

General: Reinforce the back of the access panel to prevent warping and facilitate handling.

3.3 TRIM

General

General: Provide trim such as beads, mouldings and stops to make neat junctions between lining components, finishes and adjacent surfaces.

Control joints

Location: Provide for control joints in sheet finishes where required by the *Partitions* worksection. Where possible, position joints to intersect lighting fixtures, vents or air diffusers.

Type: Form movement joints with purpose-made control joint beads.

3.4 COMPLETION

Maintenance manual

General: On completion, submit a manual of recommendations for the care and maintenance of the ceiling, and operating instructions for demounting if applicable.

Warranty: Insert the Himmel warranty in the *Operation and Maintenance Manual*.

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1 CEILING SELECTIONS

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4.1 FLUSH FIRE RATED PLASTERBOARD CEILING LINING

Schedule of fire rated flush plasterboard ceiling lining - CL-01	
Code	CL-01
Requirement	Provide fire rated plasterboard ceilings to the manufacturers' printed instructions.
Location	Refer to the Room finish schedule in <i>Architectural schedules</i> , and to the <i>Ceiling plans</i> .
Type	2x16mm Gyprock Fyrchek plasterboard above below steel framed ceiling. 2x10mm Gyprock Plus to underside of framing, Flush set finish. Provide to requirements of the CSR Red Book, similar to CSR6495 6711 for installation and fire stopping to achieve FRL of 60/60/60 (min.) from above below.
Direct fix	To HD Galv. steel ceiling battens fixed directly below 18tk plywood ceiling sub structure as noted on the drawings.
Steel Batten ceiling system	Refer to <i>Structural Drawings</i> for ceiling batten size. Allow for design and install in accordance to meet seismic requirements
Edge type	Bevelled
Joint type	Flush to Level 4
Fixing	Glue and screw
Fire stopping	Firestop all joints, gaps, cornices, perimeters, and penetrations to the manufacturers data. Refer to <i>Adhesives, Sealants, Fasteners & Fire Stop</i> .
Cornice	Square set cornice over firestop sealant.
Finish	Paint as in <i>Painting</i>

4.2 FLUSH SET FIBRE CEMENT CEILING LINING, SITE PAINTED – CL-02

Schedule of fibre cement ceiling lining and soffit sheeting, Site Painted - CL-02	
Code	CL-02
Requirement	Provide flush set fibre cement sheeting to the manufacturers' printed instructions.
Type	CSR 6mm Wall Board or approved equal
Location	Refer to the Room finish schedule and to the <i>Ceiling Plans</i> .
Layout	Refer to the <i>Ceiling Plans</i> .
Ceiling heights	Refer to the <i>Ceiling Plans</i>
Direct fix	To HD Galv. steel ceiling battens
Steel Batten ceiling system	Refer to <i>Structural Drawings</i> for ceiling batten size. Allow for design and install to meet current seismic requirements
Edges	Refer to <i>Structural Drawings</i> for ceiling batten size.
Joint Type	Flush to Level 4
Fixing	Glue and Screw
Cornice	Square set cornice

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Schedule of fibre cement ceiling lining and soffit sheeting, Site Painted - CL-02	
Finish	Paint as in Painting

4.3 EXPRESSED JOINT COMPRESSED FIBRE CEMENT (CFC)– CEILING LINING– CL-03

Schedule of compressed fibre cement (CFC) Ceiling Lining – CL-03	
Code	CL-03
Requirement	Provide same as specified as CLAD-1 in <i>CLADDING</i> Worksection
Type	CSR Cemintel Barestone, 9mm Façade Panel and fixing system, installed to the manufacturers' printed instructions. Sheet Dimensions: 1200mmWx2400mmL and 1200mmWx3000mmL
Reference	Refer CLAD-1 in <i>CLADDING</i> Worksection and provide as required to match to the manufacturers' recommendations.

End of section

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1 GENERAL

1.1 AIMS

Responsibilities

General: Provide metal fixtures that are:

- Undamaged, plumb, level and straight.
- Free of surface defects or distortions.

1.2 STRUCTURAL CRITERIA

Provide to the requirements of **Service loads** noted on the *Structural Engineering Notes*.

1.3 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

1.4 INSPECTION

Notice

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

- Shop fabricated or assembled items ready for installation.
- Steel surfaces prepared for, and immediately before, site applied finishes.

1.5 SUBMISSIONS

Submissions

Submit shop drawings and samples as noted.

1 PRODUCTS

1.6 MATERIALS AND COMPONENTS

Metals

Performance: Provide metals suited to their required function, finish and method of fabrication, in sections of strength and stiffness adequate for their purpose.

Masonry anchors

General: Proprietary types comprising screws or bolts in self-expanding sockets.

Masonry plugs

General: Screws in purpose-made resilient plastic sockets.

2 EXECUTION

1.7 CONSTRUCTION GENERALLY

Metals

Performance: Provide metals so that they transmit the loads imposed and ensure the rigidity of the assembly without causing deflection or distortion of finished surfaces.

Incompatible metals: Separate using concealed layers of suitable materials in appropriate thicknesses.

Fasteners

Performance: Provide non-galvanic corrosion fasteners.

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Materials: Provide fasteners in materials of mechanical strength and corrosion resistance at least equal to that of the most resistant metal joined.

To aluminium and aluminium alloys: Provide aluminium alloy or non-magnetic stainless-steel fixing devices only.

To stainless steel: Provide appropriate stainless-steel materials only.

Fabrication

Workshop: Fabricate and pre-assemble items in the workshop wherever practicable.

Edges and surfaces: Keep clean, neat and free from burrs and indentations. Remove sharp edges without excessive radiusing.

Colour finished work: Match colours of sheets, extrusions and heads of fasteners.

Fabrication tolerances

Structural work generally: ± 2 mm from design dimensions.

Joints

General: Fit joints to an accuracy appropriate to the class of work. Finish visible joints made by welding, brazing or soldering using grinding, buffing or other methods appropriate to the class of work, before further treatment.

Joints: Fit accurately to a fine hairline.

Marking

General: Provide suitable and sufficient marks or other means for identifying each member of site-erected assemblies, and for their correct setting out, location, erection and connection. Mark bolted connections to show the bolting category. Do not mark stainless steel by notching.

Splicing

General: Provide structural members in single lengths.

1.8 WELDING AND BRAZING

General

Quality: Provide finished welds which are free of surface and internal cracks, slag inclusion, and porosity.

Site welds: Avoid site welding. Seek specific approval from Superintendent for any item required to be site welded. If approved locate site welds in positions for down hand welding.

Butt weld quality level: Not inferior to the appropriate level recommended in AS 1665 Appendix A.

1.9 METALWORK NOTES

General

General: Provide metal fixtures noted on drawings as follows:

- Components and their location, indicative construction details, scribes and trims, materials, dimensions and thicknesses, and finishes shall be as detailed.
- All dimensions noted on drawings shall be confirmed on site.

Substrate

Do not fix metalwork to external wall surfaces prior to application of plaster and paint.

Architectural quality

Fabricate so that all welds are ground smooth, all cut surfaces ground square and smooth, and all corners lightly arrised to remove burs or sharpness. Use low-silicone consumables only, to prevent the welds standing proud when galvanised.

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3 STRUCTURAL STEEL

4 METALWORK

1.10 STAIR 1 AND 2

Schedule of Stairs	
Location	Refer to the <i>Drawings</i> for extent. Generally to <i>Stair 1 and Stair 2</i>
Requirement	Refer Structural and Architectural Drawings Submit design to Superintendent for review prior to commencement.
Standards	Design and configure to the requirements of NCC Clause D2.16 - Balustrades and other barriers. Design and provide to the requirements of AS 1170.
Design criteria	As noted in Structural Criteria in this Section.
Type	Webforge Proprietary Mild Steel Stairs & Platform (See Balustrade Special BAL1 & BAL2 in this <i>worksection</i>)
Grate	Steel, Pattern A 100x30mm.
Treatment / Colour	Mild Steel – Galvanised (G) (AS/NZS 4680)
Treads	300x50 Precast Concrete with Top Surface Serrated (S) Grating – Slip Resistant. Refer to drawings for general size requirements
Nosings	RUFS-50/10 Rufazel Stair Nosing fixed to precast concrete treads in accordance with the manufacturer's specification. Yellow colour.
Riser	Provide 0.60 BMT Colorbond Ultra steel flashings to infill between Stair treads Fix at 250mm max centres to underside of Stair Tread

1.11 PROPRIETARY BALUSTRADE – BAL-1, BAL-2

Schedule of proprietary balustrade – (BAL-1) (BAL-2)	
Location	Refer to the <i>Drawings</i> for extent. Generally To: <i>Landing 1 and Stair 1</i>
Requirement	Refer Structural and Architectural <i>Drawings</i> Submit design to Superintendent for review prior to commencement.
Standards	Design and configure to the requirements of NCC Clause D2.16 - Balustrades and other barriers. Design and provide to the requirements of AS 1170.
Design criteria	As noted in Structural Criteria in this Section. Provide matching Heavy Duty hinged Balustrade gates to Loading bay with lockable drop bolts each leaf to drop securely into concrete
Type	Webforge Proprietary Balustrade – Special Balustrade, Steel – to suit Stair 1 - Handrail 40NB.Med. - Mid Rail 32NB.Med. - Bottom Rail 32NB Med.
Stanchion	Webforge, 40NB x 4.0mm wall thickness, spaced as indicated on the drawings, or otherwise then at maximum 1800 max centres to AS 1657.
Fixing	Provide 5mm neoprene separators between the concrete and the underside of the baseplates. Fix the baseplates to the concrete with stainless steel expansion bolts to the manuf. printed instructions. Galvanised or plated anchors will not be accepted.
Treatment / Colour	Mild Steel – Galvanised (G) (AS/NZS 4680)

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1.12 HANDRAIL (HR)

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in **RED** ink are part of this approval.

Schedule of handrail (HR)	
Location	Refer to the <i>Drawings</i> for extent on <i>Stair 2 / Landing 2 (R1.06)</i>
Requirement	Refer Structural and Architectural Drawings Submit design to Superintendent for review prior to commencement.
Design criteria	As noted in Structural Criteria in this Section.
Type	Mild Steel Galvanised Handrail to match Balustrade - Wall mounted
Finish	Hot Dip Galvanised (G) (AS/NZS 4680)

1.13 A/C CONDENSER FRAMES

Location	Refer to the <i>Drawings</i> for extent on: <i>Plant Deck (R1.05)</i>
Requirement	Refer Architectural Drawings for intent Provide a purpose made self-supporting frame to stack A/C's. Provide fully welded frame designed and certified by RPEQ Engineer. Confirm weights with D & C Mechanical Contractor + 50% extra factor included. Submit design to Superintendent for review prior to commencement.
Design criteria	As noted in Structural Criteria in this Section.
Frame Type	Mild Steel 50 x 50 SHS Frame fully welded, or approved equal
Finish	Hot Dip Galvanised (G) (AS/NZS 4680)
Fixings	Bolt to the substrate with stainless steel anchors with neoprene separators between all dis-similar materials.

1.14 PLANT ENCLOSURE SCREEN TYPE 1 – SCR1

Schedule of plant enclosure screens – SCR1	
Types	As indicated on <i>Architectural drawings</i> .
Location	Refer to the <i>Drawings</i> for profiles, fixings, location and extent.
Design criteria	As noted in Structural Criteria in this Section.
Requirement	Design and provide powder-coated aluminium slatted screens to the profiles and arrangement indicated. Install all components securely fixed and anchored, plumb and in line, with hair-line joints.
Submissions	Submit manufactures data, and a sample of the slats and posts <u>5 working days</u> before commencement of work on the site.
Framing	Provide the aluminium framing to the profile and arrangement detailed. Allow to blank off all ends.
Screen slats	LOC-IT system, available from Cairns Aluminium Services, T 07] 4035 4585, or equal approved, installed so as to provide 50% cover. 70 x 38mm wide slats, installed horizontally spaced 70mm apart, fixed to the structure with the Lok-it proprietary surrounds. Allow to cap ends.
Fixings	Bolt to the substrate with stainless steel anchors. Bolt components together with stainless steel fixings. Allow to provide neoprene separators between the aluminium and the stainless steel as required for dis-similar materials.
Gates	Single and Double gates to match the adjacent screen. Refer to the <i>Elevations</i> for location and size. Provide with all matching hardware. Provide additional bracing and stiffeners as required for heavy duty gate usage. Provide all heavy-duty hardware, to match the system, with provision for locking to match other hardware at gates.
Slat & Frame Finish	Sahara Loc-coat powdercoat finish.
Colour	Refer to Exterior colour schedule in Architectural schedules .
Warranty	Provide the Loc-coat 10 year warranty

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1.15 PERFORATED AWNING SUN SHADING SCREEN – SCR-2

APPROVED in accordance with the Building Act 1975, Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in **RED** ink are part of this approval.

Schedule of horizontal sun shading screen – SCR-2	
Requirement	Provide external horizontal sun shading screens as indicated on <i>Drawings</i> . Generally to Street Corner of Glazed Awning
Design criteria	As noted in Structural Criteria in this Section.
Supports	Refer Structural Engineers drawings and Architectural.
Screen framing	50x5.0 EA aluminium perimeter frame, or approved equal
Screen panel	3mm thick aluminium sheet with perforations punched to achieve pre-defined artistic patterns. 50% open area nom. Maximum hole size 6mm.
Pattern to panel	Pattern details to be provided for PR's Approval. Allow for all panels to be the same pattern, in the same direction.
Fixings, frame	Provide frame as nominated in Structural drawings. Allow 316 grade stainless steel bolts and blocking behind cladding, separated from the aluminium by neoprene washers and strips.
Fixings, screen panel to frame	M8 316 grade stainless steel thru bolts with dome head nuts from angle surround through panel and into 40x5.0 clamp plate, separated from the aluminium by neoprene washers and strips. 600 crs nom.
Finish	Powdercoat elements after fabrication.
Colour	Refer to Exterior colour schedule in Architectural schedules .

2 FENCING & GATES

2.1 STEEL PANEL FENCING & GATES – F1

Schedule of steel panel fencing – F1	
Location	Refer to the <i>Drawings</i> for extent,
Requirement	Construct steel panel fencing, and Concrete Kerbing in accordance with Ergon Energy Corporation Limited Substation Standard Security Fencing Construction Details Drawing PS000003 included as a <i>Reference Drawing</i> , <u>except to 2.4m high</u> , along both Street frontages/ boundaries To Side Boundary the New steel posts are to be fixed onto the existing CM wall instead of new footings. All Panel materials and members to be sized and provided <u>strictly in accordance with EECL Standard Reference Drawing</u> .
Type	Powdercoated Steel panel fencing between steel posts with concrete footings, and concrete kerbing with regular spaced drainage slots to Street Frontages, except with Posts bolted onto existing CM wall alongside side boundary.
Installation	Along both Street frontages are strictly in accordance with EECL Standard <i>Reference Drawing</i> . Alongside side boundary new steel posts are to match existing, except extend to 2.4m high and be located to suit panel widths, to match the drawings.
Finish	Panel/ Posts etc. Powdercoat finish, In accord. with EECL Standard <i>Ref. Drawing</i> . Refer <i>Painting worksection and Re-paint</i> Existing CM block wall. Make Good to all existing items.
Gates	(G5) (G6) Construct Powdercoated steel panel Single (G5) and Double swinging Gates (G6), with all members <u>strictly in accordance with</u> Ergon Energy Corporation Limited Substation Standard Security Fencing Construction Details Drawing PS000003 included as a <i>Reference Drawing</i> .
Concrete Kerbing	Provide Concrete Kerbing as indicated in the drawing

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2.2 TIMBER ISOLATION PANEL FENCING – F2

Schedule of timber isolation panel fencing – F2	
Location	Refer to the Site Plan <i>Drawings</i> for extent. Generally to area directly in front of Transformer to McLeod Street frontage.
Requirement	Construct timber isolation fencing in accordance with Ergon Energy Corporation Limited Substation Standard Security Fencing Construction Details Drawing 31517-A1-ESS-01 included as a <i>Reference Drawing</i> , <u>except</u> to 2.4m high and fully painted upon completion. To Side Boundary instead of new footings - provide new timber posts bolted into existing CM Blockwall with a new steel plate arrangement same as base of existing steel posts, or approved equal. All Panel materials and members to be sized and provided <u>strictly in accordance</u> with EECL Standard <i>Reference Drawing</i> .
Type	Treated timber railings and panel fencing between treated timber posts with concrete footings to Street Frontage. To side boundary re-move existing steel posts and Make Good. Allow to provide new timber posts to match drawings, except bolted directly to CM block with similar plates to match existing and S/Steel anchors, or approved equal. Allow to provide / extend earthing to all steel members. All members to be sized and provided <u>strictly in accordance</u> with EECL Standard <i>Reference Drawing</i> .
Installation	In accordance with EECL Standard <i>Reference Drawing</i> .
Finish	Paint finish, Refer <i>Painting</i> section of specification
Concrete Kerbing	Provide Concrete Kerbing as indicated in the drawing

3 MISCELLANEOUS

3.1 BOLLARDS

Refer to *Civil and Structural* Drawings for steel bollards locations.

3.2 DOWNPIPES AND BOX GUTTERS

Refer to *Roofing* work section for requirements and Drawings for location and extent.

End of section

1 GENERAL

1.1 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Conform to the following: *LININGS*, for substrates.

1.2 INSPECTION

Notice

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

- Furniture items delivered to site before installation.
- Building locations or substrates prepared to receive furniture before the furniture is installed.

1.3 SUBMISSIONS

Subcontractors

General: Submit names and contact details of proposed suppliers and installers.

Shop drawings

General: Submit shop drawings showing the following information where relevant:

- Construction, assembly and fixing details for custom designed (nonstandard) furniture items.
- The proposed layout for furniture installations.

Installation

General: Submit the manufacturer's standard drawings and details showing methods of construction, assembly and fixing, with dimensions and tolerances.

2 PRODUCTS

2.1 MATERIALS

Steel tube

Surface:

- For painted work: Semi-bright.
- For electroplated work: Bright.

Steel sheet

Surface finish:

- For electroplating: P (plating quality).
- For painting: B (bright) or M (matt).

Stainless steel

Grade: 304 unless noted otherwise.

Finish: Surface finish 4 (general purpose polished) unless noted otherwise.

High-pressure decorative laminate sheets

Standard: To AS/NZS 2924.1.

Thickness (minimum):

- For horizontal surfaces fixed to a continuous background: 1.2 mm.
- For vertical surfaces fixed to a continuous background: 0.8 mm.
- For post formed laminate fixed to a continuous background: 0.8 mm.

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For vertical surfaces fixed intermittently (e.g. to studs): 3.0 mm.
 For edge strips: 0.4 mm.

3 JOINERY AND DISPLAY SURFACES = NIL

4 FURNITURE

1 x Desk

Location: Refer Drawings – CLEAN RM (R1.01)

Provide: 1 x Elevar Eon Sit to Stand Electric Straight Desks, or approved Equal.

Requests for substitution without concurrent submission all data matching every item listed

In detail below will not be considered.

Spec.: 25mm E0 in a Polar White Tops with Centre Cable Scallop T Foot Style Legs & Telescopic Frame in White

3 User Programmable quick select Height Settings – Height range 610mm to 1260mm

1600mm x 750mm Deep, 720mm High, No Modesty Panel

AFRDI Approved - 10 Year Mechanics & Electrics Warranty

1 x CMS Dual Cable Basket with Softwire Quad GPO & Umbilical

Cable Management with mounting plates for 3 Data Points in White

Complete with softwire Starter Points & connection Leads

Connection & Testing & all Data cables & connection is by your electrical contractor

Note : The Cable Tray with Lid forms part of the Eon back to back pairs of Desks, not the single desk

1 x CMS Desktop Atherna Services Rail with Heli Wireless Charger

Atherna II Model AN02HSUA910 - Double GPO & USB Charging

1 x Delivery & Installation in Cairns

Installation and full set-up: Allow co-ordinate all items required for installation and set-up, to be undertaken strictly in accordance with the item manufacturer's recommendations.

Requirement

Allow to provide 1 x Laminated Workstation from Specfurn Furniture To meet EQL Property Standard, or approved Equal. Refer Drawings for size.

5 MISCELLANEOUS

5.1 FIXTURES, FITTINGS & EQUIPMENT (FF&E)

Requirement

Provide / supply the FF&E items listed in the FF&E Schedule. All items are "or equal approved". Requests for substitution without concurrent submission of a sample and data will not be considered.

Coordination

- Coordinate with *LININGS* for the location of noggings, trimmers and studs provided by those sections for the installation of FF&E by this trade.
- Do not accept substrates considered inadequate for the weight and serviceability of the item.

Fixings

- Provide fixings in accordance with the item manufacturers recommendations.
- Provide additional fixing length to allow for wall linings.
- Provide chrome or stainless-steel fixings, countersunk for countersunk holes, dome head elsewhere. Cadmium screws with plastic caps will not be accepted.

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Mounting

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Mount to the heights indicated on the drawings. Install to vertical lines, and line up edges of adjacent items.

5.2 SIGNAGE

Schedule of signage	
Requirement	Provide signage that is compliant with law requirements, durable, vandal-resistant, and consistent with the size, graphics, materials, and finish
Liaison	The scope of work is indicative only. Allow to liaise with the <i>Principal's Representative</i> as to the size, graphics, text, numbering sequence, and location of the signs.
Submissions	Submit computer graphics to scale, and samples to indicate compliance with the requirements. Submit details of the proposed fixings for both exterior and interior signs. Submit the proposed samples, graphics and fixing details, <u>10 working days</u> before fabrication. Do not proceed with the work until written approval has been received from the <i>Principal's Representative</i>
Locations	Confirm the location/s of the signs with the <i>Principal's Representative</i> before installation.
Scope of work	The signage shall include, but shall not be limited to the following:
Building Identification	Provide Ergon Energy Logo & Text to Each Street frontage in the location indicated on the Elevation <i>Drawings</i> . Allow to provide: - Coloured acrylic custom shaped 'Ergon Energy' Logo. Allow for 800mm high x 1200mm Wide x 6mm thick on stainless stand-off prongs. Logo will be provided by Client. - Allow Text stating 'CAIRNS CITY SOUTH'.
Door Numbering & Naming	Provide signage made of Trafalite to indicate room numbers to all external and internal key locked rooms. Signage to be Nom. 50mm high for 1 x line and Nom. 100mm high for 2 lines Allow for Room Names, being: (R1.01, Door D1-01) = [LINE 1] +23 CLEAN ROOM (R1.01, Door D1-03) = [LINE 1] KEEP CLEAR, [LINE 2] (AUTHORISED SERVICE ACCESS ONLY) (R1.02, Door D2-02) = [LINE 1] +22 UPS / BATT ROOM (R1.02, Door D2-01) = [LINE 1] KEEP CLEAR, [LINE 2] (AUTHORISED SERVICE ACCESS ONLY) (R1.03) = [LINE 1] +21 COMMS ROOM (R1.04) = [LINE 1] GAS ROOM (R1.05 - 1 x at Gate G1 at Landing 2) = [LINE 1] PLANT DECK, [LINE 2] (AUTHORISED SERVICE ACCESS ONLY) (R1.05 - 1 x at Gate G1 at Landing 1) = [LINE 1] PLANT DECK, [LINE 2] (AUTHORISED SERVICE ACCESS ONLY) (R2.01 / D0.01) = [LINE 1] SUB FLOOR (AUTHORISED ACCESS ONLY) (R2.01 / D0.02) = [LINE 1] SUB FLOOR (AUTHORISED ACCESS ONLY)
Fire egress signage	Provide fire egress signage as required by current regulation, in a prominent location within each room to indicate the name of building, evacuation procedures, location of the assembly area, fire exit and escape routes, fire extinguisher location, and the like.

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Warning and hazard signs	Provide appropriate warning and hazard signs as required by regulation and by WH&S requirements.

5.3 PLUMBING FIXTURES & TAPWARE

Schedule of sanitary fixtures				
Requirement	Supply and install all sanitary fixtures complete with all accessories required for installation.			
Room	Fixture	Description	Tapware	No. Required
EXTERIOR	-	Hose Taps	Enware Key Operated Hose Cock, or approved EQ.	Refer Hydraulic Drawings

5.4 IRRIGATION

General: Refer Landscape Architects Drawings for Details

Allow to install Irrigation water lines concealed from view from central location (Where Irrigation Controller is proposed) as indicated on Hydraulic drawings to 2 x Garden Beds locations.

5.5 PORTABLE EXTINGUISHERS

Standards

General: Provide portable fire extinguishers and location signs as follows:

- General requirements: AS/NZS 1841.1.
- Water: AS/NZS 1841.2.
- Wet chemical: AS/NZS 1841.3.
- Foam: AS/NZS 1841.4.
- Powder: AS/NZS 1841.5.
- Carbon dioxide: AS/NZS 1841.6.
- Non-rechargeable: To AS/NZS 1841.8.

Selection and location: To AS 2444. Locate as directed on the site.

Standards Mark: Required.

Fire extinguishers schedule – confirm number and type with Principal's Representative and supplier before ordering.

Designation	FE1	FE2	FE3
Locate as directed	As indicated on drawings	As indicated on drawings	As indicated on drawings
Type	4.5kg Dry Chemical ABE	9kg Dry Chemical ABE	9L ECO Foam F3 Fluorine Free Foam
Bracket	Proprietary	Proprietary	Proprietary
Sign	Required	Required	Required

Fire blanket schedule – N/A

5.6 WHEEL STOPS

Refer to *Civil and Architectural Drawings* for wheel stop locations and type.

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5.7 SHARED ZONE (PARKING BAY) BOLLARD

Standards: AS2890.1; AS/NZS 1170.1

Fixed Bollard (BOL)

Provide proprietary steel 'internal fixed base plate' type bollard (Leda Securapost - SB80B, or equal approved), to shared zones adjacent nominated 'Accessible' car parking bays, secured to carpark concrete slab with stainless steel masonry anchors. Install in accordance with manufacturer's recommendations.

Location/s: Refer to Drawings and/or as directed by Principal's Representative.

Description: Steel circular pipe 80NB.

Finish: Powder-coated safety yellow.

Refer to *Metalwork* for all other Bollards

6 COMPLETION

Warranties

General: Submit the installer's warranty against defective workmanship or wrong installation.

Maintenance manual

General: Submit the manufacturers' data as follows:

- Recommendations for demounting and relocation.
- Recommendations for service use, care and maintenance.
- List of manufacturers and suppliers of replacement parts.

End of section

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NOT USED

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26. PLASTERING

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval or the Decision Notice. All amendments made on the plan in RED ink are part of this approval

1 GENERAL

1.1 AIMS

Responsibilities

General: Provide plaster finishes as follows:

- Resistant to impacts expected in use.
- Free of irregularities.
- Consistent in texture and finish.
- Firmly bonded to substrates for the expected life of the application.
- As a suitable substrate for the nominated final finish.

Selections: Conform to the **Selections**.

1.2 CROSS REFERENCES

General

General: Conform to the General requirements worksection.

Associated worksections

Associated worksections: Conform to the following:

Blockwork, for substrates

1.3 EXTENT

- Refer to the *Drawings* and **Room finish schedule** in *Architectural Schedules* worksection.

1.4 INSPECTION

Notice

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

- Substrates immediately before applying base coats.
- Finish treatments before application of paint or wall tiles.

1.5 WARRANTY

Provide a warranty for the materials and workmanship in this *Section*, in accordance with the terms, conditions and duration specified and scheduled in *General Requirements*. [10 years when applied by an Approved Applicator, and in accordance to Renderone specification]

2 PRODUCTS

2.1 MATERIALS AND COMPONENTS

Proprietary products

Provide the proprietary system scheduled at the end of this Section, applied to the manufacturers specification.

Accessories

Beads: To be non-metallic proprietary sections manufactured to be fixed to substrates and/or embedded in the plaster to form and protect plaster edges and junctions.

Admixtures

Plasticizers or workability agents: Do not use in cement plasters. Do not add to the proprietary product.

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Bonding products

General: To use proprietary products manufactured for bonding cement-based plaster to solid substrates.

Colouring products

General: Not applicable

Curing products

General: Do not add to the proprietary product.

Control joint products

General: To be non-metallic proprietary products manufactured for use with the plastering system and to accommodate the anticipated movement of the substrates and/or the plaster.

Water

General: To be clean and free from any deleterious matter.

3 EXECUTION

3.1 PREPARATION

Substrates

General: Ensure substrates have:

- Any deposit or finish which may impair adhesion of plaster cleaned off.
- If framed or discontinuous, support members in full lengths without splicing.
- If solid or continuous, excessive projections hacked off and voids and hollows filled with the appropriate product in the scheduled proprietary system.

Absorbent substrates: If suction is excessive, control it by dampening but avoid over-wetting and do not plaster substrates showing surface moisture.

Dense concrete: If not sufficiently rough to provide a mechanical key, roughen by scabbling or the like to remove 2 mm of the laitance and expose the aggregate then apply a bonding treatment.

Untrue substrates: If the substrate is not sufficiently true to ensure conformity with the thickness limits for the plaster system or has excessively uneven suction resulting from variations in the composition of the substrate, apply additional coats without exceeding the thickness limits for the substrate or system.

Beads

Location: Fix beads as follows:

- Movement control beads: At all movement control joints.
- Stop beads: At all terminations of plaster and junctions with other materials or plaster systems.

Embedded items

General: If there are water pipes and other embedded items, sheath them to permit thermal movement.

Lath

Location:

- Chases: If chases or recesses are 50 mm wide or greater, fix non-metallic lath extending ≥ 75 mm beyond each side of the chase or recess.
- Metal and other non-porous substrates: Fix non-metallic lath to provide a key.

Installation:

- General: Run the long way of the mesh across supports with strands sloping downwards and inwards from the intended face of the plaster.
- Fixing: Mechanically fix at centres of 150 mm or less.
- Laps: Tie with 1.25 mm galvanized wire ≤ 150 mm. Do not stop edges of sheets at corners but bend around.
- On solid substrates: Space the lath 5 mm or more clear of the substrate.
- Support spacing: ≤ 400 mm.

3.2 APPLICATION

Proprietary product

Apply strictly to the manufacturers printed instructions.

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Incidental work

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in accordance with the Building Act 1975.

General: Put on plaster into reveals, beads, sills, recesses and niches. Plaster faces, ends, and soffits of projections in the substrate, such as string courses, sills, pilasters and corbels. Trim around openings. Plaster exposed inside of built-in cupboards.

Joining up

General: If joining up is required, ensure joints will be imperceptible in the finished work after decoration.

Control joints

General: Provide joints in the finish to coincide with control joints in the substrate. Ensure that the joint in the substrate is not bridged during plastering.

- Depth: Extend the joint right through the plaster and reinforcement to the substrate.
- Width: 3 mm, or the same width as the substrate joint, whichever is greater.

Damp-proof courses: Do not continue plaster across damp-proof courses.

Plastering on metal lath: Provide movement joints to divide the plastering area into rectangular panels $\leq 10 \text{ m}^2$.

V-joints: Provide V-joints, cut right through the plaster to the substrate, at the following locations:

- Abutments with metal door frames.
- Abutments with other finishes.
- Junctions between different substrates.

Temperature

General: do not apply the product if the ambient temperature is above that recommended by the Proprietary product manufacturer.

3.3 TOLERANCES

General

Tolerances: Conform to the **Tolerances table**.

Tolerances table

Property	Tolerance criteria: Permitted deviation (mm)
Features ¹ : Verticality in 2000 mm	2
Features: Horizontality in 2000 mm	2
Walls: Verticality in 2000 mm	4
Walls: Flatness ² in 2000 mm	3
Radius of corners	Should not vary by more than $\pm 10\%$ over the length of the arris.
Square reveals < 300 mm	3
Square reveals > 300 mm	5
¹ Features: Conspicuous horizontal or vertical lines including external corners, parapets, reveals, heads, sills, movement control joints and mouldings.	
² Flatness: Measured under a straightedge laid in any direction on a plane surface.	

3.4 COMPLETION

Curing

General: Prevent premature or uneven drying out and protect from the sun and wind.

Keeping moist: Keep the applied product moist to the requirements of the manufacturer.

Top coat

Do not apply the paint as specified in *Painting* until a minimum of 48 hours after the completion of the work.

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1. SELECTIONS

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4.1 SCHEDULES

Plastering construction schedule

Item	Exterior
Location	To selected external blockwork. Refer to <i>Drawings</i> and Room finish schedule in <i>Architectural Schedules</i> worksection..
Proprietary system	ROCKCOTE render system or equal approved. Available from Cairns Wholesale Paints, 80 Aumuller St, Cairns, Ph. 4035 2000.
Substrate material	New unpainted masonry block
First coat for painted block	<i>Rockcote Fast Prep Keycote</i>
First coat for un-painted block	<i>Rockcote Fast Prep Skim Coat</i> ,
Second coat	<i>Rockcote Fast Float Finish</i> , Medium texture.
Top coat	Paint as specified in <i>Painting</i>

End of section

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27. RESILIENT FINISHES

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1 GENERAL

Aims

Responsibilities

Install resilient floor coverings to substrates as follows and/or to **Selections**:

- To remain secured for the warranty life of the covering.
- To remain consistently smooth for the warranty life of the covering.

1.1 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

1.2 INSPECTION

Notice

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

- Substrate immediately before fixing resilient finishes.
- Completed installation.

1.3 SUBMISSIONS

1] Allow to submit manufacturers' data for the following 10 working days before commencement of the work, to ensure compliance with the specification

- Floor vinyl
- Floor and wall adhesive, for wet and for dry areas.

2] Allow to retain manufacturers branded containers for the adhesive during the work to indicate compliance with the specification.

2 PRODUCTS

2.1 MARKING

Identification

General: Deliver materials to the site in the manufacturer's original sealed containers legibly marked to identify the product.

2.2 UNDERLAYS

Cementitious

General: Polymer modified cementitious self smoothing and levelling compound.

- Surface tolerance: To AS/NZS 2455.1 clause 1.4.
- Thickness: 3 mm minimum.

3 EXECUTION

3.1 PREPARATION

Substrates

General: Ensure substrates conform to the **Substrate tolerance table** and are as follows:

- To AS/NZS 2455.1 or AS/NZS 2455.2, as appropriate.
- Clean and free of any deposit or finish which may impair adhesion or location and functioning of movement joints.

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Substrate tolerance table
 Property

Property	Length of straight edge laid in any direction	Max. deviation under the straight edge
Flatness Class A	3 m	3 mm
Smoothness	150 mm	1 mm
Projections	50 mm	0.5 mm

Cleaning concrete surfaces: Mechanically remove the following surface treatments:

- Sealers and hardeners.
- Curing compounds.

Concrete substrate correction: Remove projections and fill voids and hollows with a levelling compound compatible with the adhesive.

Moisture content: Do not commence installation unless:

- Concrete: The moisture content of the concrete has been tested to AS/NZS 2455.1 Appendix B and the values in clause 2.4.2 (c) have been obtained.

Working environment

General: Do not start work before the building is enclosed, wet work is complete and dry, and good lighting is available. Protect adjoining surfaces.

3.2 SHEET INSTALLATION

Sheet set out

General: Set out sheets to give the minimum number of joints. Run sheet joints parallel with the long sides of floor areas.

Junctions

General: Scribe neatly up to returns, edges, fixtures and fittings. Finish flush with adjoining surfaces.

Rolling

General: Where rolling is required, roll the finish in 2 directions before the adhesive sets, using a 70 kg multi-wheeled roller.

Cleaning

General: Keep the surface clean as the work proceeds.

3.3 VINYL SHEETING

Welded joints

Heat welding: After fixing, groove the seams using a grooving tool and weld the joints with matching filler rod and using a hot air welding gun. When the weld rod has cooled, trim off flush.

3.4 JOINTS AND ACCESSORIES

Junctions

General: Finish junctions flush with adjoining surfaces. Where changes of floor finish occur at doorways locate the joint on the centreline of the closed door leaf.

Accessories

General: Provide purpose-made matching moulded accessories for coves, skirtings, edge cover strips and finishes at junctions and margins, if available. Otherwise form accessories from the sheet material. Provide solid backing for radiused coves and nosings.

Coves and nosings

Coved skirtings: Carry the plain flooring material up to form skirting, weld all joints. Ensure the radius of the coving conforms to the requirements of the supplier for the sheeting material and thickness.

Location: N/A.

Minimum radius: Form in situ to pencil round. [20mm former will not be accepted]

Internal and external corners: Infill boot or butterfly method.

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3.5. COMPLETION

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Protection of sheet materials

General: Keep traffic off floors until bonding has set or for 24 hours after laying, whichever period is the longer. Do not allow water in contact with the finish for 7 days.

Reinstatement: Repair or replace faulty or damaged work. If the work cannot be repaired satisfactorily, replace the whole area affected.

Warranties

General: For each type of resilient finish specified, submit the installer's warranty of the workmanship and application.

Warranty terms: refer to *General Requirements*

Maintenance manual

General: Submit manufacturer's published use, care and maintenance requirements for each type of finish.

Cleaning

General: Clean the finished surface. Buff and polish. Before handover, mop and leave the finished surface clean and undamaged on completion.

4 SELECTIONS

4.1 FLOOR SHEET VINYL – VIN 1

Schedule of floor sheet vinyl – VIN 1	
Type	VIN 1
Location	Refer to Room Finish Schedule in <i>Architectural Schedules</i> and the <i>Drawings</i> for location.
Type	Forbo, Colorex EC, Anti Static
Supplier	Forbo Flooring Systems Contact: Clinton Goff, Qld State Sales Manager – Qld, M: 0422066 907
Form	Overall 2mm, homogeneous product comprises of ≥ 1 mm thick, pure PVC, wear layer incorporating high density glass fibre non-woven reinforcement.
Colour	Refer to Interior colour schedule in <i>Architectural Schedules</i>
Slip resistance	R10/P3
Sheet width (mm)	6150x 6150mm
Joints	Welded – colour matched welds.
Skirtings	150H Coving Allow to in-fill all face blockwork perpends behind Coving
Adhesive for wet areas [where coved]	N/A
Adhesive for dry areas	To the manufacturers written instructions.
Sealant at door frames	Allow to seal the junction of floor to door frames with suitable mould resistant silicone sealant.
Floor wastes	N/A
Vinyl / Concrete junction	Provide CVS CARPET/VINYL STOP, colour Black, available from MJS Flooring, 5/313 Little Spence St, Cairns, T: 4035 6792. Bob Still. Install under the vinyl sheet so that the top of the sloped vinyl is level with the top of the adjacent floor finish.

End of section

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28. PAINTING

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1 GENERAL

1.1 AIMS

Responsibilities

General: Provide coating systems to substrates as follows:

- Consistent in colour, gloss level, texture and dry film thickness.
- Free of runs, sags, blisters, or other discontinuities.
- Paint systems fully opaque.
- Clear finishes at the level of transparency consistent with the product.
- Fully adhered.
- Resistant to environmental degradation within the manufacturer's stated life span.

Selections: Conform to the **Selections**.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following:

Concrete finishes, Doors, Metalwork, Structure.

1.3 STANDARDS

Painting

General: Comply with the recommendations of those parts of AS/NZS 2311 and AS/NZS 2312 which are referenced in this worksection.

1.4 INTERPRETATION

Definitions

General: For the purposes of this worksection the definitions given below apply.

- Standard: To AS/NZS 2310.
- Substrate: The surface to which a sealant must bond.
- Background: The surface to which the undercoat is applied.
- Paint: A product in liquid form, which when applied to a surface, forms a dry film having protective, decorative or other specific technical properties.
- Sealer: A product used to seal substrates to prevent:
 - . Materials from bleeding through to the surface.
 - . Reaction of the substrate with incompatible top coats.
 - . Undue absorption of the following coat into the substrate.
- Primer, prime coat: The first coat of a painting system that helps bind subsequent coats to the substrate and which may inhibit its deterioration.
- Undercoat: An intermediate coat formulated to prepare a primed surface or other prepared surface for the finishing coat.
- Finish coat: The final coat of a coating system.
- Adhesion: The sum total of forces of attachment between a dry film and its substrate. See AS 1580 for tests to assess adhesion.

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1.5 WARRANTIES

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Provide warranties for the materials and workmanship in this *Section*, in accordance with the terms, conditions and duration specified and scheduled in *General Requirements*.

2 PRODUCTS

2.1 PAINTS

Combinations

General: Do not combine paints from different manufacturers in a paint system.

Delivery

General: Deliver paints to the site in the manufacturer's labelled and unopened containers

Tinting

General: Provide only products which are colour tinted by the manufacturer or supplier.

Toxic ingredients

General: Comply with the requirements of Appendix P Uniform Paint Standard to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Putty

Non-timber substrates: Oil-based or polymeric based.

3 EXECUTION

3.1 PREPARATION

Standards

General: To AS/NZS 2311 Sections 3.

Protection of steelwork: To AS/NZS 2312 Sections 4.

Order of work

Other trades: Before painting, complete the work of other trades as far as practicable within the area to be painted, except for installation of fittings, floor sanding and laying flooring materials.

Clear finishes: Complete clear timber finishes before commencing opaque paint finishes in the same area.

Protection

Fixtures: Remove door furniture, switch plates, light fittings and other fixtures before starting to paint, and refix in position undamaged on completion of the installation.

Adjacent surfaces: Protect adjacent finished surfaces liable to damage from painting operations.

'Wet paint' warning

General: Place notices conspicuously and do not remove them until paint is dry.

Restoration

General: Clean off marks, paint spots and stains progressively and restore damaged surfaces to their original condition. Touch up damaged decorative paintwork or misses only with the paint batch used in the original application.

General Substrate preparation

General: Prepare substrates to receive the painting systems.

Cleaning: Clean down the substrate surface. Do not cause undue damage to the substrate or damage to, or contamination of, the surroundings.

Filling: Fill cracks and holes with fillers, sealants, putties or grouting cements as appropriate for the finishing system and substrate, and sand smooth.

Clear finish: Provide filler tinted to match the substrate.

Clear timber finish systems: Prepare the surface so that its attributes will show through the clear finish without blemishes, by methods which may involve the following:

Specific substrate preparation

General: Prepare substrates in accordance with the **Duspec** specifications scheduled in this section.

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28. PAINTING Standards

General: To AS/NZS 2311 Section 6.

Protection of steelwork: To AS/NZS 2312 Section 8.

Light levels

General: During preparation of surfaces, painting, and inspection, maintain light levels such that the luminance (photometric brightness) of the surface is equal to the specified permanent artificial illumination conditions or 400 lux, whichever is the greater.

Drying

General: Use a moisture meter to demonstrate that the moisture content of the substrate is at or below the recommended maximum level for the type of paint and the substrate material.

Paint application

General: Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Apply subsequent coats after the manufacturer's recommended drying period has elapsed.

Priming before fixing

General: Apply one coat of wood primer (2 coats to end grain) to the following before fixing in position:

- bottoms of external doors.

Spraying

General: If the paint application is by spraying, use conventional or airless equipment which does the following:

- Satisfactorily atomises the paint being applied.
- Does not require the paint to be thinned beyond the maximum amount recommended by the manufacturer.
- Does not introduce oil, water or other contaminants into the applied paint.

Paint with known health hazards: Provide masking, ventilating and screening facilities generally to the standards set out for spray painting booths, AS/NZS 4114.1 and AS/NZS 4114.2.

Repair of galvanizing

General: For galvanized surfaces which have been subsequently welded, prime the affected area.

Primer: To APAS-2916, two pack.

Tinting

General: Tint each coat of an opaque coating system so that each has a noticeably different tint from the preceding coat, except for top coats in systems with more than one top coat.

Services

General: If not embedded, paint new services and equipment including in plant rooms, except chromium, anodised aluminium, GRP, UPVC, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces. Repaint proprietary items only if damaged.

4 SELECTIONS

4.1 CONCRETE PAINT SEALER, CLEAR – CONC-SL

Refer to *Concrete finishes* worksection for concrete paint clear sealer on floor slabs and kerbing.

4.2 EPOXY PAINT FINISH, COLOURED – EPXY = NIL

4.3 LANDSCAPING KERBING

Refer to *Concrete finishes* worksection for concrete paint clear sealer on all kerbing.

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5.1 LINEMARKING - LM

Schedule of linemarking – LM	
General	Apply Dulux Roadmaster WB2 incorporating VISY drop-on reflective glass beads in accordance with the manufacturers printed instructions. System – Dulux Duspec AUSI1736
Extent	Provide where coded LM on the <i>Drawings</i> . Generally to: New Concrete in Driveway/ Parking / Loading Areas.
Installation	The area to be coated must be fully prepared in accordance with manufacturers printed instructions. All line marking to be 75mm wide unless noted otherwise.
Application	Mix and apply strictly to the manufacturers printed instructions.
Coats	1 no.
Colour	Allow for two colours – Yellow and White. Confirm application on site with Superintendent.

5.2 EXTERIOR PAINTING SCHEDULE

Schedule of exterior painting					
Area	Substrate	Duspec No.	1 st coat	2 nd coat	3 rd coat
Concrete (CF-01)	Concrete, grey	-	Refer to <i>Concrete finishes</i> worksection.		
Concrete, Coloured (CF-02)	Concrete, coloured	-	Refer to <i>Concrete finishes</i> worksection.		
Concrete Edging,	Concrete, coloured	-	Refer to <i>Concrete finishes</i> worksection.		
Concrete blockwork, coloured	Honed	-	Dulux Precision Prep	Dulux Precision (Anti Graffiti Coating)	Dulux Precision (Anti Graffiti Coating)
			Allow to provide a test sample in an agreed location with PR for approval before walls visible from Street		
Concrete blockwork, rendered (RBK)	Cement render	AU_SD1232 7	Dulux Professional Total Prep	Dulux Weathershield Gloss	Dulux Weathershield Gloss
Compressed Fibre Cement (CLAD-5)	Compressed fibre cement, site painted		Dulux Professional Total Prep	Dulux Weathershield Gloss	Dulux Weathershield Gloss
External exposed structural steel, brackets and the like	Steel	-	Complete factory applied warranted system. Site touch up only permitted. Refer to <i>Appendices</i>		
Aluminium screens and frames	Powdercoated aluminium	-	Sahara Loc-coat, or approved Equal		

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Schedule of exterior painting					
Area	Substrate	Duspec No.	1 st coat	2 nd coat	3 rd coat
(SCR1)					
Fencing, steel (F1)	Powdercoated aluminium	-	Dulux Duratec, or approved Equal		
Fencing, steel (F2)	Treated Timber slats	-	Dulux acrylic Sealer Undercoat	Dulux Wash & Wear Advanced Low Sheen	Dulux Wash & Wear Advanced Low Sheen
Doors, Frames	Powdercoated aluminium	-	Dulux Duratec, or approved Equal		
	Powdercoated Galv, Steel	-			
Doors, Panels Timber	Plywood	AUSD-0037	Dulux Step Oil Based Primer Sealer Undercoat	Dulux Super Enamel Semi-Gloss	Dulux Super Enamel Semi-Gloss
Door frames, steel	Steel	AUSD-0037	Quit Rust Galv. Based Primer Sealer Undercoat	Dulux Super Enamel Semi-Gloss	Dulux Super Enamel Semi-Gloss
Downpipes, uPVC	uPVC	AU_SD1232 7	Dulux Professional Total Prep	Dulux Weathershield Gloss	Dulux Weathershield Gloss

5.3 INTERIOR PAINTING SCHEDULE

Schedule of interior painting					
Area	Substrate	Duspec No.	1 st coat	2 nd coat	3 rd coat
Concrete, Sealed (CONC-SL)	Concrete, grey	-	Refer to <i>Concrete finishes</i> worksection.		
Walls, concrete blockwork, rendered (RBK)	Cement render	AU_SD1232 7	Dulux Professional Total Prep	Dulux Weathershield Low Sheen	Dulux Weathershield Low Sheen
Walls, plasterboard	Flush plasterboard	AUSD-0002	Dulux acrylic Sealer Undercoat	Dulux Wash & Wear Advanced Low Sheen	Dulux Wash & Wear Advanced Low Sheen
Ceilings, plasterboard and FR P'bd	Flush plasterboard	AUSD-0002	Dulux acrylic Sealer Undercoat	Dulux Wash & Wear Advanced Low Sheen	Dulux Wash & Wear Advanced Low Sheen
Ceilings, fibre Cement	Flush Fibre Cement	AUSD-0002	Dulux acrylic Sealer Undercoat	Dulux Wash & Wear Advanced Low Sheen	Dulux Wash & Wear Advanced Low Sheen
Doors	Plywood for paint	AUSD-0039	Dulux 1 Step Oil Based Primer Sealer Undercoat.	Dulux Super Enamel High Gloss	Dulux Super Enamel High Gloss
Door frames, steel	Galvabond steel	AUSD-0037	Quit Rust Galv. Based Primer	Dulux Super Enamel High	Dulux Super Enamel High Gloss

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Schedule of Internal Painting

Area	Substrate	Duspec No.	1 st coat	2 nd coat	3 rd coat
			Sealer Undercoat	Gloss	
Door frames, aluminium	Powdercoated aluminium	-	Dulux Duratec		
Door frames, aluminium	Powdercoated aluminium	-	Dulux Duratec		
Exposed structural steel, brackets and the like	Steel	-	Complete factory applied warranted system. Site touch up only permitted. Exposed structural steel, brackets and the like		
Internal enclosed structural steel, brackets and the like	Steel	-	Factory applied primer.		
Steelwork, generally	Powdercoated steel	-	Dulux Duratec		

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1 ROOM FINISH SCHEDULE

ROOM	FLOOR		SKIRTING		WALLS		CEILING		CORNICE	
Number & Title	Material	Finish	Material	Finish	Material	Finish	Material	Finish	Material	
GROUND FLOOR										
(R.1.01) CLEAN ROOM	Concrete, topped	Vinyl Sheet (VIN1)	Vinyl (SKT1)	Coved 150H	P/Board, flush finished (PB-F)	Painted	P/Board – Fire Rated flush finished (CL-01)	Painted	Rondo 294 wall-angle	
					CM Block (CMB)					
(R.1.02) UPS / BATT. RM	Concrete	Vinyl Sheet (VIN1)	Vinyl (SKT1)	Coved 150H	P/Board, flush finished (PB-F)	Painted	P/Board – Fire Rated flush finished (CL-01)	Painted	Rondo 294 wall-angle	
					CM Block (CMB)					
(R.1.03) COMMS RM	Concrete	Vinyl Sheet (VIN1)	Vinyl (SKT1)	Coved 150H	P/Board, flush finished (PB-F)	Painted	P/Board – Fire Rated flush finished (CL-01)	Painted	Rondo 294 wall-angle	
					CM Block (CMB)					
(R.1.04) GAS	Concrete	Clear Sealer (CS)	S/Steel Flashing angle (SKT3)	150 behind sheet	CM Block (CMB)	Painted	Fibre Cement, flush finished (CL-02)	Painted	TRIM Rondo 294 wall-angle	
(R.1.05) PLANT DECK	Concrete	Clear Sealer (CS)	--	--	CM Block (CMB) Rendered	Painted	Fibre Cement, flush finished (CL-02)	Painted	TRIM Rondo 294 wall-angle	
(R.1.06) LANDING 1	Concrete	Clear Sealer (CS)	--	--	CM Block (CMB) Rendered	Painted	Fibre Cement, flush finished (CL-02)	Painted	TRIM Rondo 294 wall-angle	
(R.1.06) LANDING 2	Concrete	Clear Sealer (CS)	--	--	CM Block (CMB) Rendered	Painted				

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ROOM / FLOOR			SKIRTING		WALLS		CEILING		CORNICE	
Room Number & Title	Material	Finish	Material	Finish	Material	Finish	Material	Finish	Material	
					CM Block, Honed (CMB-H)					
(R.1.07) FOOTPATH	Concrete, Coloured (CF-01) (CF-02)	Clear Sealant to CRC approval	--	--	CM Block, Honed (CMB-H)	Pre Finished, Sealed	(CL-03)	Painted	P50 Shadow joint	
					CLAD-1, CLAD-2, CLAD-3.	Pre finished				
STAIR 1 / STAIR 2	Concrete Treads & landings	Sealed Finish	Refer Landing							

2 EXTERIOR COLOUR SCHEDULE

Schedule of exterior colours					
Location	Background	Material	Brand	Colour	Texture
New Concrete, CARPARK AREA Generally (CONC.BF)	Concrete, new, plain/ natural grey	-	-	-	Light Broom Finish
New Concrete, CARPARK AREA	Linemarking	-	-	-	Light Broom Finish
Concrete Paths Generally, NEW FOOTPATH (CF-01)	Concrete	Coloured Concrete	Concrete Colour Systems	CCS Ghost Gum	Exposed Agg. Finish, Sealed
Concrete Paths Generally, NEW FOOTPATH (CF-02)	Concrete	Coloured Concrete	Concrete Colour Systems	CCS Gothic Charm	Exposed Agg. Finish, Sealed
Roof Sheetting (RSH-01)	ZA Steel	Colorbond	Stramit	Shale Grey - TBC	-
Roof Sheetting to Awnings (RSH-02)	ZA Steel	Colorbond	Stramit	Windspray - TBC	-
Roof, Gutter & Brackets	ZA Steel	Colorbond	Stramit	To match roof sheetting	-
Roof, Barge Capping & Fascia	ZA Steel	Colorbond	Stramit	To match roof sheetting	-
Roof, Flashings	ZA Steel	Colorbond	Stramit	To match roof sheetting	-

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Schedule of Exterior Colours

Location	Background	Material	Brand	Colour	Texture
Awning Soffits, Express Joint Fibre Cement (CL-02)	Battens	Compressed fibre cement, pre-finished	CSR, Cemintel	Barestone, Pre-finished "Original"	-
Landing, Plant Deck Soffit, FC (CL-3)	Fibre Cement, Painted	Refer Ceiling Section of Specification	Refer Ceiling Section of Specification	Surfmist	-
Walls, Block Honed (CMB-H)	CM Block, Honed	Concrete Masonry Block, Honed Finish	Adri Masonry	Nickel - <u>TBC</u>	Honed, Anti-graffiti Sealant
Walls, Block Rendered (RBK) All	CM Block, Rendered & Painted	As specified in <i>Paint</i>	Dulux	Colorbond Cove <u>TBC</u>	Semi-gloss
Walls, (FC)	Fibre Cement, flush finished, Painted	As specified in <i>Paint</i>	Dulux	Timeless Grey <u>TBC</u>	Semi-gloss
Walls, CFC Cladding (CLAD-1)	-	Compressed fibre cement, pre-finished	CSR, Cemintel	Barestone, - <u>TBC</u>	Original
Walls, CFC Cladding (CLAD-2)	-	Compressed fibre cement, pre-finished	CSR, Cemintel Surround	Greyish - <u>TBC</u>	Leather
Walls, CFC Cladding (CLAD-3)	-	Compressed fibre cement, pre-finished	CSR, Cemintel Surround	Blueish - <u>TBC</u>	Metal
Walls, CFC Cladding (CLAD-4)	-	Compressed fibre cement, pre-finished	CSR, Cemintel Surround	Whiteish - <u>TBC</u>	Base
Walls, CFC Cladding (CLAD-5)	-	FIBRE CEMENT (FC-F) wall cladding	Dulux	Timeless Grey- <u>TBC</u>	Base
Exist. Retaining Wall on side B'dry	Existing CM Block	As specified in <i>Paint</i>	Dulux	Timeless Grey- <u>TBC</u>	Gloss
Downpipes uPVC (DP-1)	Sewer Grade uPVC, Painted	As specified in <i>Paint</i>	Dulux	To match wall	Gloss
Downpipes H.D.G (DP-2)	Metal	Hot dipped galvanised	-	prefinished	-
Downpipes H.D.G (DP-3)	Metal	stainless steel, electro-polished	-	prefinished	-
Box Gutter and Rainwater Heads (RWH)	Metal	stainless steel, electro-polished	-	prefinished	-
Awning, Glazing Frames, Mullions & Transoms	Steel	As specified in <i>Paint</i>	Dulux, Powders, Duratec	To match colorbond Monument	-

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Schedule of Exterior Colours

Location	Background	Material	Brand	Colour	Texture
Awning, Glazing	Glass	As specified in <i>Roofing & Glass Awning</i>	G-James	prefinished	UV Stable - Patterned Print on glass
Perforated Screen	Aluminium	As specified in <i>Metalwork</i>	Dulux Powders, Duratec Zeus	Colorbond Surfmist - <u>TBC</u>	
Screens and Gates to plant enclosure (SCR1)	Aluminium, as specified in <i>metalwork</i>	As specified in <i>Paint</i>	Sahara Loc-coat powdercoat finish.	Colorbond Surfmist - <u>TBC</u>	
Gate, Type (G1) (G2) and (G3)	Aluminium Powdercoat. – to match SCR1	As specified in <i>Metalwork</i>	Sahara Loc-coat powdercoat finish.	Colorbond Surfmist - <u>TBC</u>	
Roller Doors (RS)	ZA Steel	Colorbond	BHP	Colorbond Surfmist - <u>TBC</u>	-
Door Frames	Galv. Steel	As specified in <i>Paint</i>	Dulux	To match colorbond Monument - <u>TBC</u> (30% Contrast Against Wall)	Satin
Doors, Panels	Plywood	As specified in <i>Paint</i>	Dulux	To match wall	Satin
Treads	--	Proprietary Concrete Treads. Refer <i>Metalwork</i>	--	Natural	P5/R12
Balustrades / Handrails	--	Proprietary Steel System. Refer <i>Metalwork</i>	--	--	--
Stringer	Steel	H.D. G	--	--	--
Railings	Proprietary Steel System	H.D. G	--	--	--
Fence, Steel Post (F1)	Steel, Powdercoat	As specified in <i>Metalwork</i>	Dulux Powders, Duratec Zeus	Black	Satin
Gate, Type (G5) in (F1)	Steel, Powdercoat	As specified in <i>Metalwork</i>	Dulux Powders, Duratec Zeus	Black	
Gate, Type (G6) in (F1)	Steel, Powdercoat	As specified in <i>Metalwork</i>	Dulux Powders, Duratec Zeus	Black	
Fence, Rails (F2)	Treated Timber	As specified in <i>Metalwork-Fencing</i>	Dulux Powders, Duratec Zeus	Black	Satin
Steel Post (F2)	Treated Timber	As specified in <i>Metalwork-Fencing</i>	Dulux	To Match adjacent Wall Colour - <u>TBC</u>	Satin
All exposed Structural Steel Generally	Steel	H.D.G			
All enclosed Structural Steel Generally	Steel	H.D.G	Dulux	TBC	Satin
Posts, Kerb Rails, Balustrades, Steel	Steel	H.D.G	--	--	--

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Schedule of Exterior Colours

Location	Background	Material	Brand	Colour	Texture
Note 1 – All Colours are TBC - Provide <u>20 working days</u> notice of dates when colour choices are required.					
Note 2 – Prepare a colour board of all selected finishes for submission to the Client for Approval.					

3 INTERIOR COLOUR SCHEDULE

Surface	Material	Brand	Colour	Texture	Comments
Floors, (VIN 1)	Vinyl Sheet, Anti Static	Forbo, colorex EC	Montblanc 250204	-	-
Walls – Face block	CMB, Painted	Dulux	Timeless Grey-TBC	-	Semi-Gloss
Walls – Generally (PB-F)	P/Board flush finished, Painted	Dulux	Timeless Grey-TBC	-	Semi Gloss
Walls, Skirting, Vinyl	Sheet Vinyl, Coved	As specified in <i>Resilient Finishes</i>	To match floor	--	--
Walls, Skirting, Epoxy	Epoxy	As specified in <i>Painting</i>	To match floor	--	--
Walls, Skirting, Ducted (SKT-D) If-Req'd	Aluminium	Bris Aluminium	Clear Anodized	Satin	-
Doors, Solid Panels	Flush Timber /Ply	Dulux	Tristan - TBC	Semi Gloss	30% contrast against wall and Door Frame
Doors, frames	Steel	Dulux	To match wall	Semi Gloss	-
Ceiling, Plasterboard, Fire rated (CL-01)	P/Board, fire rated, flush finished, Painted	Dulux	Vivid White	Flat	-
Ceilings, Fibre Cement, Painted (CL-02)	Compressed Fibre Cement, Flush set, Painted	Dulux	Vivid White	Flat	-
Ceiling, Compressed Fibre Cement, Prefinished (CL-03)	Compressed fibre cement, Express Joint, pre-finished	CSR, Cemintel	Barestone, Pre-finished	Original	-
Desk	Laminate	Pre-finished	White	Flat	-
Note 1 – All Colours TBC - Provide <u>20 working days</u> notice of dates when colour choices are required.					
Note 2 – Prepare a colour board of all selected finishes for submission to the Client for Approval.					

End of section

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1 GENERAL

1.1 RESPONSIBILITIES

General

General: All adhesives, sealants and fasteners shall be appropriate to the materials and / or systems that are forming part of the installation. Selection shall be in accordance with manufacturer's recommendations and shall in no way affect the certification or warranties of other materials they are used with.

Fitness for purpose: Provide adhesives, sealants and fasteners accredited for the particular use, capable of transmitting imposed loads, sufficient to make sure the rigidity of the assembly, or integrity of the joint.

Finished surface: Provide adhesives and sealants that will not cause discolouration.

Compatibility: Do not use sealants or adhesives that are incompatible with the products to which they are applied.

Sealant replacement: Use sealants that can be safely removed without compromising the application of the replacement sealant for future refurbishment.

Movement: If an adhered or sealed joint may be subject to movement, select a system accredited to accommodate the projected movement under the conditions of service.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

1.3 INSPECTION

Notice

Inspection: Give notice so that inspection can be made of joints and penetrations prepared for the application of sealants.

1.4 PERFORMANCE

Adhesives and sealants

General: Provide adhesives and sealants capable of transmitting imposed loads, sufficient to ensure the rigidity of the assembly, or integrity of the joint and which will not cause discolouration of finished surfaces.

Compatibility: Do not use sealants or adhesives that are incompatible with the products to which they are applied.

Movement: Where an adhered or sealed joint may be subject to movement, select a system accredited to accommodate the projected movement under the conditions of service.

Refurbishment: Use sealants that can be safely removed and prepared for refurbishment.

Fasteners

Provide fasteners accredited for the particular use, capable of transmitting imposed loads and maintaining the rigidity of the assembly.

2 PRODUCTS

2.1 ADHESIVES

Standards

Mastic adhesive: To AS 2329.

Non-structural adhesive for timber: To AS 2754.3.

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Polyurethane adhesive for timber: To AS 2754.2, not inferior to Type 3, as defined in AS 2754.2.

VOC limits for adhesives

General: Comply with the criteria and provide adhesives with VOC content limits as specified in the *General requirements* worksection.

2.2 SEALANTS

Standards

General: To ISO 11600.

VOC limits for sealants

General: Comply with the criteria and provide sealants with VOC content limits as specified in the *General requirements* worksection.

Jointing materials

General: Provide recommended jointing and pointing materials which are compatible with each other and with the contact surfaces and non-staining to finished surfaces. Do not provide bituminous materials on absorbent surfaces.

Filler material generally: Provide sealant and bond breaking backing materials compatible with each other and the substrate and which are non-staining to masonry.

Bond breaking backing:

- Bond breaking materials: To be non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: To be closed-cell or impregnated, not water-absorbing.

Pointing and bedding

General: Provide sealants for fast moving joints in light weight building elements that are compatible with the contact materials.

2.3 FASTENERS

General

Masonry anchors: To be proprietary expansion or chemical types.

Plain washers: To AS 1237.1.

- Provide washers to the heads and nuts of bolts, and the nuts of coach bolts.

Plugs: To be proprietary purpose-made plastic.

Powder-actuated fasteners: To AS/NZS 1873.4.

Steel nails: To AS 2334.

- Length: At least 2.5 x the thickness of the member being secured, and at least 4 x the thickness if the member is plywood or building board < 10 mm thick.

Unified hexagon bolts, screws and nuts: To AS/NZS 2465.

Bolts

Coach bolts: To AS/NZS 1390.

Hexagon bolts Grades A and B: To AS 1110.1.

Hexagon bolts Grade C: To AS 1111.1.

Corrosion resistance

Steel products: Conform to the **Corrosion resistance table** or provide proprietary products with metallic and/or organic coatings of equivalent corrosion resistance.

Note: The building will be subject to wind borne salt particles. Installations not complying with the Table will not be accepted.

Corrosion-resistance table – Atmospheric corrosivity categories D and F to AS/NZS 2312

Situation	Material	Threaded fasteners and anchors		Powder actuated fasteners
		Minimum local metallic coating thickness (µm)	Material type	Minimum local metallic coating thickness (µm)
Internal		Electroplated zinc or Hot-dip galvanized	30	Stainless steel 316
External		Stainless steel 316		Stainless steel 316

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- Metric thread: To AS 1897.
- Imperial thread: To AS 4397.

Galvanizing:

- Threaded fasteners: To AS 1214.
- Other fasteners: To AS/NZS 4680.

Mild steel fasteners: Galvanize if:

- Exposed to weather.
- Embedded in masonry.
- In external timbers such as weatherboards or decking.
- In contact with chemically treated timber, other than CCA treated timber.

Nuts

Hexagon chamfered thin nuts Grades A and B: To AS 1112.4.

Hexagon nuts Grade C: To AS 1112.3.

Hexagon nuts Style 1 Grades A and B: To AS 1112.1.

Hexagon nuts Style 2 Grades A and B: To AS 1112.2.

Performance

Loads: Provide fasteners capable of transmitting the loads imposed, and sufficient to ensure the rigidity of the assembly.

Screws

Coach screws: To AS/NZS 1393.

Hexagon screws Grades A and B: To AS 1110.2.

Hexagon screws: Grade C To AS 1111.2.

Hexagon socket screws: To AS 1420 and AS/NZS 1421.

Machine screws: To AS/NZS 1427.

Self-drilling screws: To AS 3566.1 and AS 3566.2.

Tapping screws:

- Crossed recessed countersunk (flat – common head style): To AS/NZS 4407.
- Crossed recessed pan: To AS/NZS 4406.
- Crossed recessed raised countersunk (oval): To AS/NZS 4408.
- Hexagon: To AS/NZS 4402.
- Hexagon flange: To AS/NZS 4410.
- Hexagon washer: To AS/NZS 4409.
- Slotted countersunk (flat – common head style): To AS/NZS 4404.
- Slotted pan: To AS/NZS 4403.
- Slotted raised countersunk (oval – common head style): To AS/NZS 4405.

3 EXECUTION

3.1 ADHESIVES

Preparation

Substrates: Ensure substrates are:

- Clean and free of any deposit or finish which may impair adhesion.
- If framed or discontinuous, support members are in full lengths without splicing.
- If solid or continuous, excessive projections are removed.
- If previously painted, cracked or flaking paint is removed and the surface lightly sanded.

Contact adhesive

Precautions: Do not use if:

- A substrate is polystyrene foam.
- A PVC substrate will allow plasticiser migration.
- The adhesive solvent can discolour the finished surface.
- Dispersal of the adhesive solvent is impaired.

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Two way method: Immediately after application press firmly to transfer adhesive and then pull both surfaces apart. Allow to tack off and then reposition and press firmly together. Tap areas in contact with a hammer and padded block.

One way method: Immediately after application bring substrates together and maintain maximum surface contact for 24 hours by clamps, nails or screws as appropriate. If highly stressed employ permanent mechanical fasteners.

3.2 SEALANT JOINTING

Preparation for jointing

Cleaning: Cut flush joint surface protrusions and make good. Mechanically clean joint surfaces free of any deposit or finish which may impair adhesion of the sealant. Immediately before jointing remove loose particles from the joint, using oil-free compressed air.

Bond breaking: Install bond breaking backing material.

Taping: Protect the surface on each side of the joint using 50 mm wide masking tape or equivalent means. On completion of pointing remove the tape and remove any stains or marks from the surface.

Primer: Apply the recommended primer to the surfaces in contact with sealant materials.

Sealant proportions

Depth of elastomeric sealant: One half the joint width, or 6 mm, whichever is the greater.

Sealant application

General: Apply the sealant to dry joint surfaces using a pneumatic applicator gun. Ensure the sealant completely fills the joint to the required depth; that it is in good contact with the full depth of the sides and that there is no air trapped in the joint. Do not apply the sealant in unsuitable weather conditions (e.g. when the ambient temperature is outside the range 5 – 40°C) or outside the recommended working time for the material or the primer.

Joint finish

General: Force the sealant into the joint and finish with a smooth, slightly concave surface using a tool designed for the purpose.

Protection

General: Protect the joint from inclement weather during the setting or curing period of the material.

4 VERMIN AND WEATHER SEALING

- Allow to seal all external and internal gaps, holes, junctions, and crevices to the construction that would allow the entry of vermin, wind, or rain.
- Provide backing rods as necessary, and sealants that are appropriate for the use, and for the surfaces to be sealed.

5 FIRE-STOPPING

Schedule of fire-stopping	
Item	Description
General	Fire isolate the following rooms from the remainder of the building: - Comms Rm, - UPS/Batt. Rm - Clean Rm
Location	Refer to the <i>Drawings</i> for penetrations to the fire walls and ceiling. Ceilings: Allow to fire-stop penetrations to achieve 60/60/60 minimum FRL. Walls: Allow to fire-stop penetrations to achieve 90/90/90 minimum FRL. All penetrations must be Airtight
Standards	Service penetrations: to NCC clause C3.15 Control joints: to AS 4072.1

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Installer Qualifications	5 years minimum experience in the installation of fire stopping materials.
Preparation	Clean the substrates of any matter that may affect the bond of the fire stop material. Provide primers as required by the fire stop materials.
Materials	<u>Fire pillows will not be accepted.</u> Install fire-stop mortars, stuffing, sheets, sealants, foams, putty, and collars as required, strictly to the manufacturers' instructions.
Labelling	Label each fire-stopping installation with a permanently fixed tag or sticker containing the following information: - Manufacturer's name. - Name and address of installer. - Date of installation.
Certification	Submit evidence of compliance, accordance with the recommendations of AS 4072.1, Appendix B. Submit for Building, <i>Electrical</i> , <i>Mechanical</i> , and <i>Hydraulic</i> work as applicable. Submit a completed certification document for installed fire-stopped penetrations in the form of Figure B2 of AS 4072.1 Certification to be submitted by a QBCC Fire Occupational Licence
Schedule	Submit a schedule of installed fire-stopped penetrations and control joints in the form of Figure B2 of AS 4072.1.
Time of Submission	<u>5 working days before Practical Completion.</u>

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3. METALS AND PREFINISHES

1 GENERAL

1.1 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

2 PRODUCTS

2.1 METALS

Aluminium and aluminium alloys

Drawn pipe: To AS/NZS 1867.

Drawn rod, bar and strip: To AS/NZS 1865.

Extrusions: To AS/NZS 1866.

Plate and sheets: To AS/NZS 1734.

Coated steel

Electrogalvanizing ferrous hollow and open sections: To AS 4750.

Hot-dip galvanizing (zinc):

- Ferrous open sections by an in-line process: To AS/NZS 4791.
- Ferrous hollow sections by a continuous or specialised process: To AS/NZS 4792.

Metallic-coated sheet: To AS 1397.

- Thickness: Metal thicknesses specified are base metal thicknesses.

Steel wire: To AS/NZS 4534.

Stainless steel

Bars: To ASTM A276.

Plate, sheet and strip: To ASTM A240/A240M.

Welded pipe (round): To AS 1769.

Welded pipe (square): To ASTM A554.

Steel

Sheet: To AS/NZS 1595.

Structural bars and sections: To AS/NZS 3679.1.

Structural hollow section: To AS 1163.

Steel for prefinishes

Cold rolled bar: To AS 1443 'bright'.

Cold rolled sheet: To AS/NZS 1595.

- Designation: CA2S-E.

Electric resistance welded pipe: To AS 1450 'bright'.

3 EXECUTION

3.1 GENERAL

Brazing

General: Ensure brazed joints have sufficient lap to provide a mechanically sound joint.

Butt joints: Do not use butt jointing for joints subject to loads. If butt joints are used, do not rely on the filler metal fillet only.

Filler metal: To AS/NZS 1167.1.

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Damage

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General: Prefinishes are damaged, including damage caused by unauthorised site cutting or drilling, remove and replace the damaged item.

Finishing

Visible joints: Finish visible joints made by welding, brazing or soldering using methods appropriate to the class of work (including grinding or buffing) before further treatment such as painting, galvanizing or electroplating. Ensure self-finished metals are without surface colour variations after jointing.

Preparation

General: Before applying decorative or protective prefinishes to metal components, complete welding, cutting, drilling and other fabrication, and prepare the surface using a suitable method.

Standard: To AS 1627.

Priming steel surfaces: If site painting is specified to otherwise uncoated mild steel or similar surfaces:

- Prime after fabrication and before delivery to the works.
- After installation, repair damaged priming and complete the coverage to unprimed surfaces.

Repair

General: If a repair is required to metallic coated sheet or electrogalvanized or inline galvanized steel products, clean the affected area and apply a two-pack organic primer to AS/NZS 3750.9 or APAS-2916.

Welding

Aluminium: To AS 1665.

Stainless steel: To AS/NZS 1554.6.

Steel: To AS/NZS 1554.1.

3.2 ELECTROPLATING

Electroplated coatings

Chromium on metals: To AS 1192.

Nickel on metals: To AS 1192.

Service condition number: At least 2.

Zinc on iron or steel: To AS 1789.

3.3 ANODISING

Anodising

Standard: To AS 1231.

Thickness grade:

- Indoor applications: At least AA10.
- Outdoor applications: AA15 to AA20.

3.4 METAL SPRAYING

Metal spray

Standard: To ISO 2063.

Minimum thicknesses:

- Indoor applications: 125 µm.
- Outdoor applications: 175 µm.

Process: Electric arc.

Seal coat: Cover the metal spray finish with two coats of vinyl seal to a total dry film thickness of 80 µm.

3.5 POWDER COATING

Preparation

General: Use chemical pretreatments. If recommended, provide conversion coatings.

Aluminium: Pretreat to AS 3715 Appendix G.

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Galvanneal steel: Clean by immersing in a suitable alkaline or acidic solution, apply a zinc phosphate chromate conversion coating, rinse and degas.

Unprotected steel: Remove rust to the recommendations of AS 1627.4 to grade Sa 2½ of AS 1627.9. Clean by immersing in trichloroethylene or an alkaline solution, and apply a coat of iron phosphate.

Thermoset powder coating

Standards: To AS 3715 or AS/NZS 4506 as appropriate.

External use: APAS-0155/2. Refer also to the powdercoat specification for the following:

- Powdercoating for the aluminium door and window frames as specified in *Windows & Glazed Doors*, and *Doors*.
- Powdercoating for the aluminium screens as specified in *Metalwork*.

Finish: Full gloss.

Internal use: APAS-0155/1.

3.6 PREPAINTING

Air-drying enamel

Application: Spray or brush.

Finish: Full gloss.

General use:

- Primer: Two-pack epoxy primer to APAS-2971.
- Top coats: 2 coats to APAS-0015/1.

Oil resistant use:

- Primer: Two-pack epoxy primer to APAS-2971.
- Top coats: 2 coats to APAS-0024/1.

Equipment paint system

Description: Brush or spray application using paint as follows:

- Full gloss enamel finish coats, oil and petrol resistant: APAS-0024/1, two coats.
- Prime coat to metal surfaces generally: APAS-0032 or APAS-0162/1.
- Prime coat to zinc-coated steel: APAS-0134.
- Undercoat: APAS-0029.

High performance organic coatings

Description: Factory applied spray coatings on aluminium products, including polyvinylidene fluoride (PVF₂) coatings.

Standards: To AAMA 2604 and AS/NZS 2728.

Prepainted metal products

Standard: To AS/NZS 2728.

Product type: Not lower than the type appropriate to the field of application.

Stoving enamel

Application: Spray or dip.

Internal use:

- Primer: To APAS-0065.
- Topcoat: To APAS-0066/3.

Two-pack liquid coating

Application: Spray.

Finish: Full gloss.

Primer: Two pack epoxy primer to APAS-2971.

Topcoat:

- Internal use: Proprietary polyurethane or epoxy acrylic system.
- External use: Proprietary polyurethane system.

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1 GENERAL

1.1 AIMS

Responsibilities

Provide termite management materials and systems.

Conform to the **Schedule**.

1.2 CROSS REFERENCES

General

General: Conform to the *General requirements* worksection.

Associated worksections

Associated worksections: Conform to the following:

- *Concrete finishes, Blockwork, Structural.*

1.3 STANDARD

General

Termite barriers: To AS 3660.1.

1.4 INSPECTION

Notice

Inspection: Give sufficient notice so that inspection may be made of the completed termite barriers, before covering up.

2 PRODUCTS

2.1 NON-CHEMICAL BARRIERS

Concrete slab barrier

Standard: To AS 3660.1 Section 4.

Services penetration barrier type:

TermiMesh, or equal approved

Termite cap and strip shields

Standard: To AS 3660.1 Section 5.

Material:

TermiMesh, or equal approved

Woven stainless steel mesh barriers

Standard: To AS 3660.1 Section 6.

3 EXECUTION

3.1 NON-CHEMICAL BARRIERS

Concrete slab barrier

Standard: To AS 3660.1 Section 4.

Termite cap and strip shields

Standard: To AS 3660.1 Section 5.

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Work on stainless steel mesh barriers

Standard: AS/NZS 3660.1 Section 6.

3.2 COMPLETION

Termite barrier notice

Provide a durable notice permanently fixed in a prominent location to NCC Volume 1 Part B1.4 (i) and AS 3660.1 Appendix A.

Time for Submission: 5 working days before Practical Completion

Waste materials

Progressively cleaning: Ensure that no waste materials which could attract termites remain on the site.

Warranty

Terms: 10 years repair or replacement of structural timbers

5 years repair or replacement of timber trim and fixtures internal to the building

Time for Submission: 5 working days before Practical Completion

Completion inspection

At the end of the defects liability period, inspect the termite control systems and submit a report on their efficacy and status.

Time for Submission: 5 working days before the end of the Defects Liability period.

4 SELECTIONS

4.1 PHYSICAL TERMITE BARRIERS

Schedule of physical termite barriers	
Requirement	Provide TermiMesh stainless steel mesh barriers to all new concrete works, all to the TermiMesh printed instructions and details.
Slab penetrations	Treat penetrations in the ground floor concrete slabs including for services.
Slab control joints	Treat new concrete slab control joints and footing/slab joints, including all saw joints, keyed joints, dowel joints, isolation joints.
Slab junctions	Treat junctions between interior and exterior concrete slabs.
Slab perimeters	Treat perimeters to concrete slabs, including at slab/exterior paving junctions and the like where the visible slab is less than 80mm.
Hollow steel members	Ensure that posts, frames, and the like, if box section, are capped to exclude any concealed path for termites.
Concrete slab edge	Ensure that minimum 80mm of the concrete slab edge is exposed, so that termite tracks are visible.
Appendages	Ensure that appendages such as downpipes, services, and the like, are separated from the building by a gap of not less than 25mm, to allow clear and uninterrupted visual inspection across the inspection zone.
Completion	Attend to Notice, Waste materials, and Warranty, as specified in Completion , in this <i>Worksection</i> .
Completion inspection	Allow to inspect the termite control systems at the end of the <i>Defects Liability Period</i> , as specified in Completion , in this <i>Worksection</i> .

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6. BUILDING ACCESS SAFETY SYSTEMS

1 GENERAL

1.1 SYSTEM DESIGN

Design and installation responsibilities

Generally: Design, supply and install a complete roof access safety and fall restraint and arrester system as specified below, as shown on the drawings, and that complies with the requirements of the relevant authorities, including testing, certification, user manuals and training.

Design: Fully design the system to the parameters including system types as specified and as shown on the drawings.

Designer: Accredited Height Safety Installer with calculations and certification by a professional engineer employed by the Contractor.

Certification: Obtain and supply certification that the design and the installation and all items installed and/or provided for the roof and facade access safety systems meet the requirements for their intended use and meet the minimum standards required by any and all relevant authorities having jurisdiction over the installation and its use and their own published figures.

Completion certification: Provide inspection, testing and certification by a manufacturer registered and accredited height safety installer and certifying professional engineer. The Certification must:

- State the date of installation and by whom
- State the date of the next test and period of validity and display the certificate at the access points of the system.
- State the maximum number of workers that are allowed to be connected to the system at any one time.

Conformance records: Submit conformance records for Provision for Safe Working on Roofs as follows:

- A log for Equipment Data and Maintenance Records to AS/NZS 1891.4.
- Certification from a professional engineer (to AS/NZS 1891.4 – 1.4.2) employed by the Contractor that the complete height protection system including all associated building works is in full compliance with the specification and all statutory requirements.
- A copy of a NATA registered Testing Authorities report of the ultimate load testing of the roof and façade harness anchors.

Appearance: Design and provide a system including signage to be unobtrusive and not unsightly, all to approval. Components shall be small and neat in appearance, generally set out parallel to the building grid, consistent throughout.

Shop drawings and documentation: Submit shop drawings showing set-out and details of all components of the system including signage, together with manufacture's Installation Data Sheets/Specification Manual and with calculations.

Responsibilities: Design, document, install and implement the systems including

- Review drawings, liaise with the Principal, architect and engineers to ensure the system is compliant and functional.
- Design the system.
- Document an Operating & Maintenance Manual including:
 - . Manufacturer's and supplier's related documents.
 - . Safe work method statement (SWMS) for the designed systems.
 - . User instructions.
 - . Supervision level required to use the designed installation.
 - . Method of rescue.
 - . Maintenance requirements.
- Provide an on-site system induction.

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Guidance, Codes of Practice, Regulations and Standards: Comply with WorkCover Queensland Worksafe applicable Publications and Guidelines

- QLD Work Health and Safety Regulation 2011
- Code of Practice for Managing the Risk of Falls in the workplaces
- AS 1657 Fixed Platforms, Walkways, Stairways and Ladders
- AS/NZS 5532 Manufacturing requirements for single-point anchor device used for harness-based work at height
- AS/NZS 4488 Industrial Rope Access Systems
- AS/NZS 4488.1 Industrial Rope Access Systems
- AS/NZS 4488.2 Industrial Rope Access Systems
- AS/NZS 1891.1 Industrial Fall Arrest Systems and Devices
- AS/NZS 1891.2 Industrial Fall Arrest Systems and Devices
- AS/NZS 1891.3 Industrial Fall Arrest Systems and Devices
- AS/NZS 1891.4 Industrial Fall Arrest Systems and Devices

Metalwork: Conform to the *Metalwork* worksection for general requirements for metalwork including fabricated metalwork item and for floor grille walkways and ladders.

Finishes: Conform to the *Steel – protective paint coatings* worksection for paint finishes to any required steel components.

Roofing and façade: Maintain the waterproofing integrity of roofing and cladding without damage or distortion. Maintain the structural integrity of the supporting elements.

Systems generally

Fall restraint systems: Cable based systems positioned so that the user cannot reach a fall hazard when continuously connected to the system using a standard 2 m shock absorbing lanyard. Adjustment of the Personnel Protective Equipment (PPE) is not required whilst connected to the system.

- Demonstrators: Use only manufacturer's representatives competent in connecting the appropriate travelling device to and from the cable.

Fall arrest systems: Either cable based where the user is continuously attached to the system, rope based series of anchor points or a single anchor point from which the users can attach themselves when working at height. Whilst attached to these systems they are at risk of falling. The system relies on a rescue plan being in place.

Ladder access: Vertical systems comprising top, intermediate and bottom anchor sets and 8 mm 1 x 19 grade 316 stainless steel cables.

Personal protective equipment (PPE):

- Harness: Supply two full body harnesses with shock absorbing lanyards to AS/NZS 1891.1 and to suit cable attachment.
- Storage: PPE storage holdall supplied by the manufacture.

Systems requirements

The systems shall include as shown on the drawings and as follows, and irrespective of being shown on drawings as necessary for safe access:

- Safe access to gutters, that allows safe access for regular cleaning of the full length of each gutter.
- Safe access to roof mounted plant and equipment that require regular maintenance.
- Safe access to all roof areas and perimeters including within 2.5 m of fall hazards not otherwise protected by parapets or guard rails.
- Static permanent safety lines where shown on drawings and additionally where appropriate or necessary to permit safe access.
- Anchor points only if and where necessary for access to areas of roof not able to be accessed by static permanent safety lines.
- Permanent ladders where permitted generally only if and where shown on the drawings.
- Ladder brackets where necessary at appropriate and approved location(s). Provide the loose ladder(s) of suitable length as part of the system to be stored where directed.

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1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *General requirements.*
- *Adhesives, sealants and fasteners*
- *Metals and prefinishes*
- *Roofing*
- *Cladding*
- *Metalwork*

1.3 INTERPRETATION

Definitions

General: For the purposes of this worksection the definitions given in AS/NZS 1891.1 and AS/NZS 5532 apply.

1.4 SUBMISSIONS

Certification

General: Submit certification of installed system.

Instruction manual

General: Submit the manufacturer's instruction manuals.

Warranties

Requirement: Submit the manufacturer's published product warranties for each type of building access safety system.

1.5 INSPECTION

Notice

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

- Shop fabricated or assembled items ready for delivery to the site.
- Commencement of shop or site welding.
- All equipment attachments with concealed fixings, before they are covered.
- Site erected assemblies on completion of erection, before applying finishes.
- Steel surfaces prepared for, and immediately before, site applied finishes.

Installation inspector: Registered height safety inspector or engineer.

2 PRODUCTS

2.1 GENERAL

Marking

Identification: Mark to show the following:

- Manufacturer's identification.
- Installer's contact details.
- Intended location.
- Load rating and direction.
- Current inspection/service date.
- Batch number or serial number of the components.

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3.2 FALL PROTECTION SYSTEMS

Components

General: All components of the roof access safety and fall restraint and arrester system shall be as available from the one approved supplier / installer and / or shall be integrated to provide comprehensive and complete access and safety throughout.

- Suitable supplier / installer: Aegis Sales & Service (Authorised MSA Latchways Installers)
- Components: Provide all required components including but not limited to as specified herein and as shown on the drawings.

Static permanent safety line: The roof access safety systems shall generally comprise a static line fall restraint and arrester system which shall be designed for 3 persons at any one time to each length under fall arrest conditions, and shall generally comprise:

- Permanent continuous grade 316 stainless steel cables;
- Anchor points constant force posts that affix to roof sheet profiles not the structural framework and suited to the roof sheeting type;
- Personnel attachments that can travel freely along the cable and pass over the intermediate supports without detaching;
- Full body harnesses with shock absorbing lanyard and transfastener.

Anchor points: Provide anchor points only if and where necessary for access to areas of roof and façade not able to be accessed by static permanent safety lines, strategically positioned as necessary, that allow safe access to the entire roof areas and perimeters and to the facades.

Fall arrest: The roof and facade access safety systems shall generally be fall restraint systems. Where appropriate to the situation to enable suitable access provide fall arrest systems, either static permanent safety line, or anchor points where permitted. All fall restraint systems shall be designed for and capable of fall arrest.

Roof fixing: Support brackets, anchors and fixings shall direct fix to roof profile or purlins where applicable, shall be designed to reduce the transmitted load to the structure, and not require additional structural members or modifications below the roofs. System shall be small and neat in appearance.

Waterproofing: Seal and make waterproof all fixings and penetrations. Coordinate with the roofing subcontractor. Incorporate 'Dektite' or approved equal flashing where required by the system installed in accordance with **Flashings, cappings and trays**. Set-out and install to not block water flow. Avoid laps between adjoining roof sheets.

Materials: All components shall be marine grade 316 stainless steel. Provide galvanic isolation from roof sheeting.

Harness

General: The safety system shall be designed to incorporate the wearing of harnesses by the operators. Harness and lanyard shall be supplied as part of the system.

Type: The harness shall be appropriate to the system(s). Generally provide standard 2 metre lanyard to fall restraint systems. Provide harness with lanyard suited to fall arrest systems only where applicable.

Required: 2 sets of harnesses shall be supplied and wall mounted within a service room in a location as directed.

Standards: Refer to Draft Standard DR 93160 and comply with the conditions of this Standard.

3 EXECUTION

3.1 INSTALLATION AND TESTING

General

Drilled-in anchors: Load test drilled-in anchors used in shear and not in axial tension (direct pull-out) before use.

Standards

Industrial fall arrest systems: To AS/NZS 1891.2.

Industrial rope access systems: to AS/NZS 4488.1.

Contractor

Installer: Registered Installer, approved by the manufacturer.

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Installation

APPROVED in accordance with the Building Act 1975. Refer to the conditions of approval on the Decision Notice. All endorsements made on the plan in accordance with the Building Act 1975.

General: In accordance with manufacturer's written instruction and to applicable standards.

Installer: Registered Installer approved by the manufacture.

Delivery: Deliver the fall protection assembly ready for installation as follows:

- Manufacturer's identification, batch number or serial number of the components.
- Load rating and direction.
- Current inspection/service date.
- Clearly labelled to show the intended location.
- In a separate dust and moisture proof package.
- Including the necessary templates, fixings and fixing instructions.
- Coordinate with other subcontractors including the roofing subcontractor. Ensure fastening system suits and does not compromise the roofing system including that it does not affect waterproofing and does not restrict thermal movement of the clip fixed roofing system. Submit details of fixing system and acceptance by the roofing subcontractor.

Labels and signage

General: To AS/NZS 1891.4 clause 2.2.9.

3.2 SITE TESTING

General: Submit results, as follows:

- Proof load: Test to determine if the substrates and systems are adequate. Performed after installation and at periodic inspections.

Proof load test for anchors: To AS/NZS 4488.2 clause 5.3.

Proof load test for horizontal lifeline and rail systems: To AS/NZS 1891.3 clause 3.1.

Drilled-in anchors: Load test drilled-in anchors used in shear and not in axial tension (direct pull-out) before use.

3.3 OPERATION AND MAINTENANCE MANUAL

Operation and maintenance manual: A printed manual shall be provided, with the Principal named specifically to the building application, setting out full instructions for the safe access to the roof and façade, and including full information on the necessary associated equipment storage, maintenance and use, staff training and roof security. Copy of the Operation Manual shall be kept on site and be available to WorkCover officers.

Training: Provide one on site session to users to show the correct operation and usage of the system.

Signs: A full system of signage for safe access to the roof and use of equipment to AS/NZS 1891.4 clause 2.2.9 shall be supplied and installed including but not limited to warning signs and directional signs. Signs shall be in colour fast epoxy, red lettering on a white background over non ferrous substrate and fixings. Sign at points where harness has to be detached from one line and attached to a second line are to indicate safe procedures. Signs at any special hazard location are to be provided and installed. Signs indicating lower level safety lines creating a hazard to persons crossing the line are to be provided and installed.

3.4 MAINTENANCE

General

Preventative and mandatory system maintenance: By an Accredited Height Safety Inspector/Certifier, in conformance with AS/NZS 1891.4 Section 9 and manufacturer's maintenance/recertification recommendations.

Checklist for all inspections: To AS/NZS 1891.2 Supp 1 Table 8, and AS/NZS 1891.4 Section 9 and Appendices C and D.

The installer/competent person: To AS/NZS 1891.2 clause 1.2.1.

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Periodic inspections

Standard: To AS/NZS 1891.2 clause 9.2.

Completion certificate:

- Provide inspection, testing and certification by an Accredited Installer and/or Accredited Height Safety Inspector:
 - . Upon completion of the installation at the date for practical completion.
 - . Upon the expiry of the defects liability period or 12 months after completion of the installation whichever is the lesser, and valid for a further 12 months period.
- Record the date of the next system inspection and period of validity and display the certificate at the access points of the work area or on the individual system components where provision is made.

Regular scheduled periodic inspections

Standard: To AS/NZS 1891.2 clause 9.2.

Completion certificate:

- Provide inspection, testing and certification by an Accredited Installer and/or Accredited Height Safety Inspector:
 - . Upon completion of the installation at the date for practical completion.
 - . Upon the expiry of the defects liability period or 12 months after completion of the installation whichever is the lesser, and valid for a further 12 months period.
- Record the date of the next system inspection and period of validity and display the certificate at the access points of the work area or on the individual system components where provision is made.

Inspection after a fall or other event

Standard: To AS/NZS 1891.2 Supp 1 clause 9.3.

Proof testing of drilled-in anchorages

Standard: To AS/NZS 1891.2 Supp 1 clause 9.4.

On-going maintenance

Certificate: Submit the completion certificates and notify the proprietor of the requirement for continued interval testing.

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1. SELECTIONS

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4.1 ROOF ACCESS SAFETY SYSTEM

Schedule of roof access safety system	
Requirement	Design and provide a roof access safety system to: - access the roofs so as to service the eaves gutters and if any items roof mounted. - System is to be complete with all components including ladders (except as noted in this section), hatches, anchor points, static lines, walkways, lanyards, harness etc ready for direct handover and operation by Client.
Access Concept	Design and provide a roof access safety system to allow: - Fixed ladder Bracket from Carparking Area to Roof Gutter. - Anchor points from ladder bracket location across the complete roofed areas to facilitate safe access generally.
Standards	As specified in this worksection.
Submissions	Submit details of the proposed access systems for review <u>60 days prior to installation</u> for review by the Superintendent.
Certification	As specified in this worksection.
Completion	Clean all roof and gutters free of swarf and builders waste caused by this trade. Make good any damage to adjacent surfaces caused by this trade. Allow to provide training for use of system to nominated Client representatives.
Operation and maintenance manual	Provide the following for insertion in the Operation and Maintenance Manuals, as specified in <i>General requirements</i> : - Installers details and accreditation - Manufacturers data for the products installed - Certification that the system has been designed and provided to the requirements of AS/NZS 1981, AS 1657, and AS 1170 Part 1, and to the manufacturers printed instructions - 5 years manufacturers' warranty for the work, as specified in <i>General requirements</i>

4.2 ROOF ACCESS LADDER LANDING BRACKET

Schedule of roof access ladder landing bracket	
Code	AL-01
Requirement	Design and provide a permanent ladder landing bracket. Provide shop drawings for approval by Principals Representative.
Location	As indicated on the Drawings. Preferred location to be agreed with Principals Representative before undertaking shop drawings.
Type, Support Bracket	Sayfa Katt ladder with support brackets by Aegis Safety. Single person use with approved ladder (min. 120kg weight)
Accessories	Provide all accessories as required for handover to the Client
Signage	Statutory signage. Instructional signage provided by the manufacturer.
Standard	As noted in this worksection
Installation	To the manufacturers printed instructions.

End of section

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1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Carry out demolition, as documented.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *General requirements.*
- *Consultant's documents*

1.3 STANDARD

General

Demolition: To AS 2601.

1.4 INTERPRETATION

Definitions

For the purposes of this worksection, the following definitions apply:

- Demolition: The complete or partial dismantling of a building or structure, by pre-planned and controlled methods or procedures.
- Dilapidation record: The photographic or video and written record made before commencement of demolition work of the condition of the portion of the existing building being retained, adjacent buildings, and other relevant structures or facilities.
- Dismantle: The reduction of an item to its components in a manner to allow re-assembly.
- Recover: The disconnection and removal of an item in a manner to allow re-installation.

1.5 INSPECTION

Notice

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

- Services before disconnection or diversion.
- Contents of building before commencement of demolition.
- Site after removal of demolished materials.
- Services after reconnection or diversion.

1.6 SUBMISSIONS

Authorities

Evidence of compliance: Before commencing demolition, submit evidence of the following:

- Requirements of authorities relating to the work under the contract have been ascertained.
- A permit to demolish has been obtained from the appropriate authority.
- Certification that each person having access to the construction site has completed an OHS induction training procedure which is site-specific.
- Precautions necessary for protection of persons and property have been taken and suitable protective and safety devices provided to the approval of the relevant authority.
- Treatment for rodent infestation has been carried out and a certificate has been obtained from the appropriate authority.
- Fees and other costs have been paid.

Investigation and work plan

Work plan: Submit the work plan before demolition or stripping work. Include the check list items appropriate to the project from AS 2601 Appendix A, and the following information:

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The method of protection and support for adjacent property.

Locations and details of necessary service deviations and terminations.

- Confirmation of the sequence of work.
- Requirements of AS 2601 Section 2 Planning and execution.
- If the demolition program results in components temporarily cantilevered, provide a certificate from a professional engineer.
- Proposals for the safe use of mobile plant on suspended structural members including provisions for the protection of lower floors in the event of structural failure.
- If implosion methods are proposed, provide a separate report of methods and safeguards.
- Wheel loads of tipping or loading vehicles.

Hazardous materials

Audit: Prepare a Hazardous substances management plan to AS 2601 clause 1.6. Include the following:

- Asbestos or material containing asbestos.
- Flammable or explosive liquids or gases.
- Toxic, infective or contaminated materials.
- Radiation or radioactive materials.
- Noxious or explosive chemicals.
- Tanks or other containers which have been used for storage of explosive, toxic, infective or contaminated substances.

Off site disposal

Disposal location: Submit the locations and evidence of compliance with the relevant authorities for the disposal of material required to be removed from the site.

Records

Dilapidation record: Submit a copy of the dilapidation record for inspection.

2 PRODUCTS

2.1 DEMOLISHED MATERIALS

Demolished materials

Ownership: Ownership of demolished materials is described in the **Demolished material classes table**.

Demolished material classes

Ownership and implementation: Comply with the **Demolished material classes table**.

Demolished material classes table

Class	Requirement	Ownership
Recovered items for re-use in the works	NIL	Principals Delegate
Demolished for removal	Remove from the site demolished materials Transit: Prevent spillage of demolishing materials in transit	Contractor

3 EXECUTION

3.1 SUPPORT

Temporary support

General: If temporary support is required, certification for its design and installation is required from a professional engineer engaged by the contractor.

Existing buildings: Until permanent support is provided, provide temporary support for sections of existing buildings which are to be altered and which normally rely for support on work to be demolished.

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3.2 PROTECTION

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Permissions

General: Contact EQL PM and arrange any required on-site/ in-building permissions before commencement of on-site works. Provide at least 7 working days written notice with confirmation the day before.

Dial Before You Dig

General: Contact DBYD and obtain the current information before commencement of any on-site works.

Encroachment

General: Prevent the encroachment of demolished materials onto adjoining property, including public places.

Dust protection

General: Provide dust-proof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Security

General: If a wall or roof is opened for alterations and additions, provide security against unauthorised entry to the building.

Temporary screens

General: Fill the whole of designated temporary openings or other spaces using dustproof and weatherproof temporary screens, fixed securely to the existing structure, and install to ensure appropriate shedding of water to avoid damage to retained existing elements or adjacent structures and contents.

Type: Timber framed screens sheeted with fibre cement and painted. Seal the junctions between the screens and the openings.

Temporary access

General: If required, provide a substantial temporary doorset fitted with a rim deadlock, and remove on completion of demolition.

3.3 DEMOLITION – BUILDING WORKS

Dilapidation record

Purpose: Use the dilapidation record to assess the damage and making good arising out of demolition work.

Availability: Keep the records of the investigations on site and available for inspection until the date of practical completion of the contract.

Concrete slabs

General: Using a diamond saw, neatly cut back or trim to new alignment with a clean true face existing concrete slabs to be partially demolished or penetrated.

Explosives

General: Do not use explosives.

3.4 DEMOLITION – BUILDING SERVICES

General

General: Decommission, isolate, demolish and remove from the site all existing redundant equipment including associated components that become redundant as a result of the demolition.

Breaking down: Disassemble or cut up equipment where necessary to allow removal.

Recovered materials: Recover all components associated with the listed items. Minimise damage during removal and deliver to the locations scheduled.

Refrigeration systems

General: Undertake demolition work on refrigeration systems in conformance with:

- AS/NZS 1677.2 Appendix F.
- The recommendations of SAA HB 40.1 and SAA HB 40.2.

Re-used components

General: Clean re-used components and test for compliance with current Australian Standards before returning to service. Provide results of compliance tests.

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3.5. HAZARDOUS MATERIALS

Identified hazardous materials

Register: Hazardous materials have been identified as present on site and a Hazardous materials register has been prepared.

NOTE: Refer Sub Station Asbestos Report - BEFORE undertaking any connection works within the existing Substation Building restricted access area/s. Nil Asbestos is expected given the original Construction date of the Existing Building.

Refer Contamination Testing Report in Appendix = Nil found during select testing.

Any suspect items that are uncovered during excavation works will need to be clearly identified / isolated and EECL contacted immediately to test and advise further.

Hazardous materials removal

Standard: To AS 2601 clause 1.6.2.

Requirement

- submit a copy of the 'Ergon Approved' licence of the Certified Asbestos Removalist 5 working days before commencement of removal work.
- Submit an Asbestos Removal Control Plan 5 working days before commencement of removal work
- Conform to the requirements of the Commonwealth Government Code of Practice for the Safe Removal of Asbestos, 2nd Edition, published by the National Occupational Health and Safety Commission.

3.6 COMPLETION

Notice of completion

General: Give at least 7 working days notice of completion of demolition so that adjacent structures may be inspected following completion of demolition.

Making good: Make good any damage arising out of demolition work. Obtain written acceptance from the owner of each adjoining property of completeness and standard of making good.

Temporary support

General: Clear away at completion of demolition.

4 SELECTIONS

4.1 DEMOLITION

Recovered items for re-use in the works schedule

Item	Location for re-use
Refer drawings if applicable	Refer drawings if applicable

Demolish for removal schedule

Item
All items and materials not noted for re-use.

End of section