



Rural City of
Wangaratta

new doors in existing
4
DOCK

Specification for:

Wangaratta Sports & Aquatic Centre (WSAC) Changerooms & Amenities

41 Schilling Dr, Wangaratta VIC 3677

Principal: Rural City of Wangaratta

Architect: Dock4 Architects

14th July 2026

Version 1.4 -TENDER

WSAC CHANGEROOMS & AMENITIESDate: 14th July 2026

Revision: 1.4 TENDER

CONTROL SHEET

REV	SECTION	PAGE	REVISION DESCRIPTION	APPROVED /DATE
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Schedules & Appendices

01	Finishes, Sanitary, Doors, Fittings & Signage Schedules (Version V1.4)	(15 pages)
02	Door Hardware Schedule (108275-2, June 22 nd 2026)	(23 pages)
03	Level & Feature Survey -A3 (CAD file available on request)	(1 page)
04	Existing WSAC Structural IFC drawings (GA drawings only -full set available on request)	(19 pages)
05	RCoW Sustainable Council Building Policy (Feb. 2023) -refer 0172b Environmental management for the application of this policy	(5 pages)
06	Asbestos Risk Assessment report (to existing Netball Pavilion) -Safeair 27/05.26	(20 pages)
07	Tender Option scope detail (Changeroom 2 and Amenities 2.1 & 4.1 Fitout)	(1 page)

0144 PRELIMINARIES - AS 2124 (MODIFIED)**1 GENERAL****1.1 GENERAL****General conditions**

Requirement: To Conditions of Contract (modified AS 2124).

1.2 PROVISIONAL SUMS

Refer Annexure Part C of the Contract.

1.3 SCOPE OF WORKS

This contract comprises the following works:

- Construction of new single-level Netball & Basketball changerooms and amenities and kitchen fitout, all within the existing recently-completed shell space at Wangaratta Sports and Aquatic Centre (WSAC).
- The work includes new ground floor and first floor slabs, full fitout of changerooms, amenities and kiosk etc, minor alterations to the external wall and services including backbone elements for a future first floor fitout (not in this contract).
- Demolition of the existing Netball Pavilion following completion of the above, including making good the site.
- Preparation of a Division 6 Asbestos & Hazardous Materials audit covering the existing Netball Pavilion (refer Asbestos Risk Assessment report, Appendix to this Specification) -refer 201 Demolition, clause 1.2 for timing requirements for this report.

1.4 TENDER OPTIONS

Note to Tenderers: This section 1.4 will not be included in the execution version of the Contract. Instead, if Council accepts this tender option, it will be included in the scope of works and the Contract Sum.

Tender Option 1 -Changeroom 2 and Amenities 2.1 & 4.1 Fitout

General: The works are to be priced as documented on the Tender drawings and as specified in the Tender Specification. The tenderer is to provide a Tender Option to delete the fitout of Changeroom 2 and Amenities 2.1 and 4.1 -refer Tender Forms and tender documentation including Appendix 07 (Tender Option scope detail) to this Specification for details.

Pricing: The tender pricing option is to reflect the total adjustment to the Contract Sum required should this option be selected by the Principal, including (but not limited to) the cost of all trades involved including ancillaries and sundry works required, overheads and profit etc, to reflect a single lump sum adjustment to be made reflecting the amendment in total.

1.5 RESPONSIBLE CONSTRUCTION**Demolition & construction waste material to be diverted from landfill**

The Contractor must prepare a methodology to achieve responsible minimum recycling rate for all demolition and construction waste and provide monthly reports for the project record.

1.6 CONTRACT DOCUMENTS**Contractor-supplied documents**

Number of copies: provide electronically

Confidential information

General: The following principal-supplied information is confidential: As referred to in the Condition of Contract.

Confidentiality agreement: Required.

1.7 ASSIGNMENT AND SUBCONTRACTING**Selected subcontract work**

Facilities: Refer to Item 20 of Annexure Part A to the Conditions of Contract.

Novated subcontract work

Facilities: Refer to novated subcontract documentation.

Contractor/novated subcontractor interfaces: Refer to novated subcontract documentation.

Separate contracts

Work concurrent to this contract: The following works on site, to be carried out by persons engaged by the principal, are not included in this contract: n/a

Work before this contract: n/a

Work subsequent to this contract: n/a

1.8 LEGISLATIVE REQUIREMENTS**Compliance**

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

Prior applications and approvals schedule

Prior notices given and applications made	Fees/charges paid	Permits, approvals and authorisations received
Planning Permit	N/A	N/A
Building Permit	By Council	TBA
All statutory construction stage inspections as required by the Building Surveyor and/or Structural/Civil Engineer	By Council	N/A
All construction stage re-inspections required by the Building Surveyor or Structural/ Civil Engineer due to initial failure of a statutory inspection, and all additional inspections required due to the Contractor's work methodology (eg staged slab pours)	By CONTRACTOR	N/A

The Contractor is otherwise responsible for applying for, obtaining and complying with all permits, approvals and other authorisations.

1.9 PROTECTION OF PEOPLE AND PROPERTY

Nothing in this section 1.9 limits the general nature of the Contractor's obligations arising out of clause 15 and clause 15A of the Conditions of Contract.

Occupied premises

General: For the parts of the site documented in the **Occupied premises schedule**:

- Allow occupants to continue in secure possession and occupancy of the premises for the required period.
- Maintain safe access for occupants.
- Arrange work to minimise nuisance to occupants and for their safety.
- Protect occupants against weather, dust, dirt, water or other nuisance.

Proposals: Submit details of proposed methods.

- Purpose of submission: For information.
- Timing of submission: Before commencement of work.

Occupied premises schedule

Occupants	Occupied premises	Period of occupancy
Surrounding area users	All areas outside the designated site boundaries –refer Siteplan	Duration of the Works

Safety

Accidents: Promptly notify the superintendent 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: For information.

- Timing of submission: Within one day after accident

Protective clothing

Requirement: Make available protective clothing for the use of visitors, as follows:

- Safety helmets: Type 1 to AS/NZS 1801 (2024).
- High visibility safety vests: To AS 4602.1 (2024).

Certification: Required.

- Certification provider: An organisation accredited by the Joint Accreditation System of Australia and New Zealand (JASANZ).
- Number of helmets: 4 No.
- Number of high visibility safety vests: 4 No.

1.10 CARE OF THE WORK AND REINSTATEMENT OF DAMAGE/DAMAGE TO PERSONS AND PROPERTY OTHER THAN THE WORKS

Nothing in this section 1.10 limits the general nature of the Contractor's obligations arising out of clause 16 of the Conditions of Contract.

Reinstatement

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

Accessways and services: 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. Rectify immediately any obstruction or damage to such services and provide temporary services whilst repairs are carried out.

Trees and properties: Do not interfere with or damage trees and properties that are to remain on or adjacent to the site, including adjoining property encroaching onto the site. Rectify immediately any interference or damage to such trees and properties.

Existing services

Service to be continued: Repair, divert or relocate service, as documented.

Trenches: If the existing service crosses the line of a required trench or will lose support when the trench is excavated, provide permanent support for the existing service.

Redundant services: Remove redundant parts and make safe.

Interruptions to services: Minimise the number and duration of interruptions.

Changes to existing services: Submit proposals.

- Purpose of submission: For review.
- Timing of submission: Before starting work to existing services.

1.11 SITE**General**

Public viewing area: n/a

Possession

General: Approved uses not connected with the works: None

Access for others

General: The following persons require, and are authorised to have, access to the site: As per clause 27.2 and clause 52 of the Conditions of Contract.

Site restrictions

Site limitations: Without limiting the general nature of the Contractor's obligations arising out of clause 13 of the Conditions of Contract, comply with the following restrictions on the use of the site: Statutory regulations (including EPA requirements) and Council conditions regarding work hours, noise levels etc are to be observed, unless authorised by the Principal.

Access area restrictions: Without limiting the general nature of the Contractor's obligations arising out of clause 27.1A and clause 52 of the Conditions of Contract, access onto and within 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 following areas: refer Siteplan for site boundaries and site areas –these areas are to be secured with temporary enclosures (refer below).

Secure areas

Designated secure areas: refer Siteplan for site boundaries and site areas –these areas are to be secured with temporary enclosures (refer below).

Conditions of entry: n/a

Entry permits: Make available, to persons entering designated secure areas, valid entry permits. Make sure these persons comply with conditions of entry.

Personnel: Submit the full name, address, and date and place of birth of persons required to enter designated secure areas.

- Purpose of submission: For review.
- Timing of submission: At least 14 days before entry is required.

Disposal

- No excavated material is to be disposed of on site. Unsuitable Surplus material from all excavations (footings, services trenches etc) is all to be transported to a suitable authorised location to be agreed with Council's Superintendent prior to the transportation of any material.

1.12 SETTING OUT THE WORKS**Surveys**

Setting out: Confirm setout dimensions and pitch and pavilion positions with superintendent before commencing works.

Check surveys: Required.

Final survey: Required -provide as-built survey on completion, in both CAD and .Pdf formats.

1.13 CLEANING UP**Final cleaning**

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

Samples: Remove non-incorporated samples, prototypes and sample panels.

Pest eradication

Requirement: Employ suitably qualified pest exterminators. At practical completion, verify that completed works are free of pest types documented in the **Pest eradication treatment schedule**.

1.14 MATERIALS, LABOUR AND CONSTRUCTION PLANT**General**

Temporary works: Provide and maintain required hoardings, barricades, guards, fencing, site accommodation & amenities, shoring, temporary roadways, footpaths, signs, lighting and traffic management.

Apprentice employment policy

Policy statement: to Wangaratta Rural City Council policy requirements (if any).

Principal's existing roads: Use only designated roads.

Parking

Principal's existing parking areas: Use only designated parking areas.

Number of spaces: refer Siteplan for location.

Location: Existing carpark hardstand areas.

Principal's site office

General: Not required.

Temporary fence

Requirement: To contractor's site security requirements.

Temporary services & accommodation

Requirement: To contractor's requirements (standard builder's site accommodation & amenities for the project will be required -no parts of the existing buildings are available for temporary site accommodation).

Use of existing services

General: Existing services are not available on site. Provide and pay for all other temporary connections, usage and disconnections as required.

Project signboards

General: Project-specific signboard (refer Provisional Sums), approx. 1000 mm (h) x 2000 mm (w):

- Locate where directed.
- Maintain in good condition for duration of the work.
- Obtain permission for removal.
- Remove on completion.

Other signboards: Obtain approval before display of advertisements or provision of other signboards.

Contractor's representative

General: Must be accessible, and fluent in English and technical terminology.

Contacts: Submit names and telephone numbers of responsible persons who may be contacted after hours during the course of the contract.

- Purpose of submission: For information.
- Timing of submission: At the first site meeting.

Control of runoff stormwater

Requirement: *Refer 0172 Environmental Management*

1.15 WORKING HOURS

General

Monday to Friday 7.00am -6.00pm, Saturday 7.00am-2.00pm (unless Netball is in progress).

Works are not to be undertaken on public holidays or Sundays without specific approval from superintendent. Saturday works are to be discussed with and agreed upon with the Superintendent prior to the commencement of construction.

1.16 PROGRAMMING

Nothing in this section 1.16 limits the general nature of the Contractor's obligations arising out of clause 33 of the Conditions of Contract.

Order of work

Refer to drawings for extent of works.

Program of work

Construction program: Submit a construction program showing the following:

- Sequence of work.
- Critical paths of activities related to the work.
- Allowance for holidays.
- 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.

Time scale: Working days.

Updated program: Submit revised construction programs as required by the progress of the work. Identify changes since the previous issue, and show the estimated percentage of completion for each item of work.

Purpose of submission: For information.

Timing of submission: Within 14 days after the date for possession of the site and with each progress claim.

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

Site meetings

General: Hold and attend site meetings throughout the contract and arrange for the attendance of appropriate subcontractors, superintendent and appropriate consultants.

Online: Provide accessible Wifi capabilities and computer with camera to allow meetings to be held with simultaneous online component for consultants and contractors as required.

Minutes: Make a record of site meetings. Distribute a copy of the minutes to each party.

- Purpose of submission: For review.
- Timing of submission: Within 5 working days after each meeting.

Progress photographs

General: Take colour progress photographs within 7 days before each site meeting. Submit 2 sets of prints and the digital files. Identify the project, date, time, location and orientation.

- Purpose of submission: For information.

- Timing of submission: At each site meeting.

Format: .jpeg digital files.

Responsible Construction (Environmental Management Plan)

Include in the Site meetings at least once per month a report from the recycling and waste provider detailing the demolition and construction waste performance, and an overall report against the EMP in general.

1.17 TIMES FOR COMMENCEMENT AND PRACTICAL COMPLETION

General

Refer Conditions of Contract.

CLEANING UP

Final cleaning

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

Samples: Remove non-incorporated samples, prototypes and sample panels.

1.18 PAYMENT

Progress claims

Progress claim breakdown: Without limiting the general nature of the Contractor's obligations arising out of clause 42 and clause 42.1A of the Conditions of Contract, submit a statement of amounts claimed in respect of each worksection or trade heading designated in the specification, together with variations included in the claim.

- Timing of submission: With each progress claim.

Method of measurement

General: In conformance with the principles of the Australian and New Zealand standard method of measurement of building works (ANZSMM) (2022).

0171 GENERAL REQUIREMENTS**1 GENERAL****1.1 PERFORMANCE****Bushfire resistance**

Bushfire Attack Level (BAL) to AS 3959: n/a

Bushfire resistant design and construction: To BAL n/a

Corrosion resistance

General: Atmospheric corrosivity category as defined in AS 4312:

- Exterior atmospheric corrosivity category: C2
- Interior atmospheric corrosivity category: C2

Galvanizing

Severe conditions: Galvanize mild steel components (including fasteners) to AS/NZS 1214 or AS/NZS 4680 as appropriate, if:

- Exposed to weather.
- Embedded in masonry.
- Exposed to or in air spaces behind the external leaf of masonry walls.
- In contact with chemically treated timber, other than copper chrome arsenate (CCA).

Noise levels

General: Install systems to operate within the noise level limits, as documented for the contract design and documented equipment performance.

Structure

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

- Fixed accessways: To AS 1657.
- Structural design actions: To the AS/NZS 1170 series.

2 GENERAL**2.1 PRECEDENCE****General**

Order of precedence: If there is conflict or inconsistency between the worksections of this specification, the requirements of worksections take the following order of precedence:

- All worksections other than those listed below.
- *0701 Mechanical systems, 0801 Hydraulic systems, 0901 Electrical systems and 1001 Fire services systems.*
- *018 Common requirements* worksections.
- *0171 General requirements.*

2.2 REFERENCED DOCUMENTS**General**

Precedence: The requirements of worksections override conflicting requirements of their referenced documents. The requirements of the referenced documents are minimum requirements.

Contractual relationships: Responsibilities and duties of the principal, contractor and contract administrator are not altered by requirements in the documents referenced in this specification.

Current editions: All referenced documents are the editions, with amendments, current on 1st March 2025.

Exception to current editions: If statutory requirements reference other editions or standards, conform to those other editions or standards. If the NCC (2022) references editions other than the current edition, the same editions cited in the NCC (2022) are referenced in each worksection.

Maintenance and repair works: If statutory requirements applicable to the maintenance or repair works reference other editions or standards, conform to those other editions or standards.

European standards: Any national European Standard (e.g. IS EN or DIN EN) may be used in place of the equivalent referenced European Standard (EN).

2.3 CONTRACT DOCUMENTS

Services diagrammatic layouts

General: 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.
- Coordinate the design and installation in conjunction with all trades.

Levels

General: 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.

2.4 INTERPRETATION

Abbreviations

General: For the purposes of this specification the following abbreviations apply:

- BCA: National Construction Code Series Volume One: Building Code of Australia Class 2 to 9 Buildings and Volume Two: Building Code of Australia Class 1 and Class 10 Buildings.
- NATA: National Association of Testing Authorities.
- NCC: National Construction Code.
- PCA: National Construction Code Series Volume 3: Plumbing Code of Australia.
- PVC: Polyvinyl Chloride.
- PVC-U: Unplasticised Polyvinyl Chloride. Also known as UPVC.
- SDS: Safety data sheets.
- VOC: Volatile Organic Compound.
- WHS: Work Health and Safety.

Definitions

General: For the purposes of this specification, the following definitions apply:

- Access for maintenance: Includes access for maintenance, inspection, measurement, operation, adjustment, repair, replacement and other maintenance related tasks.
- Accessible, readily: Readily accessible, easily accessible, easy access and similar terms mean capable of being reached quickly and without the use of a tool, without hazard, climbing over or removing obstructions, using a movable ladder and in any case not more than 2.0 m above the ground, floor or platform.
- Accredited Testing Laboratory: One of the following:
 - . An organisation accredited by the National Association of Testing Authorities (NATA) to undertake the relevant tests.
 - . An organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement.
 - . An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.
 - . An organisation accredited for compliance with AS ISO/IEC 17025 (2018) to undertake the relevant tests.
- Adjust: To align, support, straighten, reposition, secure, recalibrate, reset, tighten, loosen or otherwise perform work to restore to proper working order.
- Appropriately qualified person: To NCC (2022) Schedule 1.
- Attendance: Attendance, provide attendance and similar expressions mean give assistance for examination and testing.
- Baseline data: Data derived from the final design, installation and commissioning, which serve as a basis for verification of results of routine servicing.
- Check: To examine to determine accuracy, quality or condition.
- Commissioning: Advancement of an installation from static completion to full working order, including verification that the systems, subsystems, and their components meet the project requirements. This

includes all work described as commissioning in referenced documents, even if carried out before static completion.

- Concealed: Obstructed from view, including below ground, in walls, cavities or roof spaces.
- Consumable: Materials or components intended to be depleted, worn out, replaced or replenished within the service life of the associated systems, plant or equipment as part of normal operation and maintenance.
- Contract administrator: Has the same meaning as architect, superintendent or principal's authorised person and is the person appointed by the owner or principal under the contract.
- Contractor: Has the same meaning as builder and is the person or organisation bound to carry out and complete the work under the contract.
- Default: Specified value, product or installation method that is to be provided unless otherwise documented.
- Design life: The period of time for which it is assumed, in the design, that an asset will be able to perform its intended purpose with only anticipated maintenance but no major repair or replacement being necessary.
- Design parameters: Information used as the basis for design. It includes design requirements, performance criteria, performance parameters and similar terms.
- Disconnect: Includes all preparation required to safely detach, isolate, unfasten, unplug or break the connection between a supply of electricity, gas or water and a device or an appliance.
- Documented: Documented, as documented and similar terms mean contained in the contract documents.
- Economic life: The period of time from the acquisition of an asset to the time when the asset, while still physically capable of fulfilling its function and with only anticipated maintenance, ceases to be the lowest cost alternative for satisfying that function.
- Electricity distributor: Any person or organisation that provides electricity from an electricity distribution system to one or more electrical installations. Includes distributor, supply authority, network operator, local network service provider, electricity retailer or electricity entity, as may be appropriate in the relevant jurisdiction.
- Errors and omissions: For the design prepared by the contractor, errors and omissions have the same meaning as defects.
- Fire hazard properties: To NCC (2022) Schedule 1.
- Gas Network Operator: Has the same meaning as network operator in AS/NZS 5601.1 (2022).
- 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.
- High level interface: Systems transfer information in a digital format using an open system interface.
- Hot-dip galvanized: Zinc coated to AS/NZS 4680 (2006) after fabrication with coating thickness and mass to AS/NZS 4680 (2006) Table 1.
- Ingress protection: IP, IP code, IP rating and similar expression have the same meaning as IP Code in AS 60529 (2004).
- Joints:
 - . Construction joint: A joint with continuous reinforcement provided to suit construction sequence.
 - . Contraction joint: An opening control joint with a bond breaking coating separating the joint surfaces to allow independent and controlled contraction of different parts or components, induced by shrinkage, temperature changes or other causes. It may include unbound dowels to assist vertical deflection control.
 - . Control joint: An unreinforced joint between or within discrete elements of construction that allows for relative movement of the elements.
 - . Expansion joint: A closing control joint with the joint surfaces separated by a compressible filler to allow axial movement due to thermal expansion or contraction with changes in temperature or creep. It may include unbound dowels to assist vertical deflection control.
 - . Sealant joint: A joint filled with a flexible synthetic compound that adheres to surfaces within the joint to prevent the passage of dust, moisture and gases.
 - . Structural control joint: A control joint (contraction, expansion and isolation) in structural elements when used with applied material and finishes.
 - . Substrate joint: A joint in the substrate, which includes construction joints and joints between different materials.

- . Weakened plane joint: A contraction joint created by forming a groove, extending at least one quarter the depth of the section, either by using a grooving tool, by sawing or by inserting a premoulded strip.
- Local authority (local council): A body established for the purposes of local government by or under a law applying in a state or territory.
- Low level interface: Systems transfer information via terminals and voltage free contacts.
- Maintenance: Work that is carried out to preserve an asset, to allow for its continued use and function over its designed service life.
 - . Corrective maintenance: Maintenance initiated as a result of plant, equipment, systems, elements, before or after functional failure. This work can be planned or unplanned and includes repairs and replacement.
 - . Preventive maintenance: Planned maintenance of plant, equipment and other systems or elements, including cyclical or periodic maintenance, fire safety measures and statutory requirements.
- Manufacturer's recommendations: Recommendations, instructions, requirements, specifications (and similar expressions) provided in written or other form by the manufacturer and/or supplier relating to the suitability, use, installation, storage and/or handling of a product.
- Metallic-coated: Steel coated with zinc or aluminium-zinc alloy as follows:
 - . Metallic-coated steel sheet: To AS 1397 (2021). Metal thicknesses specified are base metal thicknesses.
 - . Ferrous open sections zinc coated by an in-line process: To AS/NZS 4791 (2006).
 - . Ferrous hollow sections zinc coated by a continuous or specialised process: To AS/NZS 4792 (2006).
- Network Utility Operator: To NCC (2022) Schedule 1. A person who undertakes the piped distribution of drinking water or non-drinking water for supply; or is the operator of a sewerage system or a stormwater drainage system.
- Obtain: Obtain, seek and similar expressions mean obtain (seek) in writing from the contract administrator.
- Pipe: Includes pipe and tube.
- Practical completion or defects free completion: The requirements for these stages of completion are defined in the relevant building contract for the project.
- Pre-commissioning: Verifying that the installation of a system is complete and ready for commissioning.
- Principal: Principal has the same meaning as owner, client and proprietor and is the party to whom the contractor is legally bound to construct the works.
- Professional engineer: To NCC (2022) Schedule 1.
- Proprietary: Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Prototype: A full size mock-up of components, systems or elements to demonstrate or test construction methods, junctions and finishes, and to define the level of quality.
- Provide: Provide and similar expressions mean supply and install and include development of the design beyond that documented.
- Record drawings: Record drawings has the same meaning as as-installed drawings, as-built drawings and work-as-executed drawings. It includes technical drawings and digital models.
- Recovered/reclaimed materials: Material previously used in a building or project that is then re-used in another project. The material may be altered, re-sized, refinished, or adapted, but is not reprocessed in any way, and remains in its original form.
- Referenced documents: Standards and other documents whose requirements are included in this specification by reference.
- Required: Required by the contract documents, the local or statutory authorities.
 - . If required: A conditional specification term for work that may be shown in the documents or is a legislative requirement.
- Sample: A physical example that illustrates workmanship, materials or equipment, and establishes standards by which the work will be judged. It includes samples and sample panels.
- Static completion: The state of a system when installation works are complete but have not been commissioned.
- Statutory authority: A public sector entity created by legislation, that is, a specific law of the Commonwealth, State or Territory.
- Supply: Supply, furnish and similar expressions mean supply only.
- Tests - integrated system: Tests conducted on the project as a complete, integrated system to verify successful integration, interaction, and operation of all interrelated systems to the project requirements.

- Tests - production: Tests carried out on an item, before delivery to the site.
- Tests - site: Tests carried out on site.
- Tests - type: Tests carried out on an item identical with a production item, including with respect to materials, material suppliers, manufacturing processes, dimensions and marking.
- Tolerance: The permitted difference between the upper limit and the lower limit of dimension, value or quantity.
- Utility service provider: Includes Electricity distributor, Network Utility Operator, Gas Network Operator and organisations providing other reticulated utilities including data and telecommunications services.
- Verification: Provision of evidence or proof that a performance requirement has been met or a default exists.

3 SUBMISSIONS AND INSPECTIONS

3.1 SUBMISSIONS

General

Requirement: Make submissions, as documented.

Submit to: Superintendent

Contractor review: Before submitting, review each submission item, and check for coordination with other work of the contract and conformance to contract documents.

Submission times

Default timing: Submit information or other material for information, comment or approval at least 5 working days before ordering products or starting installation of the respective portion of the works.

Proposed products schedules: Submit a schedule of proposed products that have not been specified as proprietary items within 3 weeks of starting work on site.

Identification

Requirement: Identify the project, contractor, subcontractor or supplier, manufacturer, applicable product, model number and options, as appropriate and include relevant contract document references. If the submission covers more than one item, identify the item in the contract documents the submitted items relate to.

Non-conformance: Identify proposals that do not conform with project requirements, and characteristics that may be detrimental to successful performance of the completed work.

Errors

Requirement: If a submission contains errors, make a new or amended submission as appropriate, indicating changes made since the previous submission.

Electronic submissions

Electronic copies file format: .pdf

CAD file format: .dwg, .dxf

Hard copy submissions

Hard copy quantity: n/a

Project requirements

General: Submit the following, as documented:

- Authority approvals: Notes of meetings with regulatory authorities and utility service providers whose requirements apply to the work and evidence that notices, fees and permits have been sought and paid, that utility service provider connections are complete and that statutory approvals by the authorities whose requirements apply to the work have been received.
- Baseline data: To **BASELINE DATA**.
- Building penetrations: Details of the methods to maintain the required structural, fire and other properties to **BUILDING PENETRATIONS**.
- Certification: Certificates of conformance to documented and statutory requirements.
- Commissioning plan: For the whole of the work to **COMMISSIONING**.
- Commissioning program: For the whole of the work to **COMMISSIONING**.
- Design documentation: Drawings, calculations and specifications as documented.
- Electronic facility and asset management information: For the whole of the work to **ELECTRONIC FACILITY AND ASSET MANAGEMENT INFORMATION**.

- Execution details: Execution programs, schedules and details of proposed methods and equipment. For building services include the following:
 - . Embedded services: Proposed method for embedding services in concrete walls or floors or chasing into concrete or masonry walls.
 - . Fixing of services: Typical details of locations, types and methods of fixing services to the building structure.
 - . Inaccessible services: If services will be enclosed and not accessible after completion, submit proposals for location of service runs and fittings.
- Fire performance: Evidence of conformity to requirement for non-combustibility, fire hazard properties and fire-resistance of building elements.
- Marking and labelling: Samples and schedules of proposed marking and labels to **MARKING AND LABELLING**.
- Operation and maintenance manuals: For the whole of the work to **OPERATION AND MAINTENANCE MANUALS**.
- Products and materials: Products and materials data, including manufacturer's technical specifications and drawings, product data sheets, type tests results, evidence of conformity to documented requirements, product certification, performance and rating tables, service connection requirements and installation and maintenance recommendations.
- Prototypes: Prototypes of components, systems or elements.
- Records: Record drawings to **RECORD DRAWINGS**, reports of testing or work, photographs, system diagrams, schedules and logbooks.
- Safe Work Method Statement: For high risk construction works.
- Safety in design report: For the proposed work to **DESIGN DEVELOPMENT, Safety in design**.
- Samples: Representative of proposed products and materials and including proposals to incorporate samples into the works, if any to **SAMPLES AND PROTOTYPES**.
- Shop drawings: To **SHOP DRAWINGS**.
- Substitutions: To **SUBSTITUTIONS**.
- Tests: Test reports for testing performed under the contract.
- Warranties: To **WARRANTIES**.

3.2 INSPECTION

Notice

Concealment: If notice of inspection is required for parts of the works that are to be concealed, give notice when the inspection can be made before concealment.

Notification times

Minimum notice: As documented.

Light levels

Lighting levels for inspection: To AS/NZS 1680.2.4 (2017).

Attendance

General: Provide attendance for documented inspections and tests.

4 DESIGN

4.1 DESIGN DEVELOPMENT

General

Requirement: Complete any design of the work, including development of the design beyond that documented if required.

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.

Safety in design

Requirement: Provide a design that allows for safe construction, operation and maintenance, and demolition in conformance with statutory requirements.

4.2 DESIGNER

General

Design by contractor: If the contractor provides design, use only appropriately qualified and registered persons.

5 PRODUCTS AND MATERIALS

5.1 GENERAL

Sources policy

General: Use Australian or New Zealand products, components and materials, unless specified or scheduled otherwise in the Contract Documents.

Consistency

General: For each material or product use the same source or manufacturer and provide consistent type, size, quality and appearance.

Low VOC emitting paints

Paint types: To the recommendations of AS/NZS 2311 (2017) Table 4.2.

Prohibited materials

General: Do not provide the following:

- Materials exceeding the limits of those listed in the Safe Work Australia *Hazardous Chemical Information System* (HCIS) Workplace exposure standards.
- Blowing agents:
 - . Materials that use chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) in the manufacturing process.
 - . A blowing agent with a global warming potential (GWP) not less than 700.

5.2 PROPRIETARY ITEMS

Manufacturer's or supplier's recommendations

General: Provide manufactured items to the manufacturer's or supplier's recommendations.

Proprietary items/systems/assemblies: Deliver, handle, store, assemble, install or fix to substrate to the manufacturer's or supplier's recommendations.

Project modifications: Advise of activities that supplement, or are contrary to the manufacturer's or supplier's recommendations.

Identification of proprietary items

Sealed containers: If items are supplied by the manufacturer in closed or sealed containers or packages, bring them to point of use in the original containers or packages.

Other items: Marked to show the following, as applicable:

- Manufacturer's identification.
- Brand name.
- Product type.
- Quantity.
- Reference code and batch number.
- Date of manufacture.

5.3 SUBSTITUTIONS

General

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

Alternatives: If alternatives to the documented products, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives, including the following:

- Product, method or system identification.
- Product data sheets.
- Manufacturer's contact details.
- Detailed comparison between the properties of the documented product and proposed substitution.
- Details of manufacturer and/or installer warranty.

- Statement of NCC compliance, if applicable.
- Evidence of conformity to a cited standard or code of practice.
- Evidence that the performance is at least equal to that specified.
- Samples.
- Essential technical information, in English.
- Comparison between the products in relation to assembly method, finishes, installation methods and any protection/packaging.
- Reasons for the proposed substitutions.
- Statement of the extent of revisions to the contract documents.
- Statement of the extent of revisions to the construction program.
- Statement of cost implications including costs outside the contract.
- Statement of consequent alterations to other parts of the works.
- Statement of consequent maintenance conditions of warranty.

Availability: If the documented products or systems are unavailable within the time constraints of the construction program, submit evidence.

Criteria: If the substitution is for any reason other than unavailability, submit evidence that the substitution:

- Is of net enhanced value to the principal.
- Is consistent with the contract documents and is as effective as the identified item, detail or method.

5.4 SAMPLES AND PROTOTYPES

General

Incorporation of samples: Only incorporate samples that have been endorsed for inclusion in the works. Do not incorporate other samples.

Retention of samples: Keep endorsed samples in good condition on site, until the date for practical completion.

Unincorporated samples: Remove on completion.

5.5 SHOP DRAWINGS

General

Standard: To AS 1100.101 (1992), AS 1100.201 (1992), AS 1100.301 (2008), AS 1100.401 (1984) and AS/NZS 1100.501 (2002) as applicable.

Documentation: Include dimensioned drawings showing details of the fabrication and installation of structural elements, building components, 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 prepare dimensioned set-out drawings.

Services coordination: Coordinate with other building and service elements. Show adjusted positions on the shop drawings.

Space requirements: Check space and access for maintenance requirements of equipment and services indicated diagrammatically in the contract documents.

Commissioning requirements: Show provisions for testing and commissioning on the drawings.

Access for maintenance: Show space and provisions for access for maintenance.

Building work drawings for building services: On dimensioned drawings show the following:

- Access doors and panels.
- Conduits to be cast in slabs.
- Holding down bolts and other anchorage and/or fixings required complete with loads to be imposed on the structure during installation and operation.
- Openings, penetrations and block-outs.
- Sleeves.
- Plinths, kerbs and bases.
- Required external openings.

Submission medium: electronic files

Record drawings: Amend all documented shop drawings to include changes made during the progress of the work and up to the end of the defects liability period.

6 ANCILLARY BUILDING WORK

6.1 WALL CHASING

Holes and chases

General: If holes and chases are required in masonry walls, make sure structural integrity of the wall is maintained. Do not chase walls with a fire-resistance level or an acoustic rating.

Parallel chases or recesses on opposite faces of a wall: Not closer than 600 mm to each other.

Chasing blockwork: Only chase core-filled hollow blocks or solid blocks that are not structural.

Concrete blockwork chasing table

Block thickness (mm)	Maximum depth of chase (mm)
190	35
140	25
90	20

6.2 FIXING

General

Suitability: If equipment is not suitable for fixing to non-structural building elements, fix directly to structure and trim around penetrations in non-structural elements.

Fasteners

General: Use proprietary fasteners capable of transmitting the loads imposed, and sufficient for the rigidity of the assembly.

6.3 BUILDING PENETRATIONS

Penetrations

Requirement: Maintain the required structural integrity, fire performance, waterproofing performance and other properties when penetrating or fixing to the following:

- Structural building elements including external walls, fire walls, fire doors and access panels, other tested and rated assemblies or elements, floor slabs and beams.
- Membrane elements including damp-proof courses, waterproofing membranes and roof coverings. If penetrating membranes, provide a waterproof seal between the membrane and the penetrating component.

Sealing

Fire-resisting building elements: Seal penetrations with a system conforming to AS 4072.1 (2005).

Non fire-resisting building elements: Seal penetrations around conduits and sleeves. Seal around cables within sleeves. If the building element is acoustically rated, maintain the rating.

Sleeves

General: If piping, cables or conduits penetrate building elements, provide metal or PVC-U sleeves formed from pipe sections as follows:

- Movement: Arrange to permit normal pipe or conduit movement.
- Diameter (for non fire-resisting building elements): Sufficient to provide a ring shaped space around the pipe or pipe insulation of at least 12 mm.
- Ferrous surfaces: Prime paint.
- Sealing: Seal between pipes or conduits and sleeves to prevent the entry of vermin.
- Terminations:
 - . Cover plates fitted: Flush with the finished building surface.
 - . Fire-resisting and acoustic rated building elements: 50 mm beyond finished building surface.
 - . Floors draining to floor wastes: 50 mm above finished floor.
 - . Other locations: 5 mm beyond finished building surface.
 - . Termite management: To AS 3660.1 (2014).
- Thickness:
 - . Metal: 1 mm or greater.

- . PVC-U: 3 mm or greater.

6.4 SUPPORT OF PLANT AND EQUIPMENT

Concrete plinths

General: Provide concrete plinths as documented and under all equipment located on concrete floor slabs as follows:

- Surround: Zinc (hot-dipped) coated steel, at least 75 mm high and 1.6 mm thick. Fix to the floor with masonry anchors. Fill with concrete.
- Height: 75 mm or greater, as documented.
- Reinforcement: Single layer of F62 fabric.
- Concrete: Grade N20.
- Finish: Steel float, flush with top edge of the surround.

Support of ground level plant and equipment

Ground level: Conform to the following:

- If the ground slope is 15° or more, or the area of the plant and equipment is extensive, obtain the advice of a professional engineer for the documentation of a suitable slab or platform.
- In all other cases, provide proprietary plastic or concrete supports installed with falls that achieve a raised, impervious and water shedding bearing surface.

Balustrades: If balustrades or screening are required, obtain the advice of a registered architect.

Support of plant and equipment mounted on roofs or elevated platforms

Platforms: If a platform is required, or the area of the plant and equipment mounted on roofs or elevated platforms is extensive, obtain the advice of a professional engineer for the documentation of a suitable platform.

Balustrades: If balustrades or screening are required, obtain the advice of a registered architect.

Roof level support: If any of the following apply to roof level support, obtain the advice of a professional engineer:

- The total load from any unit of plant or equipment exceeds 500 kg.
- The load from a unit of plant or equipment to any single support point exceeds 100 kg.
- The average loading of plant and equipment over the area extending 1 m on all sides beyond the plant and equipment exceeds 25 kg/m².

6.5 RESTRAINT OF NON-STRUCTURAL PARTS AND COMPONENTS

Wind restraint

General: Provide restraints to resist the effect of ultimate limit state wind pressures.

Wind pressure: To AS/NZS 1170.2 (2021).

7 BUILDING SERVICES

7.1 SERVICES CONNECTIONS

Connections

General: Connect to utility service provider services or service points. Excavate to locate and expose connection points. Reinstate the surfaces and facilities that have been disturbed.

Utility service provider requirements

General: If the utility service provider elects to perform or supply part of the works, make the necessary arrangements. Install equipment supplied, but not installed, by the utility service provider.

7.2 SERVICES INSTALLATION

General

Installation: Install equipment and services as follows:

- Plumb and securely fixed.
- Allow for movement in both structure and services.
- Arrange services running together, parallel to each other and adjacent building elements.

Concealment: Conceal all cables, ducts, trays and pipes except where installed in plant spaces, ceiling spaces and riser cupboards or documented to be exposed. If alternative routes are available, do not locate on external walls.

Lifting: Provide heavy items of equipment with permanent fixtures for lifting to the manufacturer's recommendations.

Suspended ground floors: Keep all parts of services suspended under ground floors at least 150 mm clear of the ground surface. Make sure services do not impede access.

Dissimilar metals

Joining: Join dissimilar metals with fittings of electrolytically compatible material.

Temporary capping

Pipe ends: During construction, protect open ends of pipe with metal or plastic covers or caps.

Piping

General: Install piping in straight lines at uniform grades without sags. Arrange to prevent air locks. Provide sufficient unions, flanges and isolating valves to allow removal of piping and fittings for maintenance or replacement of plant.

Spacing: Provide at least 25 mm clear between pipes and between pipes and building elements, additional to insulation.

Changes of direction: Provide as follows:

- If practicable, long radius elbows or bends and sets, and swept branch connections.
- If pipes are led up or along walls and then through to fixtures, provide elbows or short radius bends.
- Do not provide mitred fittings.

Vibration: Arrange and support piping to prevent vibration whilst permitting necessary movement. Minimise the number of joints.

Embedded pipes: Do not embed pipes that operate under pressure in concrete or surfacing material.

Valve groupings: If possible, locate valves in groups.

Pressure testing precautions: Isolate items not rated for the test pressure. Restrain pipes and equipment to prevent movement during pressure testing.

Support and structure

Requirement: Provide incidental supports and structures to suit the services.

Pipe support systems

Standard: To AS 4041 (2006) clause 3.28.

General: Provide hangers, brackets, saddles, clips, and support system components to resist live and dead loads and to control pipe movement caused by thermal and water pressure effects. Incorporate provisions for adjustment of spacing, alignment, grading and load distribution. Support pipework from associated equipment or building structure. Support valves, strainers and major line fittings so that no load is placed on connected piping or transmitted to it during operation and maintenance.

Fixings: Provide fixings to the associated equipment or building structure designed to withstand the loads imposed by the pipe supports.

Channel section supports: Proprietary channel section with clamps and hangers sized to match external diameter of pipe being supported. Provide all components from the same manufacturer.

Channel and fixing material: Metallic-coated steel.

Vertical pipes: Provide anchors and guides to maintain long pipes in position, and supports designed for the mass of the pipe and its contents.

Saddles: Do not use saddle type supports for pipes larger than DN 20.

Dissimilar metals: If pipe and support materials are dissimilar, provide industrial grade electrically non-conductive material securely bonded to the pipe to separate them. Provide fasteners of electrolytically compatible material.

Fixing to masonry and concrete: Provide metallic-coated steel or non-ferrous metal bolts or screws into chemical or expanding metal masonry anchors.

Uninsulated pipes: Clamp piping supports directly to pipes. Provide electrical isolation of dissimilar metals.

Insulated pipes:

- Spacers: Provide spacers at least as thick as the insulation between piping supports and pipes. Extend either side of the support by at least 20 mm.
- Spacer material: Rigid insulation material of sufficient strength to support the piping and suitable for the temperature application.
- Vapour barriers: For cold pipes, apply aluminium foil tape over the circumference of the spacer to form a vapour barrier. Fit to spacer before installation of the bracket on the pipe.

- Metal sheathing: If metal sheathing is documented, provide a band of the documented sheathing materials between the aluminium foil tape and the support for the full width of the spacer.

Hanger sizes: Conform to the following:

- Gas installations: To AS/NZS 5601.1 (2022) Table 5.8.3.
- Other pipes: Provide hangers sized to the manufacturer's recommendations to suit operating conditions and regulatory requirements including the loads due to valves and other attached components, pipe material, pipe contents and temperature and seismic loads.

Support spacing: Provide supports at no greater spacing than the following:

- Cold and heated water: To AS/NZS 3500.1 (2021) Table 5.7.4.
- Sanitary plumbing: To AS/NZS 3500.2 (2021) Table 10.2.1.
- Stormwater: To AS/NZS 3500.2 (2021) clause 4.9.
- Fuel gas: To AS/NZS 5601.1 (2022) Table 5.8.2.
- Fire sprinklers and combined wet suppression systems: To AS 2118.9 (1995) Table 2.6.1.
- Fire hydrants:
 - . Metal piping: To AS 2419.1 (2021) clause 10.6.
 - . Plastic piping: To AS/NZS 3500.1 (2021).
- Gaseous fire suppression systems:
 - . General gaseous fire suppression systems: To AS 4214 (2018) clause 6.3.4.
 - . Carbon dioxide fire suppression systems: To AS 6183 (2011) clause 6.3.4.
- Medical gases: To AS 2896 (2021) Table 4.1.
- Refrigerant: To AS/NZS 5149.2 (2016) Tables 5 and 6.
- Other ferrous pipes under pressure: To AS 4041 (2006) Table 3.28.2.
- Other copper pipes: To AS 4809 (2017) Table 6.2.
- ABS pipes: To AS/NZS 3690 (2009) Table 6.2.
- PVC pipes: To AS/NZS 2032 (2006) Table 6.3.
- Polyolefin including PE and PP pipes: To AS/NZS 2033 (2024) clause 7.3.2.
- Other non-ferrous pipe carrying liquids: To AS/NZS 3500.1 (2021) Table 5.7.4.
- Other pipes carrying air or gases: To AS/NZS 5601.1 (2022) Table 5.8.2.
- Proprietary grooved piping systems: To the manufacturer's recommendations.

Additional supports: Provide additional supports as follows:

- Proprietary grooved piping systems: To the manufacturer's recommendations.
- Valves and other heavy pipe mounted components: Adjacent to the valve or component.
- Adjacent pipe mounted components requiring regular maintenance.
- At changes of direction and adjacent to wall or floor penetrations.
- Where required to anchor piping or control thermal or other movement.

Differential movement

General: If the geotechnical site investigation report predicts differential movements between buildings and the ground in which pipes or conduits are buried, provide control joints in the pipes or conduits, as follows:

- Arrangement: Arrange pipes and conduits to minimise the number of control joints.
- Magnitude: Accommodate the predicted movements.

7.3 PLANT AND EQUIPMENT

General

Location: Locate so failure of plant and equipment (including leaks) does not create a hazard for the building occupants and causes a minimum or no damage to the building, its finishes and contents including water sensitive equipment or finishes.

Safe tray and an overflow pipe: Provide to each tank, hot water heater and storage vessel.

7.4 ACCESS FOR MAINTENANCE

General

Requirement: Provide access for maintenance of all items requiring inspection, measurement, operation, adjustment, repair, replacement and other maintenance-related tasks.

Standards: Conform to the relevant requirements of AS 1657 (2018), AS 1892.1 (2018), AS 2865 (2009) and AS/NZS 3666.1 (2011).

Work Health and Safety: Conform to the requirements of the applicable Work Health and Safety regulations.

Access safety systems: Provide access safety systems to *0193 Building access safety systems*.

Refrigerated or cooling plant: If the space is a refrigerated or cooling chamber inside a duct, air handling plant or similar, provided with an access door or personnel access panel and of sufficient size for a person to enter, provide the following to BCA (2022) G1D3:

- An access door.
- Internal lighting with external indicator lamp.
- An alarm.

Protection from injury: Protect personnel from injury caused by contact with objects including those that are sharp, hot or protrude at low level.

Plant room flooring surfaces: R10 Slip resistance classification to AS 4586 (2013).

Trip hazards: Do not run small services including drains and conduits across floors where they may be a trip hazard.

Manufacturer's standard equipment: If necessary, modify manufacturer's standard equipment to provide the plant access documented.

Clearances

Minimum clearances for access: Conform to the following:

- Vertical clearance: Not less than 2100 mm, vertically above horizontal floors, ground and platforms.
- Horizontal clearance: Preferably not less than 750 mm clear, but in no case less than 600 mm between equipment or between equipment and building features including walls.
- If tools are required to operate, adjust or remove equipment, provide sufficient space so the tools can be used in their normal manner and without requiring the user to employ undue or awkward force.
- Hinged or removable components: To the manufacturer's recommendations.
- Within plant items: Conform to the preceding requirements, and not less than the clearances recommended in BS 8313 (1997).

Elevated services other than in occupied areas

Access classifications:

- Access class A: Readily accessible. Provide clear and immediate access to and around plant items. If plant or equipment is located more than 2.0 m above the ground, floor or platform, provide a platform with handrails accessible by a stair, all to AS 1657 (2018).
- Access class B: If the plant item requiring access is located more than 2.0 m above the ground, floor or platform, provide a platform with handrails accessible by a non-vertical ladder, all to AS 1657 (2018).
- Access class C: Locate plant so temporary means of access conforming to Work Health and Safety regulations can be provided.

Temporary means of access: Make sure there is adequate provision in place, which is safe and effective.

Areas in which access is restricted to authorised maintenance personnel: Provide access as follows:

- Instruments, gauges and indicators (including warning and indicating lights) requiring inspection at any frequency: Readily accessible.
- Access required monthly or more frequently: Access class A.
- Access required between monthly and six monthly: Access class A or B.
- Access required less frequently than six monthly: Access class A, B or C.

Other areas: Provide access as follows:

- Locate to minimise inconvenience and disruption to building occupants or damage to the building structure or finishes.
- In suspended ceilings, locate items of equipment that require inspection and/or maintenance above tiled parts. If not possible, provide access panels where located above set plaster or other inaccessible ceilings. Arrange services and plant locations to reduce the number of access panels. Coordinate with other trades to use common access panels where feasible.
- Do not locate equipment requiring access above partitions.
- Instruments, gauges and other items requiring inspection at any frequency: Readily accessible.

- Labelling: If equipment is concealed in ceilings, provide marking to **MARKING AND LABELLING, Equipment concealed in ceilings.**

Facilities for equipment removal and replacement

Requirement: Provide facilities to permit removal from the building and replacement of plant and equipment, including space large enough to accommodate it and any required lifting and/or transportation equipment. Arrange plant so large and/or heavy items can be moved with the minimum changes of direction.

Removal of components: Allow sufficient space for removal and replacement of equipment components including air filters, tubes of shell and tube heat exchangers, removable heat exchanger bundles, coils and fan shafts. Provide access panels or doors large enough to permit the safe removal and replacement of components within air handling units.

Facilities for access

Equipment behind hinged doors: Provide doors opening at least 150°.

Equipment behind removable panels: Provide panels with quick release fasteners or captive metal thread screws.

Removable panels: Provide handles to permit easy and safe removal and replacement.

Insulated plant and services: If insulation must be removed to access plant and services for maintenance, arrange it to allow for removal and replacement without damage.

Location

Accessed from a platform or floor: Locate items requiring access as follows:

- Less than 2.5 m above a floor or platform.
- Less than 1.25 m horizontally from the edge of a platform if above the platform.
- Less than 0.75 m horizontally from the edge of a platform if under the platform.
- Less than 0.75 m vertically below the top of a platform.

Accessed through a ceiling access panel: Locate items requiring access as follows:

- Less than 0.75 m horizontally from the edge of the access panel opening.
- Less than 0.75 m vertically from the edge of the access panel opening.
- Visible from the access panel opening.

Piping

Requirement: Conform to the following:

- Provide access and clearance at fittings that require maintenance, inspection or servicing, including control valves and joints intended to permit pipe removal.
- Arrange piping so it does not interfere with the removal or servicing of associated equipment or valves or block access or ventilation openings.
- Preferably run piping, conduits, cable trays and ducts at high level and drop vertically to equipment.

Electrical equipment and controls

Electrical equipment: Provide clearances and access space to AS/NZS 3000 (2018).

Switchboards and electrical control equipment: Locate near the main entrance to plant space and with switchboards visible from the plant being operated.

Control panels: Locate near and visible from the plant being controlled.

7.5 VIBRATION SUPPRESSION

General

Requirement: Minimise the transmission of vibration from rotating or reciprocating equipment to other building elements.

Standard

Machinery noise and vibration: Vibration severity in Zone A to ISO 20816-1 (2016) and ISO 20816-3 (2022).

Speeds

General: If no maximum speed is prescribed, do not exceed 1500 r/min for direct driven equipment.

Connections

General: Provide flexible connections to rotating machinery and assemblies containing rotating machinery. Isolate pipes by incorporating sufficient flexibility into the pipework or by use of proprietary flexible pipe connections installed to prevent placing stress on pipes due to end reaction.

Inertia bases

General: If necessary to achieve the required level of vibration isolation, provide inertia bases having appropriate mass and to the following:

- Construction: Steel or steel-framed reinforced concrete with reinforcing bars welded between base sections. Position foundation bolts for equipment before pouring concrete.
- Supports: Support on vibration isolation mountings using height saving support brackets.

Vibration isolation mountings

General: Except for external equipment that is not connected to the structure of any building, support rotating or reciprocating equipment on mountings as follows:

- Static deflections less than 15 mm: Single or double deflection neoprene in-shear mountings incorporating steel top and base plates and a tapped hole for bolting to equipment.
- Static deflections not less than 15 mm: Spring mountings.

Selection: Provide mountings selected to achieve 95% isolation efficiency at the normal operating speeds of the equipment.

Installation: Set and adjust vibration isolation mounting supports to give clearance for free movement of the supports.

Spring mountings: Provide freestanding laterally stable springs as follows:

- Clearances: Not less than 12 mm between springs and other members such as bolts and housing.
- High frequency isolation: 5 mm neoprene acoustic isolation pads between base plate and support.
- Levelling: Provide bolts and lock nuts.
- Minimum travel to solid: Not less than 150% of the designated minimum static deflection.
- Ratio of mean coil diameter to compressed length at the designated minimum static deflection: Not less than 0.8:1.
- Snubbing: Snub the springs to prevent bounce at start-up.
- Vertical resilient limit stops: To prevent spring extension when unloaded, to serve as blocking during erection and which remain out of contact during normal operation.

7.6 FINISHES TO BUILDING SERVICES**General**

Requirement: If exposed to view (including in plant rooms), paint building services and equipment.

Surfaces painted or finished off-site: Conform to *0183 Metals and prefinishes*.

Exceptions: Do not paint chromium or nickel plating, anodised aluminium, glass-reinforced plastic, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces. Surfaces with finishes applied off-site need not be re-painted on-site provided the corrosion resistance of the finish is not less than that of the respective finish documented.

Standard: Conform to the recommendations of AS/NZS 2311 (2017) Sections 3, 6 and 7 or AS 2312.1 (2014) Sections 6, 7 and 8, as applicable.

Inaccessible surfaces: If surfaces are inaccessible after installation, complete finish before installation.

Painting systems

New unpainted interior surfaces: To AS/NZS 2311 (2017) Table 5.1.

New unpainted exterior surfaces: To AS/NZS 2311 (2017) Table 5.2.

Paint application

Coats: Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Make sure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture and free of runs, sags, blisters or other discontinuities.

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

Protection: Remove fixtures before starting to paint and refix in position undamaged when painting is complete.

Underground metal piping

Requirement: Provide corrosion protection for the following:

- Underground ferrous piping.
- Underground non-ferrous metal piping in chemically aggressive soils and environments.

Corrosion protection: Select from the following:

- Cathodic protection: Sacrificial anodes or impressed current. Incorporate a facility for periodic testing. Conform to the recommendations of AS 2832.1 (2015).
- Continuous wrapping using proprietary petroleum taping material.
- Impermeable flexible plastic coating.
- Sealed polyethylene sleeve.

Aggressive soils: If metallic piping or components are installed in chemically aggressive soil, provide additional protection as follows:

- Material: Continuous polyethylene sleeve to ASTM D1248 (2016) with a minimum thickness of 0.25 mm.
- Installation: Wrap or sleeve pipes and components. Tape joints between sections of polyethylene and between polyethylene and piping.

Repairs to finishes

Requirement: Repair damaged finishes to restore their corrosion protection, appearance and service life.

Painting of pipe threads: After pipe installation and before other finishes or insulation are applied, paint exposed threads in metallic-coated steel pipe with zinc rich paint.

7.7 MARKING AND LABELLING

General

Requirement: Mark and label services and equipment for identification purposes as follows:

- Locations exposed to weather: Provide durable materials.
- Pipes, conduits and ducts: To AS 1345 (1995) throughout its length, including in concealed spaces.
- Cables: Label to indicate the origin and destination of the cable.

Consistency: Label and mark equipment using a consistent scheme across all services elements of the project.

Asset management labels and tags: to EGSC requirements (ask Council to provide).

Label samples and schedules

Requirement: For each item or type of item, prepare a schedule of marking and labelling, including the following:

- A description of the item or type of item for identification.
- The proposed text for marking or labelling.
- The proposed location of the marking and labelling.

Submission timing: Before marking or labelling.

Electrical accessories

Circuit identification: Label isolating switches and outlets to identify circuit origin.

Operable devices

Requirement: Mark to identify the following:

- Controls.
- Indicators, gauges, meters.
- Isolating switches.

Equipment concealed in ceilings

Location: Provide a label on the ceiling, to indicate the location of each concealed item requiring access for routine inspection, maintenance and/or operation and as follows:

- Tiled ceilings, locate the label on the ceiling grid closest to the concealed item access point.
- Flush lined ceilings, locate adjacent to closest access panel.

Concealed equipment: Label items including the following:

- Fan coil units and terminal equipment (e.g. VAV terminals).
- Fire and smoke dampers.
- Isolating valves not directly connected to items otherwise labelled.
- Motorised dampers.

Wall mounted equipment in occupied areas

Location: Provide labels on wall mounted items in occupied areas including the following:

- Services control switches.
- Temperature and humidity sensors.

Points lists

Automatic control points: Provide plasticised, fade-free points lists for each automatic control panel and include terminal numbers, point addresses, short and long descriptors in the lists. Store in a pocket on the door of the panel.

Pressure vessels

General: Mount manufacturer's certificates in glazed frames on a wall next to the vessel.

Valves and pumps

General: Label to associate pumps with their starters and valves. Screw fix labels to body or attach label to valve handwheels with a key ring.

Underground services

Survey: Accurately record the routes of underground cables and pipes before backfilling. Include on the record drawings.

Records: Provide digital photographic records of underground cable and pipe routes before backfilling. Include in operation and maintenance manual.

Location marking: Accurately mark the location of underground cables and pipes with route markers consisting of a marker plate set flush in a concrete base, engraved to show the direction of the line and the name of the service.

Markers: Place markers at ground level at each joint, route junction, change of direction, termination and building entry point and in straight runs at intervals of not more than 100 m.

Marker bases: 200 mm diameter x 200 mm deep, minimum concrete.

Direction marking: Show the direction of the cable and pipe run by means of direction arrows on the marker plate. Indicate distance to the next marker.

Plates: Brass, aluminium or stainless steel with black filled engraved lettering, minimum size 75 x 75 x 1 mm thick.

Plate fixing: Waterproof adhesive and 4 brass or stainless steel countersunk screws.

Marker height: Set the marker plate flush with paved surfaces, and 25 mm above other surfaces.

Marker tape: Where electric bricks or covers are not provided over underground wiring, provide a 150 mm wide yellow or orange marker tape bearing the words WARNING – electric cable buried below, laid in the trench 150 mm below ground level.

Plastic pipe: Provide a detectable marker tape with trace wire to identify the route of buried piping. Terminate with 1000 mm coil in a readily accessible location. Tag to match the record drawings.

Labels and notices

Materials: Select from the following:

- Cast metal.
- For indoor applications only, engraved two-colour laminated plastic.
- Proprietary pre-printed self-adhesive flexible plastic labels with machine printed black lettering.
- Stainless steel or brass minimum 1 mm thick with black filled engraved lettering.

Emergency functions: To AS 1319 (1994).

Colours: Generally to AS 1345 (1995) as appropriate, otherwise black lettering on white background except as follows:

- Danger, warning labels: White lettering on red background.
- Main switch and caution labels: Red lettering on white background.

Edges: If labels exceed 1.5 mm thickness, radius or bevel the edges.

Labelling text and marking: To correspond to terminology and identifying number of the respective item as documented on the record drawings and in operating and maintenance manuals.

Lettering heights:

- Danger, warning and caution notices: Minimum 10 mm for main heading, minimum 5 mm for remainder.
- Equipment labels within cabinets: Minimum 5 mm.
- Equipment nameplates: Minimum 40 mm.
- Identifying labels on outside of cabinets: Minimum 5 mm.
- Isolating switches: Minimum 5 mm.
- Switchboards, main assembly designation: Minimum 25 mm.
- Switchboards, outgoing functional units: Minimum 10 mm.

- Switchboards, sub assembly designations: Minimum 15 mm.
- Valves:
 - . Not less than DN 65: Minimum 25 mm.
 - . Less than DN 65: Minimum 10 mm.
- Self-adhesive flexible plastic labels:
 - . Labels less than 2000 mm above floor: 5 mm.
 - . Labels minimum 2000 mm above floor: 10 mm.
 - . Other locations: Minimum 5 mm.

Label locations: Locate labels so they are easily seen and are either attached to, below or next to the item being marked.

Fixing: Fix labels securely using screws, rivets, proprietary self-adhesive labels or double-sided adhesive tape and as follows:

- If labels are mounted in extruded aluminium sections, use rivets or countersunk screws to fix the extrusions.
- Use aluminium or monel rivets for aluminium labels.

Vapour barriers: Do not penetrate vapour barriers.

8 COMPLETION

8.1 TOOLS AND SPARE PARTS

Spare parts

General: Provide spare parts listed as documented.

Replacement: Replace spare parts used during the maintenance period.

Tools and spare parts schedule

Submission timing: At least 8 weeks before the date for practical completion.

Requirement: Prepare a schedule of tools, portable instruments and spare parts necessary for maintenance of the installation. For each item state the recommended quantity and the manufacturer's current price. Include the following in the prices:

- Checking receipt, marking and numbering in conformance with the spare parts schedule.
- Packaging and delivery to site.
- Painting, greasing and packing to prevent deterioration during storage.
- Referencing equipment schedules in the operation and maintenance manuals.
- Suitable means of identifying, storing and securing the tools and instruments. Include instructions for use.

8.2 TRAINING

General

Standard: To SA TS 5342 (2021).

Duration: Instruction to be available for the whole of the commissioning and running-in periods.

Format: Conduct training at agreed times, at system or equipment location. Also provide seminar instruction to cover all major components.

Operation and maintenance manuals: Use items and procedures listed in the final draft operation and maintenance manuals as the basis for instruction. Review contents in detail with the principal's staff.

Certification: Provide written certification of attendance and participation in training for each attendee. Provide register of certificates issued.

Demonstrators

General: Use only qualified manufacturer's representatives who are knowledgeable about the installations.

Operation

General: Explain and demonstrate to the principal's staff the purpose, function and operation of the installations.

Maintenance

General: Explain and demonstrate to the principal's staff the purpose, function and maintenance of the installations.

Seasonal operation

General: For equipment requiring seasonal operation, demonstrate during the appropriate season.

8.3 CLEANING

Removal of material

General: Dispose of building waste material off site to the requirements of the relevant authorities.

Final cleaning

General: Before the date for practical completion, clean throughout, including all exterior and interior surfaces except those totally and permanently concealed from view.

Labels: Remove all visible labels not required for maintenance.

8.4 WARRANTIES

General

Requirement: If a warranty is documented, name the principal as warrantee. Register with manufacturers as necessary. Retain copies delivered with components and equipment.

Approval of applicator or installer: If the warranty is conditional on the manufacturer's approval of the applicator or installer, submit the manufacturer's written approval of the installing company, and authorised personnel, with evidence of qualifications and experience in the specific use of the product, material or system.

Principal's responsibilities: Submit details of responsibilities of the principal required to keep warranties in force.

Warranty types

Manufacturer's warranty: Warranty to cover manufacturing defects and defects with products and materials delivered to site.

Manufacturer and applicator's/installer's interlocking warranty: Interlocking warranty to cover manufacturing defects and defects with products and materials delivered to site, including their application or installation.

Supplier's warranty: Warranty to defects in materials delivered to site.

9 TESTING AND COMMISSIONING

9.1 TESTING - GENERALLY

Inspection and testing plan

Requirement: Provide inspection and testing plan consistent with the construction program including details of test stages and procedures.

Notice

Site tests: Give notice of the time and place of documented tests.

Inspection: Give sufficient notice for inspection to be made of the commissioning, testing and verification tests on completion of commissioning.

Attendance

General: Provide attendance at tests.

Suppliers: If necessary to carry out documented tests, arrange equipment suppliers to assist.

Testing authorities

Requirement: Have tests carried out by an Accredited Testing Laboratory, accredited for the documented test method, except for site tests or test methods that do not have an Accredited Testing Laboratory.

Test equipment

Accuracy: Use testing equipment designed to test and/or measure system performance within the documented tolerances.

Calibration: Use only instruments that have current calibration certificates issued by an Accredited Testing Laboratory. Tag or label instruments with calibration date and calibration authority name. Provide copies of certification if requested.

Maximum period since last calibration: As recommended by the manufacturer but less than 12 months, except as documented.

Recalibration: If dropped or damaged, recalibrate instruments.

Testing equipment: Provide test equipment and tools to perform documented tests as follows:

- Special testing equipment: If documented, provide special equipment, tools and instruments required for testing or calibration.
- Other testing equipment: Provide standard testing equipment.

Testing procedures

Verification: Verify test procedures by:

- Manual testing.
- Monitoring performance and analysing results using the control system trend logs.
- A combination of the above methods.

Sampling: Sampling may be used subject to the following:

- Use a sampling strategy only for multiple identical pieces of non-life-safety or otherwise non-critical equipment.
- If at any point, more than one identical item has failed, stop testing, determine the cause, rectify and document changes made to remaining units, before continuing with functional testing of the remaining units.

Type tests

Type test reports: Required, as evidence of conformance of proprietary equipment.

Sound pressure level measurements

Requirement: Conform to the following:

- Correction for background noise: To AS/NZS 2107 (2016) Table B1.
- External: To AS 1055 (2018).
- Internal: To AS/NZS 2107 (2016).
- Measurement positions: If a test position is designated only by reference to a room or space, do not take measurements less than 1 m from the floor, ground or walls. For large equipment items including chillers, measure at 2 m and 7 m from the equipment item.
- Sound pressure level analysis: Measure the sound pressure level and the background sound pressure level over the full range of octave band centre frequencies from 31.5 Hz to 8 kHz at the designated positions.
- Sound pressure levels: Measure the A-weighted sound pressure levels and the A-weighted background sound pressure levels at the designated positions.

Test outcome

Requirement: Test as documented and achieve the following:

- Pass the documented Pass/Fail test, and/or
- Values that meet documented requirements, and/or
- Verification of manufacturer's claimed performance.

Failure of multiple items

Requirement: If 10% or 3, whichever is greater, of identical pieces (size does not constitute a difference) of equipment fail to perform as documented for any reason, treat all identical units as having failed. Submit notice of failure and conform to the following:

- Within one week of notification, examine all other identical units and record the results. Submit a report of the findings within two weeks of the original failure notice.
- Within two weeks of the original failure notification, submit a signed and dated explanation of the problem, including the cause of failure, the proposed solution, full equipment details and any other information. Do not exceed the documented requirements of the original installation with the proposed solution.

Rectification of failure under test

Requirement: If an item fails a documented test, rectify the cause of failure and repeat the test.

Submissions: If submission of test results is documented, submit results of both successful and unsuccessful tests.

Test reports

Requirement: Include the following:

- Documented performance criteria including, if documented, tolerances.
- Observations and results of tests and conformance or non-conformance with documented requirements.

Test validity period

Requirement: As documented or, if no validity period is documented, no older than 5 years.

Controls

General: Calibrate, set and adjust control instruments, control systems and safety controls.

Circuit protection

General: Confirm that circuit protective devices are sized and adjusted to protect installed circuits.

Certification

General: On satisfactory completion of the installation, testing and commissioning and before the date for practical completion, certify that each installation is operating correctly.

Integrated system tests

Requirement: Conduct integrated system tests as documented.

Tests: Provide the following:

- Test the integrated operation of the systems listed in each mode documented.
- Restoration of the systems to their pre-test condition on completion of the tests above.

Failure: If any of the systems fails to perform as documented, including return to normal operation, rectify the cause and repeat the integrated system test.

Deferred and seasonal tests

Deferred tests: If documented testing cannot be completed at the scheduled or documented time, the contract administrator may direct that they be deferred to a later time but as soon as possible after the scheduled or documented time.

Seasonal tests: If documented tests are dependent on specific weather conditions, they may be deferred to a time when weather conditions are close to the documented test conditions. Complete seasonal testing as soon as possible but no later than one month before the end of the defects liability period.

Functional tests

Function: Carry out functional and operational tests on each energised equipment item and circuit.

9.2 COMMISSIONING**Standard**

Requirement: Conform to SA TS 5342 (2021).

Static completion

Requirement: Systems, components and building elements are statically complete when:

- Their construction and installation is complete and as documented, including completion of all systems, components and building elements on which they are dependent for commissioning.
- All pre-commissioning tests have been successfully completed.
- They are safe and ready for commissioning.
- All cleaning that may adversely affect commissioning is complete.
- They have been inspected and all outstanding remedial work that may adversely affect commissioning is complete.
- All spaces required for access for commissioning are safe to use and cleared of obstructions that may adversely affect commissioning.

Commissioning plan

Requirement: Provide a commissioning plan to SA TS 5342 (2021) including the following:

- A summary of the work covered by the commissioning plan.
- The parties responsible for this work and any commissioning interrelationships.
- The basis of the design.
- General sequence of commissioning.
- Project specific commissioning methodologies for each system and building element to be commissioned.
- Pre-commissioning requirements.
- Project specific commissioning procedures for each commissioning activity including integrated system tests, deferred and seasonal tests.
- A project specific building tuning plan for all commissioned systems. Include building tuning procedures and tuning team members.
- Requirements for witnessing of tests and documented demonstrations of completion of commissioning.
- Commissioning program to **COMMISSIONING, Commissioning program**.

Commissioning program

Submissions: Submit a program consistent with, and forming part of, the construction program as follows:

- Set out the proposed program for completion, commissioning, testing and instruction.
- Identify related works and timing of the works prerequisite to successful and timely completion of the works.

Revisions: Submit revisions of the program as the project proceeds.

Plant operating period: Include time in the program for the documented plant operating period before the date for practical completion.

Commissioning activities

Requirement: Provide the following to SA TS 5342 (2021):

- Manage the commissioning process.
- Establish and manage the completion process.
- Review design documents for commissionability. Submit a report including any recommended changes.
- Review documented commissioning requirements. Submit a report including any recommended changes.
- Review construction documents for commissionability. Submit a report including any recommended changes.
- Develop, review and update the commissioning plan and commissioning program.
- Develop, review and update commissioning methodologies.
- Develop, review and update commissioning procedures.
- Report on interdependencies between trades that may affect commissioning.
- Develop, review and update procedures for initial start-up of systems.
- Develop, review and update integrated system test procedures.
- Carry out pre-commissioning activities. Record results and submit pre-commissioning records.
- Conduct commissioning activities to the commissioning methodologies and procedures. Record and submit commissioning records.
- Facilitate and conduct integrated system tests and demonstrations. Record and submit integrated system test records.
- Conduct documented demonstrations of completion of commissioning.
- Report on the progress of commissioning work.
- Report on conformance to the commissioning plan and program.
- Report on commissioning defects and issues and progress on their resolution.
- Develop, review and update commissioning report.
- Develop, review and update training materials, conduct training sessions to **TRAINING**.
- Develop, review and update operation and maintenance manuals to **OPERATION AND MAINTENANCE MANUALS**.
- Manage and report deferred and seasonal testing activities to **TESTING - GENERALLY**.
- Management and reporting of building tuning process.
- Periodically review performance data.

Verification of commissioning

Requirement: On completion of commissioning of the equipment or system, provide additional tests to verify that it is fully commissioned and operating to documented requirements.

9.3 BUILDING TUNING

General

Standard: To SA TS 5342 (2021).

Frequency: Three monthly or more frequently.

Duration: Until the end of the maintenance period. Provide last building tuning in the month before the end of the maintenance period.

Requirement: Provide the following:

- Review data from all recording systems against documented requirements.
- Review of building occupant feedback.
- If discrepancies are identified from the above, take corrective action to rectify them.
- Report on the findings of the reviews, corrective action and effect of corrective action.
- Recommend other action to improve the effectiveness, reliability and efficiency of systems.

10 PROJECT RECORDS

10.1 TACTICAL FIRE DRAWINGS

General

Requirement: Provide sets of colour coded tactical fire drawings, showing all items and systems relevant in a fire to BCA (2022) Spec 19.

Scale: 1:200 or larger if required to be easily read under emergency conditions.

Coordination: Agree the format, colour coding and contents of the tactical fire plans with the Local Fire Authority before beginning documentation.

Location: Provide one set of the laminated drawings fixed to the wall or supplied in a vertical plan hanger in the fire control room.

Loose set: Provide a second set of identical drawings.

Operation and maintenance manuals: Provide a set of colour coded tactical fire drawings in each copy of the operating and maintenance manual.

Inclusions

Requirement: Include the following on the tactical fire drawings:

- Legend sheet at front of set.
- Colour coding key.
- Building: As follows:
 - . Floor plans.
 - . Pressurised and non-pressurised fire isolated stairs and passages.
 - . Smoke and fire compartments.
 - . Special risk areas.
- Fire services: As follows:
 - . Automatic fire detection systems.
 - . Automatic suppression systems including gas flooding systems.
 - . Communications including warden intercommunication points.
 - . Fire control room.
 - . Fire equipment including booster connections.
 - . Fire hydrants, hose reels, portable fire extinguishers.
 - . Fire detection control and indicating equipment (FDCIE).
 - . Fire service lifts.
 - . Fire telephone and control panel.
 - . Hydrant and sprinkler pumps.
 - . Hydrant/hose reels.
 - . Sprinkler and hydrant, suction and booster connections.
 - . Sprinkler control valves.
- Electrical services: As follows:
 - . Emergency power supplies.
 - . Essential services switchboards.
 - . Evacuation warning panel.
 - . Standby power plant.
 - . Substations/transformers.
 - . Switchboards, main switchroom.
- Mechanical ventilation and air handling equipment: As follows:
 - . Air intakes, fans, ducts, shafts.
 - . Conditioners and mixing boxes.
 - . Fire dampers.
 - . General exhaust air fans, ducts, shafts, discharges.
 - . Smoke dampers.

- . Smoke fans including exhaust fans, zone and stair pressurisation fans.
- . Stair pressurisation systems.
- . Supply air system.
- Mechanical ventilation and air handling equipment operation: As follows:
 - . Statement of normal condition.
 - . Condition upon fire alarm.
 - . Manual controls available.
- Hydraulic services: As follows:
 - . Gas meters.
 - . Gas supply control.
 - . Incoming water supplies and valves for the sprinkler, hydrant and fire hose reel systems.
 - . Water tank.

10.2 RECORD DRAWINGS

General

Requirement: Prepare record drawings showing the following:

- Installed locations of building elements, services, plant and equipment.
- Off-the-grid dimensions and depth if applicable.
- Any provisions for the future.

Recording, format and submission

Requirement: Record changes made during the progress of the works on a set of drawings kept on site for that specific purpose.

Drawing layout: Use the same borders and title block as the contract drawings.

Quantity and format: Conform to **SUBMISSIONS**.

Endorsement: Sign and date all record drawings.

Accuracy: If errors in, or omissions from, the record drawings are found, amend the drawings and re-issue in the quantity and format documented for **SUBMISSIONS**.

Date for submission: Not later than 2 weeks after the date for practical completion.

Services record drawings

General: To **RECORD DRAWINGS, General** and **Recording, format and submission** and the following:

- Extensions and/or changes to existing: If a drawing shows extensions and/or alterations to existing installations, include sufficient detail of the existing installation to make the drawing comprehensible without reference to drawings of the original installation.
- Detention: If on-site detention tanks or pondage are provided, include the volume required on the drawing and the permitted flow rate to the connected system.
- Domestic cold water or fire mains: Show the pressure available at the initial connection point and the pressure available at the most disadvantaged location on each major section of the works.
- Stormwater: If storm water pipes are shown, include the pipe size and pipe grade together with the maximum acceptable flow and the actual design flow.

Diagrams: Provide diagrammatic drawings of each system including the following:

- Controls.
- Piping including all valves and valve identification tags.
- Principal items of equipment.
- Single line wiring diagrams.
- Acoustic and thermal insulation.
- Access provisions and space allowances.
- Fasteners.
- Fixtures.
- Switchgear and controlgear assembly circuit schedules including electrical service characteristics, controls and communications.
- Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

Subsurface services: Record information on underground or submerged services to the documented quality level, conforming to AS 5488.1 (2022).

10.3 BASELINE DATA

General

Requirement: Provide baseline data to permit routine service of fire protection systems and equipment to AS 1668.1 (2015), the NCC cited AS 1670.1 (2018), AS 1851 (2012) and AS/NZS 2293.1 (2018). Include baseline data for the following:

- Active fire and smoke systems including automatic fire sprinkler systems, fire pumpsets, fire hydrant systems and water storage tanks for fire protection systems.
- Fire detection and alarm systems.
- EWIS, exit signs and emergency lighting.
- Standby generator sets and batteries.
- Lay flat fire hose, fire hose reels, portable and wheeled fire extinguishers and fire blankets.
- Passive fire and smoke systems, including the following:
 - . Fire and smoke elements (vertical and horizontal) - walls, floors, ceilings, access panels and hatches.
 - . Structural fire-resistant elements - beams, columns, girders and trusses.
 - . Fire-resisting doorsets - hinged, pivoted and horizontal sliding.
 - . Smoke doors - hinged and pivoted.
 - . Fire shutters.
 - . Fire-resisting glazing.
 - . Ducts.
 - . Dampers.
- Fire and smoke control features of mechanical services.
- Emergency planning in facilities.

Format: Provide baseline data in a format that facilitates the carrying out and recording of routine service tasks including drawings showing the extent and location of items to be serviced, schedules of items and unique identification of each item.

10.4 OPERATION AND MAINTENANCE MANUALS

General

Standard: To SA TS 5342 (2021).

Authors and compilers: Personnel experienced in the maintenance and operation of equipment and systems installed, and with editorial ability.

Referenced documents: If referenced documents or worksections require submissions of manuals, include corresponding material in the operation and maintenance manuals.

Subdivision: By installation or system, depending on project size.

Revisions: Amend the operation and maintenance manuals to include changes made to the installation during construction and maintenance including changes to software and commissioning records.

Contents of manual

Table of contents: Include a table of contents in each volume. Title to match cover.

Table of amendments: Include a table of amendments.

Directory: Include names, addresses, email addresses and telephone and facsimile numbers of principal consultant, subconsultants, contractor, subcontractors and names of responsible parties.

Record drawings: Include complete set of record drawings, full size.

Drawings and technical data: Include as necessary for the efficient operation and maintenance of the installation.

Installation description: Include a general description of the installation.

Systems descriptions and performance: Include a technical description of the systems installed including the basis of design, the interrelation with other systems and the building and mode of operation, presented in a clear and concise format readily understandable by the principal's staff. Identify function, normal operating characteristics, safety features and limiting conditions.

Baseline data: Include the baseline data to **BASELINE DATA**.

Commissioning records: Include commissioning records to SA TS 5342 (2021). Link commissioning records to item codes on the record drawings.

Training material: Include materials used to provide training, to **TRAINING**, in a form that can be used to train others.

Fire systems and equipment: Include documentation to AS 1851 (2012), including the schedule of essential functionality and performance requirements.

Digital photographic and video records: Provide documented digital photographic and video records, keyed to the drawings.

Equipment: Include schedules with the following details for installed equipment:

- Item code for use on record and diagrammatic drawings, and spare parts schedule.
- Equipment name plate data including serial number, if any.
- Name and contact details of the manufacturer and supplier.
- Catalogue list number(s).
- Location.
- Function.
- Performance figures and capacity data.
- Date of manufacture.
- Manufacturer's product data sheets including only relevant matter for the project. Mark each product data sheet to clearly identify specific products and component parts used in the installation, and data applicable to the installation.
- Additional information and commentary to illustrate relations of component parts.

Certificates:

- Certificates from authorities.
- Product certification.
- Test certificates for each service installation and all equipment.
- Warranties.

Trends: 7 day record of all trends at commissioning.

Operation procedures: Include for systems installed:

- Manufacturer's technical literature as appropriate.
- Safe starting up, running-in, operating and shutting down procedures. Include logical step-by-step instructions for each procedure.
- Control sequences and flow diagrams.
- Legend for colour-codes services.
- Schedules of fixed and variable equipment settings established during commissioning and maintenance.
- A list of special safety devices and their set points.
- Procedures for seasonal changeovers.
- Warnings to operators.
- Procedures for identifying and rectifying common faults.
- Recommendations for efficient plant operation.
- If the installation includes cooling towers, recommendations for water efficiency.
- Building tuning plan and procedure to **COMMISSIONING, Commissioning plan**.

Building occupants' guide: Include a concise guide written and illustrated for building occupants with no technical background. Include the following:

- Security provisions.
- Safety and access.
- Environmental features, including energy and water efficiency and waste management.
- Occupant relevant information on design and operation.
- Information for occupants on environmental systems that rely partially or wholly on local controls for heating, lighting, cooling, and ventilation.
- Contact details for faults, maintenance and emergencies.

Maintenance procedures:

- Detailed recommendations for periodic maintenance and procedures, including schedule of maintenance work with frequency and manufacturers' recommended tests.
- Manufacturer's 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 instructions for each procedure.
- Schedule of spares, recommended to be held on site, for those items subject to wear or deterioration and that may involve the principal in extended deliveries when replacements are required. Include complete nomenclature and model numbers, and local sources of supply.
- Schedule of normal consumable items, local sources of supply, and expected replacement intervals up to a running time of 40 000 hours. Include lubrication schedules for equipment.
- Instructions for use of tools and testing equipment.
- Troubleshooting procedures.
- Emergency procedures, including telephone numbers for emergency services, and procedures for fault finding.
- Safety data sheets (SDS).
- Instructions and schedules conforming to AS 1851 (2012), AS/NZS 3666.2 (2011), AS/NZS 3666.3 (2011) and AS/NZS 3666.4 (2011).

Maintenance records:

- Prototype routine service records conforming to AS 1851 (2012) prepared to include project specific details.
- Prototype periodic maintenance records and report to AS/NZS 3666.2 (2011), AS/NZS 3666.3 (2011) and AS/NZS 3666.4 (2011) as appropriate, prepared to include project specific details.
- Hard copies: Binders to match the manuals, containing loose leaf logbook pages designed for recording completion activities including operational and maintenance procedures, materials used, test results, comments for future maintenance actions and notes covering the condition of the installation. Include completed logbook pages recording the operational and maintenance activities performed up to the date for practical completion.
- Number of pages: The greater of 100 pages or enough pages for the maintenance period and a further 12 months.

Emergency information: For each type of emergency, including fire, flood, gas leak, water leak, power failure, water failure, system or subsystem failure, chemical release or spill, include the following:

- Emergency instructions.
- Emergency procedures including:
 - . Instructions for stopping or isolating.
 - . Shutdown procedures and sequences.
 - . Instructions for actions outside the property.
 - . Special operating instructions relevant to the emergency.
 - . Contact details relevant to the emergency.

Emergency information manual

Form of emergency information: Provide one of the following:

- An index and coloured tabs identifying emergency information for each type of emergency within the operation and maintenance manual.
- A separate Emergency manual containing copies of emergency information from the main operation and maintenance manual.

Format – electronic copies

Scope: Provide the same material as documented for hardcopy in electronic format.

Delivery method: electronically.

Quantity and format: Conform to **SUBMISSIONS, Electronic submissions**.

Printing: Except for drawings required in **RECORD DRAWINGS** provide material that can be legibly printed on A4 size paper.

Format – hard copies

General: 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 with title visible, insert in plastic sleeves (one per drawing) and accommodate them in the binders.
- Pagination: Number pages.
- 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.

Number of copies: 3.

Date for submission

Draft submission: The earlier of the following:

- 4 weeks before the date for practical completion.
- Commencement of training.

Final submission: Within 2 weeks after practical completion.

11 MAINTENANCE

11.1 PERIODIC MAINTENANCE

General

Requirement: Provide documented maintenance so that the condition and performance of the maintained work throughout and at the end of the maintenance period is equal to or better than that at the beginning of the maintenance period including with respect to the following:

- Performance, service delivery.
- Service life and reliability.
- Compliance with statutory requirements.
- Compliance with building rating requirements.
- Energy and water efficiency.
- Environmental impact.
- Health and safety.
- Risk management.

Inclusions: Include the following:

- Periodic and statutory maintenance, cleaning and replacement of consumables.
- Emergency repairs.
- Condition reporting.

Duration: From the time systems and equipment are put into service to the end of the maintenance period.

Maintenance period: The greater of the defects liability period and the period documented.

Faults: Rectify promptly.

Emergencies: Attend emergency calls promptly.

Annual maintenance: Carry out recommended annual maintenance procedures within the four weeks before the end of the maintenance period.

Maintenance program

General: Submit details of maintenance procedures and program, relating to installed plant and equipment, 6 weeks before the date for practical completion. Indicate dates of service visits. State contact telephone numbers of service operators and describe arrangements for emergency calls.

Maintenance records

General: Record in binders provided with the operation and maintenance manuals.

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

Certificates: Include test and approval certificates.

Service visits: Record comments on the functioning of the systems, work carried out, items requiring corrective action, adjustments made and name of service operator. On completion of the visit, obtain the signature of the principal's designated representative on the record of the work undertaken.

Site control

General: Report to the principal's designated representative on arriving at and before leaving the site.

11.2 STATUTORY INSPECTIONS AND MAINTENANCE**General**

Duration: From the time systems and equipment are put into service to the end of the maintenance period.

Requirement: Provide inspections and maintenance of safety measures required by the following:

- AS 1851 (2012).
- Other statutory requirements applicable to the work.

Records: Provide mandatory records.

Certification: Certify that mandatory inspections and maintenance have been carried out and that the respective items conform to statutory requirements.

Annual inspection: Perform an annual inspection and maintenance immediately before the end of the maintenance period.

0172B ENVIRONMENTAL MANAGEMENT**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide environmental management, as documented.

Management and control measures

Implementation: To the documented management and control measures.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the following definitions apply:

- Clearances: A formal certificate, approval or condition issued by a statutory authority allowing work in a particular area.
- Contamination of land: The presence of a substance in, on or under the land that is designated hazardous material and/or is at a concentration above that which is normally found in that locality, and presents a risk of harm to human health or to the environment.
- Environment: The physical factors of the surroundings of human beings including the land, waters, atmosphere, climate, sound, odours, tastes; and the biological factors of animals; and plants and the social factor of aesthetics.
- Environmental audit: A review of environmental management practices, in particular the evaluation of a site for environmental liability.
- Environmental impact assessment (EIA): A method for predicting environmental impacts of a proposed development including strategies for minimising identified impacts.
- Environmental management plan (EMP): A project or site specific plan describing the management of the environmental issues and considerations for the activity being undertaken. This applies to the design, construction and operation of the buildings, external works and infrastructure.
- Organic waste: Includes all food wastes, vegetative wastes from land clearing and pruning operations, biosolids produced from the treatment of liquid wastes, garden wastes and forestry waste (bark and saw dust) and paper and cardboard products.
- Pollution incident: An incident or set of circumstances during or as a consequence of which there is, or is likely to be, a leak, spill or other escape of a substance as a result of which pollution has occurred, is occurring or is likely to occur.
- Weed: An invasive plant that degrades natural areas, reduces the sustainability or affects the health of people and animals.

1.4 INSPECTION**Notice**

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

- Non-conforming items, such as ground contamination.
- Completed removal or rectification of non-conforming items.
- Unexpected finds.

2 ENVIRONMENTAL ADMINISTRATION, MONITORING AND REPORTING**2.1 PROCEDURAL AND PERSONNEL****Community liaison**

General: Notify residents of construction activities that will affect access to, or disrupt the use of, their properties.

Notice: Minimum 5 working days, unless the work is of an urgent nature with safety implications.

Notification content:

- Description of the work.
- Reason for the work.
- Expected duration.
- Changes to traffic arrangements and property access.
- 24-hour contact number of the representative responsible.

Emergency response

Emergency response personnel: Provide staff names and contact details.

Response procedure: refer 3.1 ENVIRONMENTAL MANAGEMENT PLAN.

Response time: within 24 hours of discovery.

Complaints

Reporting: Within 1 working day of receiving a complaint about an environmental impact, including pollution incidents, prepare a written report detailing the complaint and remedial action taken.

Register: Keep a register of all complaints and action taken.

Unexpected finds

Requirement: Give notice and close off affected site area with barrier tapes and warning signs to prevent access.

Unexpected finds: Include asbestos and other hazardous or volatile contaminants, archaeological finds and items of heritage value.

2.2 MONITORING

Internal monitoring

Approval authority: Principal's representative.

Documentation: Provide details of the following:

- Environmental monitoring: Implementation and recording procedures.
- Control measures to be implemented: Non-conformance control and corrective action procedures.

Records: Maintain records of results of environmental monitoring, including the effectiveness of any remedial action taken.

Internal monitoring personnel: Provide staff names and contact details.

Machinery and equipment: Provide details of proposed plant.

Review timing: Review the EMP or control measures at the following stages:

- When there is a change in the project, including the scope.
- Following significant environmental impacts or pollution incidents.
- When improved performance is required to reduce a specific environmental impact.
- At completion of environmental audits.
- At the end of the project.

2.3 REPORTING

General

Requirement: Prepare environmental management reports that record the progress of the following:

- Performance against statutory requirements.
- Performance against the EMP, environmental objective and policy, and ecologically sustainable development outcomes and targets.
- Summary of monitoring, inspection and audits.
- Summary of reports required to meet the statutory requirements.
- Summary of environmental impacts, pollution incidents, non-conformance and complaints.
- Summary of corrective actions where required.
- Unexpected finds.

Reporting frequency: end of each month.

3 ENVIRONMENTAL MANAGEMENT

3.1 ENVIRONMENTAL MANAGEMENT PLAN

Requirement: Prepare a site Environmental Management Plan (EMP) that covers the following and have this approved by the principal before commencing works.

- EMP objective and environmental policy
- Risk assessment
- Assignment of responsibility for environmental controls
- Approvals, licences and permits to meet statutory requirements
- Environmental training plan and procedures
- Training program: Include a program to provide the following training about the EMP and its management controls, environmentally sensitive areas and responsibilities to all contractors and subcontractors present on site for three days or more, covering:
 - The sustainability attributes of the building and their benefits.
 - The role site work and workers play in delivering a sustainable building.
- Responsible Construction -Refer to the RCoW Sustainable Council Building Policy (attached as an Appendix to this Specification) and prepare a methodology to achieve responsible minimum recycling rate for all demolition and construction waste and provide monthly reports for the project record confirming the rates per month and in aggregate for the project.
- Environmental control measures particular to the following phases of activity:
 - Before construction and site establishment:
 - During construction:
 - After construction, including rehabilitation activities and site and landscaping maintenance:

3.2 WASTE MANAGEMENT

General control measures

Requirement: Minimise solid waste generated by construction activities and dispose of the solid waste.

Major waste streams that will be generated during the works:

- Vegetation waste.
- Construction waste, including:
 - . Spoil.
 - . Demolition waste.
 - . Asphalt or bitumen.
 - . Concrete.
 - . Metal.
 - . Hazardous materials including paint.
 - . Office waste.
 - . Kitchen waste.

Transport method between the site and point of re-use, recycling, stockpiling, treatment or disposal

Covers: Use tarpaulins to prevent the loss of materials onto public roads.

Storage method: Provide details of location, labelling and protection of separate skips for the identified waste stream.

3.3 AIR QUALITY

Control measures

Requirement: Protect adjoining owners, residents and the public from emissions of dust and exhaust gases.

Prohibition: Do not light fires.

3.4 WATER QUALITY

Control measures

Requirement: Keep earthworks free of water and reduce impacts on groundwater and surface water. Conform to the following:

- Provide and maintain slopes, crowns and drains for excavations and embankments, to make sure there is free drainage.

- Construct, including placing of fill, masonry, concrete and services, on ground where free water has been removed.
- Prevent water flow over freshly laid work.

Washout: Prevent washout from entering waterways or stormwater drains.

Cross connection: Prevent cross connections between stormwater and the public sewerage system.

Water disposal: Dispose off site.

3.5 NOISE CONTROL AND VIBRATION

Control measures

Requirement: Protect adjoining owners, residents and the public from noise and vibration impacts.

Noise control and vibration: To the recommendations of AS 2436 (2010).

Noise levels: Avoid excessive noise and long periods of elevated noise that is reasonably anticipated to annoy or adversely affect the adjacent community.

Noise suppression: Minimise noise nuisance with measures including the following:

- Provide enclosures for noisy equipment.
- Provide noise attenuation screens.
- Maintain plant in good working order.
- Provide effective residential class silencers to all engine exhausts.
- Fit engine covers to all plant.

Limits on ground vibration: Make sure ground vibration levels transmitted from operating items of plant near buildings do not exceed levels that are close to the lower level of human perception inside the premises or cause structural damage to the buildings and other structures.

Monitoring: Provide the following:

- Baseline condition measurements before commencement of the works.
- Progressive monitoring during the works to verify conformance with approval conditions.

0181 ADHESIVES, SEALANTS AND FASTENERS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide adhesives, sealants and fasteners, as documented.

Performance

Requirement: Conform to the following:

- Fitness for purpose: Suitable for particular use, capable of transmitting imposed loads, and sufficient to maintain the rigidity of the assembly and integrity of the joint.
- Discolouration: Will not cause discolouration of the finished surface.
- Compatibility: Compatible with the products to which they are applied.
- Sealant replacement: Capable of safe removal without compromising the application of the replacement sealant for future refurbishment.
- Movement: If an adhered or sealed joint is subject to movement, accommodate the projected movement under the conditions of service.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 SUBMISSIONS**Products and materials**

Manufacturer's data: Submit the manufacturer's product data sheets for each type of adhesive and sealant to be used.

Type tests: Submit test results demonstrating that the adhesive, sealant or fastener is compatible with the materials to be adhered, sealed or fixed and is suitable for the project conditions.

Samples

Requirement: Submit samples to PRODUCTS, **GENERAL**, **Samples**.

Warranties

Requirement: Submit warranties to **COMPLETION**, **Warranties**.

2 PRODUCTS**2.1 GENERAL****Samples**

Visible joint sealants: Provide samples for each sealant showing the colour once cured.

Storage and handling

Adhesives and sealants: Maintain temperatures of between +5°C to +25°C in the storage area and within the manufacturer's recommended range. Do not use materials that have been stored longer than the manufacturer's maximum recommended shelf life.

2.2 ADHESIVES**Standards**

Gypsum plaster adhesive: To AS 2753 (2018).

Contact adhesive

Compatibility: Select adhesives that are compatible with the substrates to be bonded.

High strength adhesive tape

Description: A foam of cross linked polyethylene or closed cell acrylic coated both sides with a high performance acrylic adhesive system, encased in release liners of paper or polyester.

Type: Select tape to suit substrate as follows:

- High energy surfaces, including most bare metals such as stainless steel and aluminium: Firm high strength foam tapes.
- Medium energy surfaces, including many plastics, paints and unfinished metals: Conformable high strength foam tapes.
- Low energy surfaces, including many plastics, most paints and powder coatings, and unfinished metals: Conformable high strength foam tapes.

Thickness: Select tape so that the height deviation to adjoining surfaces does not exceed half the tape thickness under the required application pressure.

Total VOC limits

Requirement: Conform to the following maximum limits:

- General purpose adhesives: 50 g/L.
- Structural glazing adhesives, and timber flooring and laminate adhesives: 100 g/L.

2.3 SEALANTS**Standards**

General: To ISO 11600 (2002).

External masonry joints

General: Provide sealant and bond breaking materials that are non-staining to masonry. Do not use bituminous materials with absorbent masonry units.

Bond breaking backing:

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

Lightweight building element joints

Joints subject to rapid changes of movement: Provide sealants that accommodate the movement of the contact materials.

Floor control joints

General: Provide trafficable sealants.

Bond breaking backing:

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

Total VOC limits

Requirement: Conform to the following maximum limits:

- General purpose sealants: 50 g/L.
- Acoustic sealants, architectural sealants and waterproofing sealants: 250 g/L.
- Timber flooring and laminate sealants: 100 g/L.

2.4 FASTENERS**General**

Masonry anchors: Proprietary expansion or bonded type anchors, as documented.

Post-installed and cast-in fasteners: To AS 5216 (2021).

Plain washers: To AS 1237.1 (2002). Provide washers to the heads and nuts of bolts, and the nuts of coach bolts.

Plugs: Proprietary purpose-made plastic.

Stainless steel fasteners: To ASTM A276/A276M (2024).

Steel nails: To AS 2334 (1980). Provide nails with length conforming to the following:

- Generally: At least 2.5 times the thickness of the member being secured.
- Sheet or panel products, including plywood, blockboard, fibreboard and hardboard: If less than 10 mm thick, at least 4 times the thickness of the sheet or panel product being secured.

Unified hexagon bolts, screws and nuts: To AS/NZS 2465 (1999).

Bolts

Coach bolts: To AS/NZS 1390 (1997).

Hexagon bolts - Grades A and B: To AS 1110.1 (2015).

Hexagon bolts - Grade C: To AS 1111.1 (2015).

Nuts

Hexagon chamfered thin nuts - Grades A and B: To AS 1112.4 (2015).

Hexagon nuts - Grade C: To AS 1112.3 (2015).

Hexagon nuts - Style 1 Grades A and B: To AS 1112.1 (2015).

Hexagon nuts - Style 2 Grades A and B: To AS 1112.2 (2015).

Screws

Coach screws: To AS/NZS 1393 (1996).

Hexagon screws - Grades A and B: To AS 1110.2 (2015).

Hexagon screws - Grade C: To AS 1111.2 (2015).

Hexagon socket screws: To AS 1420 (2008).

Self-drilling screws: To AS 3566.1 (2002).

Self-tapping screws:

- Cross-recessed countersunk (flat - common head style): To AS/NZS 4407 (2015).
- Cross-recessed pan: To AS/NZS 4406 (2015).
- Cross-recessed raised countersunk (oval): To AS/NZS 4408 (2015).
- Hexagon: To AS/NZS 4402 (2015).
- Hexagon flange: To AS/NZS 4410 (2015).
- Hexagon washer: To AS/NZS 4409 (2015).
- Slotted countersunk (flat - common head style): To AS/NZS 4404 (2015).
- Slotted pan: To AS/NZS 4403 (2015).
- Slotted raised countersunk (oval - common head style): To AS/NZS 4405 (2015).

Blind rivets

Description: Expanding end type with snap mandrel.

Type:

- External application: Closed end.
- Internal application: Open end.

End material:

- Metallic-coated or prepainted steel: Aluminium base alloy.
- Stainless steel sheet: Stainless steel.
- Copper sheet: Copper.

Size:

- Sheet metal to sheet metal: 3 mm.
- Sheet metal to supports, brackets and rolled steel angles: 4.8 mm.

Corrosion resistance

Atmospheric corrosivity category: To 0171 *General requirements*.

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

Corrosion resistance table

Atmospheric corrosivity category to AS 4312 (2019)	Threaded fasteners and anchors		Powder actuated fasteners
	Material	Minimum local metallic coating thickness (µm)	Material
C1 and C2	Electroplated zinc or Hot-dip galvanized	30	Stainless steel Type 316
C3	Hot-dip galvanized	45	Stainless steel Type 316
C4	Stainless steel Type 316	-	Stainless steel Type 316
Note: For categories C5, CX and T to the AS/NZS 2312 series, seek specialist advice.			

Finishes

Electroplating:

- Metric thread: To AS 1897 (2016).
- Imperial thread: To AS 4397 (2007).

Galvanizing:

- Threaded fasteners: To AS/NZS 1214 (2016).
- Other fasteners: To AS/NZS 4680 (2006).

Mild steel fasteners: Provide galvanized mild steel fasteners for the following locations:

- Embedded in masonry.
- In external timbers.
- Exposed to or in air spaces behind the external leaf of masonry walls.
- In contact with chemically treated timber other than CCA treated timber.

Fasteners in CCA treated timber: Provide epoxy coated or stainless steel fasteners.

3 EXECUTION**3.1 ADHESIVES****General**

Requirement: Apply to the manufacturer's recommendations.

Substrate preparation

Requirement: Conform to the following:

- Remove any deposit or finish that may impair adhesion.
- Framed or discontinuous substrates: Provide support members in full lengths without splicing.
- Solid or continuous substrates: Remove excessive projections.
- Previously painted substrates: Remove cracked or flaking paint and lightly sand the surface.

Surfaces where adhesive tape will be applied: Conform to the following:

- Non-porous surfaces: Clean with surface cleaning solvents such as isopropyl alcohol/water, wash down and allow to dry.
- Porous surfaces: Prime the surface with a contact adhesive compatible with the adhesive tape.

Contact adhesive

Requirement: Make sure application of the adhesive solvent will not discolour the finished surface and dispersal of the adhesive solvent is not impaired.

Substrate: Do not use contact adhesive if one of the substrates is polystyrene foam. If contact adhesive is to be applied to a PVC substrate, make sure there is no plasticiser migration.

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, use permanent mechanical fasteners.

High strength adhesive tape

Application pressure: Make sure the tape undergoes at least 100 kPa pressure.

Application temperature: Do not apply at temperatures below 10°C.

Completion: Do not apply loads to the assembly for at least 72 hours.

3.2 SEALANTS**General**

Requirement: Apply to the manufacturer's recommendations.

Joint preparation

Cleaning: Cut flush joint surface protrusions and rectify if required. Mechanically clean joint surfaces free of any deposit or finish that may impair adhesion of the sealant. Immediately before sealant application, remove loose particles from the joint, using oil-free compressed air.

Bond breaking: Install bond breaking backing material.

Protection: Provide 50 mm wide protection tape on each side of the joint.

Primer: Apply the recommended primer to the surfaces in contact with sealant materials.

Conditions

Requirement: Do not apply at temperatures below 5°C or above 40°C, and in conditions outside the manufacturer's recommendations.

Application

General: Apply the sealant to dry joint surfaces using a pneumatic applicator gun. Make sure the sealant completely fills the joint to the required depth, provides good contact with the full depth of the sides of the joint and traps no air in the joint. Do not apply the sealant outside the recommended working time for the material or the primer.

Joint proportions (width:depth):

- Joints not more than 12 mm wide: 1:1.
- Joints more than 12 mm wide: 2:1.

Joint finish: Finish with a smooth, slightly concave surface using a tool designed for the purpose. Remove excess sealant from adjoining surfaces using cleaning material recommended by the sealant manufacturer.

Protection

General: Protect the joint from inclement weather during the setting or curing period of the material.

3.3 FASTENERS**General**

Requirement: Install to the manufacturer's recommendations.

Fasteners in timber substrates: To AS 1720.1 (2010) Section 4.

Self-drilling screws in timber and steel substrates: To AS 3566.1 (2002).

Post-installed and cast-in fasteners in concrete substrates: To AS 5216 (2021) Section 2.

3.4 COMPLETION**Cleaning**

Joint sealing: Remove protection tape and remove any stains or marks from adjacent surfaces.

Rectification

Sealants: Cut out and remove damaged portion of joint sealant and reinstall so repaired area is indistinguishable from undamaged portion.

0183B METALS AND PREFINISHES**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirements: Provide metal and prefinishes, as documented.

Performance

Requirement: Provide metals in sections of strength and stiffness suited to their required function, finish and method of fabrication.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

2 PRODUCTS**2.1 GENERAL****Samples**

Requirement: Provide samples of the following:

- Stainless steel: One sample of every documented surface finish.
- Anodising: One sample of every colour and finishing option.

2.2 METALS**Aluminium and aluminium alloys**

Drawn pipe: To AS/NZS 1867 (1997).

Drawn rod, bar and strip: To AS/NZS 1865 (1997).

Extrusions: To AS 1866 (1997).

Plate and sheets: To AS/NZS 1734 (1997).

Stainless steel

Bars: To ASTM A276/A276M (2025).

Plate, sheet and strip: To ASTM A240/A240M (2025).

Welded pipe (plumbing applications): To AS 1769 (1975).

Welded pipe (round, square, rectangular): To ASTM A554 (2021).

3 EXECUTION**3.1 GENERAL****Metal separation**

Incompatible sheet metals: Prevent direct contact between incompatible metals. Provide separation by one of the following:

- Apply an anti-corrosion, low moisture transmission coating such as alkyd zinc phosphate primer or aluminium pigmented bituminous paint to contact surfaces.
- Insert a concealed, non-conductive separation layer such as polyethylene film, adhesive tape, neoprene, nylon or bituminous felt.

Incompatible fastenings: Do not use.

Incompatible service pipes: Install lagging or grommets. Do not use absorbent, fibrous or paper products.

Brazing

Lap-joints: Make sure brazed lap-joints have sufficient lap to provide a mechanically sound joint.

Butt joints: Do not use butt jointing for joints subject to load. If butt joints are used, do not rely on the filler metal fillet only.

Filler metal: To AS/NZS ISO 17672 (2025).

Soldering

Lap-joints: Provide a mechanically sound soldered joint with sufficient lap for roofing, guttering, metalwork.

Pipes: Make a leakproof soldered joint using joiners for copper pipes.

Solder: To AS 1834.1 (1991).

Welding

Aluminium: To AS/NZS 1665 (2004).

Stainless steel: To AS/NZS 1554.6 (2012).

Steel: To AS/NZS 1554.1 (2014).

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. Make sure 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 the AS 1627 series.

Priming steel surfaces: If site painting is documented to otherwise uncoated mild steel or similar surfaces, prime as follows:

- After fabrication and before delivery to the works.
- After installation, repair damaged priming and complete the coverage to unprimed surfaces.

3.2 FERROUS STEEL FINISHES**Metallic-coated steel**

General: Steel coated with zinc or aluminium-zinc alloy as follows:

- Electrogalvanized (zinc) coating on ferrous hollow and open sections: To AS 4750 (2003).
- Ferrous open sections by an in-line process: To AS/NZS 4791 (2006).
- Ferrous hollow sections by a continuous or specialised process: To AS/NZS 4792 (2006).
- Steel sheet and strip: To AS 1397 (2021).
- Steel wire: To AS/NZS 4534 (2006).

3.3 STAINLESS STEEL FINISHES**Pre-assembly**

Mechanically polished and brushed finishes: Apply grit faced belts or fibre brushes that achieve uni-directional finishes with buffing, as required to provide the following:

- Finish designation: 4

Bead blasted finish: Provide a uniform non-directional low reflective surface by bead blasting. Do not use sand, iron or carbon steel shot. Blast both sides of austenitic stainless steel to equalise induced stress.

Post-assembly pre-treatment

Heat discolouration: Remove by pickling to ASTM A380/A380M (2025).

Welds: Grind excess material, brush, and polish to match the pre-assembly finish.

Post-assembly finish

Electropolish finish: Provide an electro-chemical process to stainless steel Type 316.

Brushed electropolish finish: Conform to the following:

- Pre-assembly finish: No. 4 polished.
- Post-assembly finish: Provide an electro-chemical process to achieve a surface roughness R_a , no greater than 0.50 μm .

Mirror finish: Conform to the following:

- Pre-assembly finish: 2B cold-rolled finish.
- Post-assembly finish: Apply a polishing and buffing process to achieve a No. 8 mirror finish.

Completion

Cleaning: Clean and rinse to an acid free condition and allow to dry. Do not use carbon steel abrasives or materials containing chloride.

Protection: Secure packaging or strippable plastic sheet.

3.4 ELECTROPLATED FINISHES

Electroplated coatings

Chromium on metals: To AS 1192 (2004).

- Service condition number: At least 2.

Nickel on metals: To AS 1192 (2004).

- Service condition number: At least 2.

Zinc on iron or steel: To AS/NZS 1789 (2023).

3.5 ANODISED FINISHES

General

Standard: To AS 1231 (2000).

Thickness grade: To the recommendations of AS 1231 (2000) Appendix H.

3.6 PREPAINTED FINISHES

Air-drying enamel

Application: Spray or brush.

Finish: Full gloss.

General use:

- Primer: Two-pack epoxy primer to AS/NZS 3750.13 (1997).
- Topcoats: 2 coats to AS 3730.6 (2006).

Oil resistant use:

- Primer: Two-pack epoxy primer to AS/NZS 3750.13 (1997).
- Topcoats: 2 coats to AS/NZS 3750.22 (2008).

Equipment paint system

Description: Brush or spray application using paint as follows:

- Full gloss enamel finish coats, oil and petrol resistant: To AS/NZS 3750.22 (2008), two coats.
- Prime coat to metal surfaces generally: To AS/NZS 3750.19 (2008) or AS/NZS 3750.20 (2008).
- Prime coat to zinc-coated steel: To AS 3730.15 (2006) or AS/NZS 3750.16 (1998).
- Undercoat: To AS/NZS 3750.21 (2008).

Prepainted metal products

Standard: To AS/NZS 2728 (2013).

Product type: To AS/NZS 2728 (2013): Not lower than the type appropriate to the documented atmospheric corrosivity category.

Stoving enamel

Application: Spray or dip.

Two-pack liquid coating

Application: Spray.

Finish: Full gloss.

Primer: Two pack epoxy primer to AS/NZS 3750.13 (1997).

Topcoat:

- Internal use: Proprietary polyurethane or epoxy acrylic system.
- External use: Proprietary polyurethane system.

3.7 COMPLETION

Damage

Damaged prefinishes: Remove and replace items, including damage caused by unauthorised site cutting or drilling.

Repair

Anodising: Use sprayers or pens for minor scratches and mitre cuts as required.

Metallic-coated sheet: If repair is required to metallic-coated sheet or electrogalvanizing on inline galvanized steel products, clean the affected area and apply a two-pack organic primer to AS/NZS 3750.9 (2009).

Cleaning

General: On completion, clean all surfaces. Do not use abrasive cleaners.

0184 TERMITE MANAGEMENT**1.1 RESPONSIBILITIES****General**

Requirement: Provide termite management systems, as documented.

Performance

Requirement: Building protection from termite attack.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARD**General**

Termite management systems: To AS 3660.1 (2014).

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection the definitions given in AS 3660.1 (2014) apply.

1.5 SUBMISSIONS**Certification**

Installation: On completion, submit certificate to AS 3660.1 (2014) clause A3.

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals.**

Products and materials

Manufacturer's data: Submit manufacturer's data including the following:

- Product data sheet.
- Recommendations for installation or application.

Type tests: Submit test results of the following:

- Termite management systems: To **PRODUCTS, GENERAL, Tests.**

Records

Termite management system: Submit report to **MAINTENANCE, Inspection.**

Subcontractors

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

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.6 INSPECTION**Notice**

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

- Completed earthworks or substrate preparation before system application or installation.
- Completed termite management system before concealing.
- Termite management system at the end of the defects liability period.

2 PRODUCTS**2.1 GENERAL****Tests**

Standard: To AS 3660.3 (2014).

2.2 PHYSICAL SYSTEMS

Termite caps, collars and sheeting

General: To AS 3660.1 (2014) Section 5.

Collars: To AS 3660.1 (2014) clauses 4.3.2.4.2 and 5.3.6.

Granular materials

Standard: To AS 3660.1 (2014) Section 6.

3 EXECUTION ---

3.1 GENERAL

Concrete slabs

Standard: To AS 3660.1 (2014) Section 4.

3.2 PHYSICAL SYSTEMS

Termite caps, collars and sheeting

General: To AS 3660.1 (2014) Section 5.

Collars: To AS 3660.1 (2014) clauses 4.3.2.4.2 and 5.3.6.

Granular materials

Standard: To AS 3660.1 (2014) Section 6.

3.3 TESTING

Site tests

Chemical systems: To AS 3660.1 (2014) Appendix E.

3.4 COMPLETION

Termite management system notice

Signage: Permanently fix a durable notice in a prominent location to BCA (2022) B1D4(i)(ii).

Cleaning

Requirement: Clean progressively and remove from the site waste building materials that could attract termites.

Operation and maintenance manuals

Requirement: For systems requiring post-construction monitoring, prepare a maintenance manual that includes the following:

- Inspection frequency.
- Instructions for inspection of termite activity and treatment effectiveness.
- Contact details of installers and manufacturer's authorised supplier of replacement components.
- Recommendations for reapplication, if required.

Warranties

Period: Minimum 10 years without maintenance.

3.5 MAINTENANCE

Inspection

Requirement: At the end of the defects liability period, inspect the termite management system to AS 3660.2 (2017) clause 3.3.2.2. Prepare a report on the efficacy and status to AS 3660.2 (2017) clause 3.4.

0185 TIMBER PRODUCTS, FINISHES AND TREATMENT**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide timber products with finishes and treatments, as documented.

Performance

Requirements:

- Appropriate for durability and fire-resistance.
- Appropriate surface finish.
- Appropriate certification for the finishing applications.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 *General requirements*.
- 0671 *Painting*.

1.3 STANDARDS**General**

Sawn and milled products:

- Hardwood: To AS 2796.1 (1999).
- Softwood: To AS 4785.1 (2002).

Reconstituted wood based panels:

- Particleboard: To AS 1859.1 (2017).
- Particleboard flooring: To AS/NZS 1860.1 (2017).
- Dry process fibreboard: To AS/NZS 1859.2 (2017).
- Decorative overlaid wood panels: To AS/NZS 1859.3 (2017).
- Wet process fibreboard: To AS/NZS 1859.4 (2018).

Plywood:

- Structural: To AS/NZS 2269.0 (2012).
- Interior: To AS/NZS 2270 (2006).
- Exterior: To AS/NZS 2271 (2004).
- Marine: To AS/NZS 2272 (2006).

Glued laminated timber: To AS/NZS 1328.1 (1998).

Laminated veneer lumber: To AS/NZS 4357.0 (2022).

Timber grading methods:

- Stress graded: To the AS/NZS 1748 series.
- Visually graded F-grade: To AS 2082 (2007) or AS 2858 (2023).

1.4 INTERPRETATION**Abbreviations**

General: For the purposes of this worksection, the following abbreviations apply:

- LVL: Laminated veneer lumber.

Definitions

General: For the purposes of this worksection, the definitions given in AS/NZS 4491 (1997) and the following apply:

- Dry process fibreboard: Panel material with a nominal thickness of 1.5 mm or greater, manufactured from lignocellulosic fibres (derived from wood or other materials) with application of heat and pressure, the bond of which is derived from a synthetic adhesive added to the fibres and the panels are manufactured with a forming moisture content less than 20%.

- Particleboard: Panel material manufactured under pressure and heat from particles of wood (wood flakes, strands, chips, shavings, sawdust and similar) and/or lignocellulosic material in particle form (flax shives, hemp hurds, bagasse fragments, rice hulls, wheat straw and similar) with the addition of an adhesive.
- Wet process fibreboard: Panel material with a nominated thickness of 1.5 mm or greater, manufactured from lignocellulosic fibres (derived from wood or other materials) with application of heat and/or pressure, the bond of which is derived from the felting of the fibres and the panels are manufactured with a forming moisture content greater than 20%.

1.5 SUBMISSIONS

Products and materials

Chain of custody of forest products: Submit the following as evidence of conformity to **CERTIFICATION, Timber source certification**:

- Third party certification of supplier's chain of custody management system.
- Formal claim of chain of custody by supplier.

Preservative treatment of timber: Submit a certificate from an independent testing authority to AS/NZS 1604.1 (2021) clause 1.5.3.6. Include details of treatment and a copy of the charge sheet.

Tests: Submit moisture content test results.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties**.

2 PRODUCTS

2.1 GENERAL

Storage and handling

General: Deliver timber products to site in unbroken wrapping or containers and store so that the moisture content is not adversely affected.

Product identification

Preservative-treated timber: Marking to AS/NZS 1604.1 (2021) clause 1.5.3 and including the following:

- A unique identifier for the treatment plant.
- A unique identifier for the preservative.
- Hazard class.

2.2 CERTIFICATION

Timber source certification

Requirement: Use timber products originating from sustainably managed forests.

Application: Items requiring source certification:

- Framing timber, incl. trusses and other roof framing.

Certification: certify from one or more of the following:

Responsible Wood: (formerly Australian Forestry Standard (AFS) and endorsed by PEFC) Certification of sustainable forest management to AS/NZS 4708 (2021) and chain of custody for forest and tree-based products to AS 4707 (2021). www.responsiblewood.org.au

FSC (Forestry Stewardship Council): Certification of sustainable forest management to FSC-STD-AUS-01 (2018) and chain of custody for forest products to FSC-STD-40-004 (2021). anz.fsc.org

PEFC (Programme for the Endorsement of Forest Certification): Certification of sustainable forest management to PEFC ST 1003 (2018) (or PEFC ST 1002 (2018) for Group Certification) and chain of custody to PEFC ST 2002 (2020). www.pefc.org

Engineered timber product certification and identification

Certification: certify from the following or equal approved scheme:

Glued laminated timber to the EWPA Product Certification Scheme. See JASANZ register.jasanz.org

2.3 FIRE-RESISTANCE

General

Structural timber: To AS/NZS 1720.4 (2019) or alternative conforming to NCC (2022) A5G3.

Bushfire-prone areas

Standard: To AS 3959 (2018).

2.4 DURABILITY

General

Requirement: Provide timbers with natural durability appropriate to the conditions of use, or preservative-treated timber of equivalent durability.

Natural durability class: To AS 5604 (2022).

Naturally termite-resistant timbers: To AS 3660.1 (2014) Appendix C.

Timber quality: Free of core wood (material within 50 mm of the tree's centre) and free of splits, checks, loose knots and cavities. Free of sapwood (lighter coloured wood found on the outer layer of the tree).

Lyctid susceptible timbers: To AS 5604 (2022). Do not provide untreated timbers containing lyctid susceptible sapwood.

Untreated sapwood: Do not use in applications requiring treated timber or natural durability.

Preservative treatment

Wood-based products: To AS/NZS 1604.1 (2021) or preservative-treated products conforming to NCC (2022) A5G3.

Verification requirements: To AS/NZS 1604.2 (2021).

Test methods: To AS/NZS 1604.3 (2021).

Moisture content

Moisture content: seasoned

Test: Methods as follows:

- Timber and glued laminated timber products: To AS/NZS 1080.1 (2012).
- Plywood and LVL: To AS/NZS 2098.1 (2006).
- Reconstituted wood-based products: To AS/NZS 4266.1 (2017).

Protection: Protect timber and timber products stored on site from moisture and weather. For milled, prefinished, prefabricated and similar elements that are to be protected in the final structure, provide temporary weather protection until the permanent covering is in place.

2.5 FINISHING

Production finish

Glued laminated timber: To AS/NZS 1328.1 (1998).

Hardwood: To AS 2796.1 (1999) Table B1.

Plywood: To AS/NZS 2269.0 (2012), AS/NZS 2270 (2006), AS/NZS 2271 (2004) and AS/NZS 2272 (2006).

Softwood: To AS 4785.1 (2002) Table B1.

Surface finish: Dressed, unless noted otherwise in the Contract Documents.

Edge detail: Rounded (arrised), unless noted otherwise in the Contract Documents.

Surface coating

Painting and staining: To 0671 *Painting*.

Application: To the manufacturer's specification.

2.6 RECYCLED TIMBER

General

Type of species: hardwood

Source: to approval

Grit blasted or re-machined: Remove all nails and screws.

Classification: Visually graded.

3 EXECUTION

3.1 JOINTS

General

Joints and connections: Use hot dip galvanized or stainless steel fasteners, composite bolts, nails or nailed metal connectors.

Timber-to-timber interfaces: To the manufacturer's recommendations and the following:

- Provide a seal coating of preservative treatment.

- Make sure the inside of bolt holes and the end grains of the timber are coated.

Water retention: Avoid details that may trap water including housing or birdsmouth joints.

Fasteners: To prevent chemical treatments reacting with fasteners, install to manufacturer's recommendations.

3.2 SHRINKAGE RESTRAINT

General

Requirement: If possible, use seasoned timber, particularly where timber elements are integrated with steel and/or concrete.

Moisture content: Maintain a timber moisture content near the anticipated in-service equilibrium moisture content.

Fasteners: Where possible, align fasteners along member axis.

Connections: Use connections that allow for movement without adversely affecting the performance of the connection.

Unseasoned timber: Provide as follows:

- Drill bolt holes 2 mm or 10% larger than the bolt diameter.
- Use species with similar shrinkage values to reduce movement and shrinkage.
- Provide adequate clearance between unseasoned timber framing, and interfacing structures and materials to allow for movement.

3.3 FINISHING

Ploughing

General: Back plough boards liable to warp (e.g. if exposed externally on one face). Make the width, depth and distribution of ploughs appropriate to the dimensions of the board and degree of exposure.

Painting

Edges: Chamfer edges of work to receive paint or similar coatings.

Priming: For woodwork to be painted, prime hidden surfaces before assembly.

0191 SUNDRY ITEMS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide sundry items, as documented.

Performance

Requirements: Installation as follows:

- Undamaged and free of surface defects or distortions.
- Correctly located and aligned, plumb, level and straight.
- Fixed firmly in position.
- Connected to the nominated service(s).

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 SUBMISSIONS**Certification**

Sealant compatibility: Submit statements from all parties to the installation certifying the compatibility of sealants with items and substrates.

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals.**

Samples

Requirement: Submit samples to **PRODUCTS, GENERAL, Samples.**

Shop drawings

General: Submit shop drawings, to a scale that best describes the detail, showing the following:

- Details of fabrication and components.
- Details of fabrication involving other trades or components.
- Information necessary for site assembly.
- Proposals for the break-up of large items as required for delivery to the site.
- Proposed method of joining the modules of large items.
- Fastening locations and types.

Tests

Requirement: Submit completion test results.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.4 INSPECTION**Notice**

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

- Set-out of item locations before fixing.
- Completion of installation.

2 PRODUCTS**2.1 GENERAL****Storage and handling**

General: Deliver, unload and store components and accessories in unbroken manufacturer's packaging.

Labelling: Label each sample, giving the brand and product name, manufacturer's code reference, date of manufacture and intended building location.

3 EXECUTION

3.1 PREPARATION

Substrates

General: Prepare the substrate to receive the item.

Protection

General: Protect existing work from damage during the installation and rectify any damage. Provide temporary coverings if required.

3.2 INSTALLATION

Accessories and trim

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

3.3 COMPLETION

Cleaning

Requirement: Remove packaging. Clean the completed assembly and surrounds. Wipe down appliances and fittings with a damp, soft, clean cloth.

Operation and maintenance manuals

Requirement: Prepare a maintenance manual and, if required, an operation manual with the technical specification and manufacturer's recommendations for the item to be installed.

0201 DEMOLITION**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Carry out demolition, as documented.

1.2 DIVISION 6 ASBESTOS & HAZARDOUS MATERIALS AUDIT**General**

Requirement: Undertake as required a Division 6 Asbestos & Hazardous Materials audit covering the existing Netball pavilion.

Timing: Do not undertake audit works until the building has been fully vacated by Council and the Netball club (WNBA) and formal notification has been given by Council that vacation has been completed and that site possession for the building and surrounds has been granted.

Submit Division 6 audit report to Principal for approval and confirmation of any removal works prior to any Demolition works.

Removal

Any controlled removal and disposal works (beyond general Demolition works) are to be covered by the Provisional Sum at 1.2 in the Preliminaries section of this Specification.

1.3 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.4 STANDARDS**General**

Demolition: To AS 2601 (2025).

1.5 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the following definitions apply:

- Demolition: The complete or partial removal of a building or structure using planned and controlled methods.
- Dilapidation record: The photographic or video and written record of the condition of the portion of the existing building retained, adjacent buildings and other relevant structures or facilities, before the start of demolition work.
- 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.

1.6 SUBMISSIONS**Authority approvals**

Evidence of compliance: Before starting demolition, submit the following:

- Evidence that requirements of authorities relating to the work under the contract have been obtained.
- A permit to demolish from the appropriate authority.
- A hoardings or scaffold permit from the appropriate authority, if hoardings or scaffolding is proposed to be used.
- Certification that each person having access to the construction site has completed site-specific WHS induction training.
- Evidence that precautions necessary for the protection of persons and property have been taken and suitable protective and safety devices have been provided to the approval of the relevant authority.
- Certification from the relevant authority confirming treatment for any vermin infestation has been carried out.
- Fees and/or costs have been paid.

Execution details

Requirement: Submit the following:

- Hazardous substances management plan: To **HAZARDOUS SUBSTANCES MANAGEMENT, Hazardous substances management plan**.
- Demolition work plan: To **DEMOLITION WORK PLAN, General**.
- Safe Work Method Statement.

Recycling: Submit certification as evidence of disposal of recycled materials.

Records

Dilapidation record:

- Before demolition: Submit to each owner of each adjoining or adjacent property, a copy of the part of the record relating to that property and obtain their written agreement to the contents.
- Rectification work: Submit written acceptance of rectification works from the owner of each adjoining or adjacent property affected.

Tests

Requirement: Submit compliance test results for building services components to be re-used.

1.7 INSPECTION

Notice

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

- Adjoining and adjacent structures before starting demolition.
- Services before disconnection or diversion.
- Trees documented to be retained, before starting demolition.
- Contents of building before starting demolition.
- Structure after stripping and removal of roof coverings and external cladding.
- Underground structures after demolition above them.
- Remaining excavations after removal of underground work.
- Site after removal of demolished materials.
- Services after reconnection or diversion.
- Adjoining and adjacent structures at completion of demolition.

2 PRODUCTS

2.1 DEMOLISHED MATERIALS

Demolished material diverted from landfill

Note the requirement for a target of a minimum recycling rate of 90% of demolition and construction waste – refer 0172b Environmental management for preparation of the Environmental Management Plan, to incorporate the requirements below:

Demolished material classes table

Class	Requirement	Ownership
Recovered items for re-use in the works	Recover without damage items identified in the Recovered items for re-use in the works schedule	Principal/proprietor
Recovered items for delivery to the principal	Recover without damage items identified in the Recovered items for delivery to the principal schedule	Principal/proprietor
Demolished material for recycling in the works	Stockpile material identified in the Demolished material for recycling in the works schedule	Contractor
Demolished material for recycling off site	Demolish and deliver for recycling material identified in the Demolished material for recycling off site schedule	Contractor
Dismantle for relocation as part of the works	Dismantle without damage and store items identified in the Dismantle for relocation schedule	Principal/proprietor
Demolish for removal	Remove from site demolished materials identified in the Demolish for removal schedule . Do not burn or bury on site Transit: Prevent spillage of demolished materials in transit	Contractor

3 EXECUTION

3.1 SITE INVESTIGATION

Investigation reports

Reports: refer Appendices to this Specification

Hazardous substances

In situ materials and unexpected finds: To AS 2601 (2025) clause 5.4.

3.2 DEMOLITION WORK PLAN

General

Requirement: Before demolition, prepare a demolition work plan based on the information provided in **SITE INVESTIGATION**. Conform to AS 2601 (2025) Sections 3 and 4. Include the checklist items appropriate to the project from AS 2601 (2025) Appendix A and the following:

- Stockpile locations: Details of the proposed locations of on-site stockpiles for demolished materials for recycling in the works. Coordinate with the locations for storage of other waste streams. Prevent mixing and pollution.
- Off-site disposal locations: Details of the proposed locations for the disposal of material required to be removed from the site and evidence of conformance with the requirements of relevant authorities.
- Recycling: Details of the proposed recycling facilities. If concrete crushing is proposed on site, include details of plant and environmental controls.
- Method of protection and support for adjoining or adjacent structures.
- Locations and details of service deviations and terminations.
- Sequence of work.
- 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.
- Structural engineering report and demolition methodology, as appropriate, if the structure is suspected to contain unbonded prestress tendons.
- Wheel loads of tipping or loading vehicles.

3.3 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 or parts of buildings being retained and which normally rely on support from work to be demolished.

Suspended slabs: If mobile plant is required for use on suspended structural members, conform to professional engineer's requirements and the demolition work plan.

Ground support: Support excavations for demolition of underground structures.

Adjoining or adjacent structures: Provide supports to adjoining or adjacent structures if necessary, sufficient to prevent damage resulting from the works.

Lateral and vertical supports: At least equal in capacity to that originally provided by the structural element or structure to be demolished.

Permanent supports

General: If permanent supports for adjacent structures are necessary and are not documented, give notice and obtain instructions.

3.4 PROTECTION

Encroachment

General: Prevent the encroachment of demolished materials onto adjoining property, including public spaces.

Weather protection

General: If walls or roofs are opened for alterations and additions, provide temporary covers to prevent water penetration. Provide covers to protect existing plant, equipment and materials intended for re-use.

Dust protection

General: Provide dustproof screens, bulkheads and covers to protect existing finishes and the immediate environment from dust and debris.

Security

General: If walls or roofs are opened for alterations or 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. Install to shed water to avoid damage to retained existing elements, and adjacent structures and contents.

Type: Timber framed screens sheeted with 12 mm plywood 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.

Exposed surfaces

General: If necessary, protect and weatherproof the surfaces of adjoining structures exposed by demolition.

Existing services

Location: Before starting demolition, locate and mark existing underground services by potholing or other non-destructive digging, in the areas that will be affected by the demolition operations.

Utility services: Contact BEFORE YOU DIG AUSTRALIA to identify location of underground utility services pipes and cables.

Essential services: Shut off, cap or control services not required for the demolition work, at or outside the building line before commencing demolition. Conform to the requirements of the relevant existing utility authority, as appropriate.

Underground utility services to be retained: Do not excavate by machine within 1 m of existing services.

Fixed items

Individual protection: Protect the following items in their existing positions:

- All structures, services and sundry items not scheduled for demolition or relocation.

Recovered items

General: If items are documented for recovery and re-use, minimise damage during removal and recover all associated components required for their re-use.

3.5 DEMOLITION - BUILDING WORKS**General**

Requirement: To the relevant parts of AS 2601 (2025) Section 6, the Safe Work Method Statement and the demolition work plan.

Encroachment

General: If encroachments from adjacent structures are encountered and are not documented, give notice and obtain instructions.

Concrete slabs

Partial demolition or penetrations: Using a diamond saw, neatly cut back or trim to new alignment with a clean true face. Do not overcut at corners. If required, provide protection to exposed reinforcement along the newly sawn concrete slab edge, as documented.

Storage: Do not store demolished materials on suspended slabs.

Material below grade

Extent: Demolish the following:

- Redundant footings, pits and services.

Remaining voids: Stabilise and provide barriers.

Explosives

General: Do not use explosives.

3.6 DEMOLITION - BUILDING SERVICES**General**

Requirement: Conform to the demolition work plan. Decommission, isolate, demolish and remove from the site all equipment and associated components that have become redundant as a result of the demolition.

Breaking down: Disassemble or cut up equipment if necessary to allow removal.

Demolition of refrigeration systems

Standard: To AS/NZS 5149.4 (2016).

Components for re-use

General: Before returning to service, clean components and test for conformance to Australian standards, as required.

3.7 COMPLETION

Notice of completion

General: Give at least 5 working days' notice of completion of demolition so that adjoining or adjacent structures may be inspected following completion of demolition.

Reinstatement

Assessment of damage: Use the dilapidation record to assess the damage and rectification work arising from the demolition work.

Rectification: Repair damage arising from the demolition work. Obtain written acceptance from the owner of each adjoining or adjacent property of the completeness and standard of the rectification work.

Removal of temporary supports

General: Obtain written instructions from a professional engineer at the completion of demolition before removing temporary supports.

4 SELECTIONS

4.1 DEMOLITION

Recovered items for re-use in the works schedule

Item	Location for re-use
n/a	

Recovered items for delivery to the principal schedule

Item	Delivery location
n/a	

Demolished material for recycling in the works schedule

Material
n/a

Demolished material for recycling off site schedule

Demolished material diverted from landfill

Note the requirement for a responsible minimum recycling rate of demolition and construction waste – refer 0172b Environmental management for preparation of the Environmental Management Plan, to incorporate the requirements below:

Material
Refer 2.1 -demolished material diverted from landfill. All materials and components able to be recycled or repurposed within the Rural City of Wangaratta municipal area, including concrete and masonry, any steelwork, timber and wall claddings. To be delivered to an approved location within the municipality.

Dismantle for relocation schedule

Item	Location for storage	Location for re-assembly
n/a	n/a	n/a

Demolish for removal schedule

Item
All items and materials that cannot comply with the Demolished material for recycling off-site schedule

0221 SITE PREPARATION**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide site preparation, as documented.

Performance

Areas for protection: refer *0172B Environmental Management*

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- *0171 General requirements.*
- *0172 Environmental management.*

1.3 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the following definitions apply:

- Authority: Any organisation with statutory authority relating to the project, including clearances.
- Clearances: A formal certificate, approval or condition issued by a statutory authority allowing work in a particular area.
- Plant establishment period: The period between the date of practical completion and the end of the defects liability period.

1.4 SUBMISSIONS**Certification**

Vermin: Submit pest exterminator's certification as evidence that the completed site works are free from vermin.

Execution details

Requirement: Submit details of methods and equipment proposed for the following:

- Clearing and grubbing.
- Tree removal and transplanting.
- Protecting the ground within and adjacent to tree driplines from compaction by proposed earthworks machinery.

1.5 INSPECTION**Notice**

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

- Enclosures around trees requiring protection.
- Trees requiring removal.
- Trees for transplanting to determine final orientation.

2 EXECUTION**2.1 COMMUNITY LIAISON****Notification**

General: Notify residents about construction activities that will affect access to or disrupt the use of their properties.

Notice: Minimum 5 working days, unless the work is of an urgent nature with safety implications.

Notification content:

- Description of the work.
- The reason for the work.

- The expected duration.
- Changes to traffic arrangements and property access.
- The 24-hour contact number of the representative responsible.

2.2 EXISTING SERVICES

General

Requirement: Before starting earthworks, locate and mark existing underground services in the areas affected by the earthworks operations including clearing, excavating and trenching.

Utility services: Contact BEFORE YOU DIG AUSTRALIA to identify location of underground utility services pipes and cables.

Construction plant: Conform to the utility service provider requirements for the operation of construction plant within the zone of influence of existing services. Maintain the required cover and do not exceed the allowable load limit.

Excavation: Do not machine excavate within 1000 mm of existing services.

Existing service lines: If required, divert services detected during excavation clear of the building and reconnect to the utility service provider requirements.

2.3 SITE CLEARING

Extent

Requirement: Clear only areas occupied by works such as structures, paving, excavation, regrading and landscaping or other areas documented for clearing.

Contractor's site areas: If not included within the areas documented above, clear only to the extent necessary for the performance of the works.

Surplus material

Topsoil and excavated material: Remove unwanted stripped soil and other material from the site as the work proceeds, including any material dropped on footpaths or roadways.

2.4 STORMWATER AND SEDIMENT CONTROL

General

Erosion and sediment control measures: To *0172 Environmental management*.

Waterways and drains

Waterways: If required, temporarily divert ditches, field drains and other waterways affected by excavation and reinstate on completion.

Stormwater drains: Divert drains detected during excavation clear of the building and reconnect as documented. Conform to the Network Utility Operator's requirements.

2.5 EXISTING WORKS TO REMAIN

Marking

Requirement: Identify existing works to remain with 1000 mm high, 50 x 50 mm timber stakes connected by yellow plastic tape to prevent accidental damage.

2.6 COMPLETION

Temporary works

Remove at completion

Site restoration

Requirement: Reinstate undeveloped ground surfaces to the condition existing at the commencement of the contract.

Clean up

Progressive cleaning: Keep the works clean and tidy. Regularly remove waste and surplus material arising from execution of the work from the site.

Waste disposal: To *0172 Environmental management*.

Vermin management

Requirement: Employ a suitably qualified pest exterminator to remove vermin found during site preparation.

0223 SERVICE TRENCHING**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide trenching for underground services, as documented.

1.2 DESIGN**Requirements**

General: To DESIGN in 0171 *General requirements*.

Responsibility: Coordinate all trenching required for proposed in-ground services, as documented.

Existing services: If possible, avoid all existing services. Locate existing services to EXECUTION, **EXISTING SERVICES**.

1.3 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 *General requirements*.

1.4 STANDARDS**Trenching**

Earthworks: To AS 3798 (2007).

Electrical services: To AS/NZS 3000 (2018).

Hydraulic services: To the NCC cited AS/NZS 3500.1 (2021), the NCC cited AS/NZS 3500.2 (2021) and the NCC cited AS/NZS 3500.3 (2021).

Communication services: To AS/CA S009 (2020).

1.5 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the definitions given in AS 3798 (2007) and the following apply:

- Bad ground: Ground unsuitable for the works, including fill liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances and ground that is or becomes soft, wet or unstable.
- Rock: Monolithic material with volume greater than 0.3 m³ that cannot be removed until broken up by rippers or percussion tools.
- Zone of influence: A foundation zone bounded by planes extending downward and outward from the bottom edge of a footing, slab or pavement and defining the extent of foundation material having influence on the stability or support of the footings, slab or pavement.

1.6 TOLERANCES**Excavation width**

Requirement: ±50 mm, unless constrained by adjacent structures.

Surface levels

Earthworks: Finish the surface to the required level, grade and shape within the following tolerances:

- Under building slabs and load bearing elements: +0, -25 mm.
- Pavement subgrades: +0, -40 mm.
- Batters: No steeper than the slope shown on the drawings. Make sure flatter slopes do not impact on boundaries or required clearances to buildings, pavements or landscaping.
- Other ground surfaces: ±50 mm, provided the area remains free draining and matches adjacent construction where required. Provide smoothness as normally produced by a scraper blade.

Pavement base and subbase: Finish the surface to the required level, grade and shape within the following tolerances:

- Subbase: +10 mm, -25 mm.
- Base: +10 mm, -5 mm.

Finished pavement or paving surface: Conform to the documented level within the following tolerances:

- Asphalt: ± 10 mm.
- Concrete: +10 mm, -0 mm.
- Paving:
 - . Finished level: ± 8 mm.
 - . Height deviation between adjacent units (lippage): 2 mm.
- Granular surfaces: ± 10 mm.
- Lippage between restored surface and adjacent existing surface: 5 mm.

1.7 SUBMISSIONS

Execution details

Excavation method: Submit details of proposed equipment and method of excavation, including the following:

- Service location and type: A plan of the trench works showing the location and type of service.
- Open excavation: Proposed duration.
- Shuttering and/or bracing of trench sides: If required for safety and stability, provide proposals.
- Geotechnical data: Geotechnical report supporting the trenching and/or boring procedures proposed.
- Boring: Proposals for the following:
 - . Limits on length.
 - . Existence of other services and method of protection.
 - . Pressure grouting to voids.
 - . The effect of pressure grouting on other services, ground heave and proposals for minimising such effects.
 - . Access to properties outside the site.
 - . Council permits.
 - . Service interruptions including a plan for minimising unintended interruptions.
- Hazards: Identify WHS hazards that may be encountered with deep trenches including toxic gases and liquids.

Off-site disposal location: Submit details of the proposed disposal location and evidence of conformance with the relevant authorities for the disposal of material required to be removed from the site.

Records

Requirement: Upon completion, submit to the relevant authority record drawings showing the location of the installed services.

Tests

Trench backfill: Submit results of the following:

- Compaction control tests.

1.8 INSPECTION

Notice

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

- Items to be measured as listed in **GROUND CONDITIONS, Records of measurement**.
- Service trenches excavated before laying the service.
- Services laid in trenches and ready for backfilling.
- Completed surface restoration.

2 PRODUCTS

2.1 FILL MATERIALS

General

Suitable material: To AS 3798 (2007) clause 4.4 including inorganic, non-perishable material suitably graded and capable of compaction to the documented density.

Unsuitable materials: Do not use fill defined as unsuitable by AS 3798 (2007) clause 4.3.

Sulfur content: Do not provide filling with sulfur content exceeding 0.5% within 500 mm of concrete and cement bound elements (for example masonry) unless such elements are protected by impermeable membranes or equivalent means.

Re-use of excavated material: Only re-use suitable material.

Material in reactive clay areas: In sites classified M, M-D, H1, H1-D, H2, H2-D, E or E-D to AS 2870 (2011), re-use excavated site material at a moisture content within $\pm 1\%$ of that of the adjoining in situ clay.

2.2 SURFACE RESTORATION MATERIALS

General

Re-use: If possible, re-use existing surface materials removed during excavation. Make sure replacement materials conform to the documented requirements.

Subbase and base

Requirement: Provide crushed rock material configured in layers and depths to match existing and adjacent work, as follows:

- Base: 20 mm nominal size.
- Subbase: 40 mm nominal size.

Pathways and paved surfaces generally

Requirement: Provide materials consistent with those of the existing surface before service trenching works commence.

Concrete surfaces

Material requirements: To AS 1379 (2007).

Concrete strength grade: N25.

Slump: Maximum 100 mm.

Asphalt surfaces

Aggregate: To AS 2758.5 (2020) or to AS 2758.2 (2021) for sprayed bituminous surfaces.

Asphalt: To AS 2150 (2020).

Binder:

- Bitumen emulsion: To AS 1160 (1996).
- Conventional bitumen: Class 170 to AS 2008 (2013).
- Cutback bitumen: To AS 2157 (1997).

Pavers

Concrete and clay pavers: To AS/NZS 4455.2 (2010).

Bedding and joint filling sand: Well-graded, free of deleterious material such as soluble salts that may cause efflorescence.

Stone paving and setts: Provide sound stone paving and setts, of uniform quality. Reject any with defects liable to affect strength and durability.

Bedding mortar mix (cement:sand): Select from the range 1:3 to 1:4 to obtain satisfactory adhesion. Provide minimum water.

3 EXECUTION

3.1 EXISTING SERVICES

Location

Requirement: Before commencing service trenching, locate and mark existing underground services in the areas that will be affected by the service trenching operations.

Utility services: Contact BEFORE YOU DIG AUSTRALIA to identify location of underground utility services pipes and cables.

Excavation

General: Do not excavate by machine within 1 m of existing underground services.

3.2 EXISTING SURFACES

Concrete and asphalt pavements

Method: Sawcut trench set-out lines for the full depths of the bound pavement layers except where the set-out line is located along expansion joints.

Removal of concrete and asphalt: Break out concrete or asphalt pavement material between the trench set-out lines, remove and dispose of off site.

Paving

Removal: Take up paving units both full and cut by hand, between the trench set-out lines. Neatly stack on wooden pallets.

Concrete edging: Break out, remove and dispose of off site.

Concrete subbase: If present, sawcut along the trench set-out lines to allow the concrete subbase to be removed and disposed of off site.

Grass

Removal method: Neatly cut grass turf between trench set-out lines into 300 mm squares.

Grass suitable for re-use: Take up and store the turf. Water during the storage period.

Unsuitable grass: Remove and dispose of off site.

Small plants, shrubs and trees

Remove for re-planting: Take up and store. Wrap the rootball in a hessian or plastic bag with drain holes and water during the storage period.

Unsuitable vegetation: Remove and dispose of off site.

3.3 GROUND CONDITIONS**As found site conditions**

Unexpected conditions: If any of the following are encountered, give notice immediately and obtain instructions before carrying out any further work in the affected area:

- Bad ground.
- Discrepancies from expected ground conditions.
- Rock.
- Springs, seepages.
- Topsoil > 100 mm deep.

Records of measurement

Excavation and backfilling: If a schedule of rates applies, provisional quantities are specified or there are variations to the contract levels or dimensions of excavations, do not backfill or place permanent works in the excavation until the following have been agreed and recorded:

- Depths of excavations in relation to the datum.
- Final plan dimensions of excavations.
- Quantities of excavations in rock.

Rock: If rock is measured for payment purposes, whether as extra over excavation of material other than rock or for adjustment of provisional measurements, do not remove the rock until the commencing levels and classes of rock have been determined.

3.4 EXCAVATION**General**

Requirement: Excavate for underground services in conformance with the following:

- To required lines and levels, with uniform grades.
- Straight between access chambers, inspection points and junctions.
- With stable sides.
- Tree protection: To AS 4970 (2025).

Adjacent structures

Existing footings: If excavation is required within the zone of influence of an existing footing, provide supports to the footing sufficient to prevent damage arising from the works. Use methods including temporary shoring or underpinning.

Temporary supports: If required, provide supports to adjacent structures, sufficient to prevent damage arising from the works, as follows:

- Lateral supports: Provide lateral support using shoring.
- Vertical supports: Provide vertical support using piling or underpinning or both.

Permanent supports: If permanent supports for adjacent structures are required and are not documented, give notice and obtain instructions.

Encroachments: If encroachments from adjacent structures are encountered and are not documented, give notice and obtain instructions.

Trench widths

General: Keep trench widths to the minimum, consistent with the laying and bedding of the relevant service and construction of access chambers and pits.

Trench depths

General: As required by the relevant service and its bedding method.

Obstructions

General: Clear trenches of sharp projections. Cut back roots encountered in trenches to at least 600 mm clear of services. Remove other obstructions including stumps and boulders that may interfere with services or bedding.

Dewatering

General: Keep trenches free of water. Place bedding material, services and backfilling on firm ground, free of surface water.

Pumping: Provide pump-out from adjacent sumps or install well points.

Adjacent subsidence: Provide recharge points to isolate the dewatering zone.

Excess excavation

General: If trench excavation exceeds the correct depth, reinstate to the correct depth and bearing capacity using compacted bedding material or sand stabilised with 1 part of cement to 20 parts of sand by volume.

Stockpiles

Topsoil removal: Stockpile topsoil intended for re-use to a maximum height of 1500 mm.

Excavated material for backfill: If required, segregate the earth and rock material and stockpile, for re-use in backfilling operations.

Locations: Do not stockpile excavated material against tree trunks, buildings or fences. Do not obstruct the free flow of water along drainage channels.

Disposal: If stockpiling is not permitted, dispose of excavated material off site.

Unsuitable material

Disposal: Remove unsuitable material from the bottom of the trench or at foundation level and dispose of off site. Replace with trench backfill material.

Boring

Subcontractor: If boring is required instead of trenches, engage a suitably qualified subcontractor to do the work.

3.5 TRENCH BACKFILL**General**

Place fill: To AS 3798 (2007) clauses 6.2.2 and 6.2.6.

Timing: Backfill service trenches as soon as possible after laying and bedding the service, if possible on the same working day.

Removal of supports: Remove temporary supports progressively as backfilling proceeds.

Marking services

Marking tape: Provide marking tape above services, with appropriate labelling, to AS/NZS 2648.1 (1995) and as follows:

- Non-metallic services: Provide tape capable of being detected by in-ground scanning devices.
- Location: Locate tape approximately half the depth of the service being marked, to a maximum depth of 200 mm below the finished ground level.

Boring: If boring techniques are used to install the service, provide permanent on site labelling at the start and end of the service run and record on the record drawings.

Bedding, haunch, side and overlay zones

Installation and material: To the particular utility authority or utility service requirements. Secure pipes against flotation.

Bedding of services: Surround pipes or conduits on all sides with a minimum of 75 mm compacted bedding sand and as documented.

Overlay zone thickness: Maximum 300 mm immediately over the utility service.

Trees

Backfill at trees: Backfill minimum 300 mm thick, around tree roots with a topsoil mixture. Place and compact in layers of 150 mm minimum depth to a dry density equal to that of the surrounding soil.

Original surface level: Do not place backfill above the original ground surface around tree trunks or over the root zone.

Watering: Thoroughly water immediately after backfilling the tree root zone.

Compaction

Backfill moisture control: To AS 3798 (2007) clause 6.2.3.

Layers: Compact all material in layers not exceeding 150 mm compacted thickness. Compact each layer to the documented relative compaction before starting the next layer.

Compaction: To AS 3798 (2007) Section 5 and clause 6.2.4.

Precautions: Use compaction methods that do not cause damage or misalignment to utility services.

3.6 TESTING**General**

Test frequency: To AS 3798 (2007) Table 8.1.

Compaction control

Requirement: To AS 1289.5.4.1 (2007) or AS 1289.5.7.1 (2006).

3.7 SURFACE RESTORATION**Subbase and base**

Compaction: Uniformly compact each layer of the subbase and base courses over the full area and depth within the trench to a relative compaction of 100% when tested in conformance with AS 1289.5.4.1 (2007).

Compacted layer thickness:

- Maximum: 200 mm.
- Minimum: 100 mm.

Compaction test frequency: Minimum 1 test every 2 layers, for each length of 40 linear metres.

Concrete surfaces

Construction: Conform to the following:

- Prime coat the cut edges of the existing surfaces with cement slurry. Lay and compact concrete so that the edges are flush with the adjoining existing surfaces.
- Surface finish and pattern: Match existing adjoining work.
- Minimum thickness: 75 mm or the adjacent pavement thickness, whichever is thicker.
- Reinforcement and dowels: If required, provide steel reinforcement with dowels into the adjacent concrete.
- Expansion joints: 15 mm thick preformed bituminous fibreboard jointing material placed in line with joints in existing concrete.
- Control joints:
 - . Form control joints in line with the control joints in existing concrete.
 - . Around service poles: Terminate the concrete paving 200 mm from the pole and fill the resulting space with cold mix asphalt.

Weather: Do not place concrete in ambient temperatures above 30°C or below 10°C, without adequate precautions. Protect surface from rain damage.

Compaction: Compact as follows:

- Thickness 100 mm or less: Compact by placing, screeding and finishing processes. If required, use a hand-held vibrating screed at the surface. Do not use immersion vibrators.
- Thickness more than 100 mm and downturns: Use an immersion vibrator.

Curing: Cure by keeping continuously wet for 7 days.

Asphalt surfaces

Placement: To AS 2150 (2020).

Operations: Spread the asphalt mix in layers covering the full width of the trench.

Thickness: Match the adjoining asphalt surface.

Finish: Compact to a smooth even surface.

Sprayed bituminous surfaces: To AS 3727.1 (2016) Section 8.

Pavers

Bedding: Replicate the bedding used for the original paved surface. Use bedding methods and materials that are appropriate to the paver, the substrate and the conditions of service, and which leave the paver firmly and solidly bedded in the bedding material.

Laying: Relay to match the pattern and surface levels of the existing paving.

Damaged paving unsuitable for relaying: Replace with new paving of the same material, type, size and colour as the existing.

Landscaped areas

In topsoil areas: Complete the backfilling with topsoil for at least the top 100 mm.

Grass: Relay stockpiled turf. If existing turf is no longer viable, re-sow grass over the trench and other disturbed areas.

Planted areas: Overfill to allow for settlement.

3.8 COMPLETION**General**

Requirement: Upon completion, record the location of all installed services on the record drawings.

0274B CONCRETE PAVEMENT**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide concrete pavement, as documented.

Performance

Requirement:

- Free draining and evenly graded between level points.
- Consistent in colour and finish.
- Even and smooth riding surfaces.

Conformance: Conform to the local authority requirements for levels, grades and minimum thickness, reinforcement and concrete strength for pavements within the kerb-and-gutter property boundaries.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 *General requirements*.
- 0222 *Earthwork*.

1.3 STANDARDS**Concrete**

Specification and supply: To AS 1379 (2007).

Materials and construction: To AS 3600 (2018).

Residential pavements: To AS 3727.1 (2016).

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the following definitions apply:

- Ambient temperature: The air temperature at the time of mixing and placing of concrete.
- Concrete class - normal: Concrete that is specified primarily by a standard compressive strength grade up to 50 MPa and otherwise in conformance with AS 1379 (2007) clause 1.5.3.
- Concrete class - special: Concrete that is specified to have certain properties or characteristics different from, or additional to, those of normal-class concrete and otherwise in conformance with AS 1379 (2007) clause 1.5.4.
- Sample: A portion of material taken for assessment, representative of the larger quantity of material from which it was taken.
- Weather - cold: Ambient shade temperature less than 10°C.
- Weather - hot: Ambient shade temperature greater than 30°C.

1.5 TOLERANCES**General**

Surface abutting gutters: ± 5 mm from the level of the gutter edge.

Rigid pavement surface:

- From design level: +10 mm, -0 mm.
- From a 3 m straightedge placed anywhere on surface: 5 mm.

Horizontal position of outer concrete edge: ± 20 mm from documented position.

Joint locations in plan: 10 mm from documented position.

1.6 SUBMISSIONS**Products and materials**

Aggregates: Nominate the source for all aggregates.

Reinforcement: Submit test certificates or the manufacturer's certificate of compliance, as evidence of product conformance with AS/NZS 4671 (2019).

Pre-mixed supply delivery docket: For each batch, submit a docket listing the information required by AS 1379 (2007) and the following:

- Special-class performance concrete: Documented performance and type of cement binder.
- Special-class prescription concrete: Details of mix, additives and type of cement binder.
- Method of placement and climate conditions during pour.
- Name of concrete delivery supervisor.
- Project assessment carried out each day.
- The concrete element or part of the works for which the concrete was ordered and where it was placed.

Liquid curing compounds: Submit certified test results, including the application rate and the efficiency index to AS 3799 (1998) Appendix B.

Curing by covering: Submit details of the proposed covering material.

Repair materials: Submit proposals for epoxy resin/grout and elastomeric sealant.

Trial mix design report: Six weeks before commencing production, submit a report for each mix design containing the information required in AS 1012.2 (2014), the individual and combined aggregate particle size distribution, and the records and reports for the tests.

Tests

Requirement: Submit test results of the following:

- Concrete:
 - . Compressive strength.
 - . Drying shrinkage.
 - . Flexural strength.
 - . Slump.
- Luminance contrast of completed tactile ground surface indicator installations.
- Slip resistance of completed installations.

1.7 INSPECTION

Notice

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

- Base or subgrade before covering.
- Membrane or film underlay installed on the base or subgrade.
- Concrete formwork, reinforcement and dowels in position.
- Commencement of concrete placement and compaction.
- Finishing and curing of concrete.
- Evaluation of surface finish.

2 PRODUCTS

2.1 REINFORCEMENT

Steel reinforcement

Standard: To AS/NZS 4671 (2019).

Shape: refer Civils drawings

Strength grade: refer Civils drawings

Identification: Supply reinforcement which is readily identifiable as to grade and origin.

Reinforcement and joint requirements: refer Civils drawings

Surface condition: Provide surfaces conforming to the following:

- Free of loose or flaking mill scale and rust.
- Clean from oil, grease, mud or other material that may reduce the bond between the reinforcement and concrete.

Storage: Store reinforcement above the surface of the ground and protect from damage and from deterioration by exposure.

Tie wire

General: Annealed steel 1.25 mm diameter (minimum).

External and corrosive applications: Galvanized.

Supports

Standard: To AS/NZS 2425 (2015).

2.2 CONCRETE MIX**Standard**

Concrete mix and supply: To AS 3600 (2018) clause 17.1 and AS 1379 (2007).

Properties

Characteristic compressive strength: refer Civils drawings

Flexural strength: refer Civils drawings

Concrete pavement thickness: refer Civils drawings

Slump: Maximum 100 mm.

Drying shrinkage: Maximum 450 µε after 21 days of air drying.

2.3 AGGREGATE**Characteristics**

Standard: To AS 2758.1 (2014).

Durability: Tested to AS 1141.22 (2019):

- Wet strength not less than 80 kN.
- 10% Fines Wet/Dry variation not to exceed 35%.

Recycled concrete aggregate (RCA): If blending coarse RCA with natural aggregates, make sure substitution rates are below 30%.

2.4 CEMENT**General**

Standard: To AS 3972 (2010).

Type: GP

Age: Less than 6 months old.

Moisture: Protect from moisture until used. Do not use caked or lumpy cement.

Storage: Store cement bags in a dry, under cover and above-ground environment.

Supplementary cementitious materials

Fly ash: To AS/NZS 3582.1 (2016).

Slag: To AS 3582.2 (2016).

Amorphous silica: To AS/NZS 3582.3 (2016).

Manufactured pozzolans: To AS 3582.4 (2022).

2.5 WATER**General**

Mixing water: To AS 1379 (2007) clause 2.4.

Requirement: Clean potable water, free from any material that may be harmful to the concrete or reinforcement including oil, acid, alkali, organic or vegetable matter.

Limits of impurities in mixing water: To AS 1379 (2007) Table 2.2 and the following:

- Chloride ion: Maximum 300 parts per million to AS 1478.1 (2000) Appendix C.
- Sulfate ion: Maximum 400 parts per million to AS 1289.4.2.1 (2020).

2.6 ADMIXTURES**General**

Standard: Chemical admixtures to AS 1478.1 (2000), used to the manufacturer's recommendations.

Quality: Free from calcium chloride, calcium formate, triethanolamine or any other accelerator. Do not use admixtures or combinations of admixtures without prior written approval.

Dosage: Vary the dosage of chemical admixture to account for factors such as air temperature, setting time and cement content to the manufacturer's recommendations.

2.7 CURING COMPOUNDS

General

Curing compounds: To AS 1160 (1996) and AS 3799 (1998), Type 2.

Sheet material covering: To ASTM C171 (2020), white opaque or clear polyethylene film, or white burlap-polyethylene sheet, or equivalent material.

2.8 OTHER MATERIALS

Tactile ground surface indicators

Standard: To AS/NZS 1428.4.1 (2009).

3 EXECUTION

3.1 GENERAL

Traffic control

Traffic restriction: Do not allow traffic or construction plant other than those associated with testing, sawcutting, cleaning or joint sealing on pavement for minimum 10 days after placing or until the concrete has reached a compressive strength of at least 20 MPa, and joints have been sealed.

3.2 SUBGRADE

Preparation

Conformance: Prepare subgrade to 0222 *Earthwork*.

Extent: Prepare a uniform subgrade for the full pavement formation, extending at least to the back of kerbs or at least 300 mm beyond each side of the carriageway if kerbs are not proposed.

Adjacent structures: Compact without causing damage to adjacent structures.

Reinstatement: Make sure of uniformity for backfilling of any utility trenches.

3.3 SUBBASE

Thickness

Subbase thickness: refer Civils drawings

Width

Subbase width: Extend the subbase at its full depth to at least the back of kerbs or other edge stops before their installation.

No integral kerbs: Extend granular unbound subbase at least 300 mm beyond each side of the carriageway.

Tolerance

Subbase finished surface level: +0 mm, -10 mm.

3.4 INSTALLATION

Junctions with existing pavements

Trimming: If new pavement is to be joined to an existing pavement, trim the edge of the existing pavement to create a neat vertical edge for its full depth before placing new pavement material.

Fixed formwork

Type:

- Steel forms.
- Seasoned, dressed timber planks, free of warps, bends or kinks.

Depth: Equal to the edge thickness of the slab and in one piece.

Tolerances on position:

- Level of top of form: -0 mm, +10 mm from pavement surface design level.
- Horizontal tolerance: 10 mm (maximum departure from a plane surface).
- Verticality: 3 mm departure from vertical.

Staking: Stake forms in position using at least 3 steel stakes per form, not more than 1.5 m apart. Lock joints between form sections to prevent movement.

Release agent: Before placing reinforcement, apply a release agent compatible with the contact surfaces, to the interior of the formwork, except if the concrete is to receive an applied finish for which there is no compatible release agent.

Re-use: Clean and recoat the forms each time before placing concrete.

Keyways: Form the keyways of keyed construction joints using steel or timber form strips accurately located at the mid-depth of the slab and securely fixed flush against the formwork face.

Reinforcement

Tolerances in fabrication and fixing: To AS 3600 (2018).

Locate reinforcement: Place reinforcement in the top half of the pavement.

Minimum cover to reinforcement: 30 mm.

Splicing mesh: Overlap a minimum of 2 crosswires.

Supports: Provide reinforcement supports as follows:

- Able to withstand construction and traffic loads and maintain the concrete cover, as documented.
- With a protective coating if they are ferrous metal extending to the surface of the concrete.
- Use plastic or concrete supports with galvanized or zinc-coated reinforcement.
- Spacing:
 - . Bars: ≤ 60 diameters.
 - . Mesh: ≤ 600 mm.
- Supports over membranes: Prevent damage to waterproofing membranes or vapour barriers. If appropriate, place a metal or plastic plate under each support.

Projecting reinforcement: If starter or other bars extend beyond reinforcement mats or cages, through formwork or from cast concrete, provide a plastic protective cap to each bar until it is cast into later work.

Tying: Secure the reinforcement against displacement at intersections with either wire ties, or clips. Bend the ends of wire ties away from nearby faces of formwork or unformed faces to prevent the ties projecting into the concrete cover.

Mats: For bar reinforcement in the form of a mat, secure each bar at alternate intersections.

Cores, fasteners and embedded items

Position: Fix cores and embedded items to prevent movement during concrete placing. In locating cores, fasteners and embedded items, displace but do not cut reinforcement, and maintain cover to reinforcement.

Isolation: Isolate embedded items to prevent water tracking to concrete providing minimum cover to reinforcement.

3.5 CONCRETE SUPPLY

Elapsed delivery time

General: Make sure that the elapsed time between the wetting of the mix and the discharge of the mix at the site is in conformance with the **Elapsed delivery time table**. Do not discharge at ambient temperature below 10°C or above 30°C unless approved heating or cooling measures are taken to deliver concrete within the range 5°C to 35°C.

Elapsed delivery time table

Concrete temperature at time of discharge (°C)	Maximum elapsed time (minutes)
5 – 24	120
24 – 27	90
27 – 30	60
30 – 35	45

Pre-mixed supply

Transport method: Select a method that will prevent segregation, loss of material and contamination of the environment, and that will not adversely affect placing or compaction.

Site mixed supply

Emergencies: If mixing by hand, provide details.

Plant: Mix concrete in a plant located on the construction site.

3.6 TESTING

General

Reports and records of test results: To the relevant parts of the AS 1012 series. Keep results on site.

Standards

Sampling, identification, testing and recording: To the AS 1012 series.

Type and frequency: To AS 1379 (2007).

Concrete testing methods

Specimens: Sample the concrete on site, at the point of discharge from the agitator.

Slump: To AS 1012.3.1 (2014).

Compressive strength: To AS 1012.8.1 (2014) and AS 1012.9 (2014).

Drying shrinkage: To AS 1012.8.4 (2015) and AS 1012.13 (2015).

Flexural strength: To AS 1012.8.2 (2014) and AS 1012.11 (2000).

Acceptance criterion for strength: The average strength of any set of 3 consecutive project samples must be equal to or greater than the specified minimum value.

Sampling frequency: Provide a minimum of one sample from each 50 m³ of concrete.

Slip resistance tests

Slip resistance of completed installation: To AS 4663 (2013).

Tactile ground surface indicators

Luminance contrast of completed installation: To AS/NZS 1428.4.1 (2009) Appendix E.

3.7 CONCRETE PLACING AND COMPACTION**Placing**

General: Place concrete uniformly over the width of the slab or lane and so that the face is generally vertical and normal to the direction of placement. Hand spread concrete using shovels, not rakes.

Fibre-reinforced concrete: For pumped concrete, use a 100 to 150 mm mesh screen on the pump hopper to catch fibre balls.

Ponding: Remove any water ponding on the base or subbase before starting placement.

Placing sequence: Commence from one corner (usually the lowest point) and proceed continuously out from that point.

Weather: Do not place concrete in ambient temperatures above 30°C or below 10°C, without adequate precautions.

Compaction

Thickness 100 mm or less: Compact by placing, screeding and finishing processes. If required use a hand-held vibrating screed at the surface. Do not use immersion vibrators.

Thickness more than 100 mm and downturns: Use an immersion vibrator.

Placing records

Logbook: Keep on site and make available for inspection a logbook, recording each placement of concrete, including the following:

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

Rain

Protection: During placement and before setting, protect surface from damage.

Placing in cold weather

Cement: Do not use high alumina cement.

Temperature limits: Maintain the following:

- Freshly mixed concrete: $\geq 5^{\circ}\text{C}$.
- Formwork and reinforcement before and during placing: $\geq 5^{\circ}\text{C}$.
- Water: Maximum 60°C when placed in the mixer.

High early strength cement: If deteriorating weather conditions are predicted, use high early strength cement.

Temperature control: Heat the concrete materials, other than cement, to the minimum temperature necessary so that the temperature of the placed concrete is $\geq 5^{\circ}\text{C}$.

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

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

Freezing: Prevent concrete from freezing.

Placing in hot weather

Requirement: Prevent premature stiffening of the fresh mix and reduce water absorption and evaporation losses.

Severe weather: If ambient shade temperature more than 38°C, do not mix concrete.

Temperature control: Select one or more of the following methods to make sure the temperature of the concrete mix does not exceed 35°C:

- Cool the concrete using liquid nitrogen injection before placing.
- Cover horizontal transport containers.
- Forms and reinforcement before and during placing: $\leq 35^{\circ}\text{C}$.
- Spray the coarse aggregate using cold water before mixing.
- Use chilled mixing water.

Evaporation control barriers: Erect barriers to protect freshly placed concrete from drying winds.

Evaporation rate limit: $\leq 0.50 \text{ kg/m}^2/\text{h}$.

3.8 CONCRETE FINISH**General**

Commencement: Immediately after placement, spreading and compaction of the concrete, start initial finishing procedures to achieve the documented finish.

Final finishing: Do not commence final finishing until all bleed water has evaporated from the surface after initial finishing procedures.

Unformed surfaces

General: Strike off, screed and level slab surfaces to finished levels, to the tolerance class and finish documented.

Formed surfaces

Damage: Do not strip formwork prematurely if damage to the concrete may be caused.

Curing: If formwork is stripped before the minimum curing period for the concrete has elapsed, continue curing the exposed faces as soon as the stripping is completed and within an hour of exposure.

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.

Wood float finish: After machine floating, use wood or plastic hand floats to produce the final consolidated finish free of float marks and uniform in texture and appearance.

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

Scored or scratched finish: After screeding, use a stiff brush or rake drawn across the surface before final set to produce a coarse scored texture.

Finishing methods - supplementary finish

Abrasive blast: After steel trowelling, abrasive blast the cured surface to provide texture or to form patterns without exposing the coarse aggregate, using hard, sharp graded abrasive particles.

Coloured applied finish: After machine floating, apply a proprietary liquid or dry shake material to the manufacturer's recommendations and trowel to achieve the required appearance.

Stamped and coloured pattern finish: Provide finishing system.

Surface repairs

Method: If surface repairs are required, detail proposals.

3.9 CURING**General**

Requirements: Take into account the average ambient temperature at site over the relevant period affecting the curing and adopt procedures to make sure of the following:

- Curing: Cure continuously from completion of finishing, when the concrete has set sufficiently not to be damaged by the curing process.

- Minimum curing period: Total cumulative number of days or fractions of days, during which the air temperature in contact with the concrete is above 10°C, conforms to AS 3600 (2018) clause 17.1.5. Cure for at least 7 days.
- End of curing period: Prevent rapid drying out at the end of the curing period.
- Protection: Maintain at a reasonably constant temperature with minimum moisture loss, during the curing period.

Curing compounds

Liquid membrane-forming compounds: Provide a uniform continuous flexible coating without visible breaks or pinholes, which remains unbroken for at least the required curing period after application. Respray defective areas within 30 minutes. Respray within 3 hours after heavy rain.

Visually important surfaces: Apply curing compounds to produce uniform colour on adjacent surfaces.

Water curing

Method: Select a method of ponding or continuous sprinkling that does not damage the concrete surface during the required curing period.

Wet hessian curing

Method: Place wet hessian sheets/bags over concrete surface. Keep hessian wet during the required curing period by regularly sprinkling with water. Protect from wind and traffic.

Impermeable sheet curing

Method: Place impermeable sheets, to ASTM C171 (2020), over concrete surface. Anchor down and tape joints in material to retain concrete moisture. Keep the concrete surface covered for the required curing period.

Cold weather curing

Temperature: Maintain concrete surface temperatures above 5°C for the duration of the curing period.

Hot weather curing

Requirement: If the concrete temperature exceeds 25°C, or the ambient shade temperature exceeds 30°C, protect from drying winds and sun by using an evaporative retarder until curing has commenced.

3.10 JOINTS**General**

Requirement: Construct expansion, contraction and construction joints straight and plumb. Make transverse joints normal to longitudinal joints. Extend transverse expansion and contraction joints continuously from edge to edge of the pavement through interconnected slabs.

Joint layout: Install joints as documented.

Joint spacings: refer Civils drawings

Joint widths: Ensure joint rebate is in accordance with the particular sealant being used

Non-dowelled contraction joints

Installation: Construct transverse and longitudinal contraction joints by early power sawing at an appropriate time, tooling or by placing an insert in the fresh concrete.

Construction joints

Installation: Place header board on the subbase or subgrade at right angles to the pavement centreline.

Planned location: Terminate each day's placing operation at a transverse construction joint located to coincide with a planned contraction or expansion joint.

Unplanned joints: If placement is interrupted for 30 minutes or longer, form a tied transverse construction joint within the middle third of the distance between planned joints but no closer than 1.5 m to the nearest planned joint. If necessary remove placed concrete back to the required location.

Expansion joints

Joint filling: Fill with jointing materials as documented. Finish visible jointing material neatly flush with adjoining surfaces.

Jointing materials: Provide jointing materials compatible with each other and non-staining to concrete in visible locations.

Foamed materials (in compressible fillers): Closed cell or impregnated, not water absorbing.

Sawn joints

Weakened plane joint: Saw the hardened concrete to depth at least 0.25 to 0.33 of the pavement thickness and to a uniform width in the range of 3 to 5 mm as follows:

- Timing: Commence sawing, regardless of time or weather conditions, as soon as the concrete has hardened sufficiently to permit cutting with only minor raveling of the edges of the sawcut. Complete sawing no later than 24 hours after concrete placement.

- Sequence: If possible, saw every third transverse joint initially, then saw the intermediate joints. Start where concrete placement commenced.
 - Cracking: If the concrete has already cracked near the location chosen for a joint, do not saw a joint in that location. If a crack develops ahead of the sawcut, discontinue sawing and submit proposals for extra sawn joints.
 - Standby machines: Provide one standby sawing machine for each machine planned to be used.
 - Cleaning and protection: Immediately after each joint is sawn, flush the sawcut and adjacent concrete surface using water, until the waste from sawing is removed from the joint.
- Rebated groove joints: Saw straight, parallel-sided grooves for joint seals on top of and centred on the sawn weakened plane joints.
- Timing: Commence sawing after the curing period has ended, immediately before joint sealing. Saw during daylight hours.

Preparing joints

Stripping time: At least 12 hours.

Clean: Immediately before installation of the sealer, make sure the joint space is dry, clean and free from loose material. Remove laitance, curing compound and protrusions of hardened concrete from the sides and upper edges of the joint.

Joint sealing

Sealant type: Provide silicone sealant in conformance with the manufacturer's recommendations.

Backing rod: Compressible closed cell polyethylene foam with a bond breaking surface.

3.11 SURFACE SEALERS**General**

Sealer: refer Schedule of Finishes

Silica chip or carborundum dust required: refer Schedule of Finishes

Application: Apply surface sealer after the curing period to the manufacturer's recommendations.

Curing sealer compound: If using the sealer as a curing compound, apply directly after finishing.

3.12 TACTILE GROUND SURFACE INDICATORS**Preparation**

Requirement: Conform to the manufacturer's requirements and make sure surfaces are clean and free of dust and contaminants.

Installation

General: Install on a dry and flat surface. Conform to the manufacturer's recommendations.

3.13 COMPLETION**Material removal**

Excavated material: Remove from site.

0310B CONCRETE**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide cast concrete as documented and as follows:

- Conforming to the design details.
- Satisfying quality and inspection requirements.
- Compatible with following finishes.

NB. This section should be read in conjunction with notes provided on Structural and Civil Engineering drawings –drawing notes take precedence over this Specification, however notify the Superintendent immediately if conflicting requirements are found.

Design

Formwork: The design of the formwork is the contractor's responsibility.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 STANDARDS**General**

Formwork design and construction, formed surfaces: To AS 3610 and AS 3610.1.

Plywood formwork: To AS 6669.

Profiled steel sheeting, including shear connectors: To AS 2327.1.

Specification and supply of concrete: To AS 1379.

Concrete materials and construction: To AS 3600.

Residential ground slabs and footings: To AS 2870.

Concrete structures for retaining liquids: To AS 3735.

Structural design: To AS 3600.

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection the following definitions apply:

- Ambient temperature: The air temperature at the time of mixing and placing of concrete.
- Average ambient temperature: Average value of the daily maximum and minimum ambient temperatures over the relevant period at a site.
- Batch: A quantity of concrete containing a fixed quantity of ingredients and produced in a discrete operation.
- Concrete class:
 - . Normal: Concrete which is specified primarily by a standard compressive strength grade and otherwise conforming to AS 1379 clause 1.5.3.
- Early age strength: A mean compressive strength at 7 days exceeding the values shown in AS 1379 Table 1.2.
- Formwork:
 - . Lost formwork: Sacrificial formwork left in place.
 - . Slip formwork: Continuously slipped or moving formwork.
- Green concrete: Concrete which has set but not appreciably hardened.
- Production assessment: An assessment procedure for concrete specified by strength grade, carried out by the supplier on concrete produced by a specific supplying plant and based on the statistical assessment of standard compressive strength tests on concrete.
- Sample: A portion of the material used in the works, or to take such a sample.

- Specimen: A portion of a sample which is submitted for testing.
- Weather:
 - . Cold: Ambient shade temperature < 10°C.
 - . Hot: Ambient shade temperature > 30°C.

1.5 INSPECTION

Notice

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

- Base or subgrade before covering.
- Membrane or film underlay installed on the base or subgrade.
- Completed formwork and reinforcement, tendons, cores, fixings and embedded items fixed in place.
- Used formwork, after cleaning and before re-use.
- Surfaces or elements to be concealed in the final work before covering.
- Commencement of concrete placing.
- Evaluation of the off-form finishes.
- Evaluation of surface finish.

1.6 TOLERANCES

Formwork

Plumb of elements > 8 m high: 1 in 1000.

Plumb of elements ≤ 8 m high: To AS 3610.1.

Position: Construct formwork so that finished concrete conforms to AS 3600 clause 17.5.

Reinforcement

Fabrication and fixing: To AS 3600 clause 17.2.

Reinforcement and tendon position: To AS 3600 clause 17.5.3.

Finishes

Surface quality of formed surfaces: Conforming to the surface finish requirements of AS 3610.1 Table 3.3.2.

Flatness of unformed surfaces: Conforming to the **Flatness tolerance class 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

Note: Note requirement or a max. +/- 5mm slab surface deviation across the length of the operable wall in the Social room.

1.7 SUBMISSIONS

Calculations

Design: Submit structural performance calculations.

Certification

Formwork execution certification: Submit certification by a professional engineer experienced in formwork design and construction verifying conformance of the completed formwork, including the suitability of the formwork for the documented surface finish class.

Design

Loading: Submit details of proposed construction systems, loads and procedures, including propping and re-shoring.

Execution details

Re-shoring: If re-shoring is intended, submit proposals.

Stripping single storey suspended work: If the requirements of AS 3610.1 cannot be met, give notice.

Surface repair method: If required, submit details of the proposed method before commencing repairs.

Concrete: Submit proposals for mixing, placing, finishing and curing concrete including the following:

- Changes to the concrete mix.
- Curing and protection methods.

- Curing period for low-pressure steam curing, if proposed.
- Cutting or displacing reinforcement, or cutting hardened concrete.
- Handling, placing, compaction and finishing methods and equipment, including pumping.
- Placing under water.
- Sequence and times for concrete placement, and construction joint locations and relocations.
- Site storage, mixing and transport methods and equipment, if applicable.
- Temperature control methods.

Cutting or coring: If cutting or coring of hardened concrete is proposed, provide details.

Loading: If proposed construction systems, loads and procedures, including propping and re-shoring, differ from submitted design documentation, submit details.

Sequence of concrete placement: If sequential placement of slab segments is proposed, provide details.

Sawn joints: Submit proposed methods, timing and sequence of sawing joints.

Reinforcement: Submit the following:

- General: If changes are proposed to reinforcement shown on the drawings, proposed details.
- Damaged galvanizing: If repair is required, proposals to AS/NZS 4680 Section 8.
- Mechanical splices: If mechanical bar splices are proposed or required, details and test certificates for each size and type of bar to be spliced.
- Provision for concrete placement: If spacing or cover of reinforcement does not conform to AS 3600, give notice.
- Splicing: If undocumented splicing is proposed, proposed details.
- Welding: Give notice before welding reinforcement.

Pre-mixed supply delivery dockets: For each batch, submit a docket listing the information required by AS 1379, and the following information:

- For special class performance concrete: Specified performance and type of cement binder.
- For special class prescription concrete: Details of mix, additives, and type of cement binder.
- Method of placement and climate conditions during pour.
- Name of concrete delivery supervisor.
- Project assessment carried out each day.
- The concrete element or part of the works for which the concrete was ordered, and where it was placed.
- The total amount of water added at the plant and the maximum amount permitted to be added at the site.

Materials

Product conformity: Submit current assessments of conformity, as appropriate, as follows:

- Certificate of conformity by a JAS-ANZ accredited third party.
- Mark of conformity of a JAS-ANZ accredited third party applied to the product.
- Report by a NATA accredited laboratory describing tests and giving results which demonstrate that the product conforms.

Concrete mixes: Submit details, for each grade and type of concrete including any proposed use of special-purpose cement types.

Curing compounds: If it is proposed to use a liquid membrane-forming curing compound, submit the following information:

- Certified test results for water retention to AS 3799 Appendix B.
- Evidence of compatibility with concrete, and with applied finishes including toppings and render, if any, including methods of obtaining the required adhesion.
- For visually important surfaces, evidence that an acceptable final surface colour will be obtained.

Coloured concrete: Using the same mix and method used in the works, submit sample blocks of concrete before colouring with mineral oxides.

- Number: 4.
- Size (nominal): 300 x 300 x 50 mm.

Void formers: Test void formers under laboratory conditions. Place formers on damp sand and load with a mass of wet concrete at least equal to the mass of the beams or slabs to be supported. Submit certified test results to verify conformance with the following requirements:

- Deflection during placing and compaction of the concrete does not exceed beam or slab span/1000.

- Additional deflection between initial set and 7 days does not exceed span/400.
- Collapse and loss of load carrying capacity occurs not more than 48 hours after flooding with water, creating a void at least 60% of the original depth of the void former.

Reinforcement: Submit type-test reports to verify conformance for each reinforcement type as follows:

- Strength and ductility: To AS 3600 Table 3.2.1.

Shop drawings

Cores, fixings and embedded items: If the locations of these items are not shown or are shown diagrammatically, submit shop drawings showing the proposed locations, clearances and cover. Indicate proposed repositioning of reinforcement.

Subcontractors

Pre-mixed supply: Submit names and contact details of proposed pre-mixed concrete suppliers and alternative source of supply in the event of breakdown of pre-mixed or site mixed supply.

2 PRODUCTS

2.1 MATERIALS

General

Stockpile: If uniform, consistent colour is required, stockpile sand, cement and aggregates for the project.

Aggregates

Standard: To AS 2758.1.

Aggregate properties: refer Structural drawings.

Special aggregates: Stockpile special aggregates at the beginning of the project to minimise colour and other variations.

Cement

Standard: To AS 3972.

Age: Less than 6 months old.

Storage: Store cement bags under cover and above ground.

Water

Standard: To AS 1379.

Requirement: Provide clean water, free from oil, acid, alkali, organic or vegetable matter and including not more than 500 mg/l of chloride ions.

Polymeric film underlay

Vapour barriers and damp-proofing membranes: To AS 2870 clause 5.3.3.

Chemical admixtures

Standard: To AS 1478.1.

Contents: Free of chlorides, fluorides and nitrates.

Curing compounds

Curing compounds: To AS 3799.

Coloured concrete

Standard: To AS 3610.1.

2.2 CONCRETE

Properties

Concrete mix and supply: Conform to the following:

- Normal-class: To AS 1379 clause 1.5.3.
- . Properties: refer Structural drawings.

Cover

Concrete cover generally: To AS 3600.

Concrete cover for structures for retaining liquids: To AS 3735.

Concrete cover for residential ground slabs and footings: To AS 2870.

2.3 TESTING

General

Test authority: Concrete supplier or NATA registered laboratory.

Reports and records of test results: To AS 1012. Retain results on site.

Assessment process of test results

Standard: To AS 1379.

Method of assessment: Project assessment.

Sampling

Method of sampling: AS 1012.1.

Sampling locations: To AS 1012.1 and the following:

- Sample the concrete on site, at the point of discharge from the agitator.
- For compressive strength tests: Spread the site sampling evenly throughout the pour.

Frequency of sampling: To AS 1379 and the following:

- For slump tests: Take at least one sample from each batch.
- For compressive strength tests: Sample to the Project assessment strength grade sampling table.

Project assessment strength grade sampling table

Number of batches for each type and grade of concrete per day	Minimum number of samples	
	Columns and load bearing wall elements per batch	Other elements per day
1	1	1
2-5	1	2
6-10	1	3
11-20	1	4
each additional 10	1	1 additional

Making and curing of specimens

General: To AS 1012.8.1 and AS 1012.8.2.

Specimens for compressive strength tests: Make and cure at least two specimens from the sample of each grade.

Specimen size: Nominally 200 x 100 mm diameter. If aggregate size exceeds 20 mm, nominally 300 x 150 mm diameter.

Testing

Test methods: To AS 1012.

Acceptance criteria:

- General: refer Structural drawings.
- Early age compressive strength: refer Structural drawings.

Slump tests: Assess slump for every batch. Perform slump test on each strength sample.

Drying shrinkage at 56 days: To AS 1012.13.

Embedded pressure pipes

General: Complete leak tests before embedding pipes.

Liquid retaining structures

Testing for liquid tightness: To AS 3735.

2.4 FORMWORK

General

Linings, facings and release agents: Compatible with finishes applied to concrete.

Lost formwork: Not to contain timber or chlorides, and not to impair the structural performance of the concrete members.

Void formers: Material capable of maintaining rigidity and shape until the concrete has set, capable of withstanding construction loads and non-collapsible on absorption of moisture.

Profiled steel sheeting composite formwork

Material: Hot-dipped zinc-coated sheet steel to AS 1397.

Minimum steel grade: G550.

Corrosion protection: Zinc coating weight of Z350

Accessories: Adopt material and corrosion protection to match the profiled steel sheeting.

Plywood formwork

Material: Plywood sheeting to AS 6669.

Grade: To meet the design dimensions, loading and surface quality specified to AS 3610 and AS 3610.1.

Joints: Seal the joints consistent with the surface finish class.

Tolerances: To AS 3610.1 Section 3.

2.5 REINFORCEMENT**Steel reinforcement**

Standard: To AS/NZS 4671:

- Type: refer Structural drawings
- Strength grade and ductility class: refer Structural drawings

Surface condition: Free of loose mill scale, rust, oil, grease, mud or other material which would reduce the bond between the reinforcement and concrete.

Protective coating

Corrosion protection: To AS 3600 clause 4.10.3.

General: For concrete elements containing protective coated reinforcement, provide the same coating type to all that element's reinforcement and embedded ferrous metal items, including tie wires, stools, spacers, stirrups, plates and ferrules, and protect other embedded metals with a suitable coating.

Epoxy coating: High build, high solids chemically resistant coating.

- Thickness: 200 µm minimum.

Galvanizing: To AS/NZS 4680, as follows:

- Sequence: If fabrication is to occur after galvanizing, submit proposals for galvanizing repair and coating of cut ends.
- Zinc-coating (minimum): 600 g/m².

Tie wire

General: Annealed steel 1.25 mm diameter (minimum).

External and corrosive applications: Galvanized.

2.6 MISCELLANEOUS**Surface hardeners, sealants and protectors**

Supply: If documented, provide proprietary products conforming to the manufacturer's recommendations.

Slip resistance treatment

Slip resistance classification: To AS/NZS 4663.

3 EXECUTION**3.1 POLYMERIC FILM UNDERLAY****Location**

General: Under slabs on ground including integral ground beams and footings, provide a vapour barrier or, in areas prone to rising damp or salt attack, a damp-proofing membrane.

Base preparation

General: According to base type, as follows:

Concrete working base: Remove projections above the plane surface, and loose material.

Graded prepared subgrade: Blind with sufficient sand to create a smooth surface free from hard projections. Lightly wet the sand just before laying the underlay.

Installation

Standard: To AS 2870 clause 5.3.3.

General: Lay underlay over the base as follows:

- Lap joints at least 200 mm and seal the laps and penetrations with waterproof adhesive tape.
- Face the laps away from the direction of concrete pour.
- Continue up vertical faces past the damp-proof course where applicable, and tape fix at the top.
- Patch or seal punctures or tears before placing concrete.
- Cut back as required after concrete has gained strength and formwork has been removed.

3.2 FORMWORK

General

General: Refer Structural drawings.

Preparation

Cleaning: Before placing concrete, remove free water, dust, debris and stains from the formwork and the formed space.

Bolt holes

Removable bolts: Remove tie bolts without causing damage to the concrete.

Cover: Position formwork tie bolts left in the concrete so that the tie does not project to within 50 mm of finished surface.

Bolt hole filling: Provide material with durability and colour matching the concrete.

Recessed filling: Fill or plug the hole to 6 mm below the surface.

Corners

Work above ground: Fillet at re-entrant angles, and chamfer at corners.

- Face of bevel 25 mm.

Embedments

General: Fix embedments through formwork to prevent movement, or loss of slurry or concrete, during concrete placement.

Openings

General: In vertical formwork provide openings or removable panels for inspection and cleaning, at the base of columns, walls and deep beams.

Access: For thin walls and columns, provide access panels for placing concrete.

Release agents

Application: Before placing reinforcement, apply a release agent to linings and facings.

Slip formwork

Provision for inspection: Provide access below the moving formwork for surface treatment and inspection.

Profiled steel sheeting composite formwork

Fixing: If sheeting cannot be fixed to structural steel supports with puddle welds, or with welded shear studs in composite construction, provide details.

Steel linings

Rust: Clean off any rust and apply rust inhibiting agent prior to re-use.

Visually important surfaces

General: For concrete of surface finish classes 1, 2 or 3, set out the formwork to give a regular arrangement of panels, joints, bolt holes, and similar visible elements in the formed surface.

Void formers

Protection: Keep void formers dry until use, place them on a firm level surface and place reinforcement and concrete with minimum delay.

3.3 REINFORCEMENT

Dowels

Fixing: If a dowel has an unpainted half, embed in the concrete placed first.

Tolerances:

- Alignment: 2 mm in 300 mm.
- Location: $\pm$ half the diameter of the dowel.

Grade: 250 N.

Supports

General: Provide proprietary concrete, metal or plastic supports to reinforcement in the form of chairs, spacers, stools, hangers and ties, as follows:

- Adequate to withstand construction and traffic loads.
- With a protective coating if they are ferrous metal located within the concrete cover zone, or are used with galvanized or zinc-coated reinforcement.

Minimum spacing:

- Bars: $\leq$ 60 diameters.
- Mesh: $\leq$ 800 mm.

Supports over membranes: Prevent damage to waterproofing membranes or vapour barriers. If appropriate, place a metal or plastic plate under each support.

Projecting reinforcement

General: If starter or other bars extend beyond reinforcement mats or cages, through formwork or from cast concrete, provide a plastic protective cap to each bar until it is incorporated into subsequent work.

Tying

General: Secure the reinforcement against displacement by tying at intersections with either wire ties, or clips. Bend the ends of wire ties away from nearby faces of formwork or unformed faces to prevent the ties projecting into the concrete cover.

Beams: Tie stirrups to bars in each corner of each stirrup. Fix other longitudinal bars to stirrups at 1 m maximum intervals.

Bundled bars: Tie bundled bars in closest possible contact. Provide tie wire of at least 2.5 mm diameter and spaced not more than 24 times the diameter of the smallest bar in the bundle.

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

Mats: For bar reinforcement in the form of a mat, secure each bar at alternate intersections.

Welding

General: If welding of reinforcement is proposed, provide details.

3.4 CONCRETE

General

General: Refer Structural drawings.

Elapsed delivery time

General: Make sure the elapsed time between the wetting of the mix and the discharge of the mix at the site conforms to the **Elapsed delivery time table**. Do not discharge at ambient temperature below 10°C or above 30°C unless approved heating or cooling measures are taken to delivered concrete within the range 5°C to 35°C.

Elapsed delivery time table

Concrete temperature at time of discharge (°C)	Maximum elapsed time (minutes)
10 – 24	120
24 – 27	90
27 – 30	60
30 – 32	45

Pre-mixed supply

Addition of water: If adding water, conform to AS 1379 clause 4.2.3.

Transport method: Prevent segregation, loss of material and contamination of the environment, and do not adversely affect placing or compaction.

Site mixed supply

Emergencies: If mixing by hand, provide details.

Plant: Mix concrete in a plant located on the construction site.

3.5 CORES, FIXINGS AND EMBEDDED ITEMS

Adjoining elements

Fixings: Provide fixings for adjoining elements including any temporary fixings that are required.

Protection

General: Grease threads. Protect embedded items against damage.

Compatibility: Make sure inserts, fixings and embedded items are compatible with each other, with the reinforcement and with the concrete mix to be used and surface finish requirements.

Corrosion: If in external or exposed locations, galvanize anchor bolts and embedded fixings or submit proposed alternate materials.

Structural integrity

Position: Fix cores and embedded items to prevent movement during concrete placing. In locating cores, fixings and embedded items, reposition but do not cut reinforcement, and maintain cover to reinforcement.

Isolation: Isolate embedded items to prevent water tracking to concrete providing minimum cover to reinforcement.

Tolerances

General: Maximum deviation from correct positions:

- Anchor bolt groups for structural steel: To AS 4100.
- Cores and embedded items generally: 10 mm.
- Other fixing bolts: 3 mm.

3.6 PLACING AND COMPACTION**Placing**

Horizontal transport: Use suitable conveyors, clean chutes, troughs, hoppers or pipes.

Methods: Avoid segregation and loss of concrete, and minimise plastic settlement. Maintain a nominally vertical and plastic concrete edge during placement.

Layers: Place concrete in layers ≤ 300 mm thick. Compact succeeding layer into previous layer before previous layer has taken initial set.

Compaction

Methods: Use immersion and screed vibrators accompanied by hand methods as appropriate to remove entrapped air and to fully compact the mix.

Vibrators: Do not allow vibrators to contact set concrete, reinforcement or items including pipes and conduits embedded in concrete. Do not use vibrators to move concrete along the formwork. Avoid causing segregation by over-vibration.

Placing records

General: Keep on site and make available for inspection a log book recording each placement of concrete, including the following:

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

Rain

General: During placement and before setting, protect the surface from damage.

Time between adjacent placements

General: Conform to the **Minimum time delay schedule**.

Vertical elements

General: Limit the free fall of concrete to maximum of 2000 mm.

Placing in cold weather

Cement: Do not use high alumina cement.

Placing concrete: Maintain the temperature of the freshly mixed concrete at $\geq 5^{\circ}\text{C}$.

Formwork and reinforcement: Before and during placing maintain temperature at $\geq 5^{\circ}\text{C}$.

Severe weather: If severe weather conditions are predicted, use high early strength cement.

Temperature control: Heat the concrete materials, other than cement, to the minimum temperature necessary to make sure the temperature of the placed concrete is within the limits specified.

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

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

Maximum temperature of water: 60°C when placed in the mixer.

Concrete: Prevent concrete from freezing, without using salts or chemicals.

Placing in hot weather

Handling: Prevent premature stiffening of the fresh mix and reduce water absorption and evaporation losses.

Mix, transport, place and compact the concrete conforming to the **Elapsed delivery time table**.

Placing concrete: Maintain the temperature of the freshly mixed concrete conforming to the **Hot weather placing table**.

Evaporation control barriers: Erect barriers to protect freshly placed concrete from drying winds.

Formwork and reinforcement: Before and during placing, maintain temperature at $\leq 35^{\circ}\text{C}$.

Temperature control: Select one or more of the following methods of maintaining the specified temperature of the placed concrete at < 35°C:

- Cool the concrete using liquid nitrogen injection before placing.
- Cover horizontal transport containers.
- Spray the coarse aggregate using cold water before mixing.
- Use chilled mixing water.

Hot weather placing table

Concrete element	Temperature limit
Normal concrete in footings, beams, columns, walls and slabs	35°C
Concrete in sections ≥ 1 m in all dimensions except for concrete of strength 40 MPa or greater, in sections exceeding 600 mm in thickness	27°C

Placing under water

Condition: If placing in the dry is practicable by pumping or other means of dewatering, do not place under water.

Minimum cement content for the mix: Increase by 25%.

Method: If required, submit proposals.

3.7 CURING

General

Requirements: Taking into account the average ambient temperature at site over the relevant period affecting the curing, adopt procedures to make sure of the following:

- Curing: Cure continuously from completion of finishing until the total cumulative number of days or fractions of days, during which the air temperature in contact with the concrete is above 10°C, conforms to the following, unless accelerated curing is adopted:
 - . Fully enclosed internal surfaces/Early age concrete: 3 days.
 - . Other concrete surfaces: 7 days.
- End of curing period: Prevent rapid drying out at the end of the curing period.
- Protection: Maintain at a reasonably constant temperature with minimum moisture loss, during the curing period.

Curing compounds

Application: Provide a uniform continuous flexible coating without visible breaks or pinholes, which remains unbroken at least for the required curing period after application.

Substrates: Do not use wax-based or chlorinated rubber-based curing compounds on surfaces forming substrates to applied finishes, concrete toppings and cement-based render.

Self levelling toppings: If used also as curing compounds, conform to AS 3799.

Visually important surfaces: Apply curing compounds to produce uniform colour on adjacent surfaces.

Hot weather curing

Curing compounds: If curing compounds are proposed, provide details.

Protection: Select a protection method from the following:

- If the concrete temperature > 25°C or if not protected against drying winds, protect the concrete using a fog spray application of aliphatic alcohol evaporation retardant.
- If ambient shade temperature is > 35°C, protect from wind and sun using an evaporative retarder until curing is commenced.
- Immediately after finishing, either cover exposed surfaces using an impervious membrane or hessian kept wet until curing begins, or apply a curing compound.

Water curing

General: Select a method of ponding or continuously sprinkling to prevent damage to the concrete surface during the required curing period.

3.8 JOINTS

Construction joints

Location: Do not relocate or eliminate construction joints, or make construction joints not documented. If emergency construction joints are made necessary by unforeseen interruptions to the concrete pour, submit a report on the action taken.

Finish: Butt join the surfaces of adjoining pours. In visually important surfaces make the joint straight and true, and free from blemishes impermissible for its surface finish class.

Preparation: Roughen and clean the hardened concrete joint surface. Remove loose or soft material, free water, foreign matter and laitance. Dampen the surface just before placing the fresh concrete and coat with a neat cement slurry.

Expansion joints

Joint filling: Fill with jointing materials as documented. Finish visible jointing material neatly flush with adjoining surfaces.

Preparation: Before filling, dry and clean the joint surfaces, and prime.

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

Jointing materials: Provide jointing materials compatible with each other, and non-staining to concrete in visible locations.

Bond breaking: Provide back-up materials for sealants, including backing rods, which do not adhere to the sealant.

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

Slip joints

Requirement: If concrete slabs are supported on masonry, provide proprietary slip joints.

3.9 SURFACE MODIFIERS

General

Application: Apply to clean surfaces conforming to the manufacturer's recommendations.

3.10 FORMED SURFACES

General

Surface finish: Refer Drawings.

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

Curing

General: If formwork is stripped before the minimum curing period for the concrete has elapsed, continue curing the exposed faces as soon as the stripping is completed.

Evaluation of formed surfaces

General: If evaluation of formed surface tolerance or colour is required, complete the evaluation before surface treatment.

Surface repairs

Method: If surface repairs are required, submit proposals.

Finishing methods

General: If soffits of concrete elements or faces of concrete columns are to have a finish other than an off-form finish, provide details of proposed procedures.

Blasted finishes:

- Abrasive: Blast the cured surface using hard, sharp graded abrasive particles until the coarse aggregate is in uniform relief.
- Light abrasive: Blast the cured surface using hard, sharp graded abrasive particles to provide a uniform matt finish without exposing the coarse aggregate.

Bush hammered finish: Remove the minimum matrix using bush hammering to expose the coarse aggregate, recessing the matrix no deeper than half the aggregate size, to give a uniform texture.

Exposed aggregate finish: Remove the vertical face formwork while the concrete is green. Wet the surface and scrub using stiff fibre or wire brushes, using clean water freely, until the aggregate is uniformly exposed. Do not use acid etching. Rinse the surface with clean water.

Floated finishes:

- Sand floated finish: Remove the vertical face formwork while the concrete is green. Wet the surface and rub using a wood float. Rub fine sand into the surface until a uniform colour and texture are produced.
- Grout floated finish: Remove the vertical face formwork while the concrete is green. Dampen the surface and spread a slurry, using hessian pads or sponge rubber floats. Remove surplus slurry and work until a uniform colour and texture are produced.

Smooth rubbed finish: Remove the vertical face formwork while the concrete is green. Wet the surface and rub using a carborundum or similar abrasive brick until a uniform colour and texture are produced.

3.11 UNFORMED SURFACES

General

Surface finish: Refer Drawings.

Finished levels: Strike off, screed and level slab surfaces to finished levels, to and the flatness tolerance class documented. Locally form slab to falls around floor waste positions, surrounding 500mm radius.

Surface repairs

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.

Steel trowel finish: After machine floating finish as follows:

- Use power or hand steel trowels to produce a smooth surface relatively free from defects.
- When the surface has hardened sufficiently, re-trowel to produce the final consolidated finish free of trowel marks and uniform in texture and appearance.

Burnished finish: Continue steel trowelling until the concrete surface attains a polished or glossy finish, uniform in texture, appearance and free of trowel marks and defects.

Wood float finish: After machine floating, use wood or plastic hand floats to produce the final consolidated finish free of float marks and uniform in texture and appearance.

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

Scored or scratch finish: After screeding, use a stiff brush or rake drawn across the surface before final set, to produce a coarse scored texture.

Sponge finish: After machine floating and steel trowelling, use a damp sponge to wipe the surface to produce an even textured sand finish.

3.12 COMPLETION

Formwork removal

Extent: Remove formwork, other than profiled steel sheeting composite formwork and lost formwork, including formwork in concealed locations.

Timing: Do not disturb formwork until concrete is hardened enough to withstand formwork movements and removal without damage.

Stripping:

- General: To AS 3600 where it is more stringent than AS 3610.1.
- Vertical formwork: To AS 3610.1 Appendix B Table B1.
- Multi-storey work: Remove formwork without disturbing props supporting succeeding floors.
- Post-tensioned concrete: Remove formwork supporting post-tensioned concrete members to AS 3600 clause 17.6.2.7.

Loading

General: Give notice before loading the concrete structure.

Protection

General: Protect the concrete from damage due to construction load, physical and thermal shocks, and excessive vibrations, particularly during the curing period.

Surface protection: Protect finished concrete surfaces and applied finishes from damage.

0341B STRUCTURAL STEEL**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide structural steelwork that is integrated into the building construction.

Local Product: Use structural steel that has been manufactured

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- *General requirements.*
- *Steel – hot dip galvanized coatings.*
- *Steel – protective paint coatings.*

NB. This section should be read in conjunction with notes provided on Structural and Civil Engineering drawings –drawing notes take precedence over this Specification, however notify the Superintendent immediately if conflicting requirements are found.

1.3 STANDARDS**General**

Materials, construction, fabrication and erection: To AS 4100.

Cold-formed steel: AS/NZS 4600.

1.4 ADJOINING ELEMENTS**General**

Fixing: Provide for the fixing of adjoining building elements that are to be connected to or supported on the structural steel.

1.5 INSPECTION**Notice – on site**

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

- Anchor bolts in position before casting in.
- Steelwork and column bases erected on site, before grouting, encasing, site painting or cladding.
- Tensioning of bolts in categories 8.8/TB and 8.8/TF.
- Reinforcement and formwork in place prior to any encasement.
- After any grouting, encasement, fire protection or site painting is completed.

1.6 SUBMISSIONS**Origin of steel**

Requirement: If it is proposed to use steel not of Australian origin, submit documentation which demonstrates that the steel complies and is suitable for fabrication to Australian standards.

Bolts

Compliance: Submit a manufacturer's compliance/test certificate from an accredited testing organization confirming compliance with AS/NZS 1252.

Independent certification: If bolts manufactured from outside Australia, provide a local NATA-accredited laboratory independent compliance certificate based on appropriate testing and verification.

Shop drawings

General: Submit shop drawings showing the following information:

- Marking plans.
- Identification.
- Steel type and grade.
- Dimensions of items.
- Required camber, where applicable.

- Connection details
- Orientation of members.
- Surface preparation methods and coating system if shop applied.
- Breather holes for hollow sections (with seal plates) being hot-dip galvanized.
- Location of and preparation for site welds.
- Temporary works such as lifting lugs, support points, temporary cleats and bracing which are required for transport and erection of the structural steelwork, and the procedure for final removal.
- Required fixings for adjoining building elements.

Materials and components

Concrete or masonry anchors: If masonry anchors other than as shown on the drawings are required or proposed for the support or fixing of structural steel, submit evidence of the anchor capacity to carry the load.

Execution

Splicing: If splicing of structural members is intended, submit proposals.

Distortions: Submit proposals for preventing or minimising distortion or galvanized components, welded components or welded and galvanized components; and proposals for restoration to design shape.

2 PRODUCTS

2.1 STEEL TYPE AND GRADE

Material

Steel members and sections: Conform to the **Steel grade (minimum) table**.

Steel grade (minimum) table

Type of steel	Grade
Universal beams and columns, parallel flange channels, large angles to AS/NZS 3679.1	300
Flat, small angles, taper flange beams and columns to AS/NZS 3679.1	250
Welded sections to AS/NZS 3679.2	300
Hot rolled plates, floor plates and slabs to AS/NZS 3678	250
Hollow sections to AS/NZS 1163: - Circular sections less than 165 mm nominal outside diameter - Sections other than the above	C250/C350 C350/C450
Cold formed purlins and girts to AS 1397	G550 Z350 or Z450 G450 Z350 or Z450

2.2 BOLTS

Bolts, nuts and washers

General: Hot-dip galvanized, corrosion-free, and in serviceable condition.

3 EXECUTION

3.1 FABRICATION AND ERECTION

General

Substitution: If substitution of members is proposed, provide details.

Beam camber

General: If beam members have a natural camber within the straightness tolerance, fabricate and erect them with the camber up.

Straightening

Care: If correcting distorted members, conform to the submitted procedures and avoid damage.

Work exposed to view

Welds: Grind smooth but do not reduce the weld below its nominal size.

Shearing, flame cutting and chipping: Perform carefully and accurately.

Corners and edges: Grind fair those corners and edges which are sharp, marred, or roughened.

Site work

General: Other than work shown on the shop drawings as site work, do not fabricate, modify or weld structural steel on site.

Identification marks

General: Provide marks or other means of identifying each member compatible with the finish, for the setting out, location, erection and connection of the steelwork in accordance with the marking plans.

Monorail beams: Identify and mark rated capacity in accordance with AS 1418.18 clause 5.12.6.

Tolerances

Measurement: Tolerances are to be checked by measurement after fabrication when corrosion protection has been applied.

Conformance: To AS 4100 clause 14.4.

3.2 WELDING**General**

Standard: To AS/NZS 1554.1.

Weld category

Weld categories not shown on the drawings: Category GP.

Weld type

Weld type not shown on the drawings: Submit proposals for weld type and electrodes.

3.3 BOLTING**Connections**

Weld type not shown on the drawings: Submit proposals for weld type and electrodes.

- Contact surfaces: Clean, as rolled and free from applied finishes.

Anchor bolts

General: Provide each anchor bolt with 2 nuts and 2 oversize washers and provide sufficient thread to permit the levelling nut and washer to be set below the base plate.

Galvanizing: Galvanize all components.

Hexagonal bolts: To AS 1111.1.

Hexagonal nuts: To AS 1112.3.

Plain washers: To AS 1237.1.

Set out: Set out bolt groups using templates and subjected to survey check.

Lock nuts

General: Provide lock nuts for bolts in moving parts or parts subject to vibration and for vertical bolts in tension.

Tensioning of bolting categories 8.8/TB and 8.8/TF

Method: Use part-turn-of-nut or load indicating washers.

3.4 SURFACE PREPARATION AND TREATMENT**General**

General: Conform to the *Steel – protective paint coatings* and/or *Steel – hot dip galvanized coatings* worksections as appropriate.

General: Coat structural steelwork not encased in concrete .

Standards: To AS 1627.4 and AS/NZS 2312 Section 1.

Surface preparation: Class 1 blast.

Coating: Coat prepared steelwork as follows:

- Primer: Zinc phosphate primer.
- Thickness: 70 µm.
- Requirement: Verify and record thickness.
- Concrete encasing: Where members are part concrete encased extend the priming 25 mm into the surface to be encased.
- Inaccessible surfaces: Where surfaces will be in contact or near contact after fabrication or erection, apply the finish and allow it to dry before assembly.

Shop work: Apply the primer coat or protective system to the structural steel before delivery to the site.

Transport and handling: Do not damage the paintwork.

Site work: After erection, repair damage to the shop coating and apply coating omitted at site connections.

3.5 FIRE PROTECTION COATINGS

General

General: Apply fire protection to structural steelwork in conformance with the **worksection**.

3.6 ERECTION

Temporary work

General: Provide all necessary temporary bracing or propping.

Temporary connections: If cleats not shown on shop drawings are required, submit details.

Site welds

Completion: Weld only when correct alignment and preset or camber have been achieved.

Overhead welding: If overhead welding is required, submit proposals.

Anchor bolts

General: For each group of anchor bolts provide a template with setting out lines clearly marked for positioning the bolts when casting in.

Grouting at supports

Preparation: Before grouting steelwork to be supported by concrete, masonry and the like, set steelwork on packing or wedges.

Minimum compressive strength (MPa): **20MPa**

Handling

Care: Handle members or components without overstressing or deforming them.

Protection: Wrap or otherwise protect members or components to prevent damage to surface finishes during handling and erection.

3.7 REPAIRS

General

General: Repair finishes to ensure the full integrity of each phase and each coating.

3.8 COMPLETION

Temporary connections

General: Remove temporary cleats on completion and restore the surface.

0342 LIGHT STEEL FRAMING**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide light steel framing, as documented.

Performance

Requirements:

- Suitable for installation of flooring, lining, cladding and roofing, as required.
- Conforms to the documented performance criteria.
- Conforms to NASH-1 (2005) or NASH-2 (2014).

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARDS**General**

Design, materials and protection: To AS/NZS 4600 (2018).

Residential and low-rise steel framing: To the National Association of Steel Housing standards NASH-1 (2005) or NASH-2 (2014).

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the definitions given in the NASH-1 (2005), NASH-2 (2014) and the following apply:

- Light steel framing: Cold-formed hot dip metallic-coated or hot dip galvanized steel framing.

1.5 TOLERANCES**General**

Manufacturing, assembly and installation tolerances: To NASH-1 (2005) Appendix D and NASH-2 (2014) Appendix A.

1.6 SUBMISSIONS**Certification**

Erected frame: Submit certification that the erected frame conforms to the documented project requirements.

Design documentation

General: If the structural documentation defines performance criteria, submit as follows:

- To AS/NZS 4600 (2018) or NASH-1 (2005): Independent design, documentation and certification by a professional engineer.
- To NASH-2 (2014): Certification of conformance to the requirements of NASH-2 (2014) by a professional engineer.

Reactions: Submit the location and magnitude of reactions that are to be accommodated by the support structure.

Floor and wall frame member sizes: Submit a schedule of proposed member sizes, certified as meeting documented project requirements, and AS/NZS 4600 (2018), NASH-1 (2005) or NASH-2 (2014) requirements for span, spacing and loading.

Shop drawings

General: Submit shop drawings to a scale that best describes the detail, requirements for the documented configurations and loading.

Prefabricated roof trusses: Include the following:

- Plan: Truss layout.

- Elevations: Arrangement of members, allowing for the accommodation of in-roof services, and the size and section type of each member.
- Method of assembly and connection details.
- Holding down and bracing: Details demonstrating capability to resist lateral and uplift forces.

Prefabricated wall frames: Include the following:

- Plan: Wall layout.
- Elevation: Arrangement of members, and size and section type of each member.
- Method of assembly, connection, holding down and bracing.

Prefabricated floor frames/cassettes: Include the following:

- Plan: Level of installation, arrangement of members, and size and section type of each member, including prefabricated floor joists.
- Method of assembly, connection, holding down and bracing.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties**.

1.7 INSPECTION

Notice

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

- Damp-proof course installed before installation of steel framing.
- Steel framing erected on site before lining or cladding.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Requirement: Transport all components to site and store, if required, so that components and their coating are not damaged or distorted.

Frames and trusses: If required, store on a flat even surface and do not load with other items.

Exposure: Minimise exposure of components to the weather during storage, handling and after erection.

2.2 COMPONENTS

Damp-proof course

Membrane: To the membrane requirements of AS 2870 (2011) or AS/NZS 2904 (1995).

Light steel framing

General: Cold-formed sections from steel, metallic-coated to AS 1397 (2021).

Corrosion protection: To NASH-2 (2014) Section 8.

3 EXECUTION

3.1 GENERAL

Frame fabrication

Length: Cut members accurately to length so they fit firmly against abutting members.

Service holes: If not pre-punched, form holes by drilling or punching, without compromising the structural integrity of the frame, located centrally in the web of the section, conforming to the requirements of NASH-2 (2014).

Swarf: Immediately remove swarf and other debris from the light steel framing.

Connections

Prefabricated framing: Fix framing elements to the fabricator's requirements.

Framing built in situ: Fix framing elements, as documented.

Fasteners: Compatible with steel frame to prevent galvanic corrosion of dissimilar metals.

Welding

Burning: Avoid procedures that result in greater than localised burning of the sheets or framing members.

Prefabricated frames

General: Protect frames from damage or distortion during erection.

Unseasoned or CCA treated timber

General: Do not fix in contact with framing without fully painting the timber and/or the steel.

Earthing

Requirement: To AS/NZS 3000 (2018). Provide temporary earthing during erection until the permanent earthing is installed.

Protection

General: Restore coatings that have been damaged. Thoroughly clean affected areas back to base metal and coat with a zinc-rich organic primer.

Metal separation: Install lagging to separate non-ferrous service pipes and accessories from the framing.

Grommets: Provide grommets to isolate piping and wiring from the light steel framing.

Site cut holes: Provide plastic bushes or grommets to site cut holes.

3.2 FLOOR FRAMING**General**

Protection: If floor framing is for ground floor construction, make sure that it is protected from moisture.

Construction loads: If construction loading exceeds design loading, provide additional supports to avoid overstressing the members.

3.3 WALL FRAMING**Wall studs**

General: Provide studs in single lengths without splices. Place a stud and a stiffened top plate under each structural load point from the roof or ceiling (except at openings). Provide multiple studs at points of concentrated load.

Maximum stud spacing: 600 mm.

Heads to openings

Requirement: Provide lintels appropriate for the load and span.

Additional support

General: Provide additional support in the form of noggings, trimmers and studs for support and fixing of lining, cladding, hardware, accessories, fixtures and fittings.

Vermin barriers

Brick veneer barrier: Nail 10 mm galvanized steel wire mesh to the underside of the bottom plate of external stud walls, extending across the cavity for building into brickwork.

Damp-proof course

Requirement: Provide damp-proof courses under the bottom plate of stud walls built off slabs or masonry dwarf walls as follows:

- External walls (not masonry veneer): Turn up a minimum of 75 mm on the inside and tack to studs. Project 10 mm beyond the external slab edge or dwarf wall and turn down at 45°.
- Walls of bathrooms, shower rooms and laundries: Turn up a minimum of 150 mm on the wet side and tack to studs.

Installation: Lay in long lengths. Lap full width at corners and intersections and at least 150 mm at joints.

Junctions: Preserve continuity of damp-proofing at junctions of damp-proof courses, sarking and waterproof membranes.

Flashings

Location: Provide flashings to external openings sufficient to prevent the entry of moisture. Form trays at the ends of sill flashings.

Masonry veneer construction: Extend across cavities and build into brickwork.

3.4 ROOF AND CEILING FRAMING**Beam framing**

General: Construct framing for flat or pitched roofs where the ceiling follows the roof line, consisting of prefabricated roof beams, rafters or purlins supporting both ceiling and roof covering.

Additional support

Requirement: Provide additional framing members at the following locations:

- Hanging light fittings.
- Ceiling fans.
- Access panels.

- Any other hanging services or fixtures and fittings.

Water tank or heater in roof space: Provide a support platform to the NCC cited AS/NZS 3500.4 (2021) clause 5.5.1.

Battens

Requirement: Supply and fix battens suitable for the span, spacing and proposed roofing material.

Anti-ponding boards

Standard: To AS 2050 (2018) clause 3.1.2.

3.5 TRUSSES

Fabrication

Assembly: Factory assemble trusses.

Supports for in-roof services

General: If walkways, mechanical plant or other services are to be supported within the roof space, provide support and make sure trusses have been designed to carry the loads.

Water tank and heater: If a water tank or heater is located in the roof space, provide a support platform to the NCC cited AS/NZS 3500.4 (2021) clause 5.5.1 and make sure trusses have been designed to carry the loads.

Marking

General: Permanently mark each truss to show:

- Project identification.
- Manufacturer.
- Tag or number.
- Location.
- Support points.

Installation

General: Support and fix trusses to the truss fabricator's recommendations.

Vertical movement: Over internal walls not providing support to trusses, provide at least 10 mm vertical clearance and use wall bracing methods that allow for vertical movement, to the truss fabricator's recommendations.

3.6 ROOF TRIM

Fascia, valley and barge boards

Requirement: Fix fascia, valley gutter boards and barge boards to the manufacturer's recommendations.

3.7 COMPLETION

Cleaning

General: On completion of framing, remove debris from any gaps between members and make sure void between bottom chord of roof trusses and top of any non-supporting internal wall is clear.

0344B STEEL - HOT DIP GALVANIZED COATINGS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide hot dip galvanized coatings, as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARDS**General**

Coating: To AS/NZS 4680 (2025).

Coating on fasteners: To AS/NZS 1214 (2016).

Design: To AS/NZS 2312.2 (2014).

Metal finishing

Minimum coating mass/thickness: To AS/NZS 4680 (2025).

Threaded fasteners coating mass/thickness minimum: To AS/NZS 1214 (2016).

1.4 SUBMISSIONS**Execution details**

Holes and lifting lugs: Submit size and locations of holes and/or lifting lugs.

Detailing features: If design and fabrication features of the items to be galvanized may lead to dimensional change, distortion or difficulties during galvanizing, identify these and submit details for improvement.

2 EXECUTION**2.1 GENERAL****Care**

Embrittlement: Take due care to avoid embrittlement of susceptible steels.

Mechanical properties: Avoid mechanical damage. Make sure that mechanical properties of the base metal do not change.

Surface preparation

Surface contaminants and coatings generally: Chemical clean, then acid pickle.

Abrasive blast cleaning: To AS 1627.4 (2005).

Coating process

General: To AS/NZS 4680 (2025) Section 2.

Double dipping to AS/NZS 5131 (2016) clause 9.10.5.

Threaded fasteners: To AS/NZS 1214 (2016) Section 5.

Post treatment

General: Passivate.

Drilling after completion of hot dip galvanizing

Repair: Prime drill hole surfaces to AS/NZS 4680 (2025) clause 4.3 before the surfaces begin to corrode.

Surface finish

Standard: To AS/NZS 4680 (2025) clause 4.1.

Coating appearance: Free of uncoated areas, blisters, roughness and sharp points where they may cause injury, and any defects that may affect the end use of the article. Dull grey is acceptable provided a sound and continuous coating is achieved.

Surplus zinc on fastener threads: Remove.

Friction-type bolted connections: Treat coated contact surfaces to achieve the required design slip factor, without removing excessive coating thickness as follows:

- Contact surface preparation: To
GAA Best practice guide for hot dip galvanized bolts and bolted joints (2020).
- Slip factor test: To AS 4100 (2020) Appendix J.

Coating repair

Rejection: If uncoated surfaces or areas damaged by handling at the galvanizing plant exceed the limits specified for repair in AS/NZS 4680 (2025) clause 4.3, reject the galvanizing.

Extent and methods: To AS/NZS 4680 (2025) clause 4.3.

Preparation of galvanized surfaces for paint finishes

Coarse preparation: Remove spikes, and make sure edges are free from lumps and runs.

Light sweep blasting before painting: Required.

- Maximum zinc removal: 10 µm.
- Abrasive grade (range): 150 to 180 µm.
- Abrasive type: Clean ilmenite or garnet.
- Blasting angle to surface: 45° maximum.
- Blast pressure (maximum): 275 kPa.
- Distance of nozzle from surface (range): 350 to 400 mm.
- Nozzle type: 10 to 13 mm orifice diameter venturi type.

2.2 SITE WORK

Site welding

Grinding of edges: Permitted.

Weld areas: Reinstate coating to AS/NZS 4680 (2025) clause 4.3.

Coating reinstatement

Extent: Areas damaged by transport, site welding, site flame cutting, site handling, or erection.

Method: To AS/NZS 4680 (2025) clause 4.3.

0382 LIGHT TIMBER FRAMING**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide light timber framing, as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.
- 0181 Adhesives, sealants and fasteners.
- 0185 Timber products, finishes and treatment.

1.3 STANDARDS**General**

Framing: To AS 1684.2 (2021), AS 1684.3 (2021) or the NCC cited AS 1684.4 (2010), as appropriate.

Design: To AS 1720.1 (2010).

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the definitions given in the AS 1684 series apply.

1.5 TOLERANCES**Floors**

Maximum deviation from a 3 m straightedge laid in any direction on the floor framing: 5 mm.

Wall tolerances table

Property	Permitted deviation
Generally: Verticality	1:500
Generally: Flatness ^a	3 mm
Features ^b : Verticality	1:1000
Features ^b : Horizontality	1:1000

a. Flatness: Measured under a 2 m straightedge laid in any direction on a surface.
b. Features: Conspicuous horizontal or vertical lines including external corners, parapets, reveals, heads, sills.

1.6 SUBMISSIONS**Certification**

Requirement: Submit certification by an appropriately qualified person of the design, documentation and erected work to the AS 1684 series and/or by a professional engineer to AS 1720.1 (2010). Include the following:

- Reactions: Provide location and magnitude of reactions to be accommodated by the support structure. If part of the structure is manufactured by a prefabricator (e.g. roof trusses), provide location and magnitude of reactions and tie down forces.
- Floor, wall and roof frame member sizes: A schedule of proposed member sizes, certified as meeting stated project requirements for spans, spacings, loadings and deflections.
- Species and stress grade.

Products and materials

Supply: Submit supplier's evidence of conformity, which may be included on an invoice or delivery docket, verifying the timber conforms to the documented requirements.

Inspection: Submit the inspection authority's certificate verifying the erected timber frame conforms to the documented requirements.

Moisture content: Submit records of moisture content to AS/NZS 1080.1 (2012).

CCA treated timber: If proposed to be used, submit details.

Shop drawings

General: Submit shop drawings, to a scale that best describes the detail, certified by an appropriately qualified person stating that the design has been carried out to the requirements of the AS 1684 series and/or by a professional engineer to AS 1720.1 (2010), for the documented configurations and loadings.

Prefabricated roof trusses: Include the following:

- Marking plans.
- Truss plan layout.
- Elevations, showing the arrangement of members, allowing for the accommodation of in-roof services, and the size and section type of each member.
- Camber of all elements.
- Method of assembly, connection and lifting.
- Location and details of tie down and bracing.

Prefabricated wall frames: Include the following:

- Wall plan, showing all wall layouts.
- Elevations, showing the arrangement of members, and the size and section type of each member.
- Method of assembly, connection and lifting.
- Location and details of tie down and bracing.

Subcontractors

Prefabricated items: Submit the name and contact details of proposed manufacturers, suppliers and installers.

1.7 INSPECTION

Notice

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

- Prefabricated units before installation.
- Fabricated items before priming or water-repellent treatment.
- Connections/joints after final tightening of fasteners.
- Timberwork after erection but before it is covered.

2 PRODUCTS

2.1 GENERAL

Certification

Requirement: Forest certification, chain of custody and product labelling to *0185 Timber products, finishes and treatment*.

Identification

Method: Identify timber using branding, certification or both.

Branding: Brand structural timber, under the authority of a recognised product certification scheme to *0185 Timber products, finishes and treatment* as applicable to the product. Locate the brand mark on faces or edges that will be concealed in the works. Include the following data for timbers not covered by branding provisions in Australian standards or regulations for which branding is required:

- Stress grade.
- Method of grading.
- If seasoned, the word, SEASONED or DRY, or an abbreviation of seasoned, such as SEAS or S.
- The certification mark of the product certification scheme.
- The applicable standard.

Trusses: Permanently label each truss to show:

- Manufacturer.
- Tag or number with reference to location.
- Support and tie down points.
- Labelling in coordination with installation documentation.

Preservative treatment

Requirement: To *0185 Timber products, finishes and treatment*, including for termite treatments.

2.2 TIMBER

Framing

Requirement: To AS 1684.2 (2021), AS 1684.3 (2021) or the NCC cited AS 1684.4 (2010), as appropriate.

Fascias and barge boards

Hardwood: To AS 2796.1 (1999).

Hardwood grade: SEL

Trusses

Design: To AS 1720.1 (2010).

Nailplated roof trusses: To AS 1720.5 (2015).

Overhangs: Free from spring or splits.

2.3 GLUED LAMINATED TIMBER AND LAMINATED VENEER LUMBER

Glued laminated timber

Standard: To AS/NZS 1328.1 (1998).

Laminated veneer lumber

Standard: To AS/NZS 4357.0 (2022).

Formaldehyde emission class to AS/NZS 4357.0 (2022): E1 or less.

2.4 STRUCTURAL PLYWOOD

General

Standard: To AS/NZS 2269.0 (2012).

Bond: Type A to AS/NZS 2754.1 (2016).

Formaldehyde emission class to AS/NZS 2269.0 (2012): E1 or less.

Bracing

Bracing unit type: refer Structural drawings.

Bracing thickness (mm): refer Structural drawings.

Veneer

Veneer quality to visible surfaces: CD (minimum) to AS/NZS 2269.0 (2012).

2.5 COMPONENTS

Mild steel post bases

Embedment: Embed base a minimum of 150 mm into the concrete support and to the manufacturer's recommendations.

Location: To timber posts supported off concrete slabs or footings.

Finish: Galvanized.

Fasteners

Requirement: Conform to *0181 Adhesives, sealants and fasteners*.

CCA treated timber: If in contact with CCA treated timber, provide hot dip galvanized bolts with plastic sheaths, or bituminous or epoxy coatings to manufacturer's recommendations.

Damp-proof course

Material: To AS/NZS 2904 (1995) or suitable alternative material conforming to NCC (2022) A5G3.

Type: min. 0.56 mm thick bitumen coated aluminium.

Flashings

Material: To AS/NZS 2904 (1995) or suitable alternative material conforming to NCC (2022) A5G3.

Type: min. 0.8 mm thick bitumen coated aluminium

2.6 FINGER JOINTED STRUCTURAL TIMBER

General

Performance: To AS/NZS 8008 (2022).

Adhesive bond performance: To AS/NZS 8008 (2022).

Production: To AS 5068 (2006).

Material requirements: As documented.

2.7 RECONSTITUTED WOOD PRODUCTS

Wet process fibreboard (including hardboard)

Standard: To AS/NZS 1859.4 (2018).

Bending strength: To AS/NZS 1859.4 (2018) Section 7.

Material requirements: As documented.

3 EXECUTION

3.1 GENERAL

Storage and handling

Handling: Do not distort or damage timber or timber products. Do not mark or stain the surface of architecturally expressed structural elements. Use identified loading and lifting points.

Storage: To the manufacturer's specifications and the following:

- Maintain integrity of timber and treatments.
- Store above ground. Provide supports at maximum 1.2 m centres and of sufficient height to allow air circulation around the timber elements.
- Store architecturally expressed structural elements and elements for internal use under cover.

Moisture content of seasoned timber: Provide protection throughout handling and storage to maintain a moisture content within the targets for seasoned timber (15% maximum) and ideally near the equilibrium moisture content anticipated in service.

Installation

Framing: To the AS 1684 series.

Fastener installation: To *0181 Adhesives, sealants and fasteners*. Do not split or damage the timber.

3.2 FLOOR FRAMING

Bearers and joists

Levelling: Level bearers and joists by checking or by packing for the full width of the member with dense corrosion-resistant material that is secured in place.

Maximum thickness of packing: 3 mm.

Spring: Lay bearers and joists to allow for straightening under loading.

Joints

Requirement: Locate joints only over supports:

- Minimum bearing of bearers: 50 mm.
- Minimum bearing of joists: 30 mm.

Fixing and restraint

Fixing: Secure bearers and joists to supports to provide restraint against lateral movement.

Deep joists: To AS 1684.2 (2021) clause 4.2.2.3 or AS 1684.3 (2021) clause 4.2.2.3, as appropriate.

Trimmers or blocking dimensions:

- Depth: Joist depth less 25 mm.
- Minimum thickness: 25 mm.

Engineered timber joists: Provide lateral restraint to the manufacturer's recommendations.

3.3 WALL FRAMING

Additional support

Requirement: Provide additional support in the form of noggings, trimmers and studs for fixing lining, cladding, hardware, accessories, fixtures and fittings, as required.

Spacing of noggings: Maximum 1350 mm centres.

Vermin barriers

Brick veneer barrier: Nail 10 mm galvanized steel wire mesh to the underside of the bottom plate of external stud walls, extending across the cavity for building into brickwork.

Damp-proof course

Requirement: Provide damp-proof courses under the bottom plate of stud walls built off slabs or masonry dwarf walls as follows:

- External walls (not masonry veneer): Turn up at least 75 mm on the inside and tack. Project 10 mm beyond the external slab edge or dwarf wall and turn down at 45°.
- Walls of bathrooms, shower rooms and laundries: Turn up at least 150 mm on the wet side and tack to studs.

Installation: Lay in long lengths. Lap full width at corners and intersections, and at least 150 mm at joints.

Junctions: Preserve continuity at junctions of damp-proof courses, sarking and waterproof membranes.

Flashings

Location: Provide flashings to external openings to prevent the entry of moisture. Form trays at the ends of sill flashings.

Masonry veneer construction: Extend flashing across cavities and build into brickwork.

3.4 ROOF AND CEILING FRAMING

Wall plates

Fixing: Fix timber wall plates to masonry, with straps, bolts or both.

Fixing plates

Requirement: Provide timber fixing plates to transfer the design loads where timber joists, rafters or purlins bear on or into steel members, as documented. Bolt to the steel member at maximum 500 mm centres and at a maximum of 100 mm from the end of the fixing plate.

Beam framing

Ridge straps: Butt ends of rafters together at ridge. Strap each pair together with 900 mm long steel strap passing over the ridge, triple nailed to each rafter.

Additional support

Requirement: Provide additional frame members at the following locations:

- Hanging light fittings.
- Ceiling fans.
- Access panels.
- Any other hanging services or fixtures and fittings.

Water tank or heater in roof space: Provide a support platform to the NCC cited AS/NZS 3500.4 (2021) clause 5.5.1.

Anti-ponding boards

Standard: To AS 2050 (2018) clause 3.1.2.

Trusses

Nailplated prefabricated roof trusses: To AS 4440 (2004).

Support: Support trusses on bottom chord at two points only, unless designed for additional support.

Plumb: The lesser of $H/50$ or 50 mm, where H is the height of the truss at the point where plumb is being measured.

Vertical movement: Provide minimum vertical clearance of 10 mm plus ceiling batten depth over internal non-load bearing walls. Use bracing methods that accommodate design vertical movements.

3.5 ROOF TRIM

Fascia, valley and barge boards

Requirement: Fix fascia, valley gutter boards and barge boards.

3.6 COMPLETION

Protection

Protection from weather: Provide temporary protection for members until permanent covering is in place.

Tightening

Requirement: Retighten bolts, screws and other fasteners so that all joints and anchorages are secure at the date of practical completion.

Cleaning

General: On completion of framing remove debris from any gaps between members and make sure void between bottom chord of roof trusses and top of any non-load bearing internal wall is clear.

0421 METAL CLADDINGS**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide matching flashings, cappings and other components to the existing lightweight external wall claddings and soffit linings and associated work where altered for new openings etc as documented and which satisfies the product performance requirements of the original systems..

Bushfire Protection

Requirement: N/A

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 TOLERANCES

Permitted deviations -Metal sheet roofing, cladding & lining: To AS 1562.1 clause 4.2.

1.4 INSPECTION**Notice**

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

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

2 PRODUCTS**2.1 ROOF PLUMBING****General**

Standard: To AS/NZS 3500.3. General: Provide the flashings, cappings, necessary to amend the existing wall claddings.

Materials

Metal: same material as existing components.

Flashings and cappings

Standard: To AS/NZS 2904.

Material and colour: Colorbond to match existing.

Thickness (base metal) (mm): min. **0.55 BMT**

Flashing and capping types: to match existing flashings & cappings

3 EXECUTION**3.1 CONSTRUCTION GENERALLY -SHEET METAL CLADDING****Substrates or framing**

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

Fixing sheet cladding

Pre-drilling: Pre-drill cladding for all fixings.

Method: Manufacturer's standard wafer head exposed screw fixings, with washers, fixed to the manufacturer's recommendations.

Finish: Use manufacturer's **pre-coated** fixings and façade washers.

Accessories and trim

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

Metal separation

Requirement: 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.

Cladding sheet installation

Use cover flashing at abutment of all metal claddings to other materials and install sill/drip flashing to base of all metal claddings.

Finishing: seal as required & take particular care to ensure there are no exposed edges, junctions, corners or the like that can be accessed by children.

Corners

Fabricate corner panels (eg around columns) to have folded pressed metal face (ie not expressed joint on corners).

0451B WINDOWS AND GLAZED DOORS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide windows and glazed doors, as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARDS**General**

Selection and installation: To AS 2047 (2014).

Building classification: 9b

Glazing

Glass type and thickness: To AS 1288 (2021), if no glass type or thickness is nominated.

Materials and installation: To AS 1288 (2021).

Quality requirements for cut-to-size and processed glass: To AS/NZS 4667 (2000).

1.4 SUBMISSIONS**Certification**

Windows and glazed doors: Submit evidence of conformity to AS 2047 (2014).

Sealant compatibility: Submit statements from all parties to the installation certifying the compatibility of sealants and glazing systems to all substrates.

Toughened glass: Submit certification from the manufacturer for all toughened glass as evidence of heat soaking to **GLAZING, Heat soaking**.

Fire performance

Fire-resistance level: Submit evidence of conformity to **FIRE PERFORMANCE, Fire-resistance of building elements**.

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals**.

Products and materials

Safety glazing materials: Submit evidence of conformity to AS 2208 (2023).

Type tests: Submit test results of the following:

- Acoustic performance of windows and doors: To PRODUCTS, **GENERAL, Acoustic performance**.
- Protection of openable windows: To PRODUCTS, **GENERAL, Protection of openable windows**.

Samples

Requirement: Submit samples to PRODUCTS, **GENERAL, Samples**.

Shop drawings

General: Submit shop drawings, to a scale that best describes the detail, showing the following:

- Full size sections of members.
- Hardware, fittings and accessories including fastener details.
- Junctions and trim to adjoining surfaces.
- Layout (sectional plan and elevation) of the window assembly.
- Methods of assembly.
- Methods of installation, including fixing, caulking and flashing.
- Provision for vertical and horizontal expansion.
- Method of glazing, including the following:
 - . Rebate depth.

- . Edge restraint.
- . Clearances and tolerances.
- . Glazing gaskets and sealant beads.

Subcontractors

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

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.5 INSPECTION**Notice**

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

- Openings prepared to receive windows.
- Fabricated window assemblies at the factory ready for delivery to the site.
- Fabricated window assemblies delivered to the site, before installation.
- Commencement of window installation.

2 PRODUCTS**2.1 GENERAL****Samples**

Requirement: Provide samples labelled with the series code reference and date of manufacture.

Window and door framing: Provide samples of the following:

- Prefinished production materials showing the limits of the range of variation in the documented colour.
- Joints made by proposed techniques.
- Sections for frames, sashes and slats.

Glazing: Provide samples of glazing materials, each at least 200 x 200 mm, showing the visual properties and range of variation, if any, for each of the following:

- Tinted or coloured glass or plastics glazing.
- Surface modified or surface coated glass.

Hardware and accessories: Provide samples of the following:

- Window manufacturer's standard hardware and accessories including locks, latches, handles, catches, sash operators, anchor brackets and attachments, masonry anchors and weatherseals (pile or extruded).
- Generic hardware: Provide samples of generic hardware not documented as proprietary items.

Storage and handling

Storage: Store in a clean, dry area unaffected by weather, to the manufacturer's recommendations. Protect from building materials and loose debris such as wet plaster, mortar, paint and welding splatter.

Handling: Handle frames to the manufacturer's recommendations and as follows:

- Stack upright, off the ground and against a flat, vertical surface.
- Carry in the vertical position with sashes locked.
- Do not rack frames out of square.
- Do not remove any bands and corner bracing until after installation.

Acoustic performance

Windows and doors: Rating to the NCC cited AS/NZS ISO 717.1 (2004), as documented.

Protection of openable windows

Fall prevention: To BCA (2022) D3D29.

Marking

Window assemblies: To AS 2047 (2014) Section 8.

2.2 FIRE PERFORMANCE**Fire-resistance of building elements**

Fire-resistance level: Tested to AS 1530.4 (2014).

2.3 SERVERY WINDOWS

Proprietary Items (windows **W.01 & W.11**):

- **AWS** PowerStrut Servery Window (or equal to approval) -refer Window Schedule for size, Double-glazed unit, powdercoated to match other windows. Unit fabricated without window sill framing to fit to stainless steel benchtop.

2.4 ALUMINIUM FRAMED WINDOWS

Proprietary Items: From one of the following (do not combine systems):

Capral AGS 425 Narrowline centre-glazed or equivalent to approval, (eg **Alspec 101.6 Series** centre-glazed or **AWS Series 424** centre-glazed).

Type: Generally, unless specifically noted otherwise -nom.100mm double-glazed framing system, with matching awning sashes and hinged, sliding doors **-external windows, window walls and glazed doors – refer Window Schedules**. Provide a suitable sub-sill section where required.

Note: Provide sill-mounted winder opening hardware to all opening (top-hung awning sash) windows –ensure these mechanisms are set to open the window a maximum of 120mm clear opening, and no further.

Powder coatings

Standard: To AS 3715.

Grade: Refer Finishes Schedule

Colour: Refer Finishes Schedule

2.5 FRAMES

Aluminium frames

Standard: To AS 2047 (2014) clause 3.1.

Construction: Assembled from aluminium sections, including accessories such as pile strips, fixing ties or brackets and cavity flashings, with provision for fixing documented hardware and seals.

Subsill: If the frame includes a subsill, provide a self-draining section.

2.6 GLAZING

Performance

Glass: Free from defects that detract from appearance or interfere with performance under normal conditions of use.

Plastics glazing: Free from surface abrasions and resistant to yellowing or other colour change. Capable of maintaining physical properties including strength and impact resistance for its design life.

Heat soaking

Requirement: Heat soak glass to AS 1288 (2021) clause 3.8.

Standard: To EN 14179-1 (2016).

Marking: To EN 14179-1 (2016) or certified by the manufacturer to AS 1288 (2021) clause 3.8.2.

Safety glazing materials

Standard: To AS 2208 (2023).

Type: Grade A.

Marking: To AS 1288 (2021) clause 5.23.

Heat-strengthened glass

Standard: To ASTM C1048 (2025).

Insulating glass units (IGUs)

Requirement: Provide insulating glass units, as documented.

Manufacture, testing and installation: To AS 4666 (2012).

2.7 GLAZING MATERIALS

General

Requirement: Putty, glazing compounds, sealants, gaskets, glazing tapes, spacing strips, spacing tapes, spacers, setting blocks and compression wedges appropriate for the conditions of application and required performance.

Jointing materials

Requirement: Jointing and pointing materials that are compatible with each other and the contact surfaces, and non-staining to finished surfaces to manufacturer's recommendations. Do not provide bituminous materials on absorbent surfaces.

Elastomeric sealants

Sealing compounds (polyurethane, polysulfide, acrylic): To ASTM C920 (2018) or ISO 11600 (2002).

Sealing compounds (silicone): To ASTM C920 (2018) or ISO 11600 (2002).

Sealing compounds (butyl): To ASTM C1311 (2022).

Primer

Compatibility: Apply the manufacturer's recommended primer to the surfaces in contact with sealant materials.

Control joints

Depth of elastomeric sealant: Half the joint width or 6 mm, whichever is the greater.

Foamed materials (in compressible fillers and backing rods): Closed cell or impregnated types that do not absorb water.

Bond breaking: Provide backing rods, and other back-up materials for sealants, that do not adhere to the sealant.

2.8 SCREENS**General**

Requirement: Provide screens, as documented.

Fixed screens

General: Fixed screens fitted to the window frames with a clipping device that allows for removal for cleaning.

Hinged screens

General: Screens hinged at the top to give access to opening sash.

Retractable screens

General: Proprietary retractable screens, comprising aluminium frames and fibreglass mesh, fitted between the guide channels incorporated in the frames, and a retraction system including tension spring, bearings, positive self-locking device and elastomeric sealing strip at sill.

Sliding screens

General: Screens that are part of the window frame, with matching aluminium head guide, sill runner, and frame stile sections.

Hardware: Nylon slide runners and finger pull handle. Provide pile strip closers against sash if necessary to close gaps.

Aluminium framed screens

General: Aluminium extruded or folded box frame sections with mesh fixing channel, mitred, staked and screwed at corners. If necessary to adapt to window opening gear, provide an extended frame section.

Mesh: Bead the mesh into the frame channel with a continuous resilient gasket, so that the mesh is taut and free of distortion.

2.9 INSECT SCREENS**General**

Requirement: To all opening lights provide proprietary insect screens, fixed to window frames with removable fastenings.

2.10 ALUMINIUM FRAME FINISHES**Powder coatings**

Service condition category to AS 3715 (2025)

Coating performance: refer Scheduled Dulux powdercoating type.

Coating type: refer Scheduled Dulux powdercoating type.

Polyester coating grade: refer Scheduled Dulux powdercoating type.

Anodised

Standard: To AS 1231 (2000).

Thickness:

- Internal: 15 µm.
- External: 20 µm.

2.11 OTHER MATERIAL FRAME FINISHES**Finish**

Standard: To AS 2047 (2014) clause 3.4.1.4.

2.12 ANCILLARY COMPONENTS AND FITTINGS

Trim

General: Provide trim, shadow angles and architraves, as documented.

Extruded gaskets and seals

General: Provide seals, as documented.

Materials: Non-cellular (solid) elastomeric seals as follows:

- Rubber products: Neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber.
- Flexible polyvinyl chloride (PVC): E type compounds, colourfastness grade B.

Flashings

General: Corrosion-resistant, compatible with the other materials in the installation, and coated with a non-staining compound if necessary.

Standard: To AS/NZS 2904 (1995).

Nylon brush seals

General: Dense nylon bristles locked into holding strips and fixed in a groove in the edge of the door or in purpose-made anodised aluminium holders fixed to the door or frame to the manufacturer's recommendations.

Pile weatherstrips

General: Provide weatherstrips, as documented.

Standard: To AAMA 701/702 (2023).

Material: Pile and backing or equivalent polypropylene, low friction silicone treated, ultraviolet stabilised, fixed to the frame to the manufacturer's recommendations.

Finned type: A pile weatherseal with a central polypropylene fin bonded into the centre of the backing rod and raised above the pile level.

Weather bars

General: Provide corrosion-resistant weather bars or threshold plates for hinged external doors, located under the centres of closed doors or to manufacturer's recommendations.

2.13 HARDWARE

Hardware documented generically

General: Provide hardware of sufficient strength and quality to perform its function, appropriate to the intended conditions of use, compatible with associated hardware, and fabricated with fixed parts firmly joined.

Window locks and latches

Standard: To AS 4145.2 (2008).

Window catches: Provide 2 catches per sash to manually latched awning or hopper sashes over 1000 mm wide.

Sash balances

Requirement: Match the spring strength of the balances to the sash weight they support.

Sash operators

Requirement: Provide sash operators, as documented.

3 EXECUTION

3.1 GLAZING PROCESSING

General

Processing: Perform required processes on glazing, including cutting, obscuring, silvering and bending. Form necessary holes, including for fastenings, equipment, access openings and speaking holes. Process exposed glass edges to a finish not inferior to ground arised.

3.2 INSTALLATION

General

Requirement: Install windows and glazed doors as follows:

- Plumb, level, straight and true within building tolerances.
- Fixed or anchored to the building structure in conformance with the wind action loading requirements.
- Isolated from any building loads, including loads caused by structural deflection or shortening.
- Allow for thermal movement.

Glazing

Requirement: Install the glass as follows:

- Permanently fix in place each piece of glass to withstand the normal loadings and ambient conditions at its location without distortion or damage to glazing materials.
- No transfer of building movements to the glazing.
- Watertight and airtight for external glazing.

Temporary marking: Use a method that does not damage the glazing. Remove marking only after certification and acceptance of the installation.

Toughened glass: Do not cut, drill, edgework or permanently mark after toughening. Use installation methods that prevent the glass making direct contact with metals or other non-resilient materials.

Frameless installations: Join the vertical edges of adjacent glass panels with silicone jointing compound.

Heat-absorbing glass: In locations exposed to direct sunlight, provide wheel cut edges free from damage or blemishes, with minimum feather.

Preglazing

Window assemblies and glazed doors: Supply inclusive of glazing, shop preglazed.

Site glazing

External timber framed glazing: Glaze with putty.

Weatherproofing

Flashing and weatherings: Install flashings, weather bars, threshold plates, drips, storm moulds, joint sealant and pointing to prevent water penetrating the building between the window frame and the building structure under the prevailing service conditions, including normal structural movement of the building.

Fixing

General: Conform to the manufacturer's recommendations. Make sure fasteners are concealed.

Packing: Pack behind fixing points with durable full width packing.

Prepared masonry openings: If fixing of timber windows to prepared anchorages needs to be fixed from the frame face, sink the fastener heads below the surface and fill the depression flush with a material compatible with the surface finish.

Joints

General: Form tight fitted joints so that fasteners and fixing methods, such as pins, screws and adhesives do not create pressure indentations visible on exposed surfaces.

Sealants:

- If priming is recommended, prime surfaces in contact with jointing materials.
- If frames are powder coated, apply a neutral cure sealant.

Operation

General: Make sure moving parts operate freely and smoothly, without binding or sticking, at correct tensions or operating forces and are lubricated.

Protection

Removal: Remove temporary protection measures from the following:

- Contact mating surfaces before joining up.
- Exposed surfaces before completion of the works.

Seals

General: Provide the fastenings, rebates, grooves, and clearances required for installation and operation of the seals. Allow seals unwound from coils to settle before use. Install proprietary seals to manufacturer's recommendations and adjust correctly.

Trim

General: Provide mouldings, architraves, reveal linings, and other internal trim using materials and finishes matching the window frames. Install to make neat and clean junctions between frames and the adjoining building surfaces.

3.3 HARDWARE**Fasteners**

Materials: Use materials compatible with the item being fixed and of sufficient strength, size and quality to perform their function.

- Concealed fasteners: Provide a corrosion-resistant finish.
- Exposed fasteners: Match exposed fasteners to the material being fixed.

Support: Provide appropriate back support (for example lock stiles, blocking, wall noggings and backing plates) for hardware fasteners.

- Hollow metal sections: Provide backing plates drilled and tapped for screw fixing, or provide rivet nuts with machine thread screws. Do not use self-tapping screws or pop rivets.

Proprietary window systems

Requirement: Provide the standard hardware and internal fixing points for personnel safety harness attachment, if required by and conforming to the governing regulations.

Operation

General: Make sure working parts are accurately fitted to smooth close bearings, without binding or sticking, free from rattle or excessive play, lubricated if appropriate.

Opening force performance: To AS 1428.1 (2021).

Supply

Delivery: Deliver window hardware items, ready for installation, in individual complete sets for each window set, as follows:

- Clearly labelled with the intended location.
- In a separate dust and moisture proof package.
- Including the necessary templates, fastenings and fixing instructions.

3.4 COMPLETION

Hardware

Adjustment: Leave the hardware with working parts in working order, and clean, undamaged, properly adjusted, and lubricated if appropriate.

Repair of finish

Polyester or fluoropolymer coatings: Contact supplier for approval to apply touch up products, otherwise replace damaged material.

Cleaning

Method: Clean with soft clean cloths and clean water, finishing with a clean squeegee. Do not use abrasive, acidic or alkaline materials.

Extent: All frames and glass surfaces internally and externally.

Operation and maintenance manuals

Requirement: Prepare a manual that includes the following:

- Window and glazed door manufacturer's published recommendations for operation, care and maintenance.
- Hardware manufacturer's published recommendations for use, care and maintenance.

Warranties

Window and door assemblies: Submit the manufacturer's published product warranties.

Hardware: Submit the manufacturer's published product warranties.

0453B DOORS AND ACCESS PANELS**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide doors, frames, doorsets, security screen doors and fire doorsets as documented.

Bushfire Protection

Requirement: n/a

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*
- *Overhead doors*
- *Door hardware*
- *Door Schedule & Door Hardware Schedule*

1.3 STANDARDS**General**

Timber and composite doors: To AS 2688 (2017).

1.4 INTERPRETATION

General: For the purposes of this worksection the following definitions apply:

- **Balanced construction:** Flush door construction where the facings on one side of the core are nominally equal in thickness, grain direction, properties and arrangement to those on the other side of the core, such that uniformly distributed changes in moisture content will not cause warpage.
- **Door frame:** Includes jamb linings.
- **Doorset:** An assembly comprising a door or doors and supporting frame, guides and tracks including the hardware and accessories necessary for operation.
 - . **Fire-doorset:** A doorset which retains its integrity, provides insulation and limits, if required, the transmittance of radiation in a fire.
 - . **Smoke-doorset:** A doorset which restricts the passage of smoke.
- **Flush door:** A door leaf with two plane faces which entirely cover and conceal its structure. It includes doors with intermediate rail, cellular, blockboard, medium density fibreboard (MDF) and particleboard cores.
 - . **Solid core door:** A flush door with a solid core continuous between stiles and rails or edge strips and fully bonded to the faces.
- **Joinery door:** A door leaf with either stiles and rails, or stiles, rails and muntins, framed together. A joinery door may also incorporate glazing bars.
 - . **Louvred door:** A joinery door with spaces filled in with louvre blades.
 - . **Panelled door:** A joinery door with spaces filled in with panels including glass.

1.5 SUBMISSIONS**Products and materials**

Type tests: Submit test results for the following:

- Acoustic performance of doorsets: To PRODUCTS, **DOORSETS, Acoustic performance.**
- Fire-resisting doorsets: To PRODUCTS, **DOORSETS, Fire-resisting doorsets.**
- Smoke doorsets: To PRODUCTS, **DOORSETS, Smoke doorsets.**

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.6 INSPECTION**Notice**

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

- Door frames in place before building in to masonry.
- Door frames installed before fixing trim.

2 PRODUCTS

2.1 FRAMES

Aluminium frames

General: Assembled from aluminium sections, including accessories such as buffers, pile strips, strike plates, fixing ties or brackets and cavity flashing, with provision for fixing documented hardware.

Threshold: If the frame includes a threshold member, provide a self-draining section with anti-skid surface.

Steel frames

General: Continuously welded from metallic-coated steel sheet sections, including accessories such as buffers, strike plates, spreaders, mortar guards, switch boxes, fixing ties or brackets, and cavity flashing with provision for fixing documented hardware and electronic security assemblies, and prefinished with a protective coating.

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

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

Base metal thickness:

- General: ≥ 1.1 mm.
- Fire rated doorsets: ≥ 1.5 mm.
- Security doorsets: ≥ 1.6 mm.

Metallic-coated steel sheet: To AS 1397.

- Coating class interior: ZF100.
- Coating class exterior: Z275

Access Panels

Refer Sanitary Fixtures & Tapware Schedule for WC cistern access panels.

Refer Suspended Ceilings for ceiling access panels.

2.2 DOORS

General

Doors: Proprietary products manufactured for interior or exterior applications and for the finish required.

Materials

Standards: Conform to the following:

- Decorative laminated sheets: To AS/NZS 2924.1 (2024).
- Wet process fibreboard (including hardboard): To AS/NZS 1859.4 (2018).
- Dry process fibreboard (including medium density fibreboard): To AS/NZS 1859.2 (2017).
- Particleboard: To AS 1859.1 (2017).
- Plywood and blockboard for interior use: To AS/NZS 2270 (2006).
- Plywood and blockboard for exterior use: To AS/NZS 2271 (2004).
- Seasoned cypress pine: To AS 1810 (1995).
- Timber – hardwood: To AS 2796.1 (1999).
- Timber – softwood: To AS 4785.1 (2002).

Flush doors

General: Provide flush doors of balanced construction.

Cellular core and intermediate rail core flush doors:

- Provide a subframe of 25 mm minimum width timber around openings for louvres and glazing.
- Provide additional material to take hardware, fastenings and grooves.

Solid core: Solid flush doors as follows:

- Flush door with blockboard: Core plate of timber strips laid edge to edge, fully bonded to each other and to facings each side of no less than two sheets of timber veneer.
- Flush doors with particleboard: Core plate of particleboard fully bonded to facings each side of no less than two sheets of timber veneer.

Medium density fibreboard doors: Single thickness of moisture resistant general purpose medium density fibreboard with the same surface finish to both sides, for internal use.

Smoke doors: Solid core ≥ 35 mm thick.

Construction

General: To AS 2688 (2017).

Adhesives:

- Internal: To AS/NZS 2270 (2006).
- External: To AS/NZS 2271 (2004).

Door thickness:

- General: 35 mm.
- External doors and doors over 900 mm wide: 40 mm.

Cut outs: If openings are required in flush doors (e.g. for louvres or glazing), do not make cut outs closer than the width of the stiles at the edges of the doors.

Edge strips: Minimum thickness 10 mm. Increase overall thickness to greater than 15 mm to accommodate the full depth of the rebate in rebated doors. Apply to the external edges of door after the facings are bonded to the door framing/core and finish flush with outside surface of the facings.

Louvre grilles: Construct by inserting the louvre blades into a louvre frame and fix the frame into the door.

Double doors

General: Bevel square edged doors as necessary to prevent binding between the leaves.

Rebated meeting stiles: If not double acting doors, provide rebated meeting stiles or fix equivalent metal T stop to one leaf. Form rebates to suit standard rebated hardware.

Tolerance

Squareness: The difference between the lengths of diagonals of a door: ≤ 3 mm.

Twist: The difference between perpendicular measurements taken from diagonal corners: ≤ 3 mm.

Nominal size (mm): Height: + 2, - 2. Width: - 0, + 2.

2.1 DOORSETS

Roller Shutter assemblies –refer 0454b Overhead doors

Arrangement: Refer Drawings & Door Schedule

Marking and labelling

Fire-resisting doorsets: To AS 1905.1 (2015) Section 6.

Doors and doorsets: To AS 2688 (2017) clause 2.5.

Acoustic performance

Doorsets: Rating to the NCC cited AS/NZS ISO 717.1 (2004), as documented.

Automatic door assemblies

Standard: To AS 5007 (2007).

Control systems: To 0455 Door hardware.

Cavity sliding doors

General: Proprietary product comprising steel and timber frame construction with rigid steel top, base and rear supporting members and incorporating the overhead door track, ball race type wheel carriages, guides, stops, split jamb linings and removable pelmet.

Duct access panels

General: Proprietary products comprising metal-faced doors side-hung to steel door frames, including hardware and accessories such as hinges and lock and installation lugs.

Fire-resisting doorsets

Standard: To AS 1905.1 (2015) and BCA (2022) Spec 12.

Standard: To AS 6905 (2007) and BCA (2022) Spec 12. Tested to AS 1530.7 (2007).

Ceiling access panels

General: Proprietary products comprising powdercoated metal or prefinished panel doors side hung to concealed metal frames, including hardware and accessories such as hinges and lock and installation lugs. All exposed components are to be finished to match the surrounding ceiling, with the panel face in the same material as the ceiling as required (eg ply ceilings). Refer drawings and 0900 Builders Work in Connection with Engineering Services for access panel numbers.

2.2 ANCILLARY MATERIALS

Trims

Timber: Solid timber at least 19 mm thick, mitred at corners.

Extruded gaskets and seals

General: Provide seals to the **Door Schedule**.

Materials: Non cellular (solid) elastopressive seals as follows:

- Flexible polyvinyl chloride (PVC): To BS 2571, 100% solids with high consistency, ultra-violet stabilised.
- Rubber products (neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber): To BS4255-1.

Flashings

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

Standard: To AS/NZS 2904.

Jointing materials

General: Compatible with each other and with the contact surfaces and non-staining to finished surfaces. Do not provide bituminous materials on absorbent surfaces.

Nylon brush seals

General: Dense nylon bristles locked into galvanized steel strips and fixed in a groove in the edge of the door or in purpose-made anodised aluminium holders fixed to the door with double sided PVC foam tape.

Pile weather strips

General: Polypropylene or equivalent pile and backing, low friction silicone treated, ultra-violet stabilised.

Standard: To AAMA 701/702.

Weather bars

General: Provide a weather bar under hinged external doors, locate under the centres of closed doors.

3 EXECUTION

3.1 FRAMES

General

Frames: Install the frames as follows:

Plumb, level, straight and true, fixed or anchored to the building structure and isolated from any building loads, including loads caused by structural deflection or shortening.

Frame fixing

Brackets: Metallic-coated steel: Width: ≥ 25 mm, thickness: ≥ 1.5 mm.

Depth of fixing for building into masonry:

- Brackets: ≥ 200 mm, Expansion anchors: ≥ 50 mm, Plugs: ≥ 50 mm, Rods: ≥ 60 mm.

Jamb fixing centres: ≤ 600 mm.

Joints

General: Make accurately fitted joints where fasteners, pins, screws, adhesives and pressure indentations are not visible on exposed surfaces.

Aluminium frames

Building in to masonry: Screw galvanized steel brackets twice to jambs and build in.

Fixing to masonry openings: Build in seasoned timber plugs to masonry joints or use proprietary expansion anchors and screw twice through jambs at each fixing.

Fixing to stud frame openings: Screw once to studs at each fixing.

General: Assembled from aluminium sections, including necessary accessories such as buffers, pile strips, strike plates, fixing ties or brackets, with suitable provision for fixing nominated hardware.

Finishing

Trim: Provide mouldings, architraves, reveal linings, and other internal trim using materials and finishes matching door frames to make neat and clean junctions between the frame and adjoining building surfaces.

Seals

General: Provide the fixings, rebates, grooves, and clearances required for installation and operation of the seals. Allow seals unwound from coils to settle before use.

Weatherproofing

Flashings and weatherings: Install flashings, weather bars, 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.

3.2 DOORS**Priming**

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

3.3 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 the date for practical completion, or before joining up to other surfaces, remove all traces of temporary coatings used as a means of protection.

0454B OVERHEAD DOORS**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide overhead doorsets as scheduled in **SELECTIONS**.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*
- *Doors & access panels.*

1.3 STANDARDS**General**

Garage doors and other large access doors: To AS/NZS 4505 (2012).

Design wind pressure: To AS/NZS 1170.2 (2021).

1.4 SUBMISSIONS**Operation and maintenance manuals**

Requirement: Submit manual to **COMPLETION**, **Operation and maintenance manuals**.

Warranties

Requirement: Submit warranties to **COMPLETION**, **Warranties**.

1.5 INSPECTION**Notice**

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

- Tracks and guides installed before doors or shutters are hung.

2 PRODUCTS**2.1 ROLLER DOORS & GRILLES****Types**

Roller door: Proprietary system comprising a flexible continuous curtain sliding between vertical guides, raised or lowered by rolling or unrolling around a horizontal drum (barrel) mounted above the opening, inclusive of the manufacturer's standard operating gear, hardware, and accessories necessary for satisfactory performance. Install storm clip inserts to guides to external shutters *Refer Door Schedule for nominal sizes..*

Changerooms R1.2, R3.1 and Amenities R1.3 & R2.1

-Eurotec 'AR402 Extruded Aluminium Profile Roller Shutter' or equal to approval of Superintendent, solid slats (no slots, punches etc), motorised using direct drive tubular motor controlled by a key switch and with crank handle-operated manual backup operation. Controls on one side of shutter, wall-mounted control location to be approved on site.

Kiosk & Netball Registration internal & external serveries R8.1, R8.2 & R13.1

-Eurotec 'AR402 Extruded Aluminium Profile Roller Shutter' or equal to approval of Superintendent, solid slats (no slots, punches etc), motorised with direct drive tubular motor controlled by a key switch and with crank handle-operated manual backup operation. Controls on room interior side at 1500 AFL to approval.

Netball External Store R10.1

refer 0901 External Storage Shed for roller shutter requirements.

Wind actions

General: Install so that the shutter, in its closed position, withstands pressure on the surface without impairment of its ability to function. Pressure: To AS 1905.2.

Curtain

Continuous curtain: A single metal sheet pressed to a horizontal ribbed profile.

Slatted curtain: A curtain of horizontal interlocking slats, incorporating interlocking hinges extending the full width of the curtain.

Bottom curtain rail: A stiffening member interlocking with the bottom edge or lowest slat of the curtain, extending between the inner faces of the vertical guides, formed or adapted where necessary to follow the contour of a sloping floor or threshold. The rail may also be adapted to house the locking device.

Wind locks- General: Wind lock end clips & guides to retain curtain in wide openings or under extreme wind conditions.

Drum- Maximum drum deflection: 1/360th of span. Springs: Helical torsion springs housed in drum and arranged to counterbalance curtain weight without exceeding safe working stress of the spring material.

Operation

Method of raising and lowering the curtain:

- Direct manual: By handles attached to the bottom curtain rail.
- Hand stick manual (high openings): By a boathook type pole supplied with the installation.
- Chain manual: By a chain passing over a sprocket on the drum, with reduction gears where necessary.
- Crank handle manual: By a removable crank handle inserted into a gearbox mounted above the opening.
- Motorised: If a wicket is fitted to the shutter, provide a limit switch device to prevent motor operation until the wicket and frame are clear of the curtain.

Motorised operation

General: Provide electric motor incorporating limit switches, manual safety stop and reversing mechanism, and overload cutout, operated by a battery-powered radio remote controller (supplied as part of the system), and also by a direct push-button or key switch. Provide a motorised system which is capable of manual operation in the event of power failure –note security needs to be maintained to external roller shutters. Locate operating switch 1500 mm above floor level, positions to be agreed on site.

Automatic safety stop and reversing: required -to manufacturers standard.

Manual backup to Motorised operation

General: manual backup operation to externally-mounted and motorised roller doors and grilles is required to be operable from the room interior, or accessible only by a key-operated locked external panel.

3 EXECUTION

3.1 FRAMES

General

Frames: Install the frames as follows:

- Plumb, level, straight and true. -Fixed or anchored to the building structure.
- Isolated from any building loads, including loads caused by structural deflection or shortening.

3.2 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.

Maintenance manual

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

Warranties

Roller doors: Submit the manufacturer's published product warranties.

0455 DOOR HARDWARE**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide door hardware as documented -refer to Door and Door Hardware Schedules as Appendices to this Specification. The lock work will include a combination of swipe-card access control and bi-lock keyed cylinders.

All new keyed cylinders will be supplied by Council's nominated subcontractor and installed by the Builder under this contract. This contractor for the bi-lock system is:

Wynns Locksmith, Wodonga

5 High Street, Wodonga VIC 3690

Ph: (02) 6024 775.

Handing: Before supply, verify on site, the correct handing of hardware items.

Hardware specified generically: Provide hardware of sufficient strength and quality to perform its function, appropriate to the intended conditions of use, suitable for use with associated hardware, and fabricated with fixed parts firmly joined.

Operation: Make sure working parts are accurately fitted to smooth close bearings, without binding or sticking, free from rattle or excessive play, lubricated where appropriate.

Supply

Delivery: Deliver door hardware items, ready for installation, in individual complete sets for each door, as follows:

- Clearly labelled to show the intended location.
- In a separate dust and moisture proof package.
- Including the necessary templates, fixings and fixing instructions.

Replacement items

Door hardware: Match items being replaced with existing unless documented otherwise. Upgrade hinges as necessary to conform to **Hinges table A** and **Hinges table B**.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 INTERPRETATION**Abbreviations**

General: For the purposes of this worksection the abbreviations given in AS 4145.1 Appendix D apply.

Definitions

General: For the purposes of this worksection the general definitions given in AS 4145.1 Section 2 apply.

Lock function: For the purposes of this worksection the general definitions given in AS 4145.1 Appendix E apply.

1.4 SUBMISSIONS**Door-by-door schedule**

General: Submit a door-by-door hardware schedule –refer Door Hardware Schedule as Appendix to this Specification –allow to review & update this Schedule prior to ordering.

Information sources: This worksection and the contract drawings.

Refurbishment and alteration work

Reuse of recovered hardware: Submit a proposal describing the standard of cleaning, repair and testing of recovered items and the location where each is to be reused.

Samples

Generic items: Submit samples of hardware items offered as meeting the description of items not specified as proprietary items.

Refurbished items: Submit samples of hardware items offered as meeting the standard of cleaning, repair and testing of recovered items.

Key control System

~~New works: Submit details of the proprietary key control security system proposed by the lock manufacturer for locks required to accept a group key (master, grandmaster).~~

~~Alterations and additions: Submit details to extend the existing key control security system for locks required to accept a group key.~~

Subcontractors

Automatic door operators: Submit names and contact details of proposed supplier and installer.

Pressure floor mat: Submit names and contact details of proposed supplier and installer.

Record documents

Door hardware schedule: Submit an amended schedule, prepared by the door hardware supplier, showing changes to the contract door hardware schedule caused as follows:

- By the approval of a hardware sample.
- By the acceptance of an equivalent to a specified proprietary item.
- By a contract variation to a door hardware requirement.

Keys

~~Key codes: Submit the lock manufacturer's record of the key coding system showing each lock type, number and type of key supplied, key number for re-ordering, and name of supplier.~~

~~Keys: For locks keyed to differ and locks keyed alike, verify quantities against key records, and deliver to the contract administrator at practical completion.~~

2 PRODUCTS

2.1 LOCKS AND LATCHES

Standard

General: To AS 4145.2 (2008).

Proprietary Item: *Locks and latches shall generally be from the Lockwood (Assa Abloy) range - Refer to Door Hardware Schedule.*

Padlocks

Standard: To AS 4145.4 (2002).

Lock and latch classification

Rating systems: To AS 4145.1 (2008) Section 3.

Performance requirements: To AS 4145.2 (2008) Section 3.

2.2 SLIDING DOOR TRACKS

Face sliding doors

Provide ultra-low friction overhead door tracks, wheel carriages, guides, stops. Ensure a maximum 20N operating force is achieved for accessibility

2.3 HINGES

Butt hinge sizes

Size for door types: Conform to tables as follows:

- Timber doors in timber or metal frames: **Hinge table A.**
- Aluminium framed doors in aluminium frames: **Hinge table B.**
- Cupboard doors: Not included in hinge tables.

Measurement: Length (l) is the dimension along the knuckles, not including hinge tips, if any, and width (w) is the dimension across both hinge leaves when opened flat.

Butt hinge materials

Timber doors in timber or steel frames:

- Material: steel

Aluminium framed doors in aluminium frames:

- Material: stainless steel

Doors fitted with closers: Provide low friction ball bearing hinges.

Fire doors: To AS 1905.1.

Power transfer hinges: Make sure they do not assume any load & are installed with other compatible hinges.

Lift-off doors: If toilet cubicles require lift off doors provide Lift Off hinges, detail the door panel with clearance at the head, and provide appropriate handles for lifting.

2.4 HINGE TABLES

Solid core doors

Application: Provide hinges to solid core doors to **Hinges table A**. The table can be used to determine the quantity of hinges required for the nominated door leaf sizes and weights only. For door leaf sizes not specified or with applied finishes use the weight of the door to determine the quantity of hinges required. For door leaves over 80 kg, nominate pivot hinges.

The size of the hinge is determined by the door leaf thickness:

- 35 - 43 mm thick door: 100 x 75 mm # butt hinges with a minimum thickness of 2.5 mm.
- 44 - 55 mm thick door: 100 x 100 mm # butt hinges with a minimum thickness of 2.5 mm.
- > 55 mm thick door: Refer to the door by door hardware schedule.

Hinge pin: The symbol # refers to the pin type. Supply fixed pins to doors opening out or designated as a security doors.

Wide throw: If necessary, provide wide throw hinges to achieve the required door swings in the presence of obstacles such as nibs, deep reveals and architraves.

Hinge table A

Nominal door leaf size (H x W x T) (mm)	Door leaf weight (kg - approx)	Number of hinges
2040 x 400 x 35	≤ 19	2
2040 x 600 x 35	≤ 29	3
2040 x 720 x 35	≤ 35	4
2040 x 820 x 35	≤ 39	4
2040 x 920 x 35	≤ 44	4
2040 x 1020 x 35	≤ 49	4
2040 x 720 x 40	≤ 37	4
2040 x 820 x 40	≤ 42	4
2040 x 920 x 40	≤ 48	4
2040 x 1020 x 40	≤ 52	4
2040 x 720 x 50	≤ 45	4
2040 x 820 x 50	≤ 50	4
2040 x 920 x 50	≤ 57	4
2040 x 1020 x 50	≤ 68	4
2400 x 720 x 40	≤ 50	4
2400 x 820 x 40	≤ 52	4
2400 x 920 x 40	≤ 55	4
2400 x 1020 x 40	≤ 60	4
2400 x 1220 x 50	≤ 72	5
2040 x 920 x 70	≤ 88	Nominate pivot hinges

Aluminium doors

Application: Aluminium hinges for aluminium doors, or for doors of other materials in aluminium frames 40 kg or less.

Hinges for aluminium doors table B

Nominal hinge size (L x W x T) (mm)	Maximum door leaf weight (kg)	Knuckles (minimum)	Screws/hinge leaf (minimum)
100 x 70 x 3	30	3	3
100 x 80 x 3.5	50	5	4
130 x 50 x 3.4	75	Interfold	3
Length (L) is the dimension along the knuckles, not including hinge tips, if any, and width (W) is the dimension across both hinge leaves when opened flat.			

2.5 ANCILLARIES

Bolts

General: Barrel bolts, flush bolts and tower bolts with keepers, including lock plates, staples, ferrules or floor sockets.

Door seals

Acoustic applications: Tested to AS 1191 (2002) or EN ISO 10140-2 (2021) and rated to the NCC cited AS/NZS ISO 717.1 (2004).

Weather and energy saving seals: To AS 4420.1 (2016) Sections 5 and 6, and AS 2047 (2014).

Extruded gaskets and seals

General: Provide seals, as documented.

Materials: Non-cellular (solid) elastomeric seals as follows:

- Rubber products: Neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber.
- Flexible polyvinyl chloride (PVC): E type compounds, colourfastness grade B.

Mortar guards

General: For steel door frame installations, provide mortar guards designed to allow the full extension of the lock tongue or similar devices and the correct operation of the locking mechanism.

Nylon brush seals

General: Dense nylon bristles locked into holding strips and fixed in a groove in the edge of the door or in purpose-made anodised aluminium holders fixed to the door or frame to the manufacturer's recommendations.

Pile weatherstrips

General: Polypropylene or equivalent pile and backing, low friction silicone treated, ultraviolet stabilised, fixed to the door or frame to the manufacturer's recommendations.

Standard: To AAMA 701/702 (2023).

Rebated doors

General: For mortice locks or latches to rebated doors, provide purpose-made rebated pattern items.

Strike plates

General: Use strike plates supplied with the locks or latches. Do not provide universal strike plates.

Weather bars

General: Provide corrosion-resistant weather bars or threshold plates under hinged external doors, located under the centres of closed doors or to manufacturer's recommendations.

2.6 ELECTRONIC CONTROL DEVICES

General

Requirement: Electric strikes, electric locks, drop bolts and/or similar devices to suit door construction and hardware.

Electromagnetic hold-open devices: To AS 1905.1 (2015) and the NCC cited AS 1670.1 (2018).

Glass doors: Tumbler, drop bolts or magnetic holders.

Double leaf doors (solid frame): Electric strike or lock on the inactive leaf, connected to the door frame by concealed flexible wiring.

Activation

Activation device: Keypads, card readers or other activation devices located next to entry points.

External: Weatherproof (IP56) hoods or housings for external units.

Mounting height: 900 to 1100 mm from floor level and not less than 500 mm from internal corners.

2.7 PANIC EXIT DEVICES

General

Standard: To EN 1125 (2008).

Requirements:

- Field sizable.
- Keyed dogging.

2.8 KEYING

Keying requirements

Standard: To AS 4145.1 (2008) for keying security.

Requirement: Provide door hardware and keys, as documented -refer to Door and Door Hardware Schedules as Appendices to this Specification.

Temporary construction keys and cylinders

Requirement: Provide one of the following:

- Loan cylinder: Install for construction locks and replace at practical completion.
- ~~Construction keyed master key cylinder: Keep up-to-date records of keys issued including recipient's name, company and contact details, date issued and date returned.~~

Delivery of keys

~~Great grandmaster, grandmaster and master keys: Arrange for delivery direct to the principal.~~

~~Locks keyed to differ and locks keyed alike: Check the quantity against key records, and deliver keys to the contract administrator at practical completion.~~

Group keying

~~Keying system: As documented.~~

~~Existing system extension: Obtain the details of existing group or master key systems of the system to be extended.~~

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

~~Proprietary keying control security system: Provide for cylinder or pin tumbler locks that accept a group key (e.g. master key, maison key).~~

~~Stamping: Stamp keys and lock cylinders to show the key codes and/or door number as scheduled.~~

Identification

~~Labelling: 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.~~

Number of keys table

Key code	Key type	Minimum number of keys
GGMK	Great grandmaster keys	2
GMK	Grandmaster keys	2
MK	Master keys	2 per code group
KD	Locks keyed to differ	2 per lock
KA	Locks keyed alike:	
	- 2 locks in code group	4
	- 3 to 10 locks in code group	6
	- 11 to 40 locks in code group	10
	- 41 and over locks in code group	1 per 4 locks or part thereof

3 EXECUTION

3.1 INSTALLATION

Mounting height

Locks and latches: Centreline of the doorknob or lever spindle above finished floor: 1000mm

Door stops

Fixing: Fix on the floor, skirting or wall, as appropriate, to prevent the door or door furniture striking the wall or other surface.

Fasteners

Materials: Provide materials compatible with the item being fixed, and of sufficient strength, size and quality to perform their function.

- Concealed fixings: Provide a corrosion resistant finish to concealed fixings.
- Exposed fixings: Match exposed fixings to the material being fixed.

Security: Locate exposed fixings to lock furniture on the inside faces of external doors and on the inside faces of internal doors to lockable rooms.

Support: Provide appropriate back support (for example lock stiles, blocking, wall noggings and backing plates) for hardware fixings.

- Hollow metal sections: Provide backing plates drilled and tapped for screw fixing, or provide rivet nuts with machine thread screws. Do not use self tapping screws or blind rivets.

Hinges

Metal frames: Fix hinges using metal thread screws.

Timber doorsets: Install butt hinges in housings equal in depth to the thickness of the hinge leaf (except for hinges designed for mounting without housing), and fix with countersunk screws.

3.2 COMPLETION

Adjustment

General: Leave the hardware properly adjusted with working parts in working order, and clean, undamaged, properly adjusted, and lubricated if appropriate.

Opening force performance: To the NCC cited AS 1428.1 (2009).

Automatic door operators: Maintain and adjust the system throughout the defects liability period.

Keys

~~Contractor's keys: Immediately before practical completion, replace or reset cylinders to which the contractor has had key access during construction to exclude the contractor's keys.~~

Operation and maintenance manuals

Requirement: Prepare a manual that includes the manufacturer's published recommendations for use, care and maintenance of the hardware provided.

Automatic door operators: Include the installer's proposal for continuing maintenance after completion on an annual renewal basis.

Product warranties

Warranty: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the manufacturer or distributor and the applicator.

0461B GLAZING**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide glazing, as documented.

Performance

Thermal qualities: U-Value and Solar heat gain coefficient (SHGC) as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARDS**Glazing**

Glass type and thickness: To AS 1288 (2021), if no glass type or thickness is nominated.

Materials and installation: To AS 1288 (2021).

Quality requirements for cut-to-size and processed glass: To AS/NZS 4667 (2000).

Roof glazing: To AS 1288 (2021) Section 6.

1.4 SUBMISSIONS**Certification**

Design: Submit an engineer's certificate confirming conformance to AS 1288 (2021).

Opacified glass: Submit a report, from the manufacturer certifying that the proposed method of opacifying the glass will not be detrimental to the glass or affect the glass product warranty.

Toughened glass: Submit certification from the manufacturer for all toughened glass as evidence of heat soaking to **GLAZING, Heat soaking**.

Installation: Submit certification from the fabricator that the method of glazing, the selection of sealant systems and conditions next to the glass conform to the following:

- Compatible with the edge seal of insulating glass units (IGUs) and self-cleaning glass.
- Will not be detrimental to the long-term structural performance, weathering capabilities and visual qualities of the glass.

Glazier's data: Submit the glazing subcontractor's statement certifying the following:

- A satisfactory thermal safety assessment.
- The assembled frame provides the required glazing clearances and tolerances, and maximum and minimum joint configurations, based on the bow, warp and kink characteristics of the required glass types, and is ready for glazing.

Execution details

Site glazing: If site glazing is intended, submit proposals.

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals**.

Products and materials

Safety glazing materials: Submit evidence of conformity to AS 2208 (2023).

Samples

Requirement: Submit samples to **PRODUCTS, GENERAL, Samples**.

Shop drawings

Requirement: Submit shop drawings showing the following:

- Method of glazing.
- Rebate depth.
- Edge restraint.
- Clearances and tolerances.

- Glazing gaskets and sealant beads.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

2 PRODUCTS**2.1 GENERAL****Samples**

Requirement: Provide samples of glazing materials, each at least 200 x 200 mm, showing the visual properties and range of variation, if any, for each of the following:

- Tinted or coloured glass or plastics glazing.
- Surface modified or surface coated glass.
- Patterned or obscured glass or plastics glazing.
- Ceramic-coated glass.
- Wired glass.
- Insulating glass units.
- Mirror glass.

Storage and handling

Storage: Store glass and glazing materials in a clean, dry area unaffected by weather, to the manufacturer's recommendations. Protect from building materials and loose debris such as wet plaster, mortar, paint and welding splatter.

Handling: Handle glass to the manufacturer's recommendations.

2.2 GLAZING**Performance**

Glazing: Free from defects that detract from appearance or interfere with performance under normal conditions of use.

Plastics glazing: Free from surface abrasions and resistant to yellowing or other colour change. Capable of maintaining physical properties including strength and impact resistance for its design life.

Heat soaking

Requirement: Heat soak glass to AS 1288 (2021) clause 3.8.

Standard: To EN 14179-1 (2016).

Marking: To EN 14179-1 (2016) or certified by the manufacturer to AS 1288 (2021) clause 3.8.2.

Safety glazing materials

Standard: To AS 2208 (2023).

Type: Grade A.

Marking: To AS 1288 (2021) clause 5.23.

Heat-strengthened glass

Standard: To ASTM C1048 (2025).

Insulating glass units (IGUs)

Requirement: Provide insulating glass units, as documented.

Manufacture, testing and installation: To AS 4666 (2012).

2.3 GLAZING MATERIALS**General**

Requirement: Putty, glazing compounds, sealants, gaskets, glazing tapes, spacing strips, spacing tapes, spacers, setting blocks, shims and compression wedges appropriate for the conditions of application and required performance.

Primer

Compatibility: Apply the manufacturer's recommended primer to the surfaces in contact with sealant materials.

2.4 ANCILLARY COMPONENTS AND FITTINGS**Extruded gaskets and seals**

General: Provide seals, as documented.

Materials: Non-cellular (solid) elastomeric seals as follows:

- Rubber products: Neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber.
- Flexible polyvinyl chloride (PVC): E type compounds, colourfastness grade B.

Pile weatherstrips

Standard: To AAMA 701/702 (2023).

Material: Polypropylene or equivalent pile and backing, low friction silicone treated, ultraviolet stabilised.

Finned type: A pile weatherseal with a central polypropylene fin bonded into the centre of the backing rod and raised above the pile level.

3 EXECUTION

3.1 GLAZING PROCESSING

General

Processing: Perform required processes on glazing, including cutting, obscuring, silvering and bending. Form necessary holes, including for fastenings, equipment, access openings and speaking holes. Process exposed glass edges to a finish not inferior to ground arised.

3.2 INSTALLATION

Glazing

Requirement: Install the glazing as follows:

- Permanently fix in place each piece of glass to withstand the normal loadings and ambient conditions at its location without distortion or damage to glazing materials.
- No transfer of building movements to the glazing.
- Watertight and airtight for external glazing.

Temporary marking: Use a method that does not damage the glazing. Remove marking only after certification and acceptance of the installation.

Toughened glass: Do not cut, work, or permanently mark after toughening. Use installation methods that prevent the glass making direct contact with metals or other non-resilient materials.

Heat-absorbing glass: In locations exposed to direct sunlight, provide wheel cut edges free from damage or blemishes, with minimum feather.

Preglazing

Window assemblies and glazed doors: Supply inclusive of glazing, shop preglazed.

Curtain walls: Supply inclusive of glazing, shop preglazed.

Site glazing

Minimum dimensional requirements: Edge clearance, edge cover, front clearance and back clearance to AS 1288 (2021).

External timber framed glazing: Glaze with putty.

3.3 COMPLETION

Replacement

Requirement: After replacing damaged glass, leave the work clean, polished, free from defects, and in good condition.

Cleaning

Method: Clean with soft clean cloths and clean water, finishing with a clean squeegee. Do not use abrasive, acidic or alkaline materials.

Extent: All frames and glass surfaces internally and externally.

Operation and maintenance manuals

Requirement: Prepare a manual that includes the manufacturers' published recommendations for in-service use.

Warranties

Glazing subcontractor's warranty: Provide an undertaking conditional only on compliance with the manufacturers' recommendations for maintenance, to repair or replace glass and glazing materials that become defective or prove unsuitable for the nominated application; during the warranty period.

Glass manufacturer's warranty: Provide an undertaking, conditional only on compliance with the manufacturer's recommendation for installation and maintenance, to supply replacement glass units to the site for replacement of defective units defined as follows:

- IGU: Units in which the hermetic seal has failed as evidenced by intrusion of foreign matter, or internal condensation at temperature above 2°C.
- Coated glass units (including coated super insulating glass units): Units in which the metallic coating shows evidence of manufacturing defects, including but not necessarily limited to cracking or peeling, as determined in conformance with ASTM C1048 (2025).

Toughened glass warranty: Provide a manufacturer's warranty that toughened glass supplied for use in curtain walls has been subjected to a heat soaking process that has converted at least 95% of the nickel sulfide content to the stable beta-phase.

0471 THERMAL INSULATION AND PLIABLE MEMBRANES**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide thermal insulation and pliable membrane systems, as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the definitions given in AS/NZS 4859.1 (2018) and the following apply:

- Batts: Flexible insulation supplied as factory cut pieces and composed of mineral fibre (glass and rock fibre) or polyester fibre.
- Bio-soluble: A product that dissolves in bodily fluids and is quickly cleared from the lungs.
- Blankets: Flexible insulation supplied as factory cut rolls and composed of mineral fibre (glass and rock fibre) or polyester fibre, and may be combined with reflective facings.
- Pliable building membrane: To AS 4200.1 (2017) and equivalent to sarking-type materials as defined in the NCC.
- Vapour permeable (breathable) membrane: A flexible membrane material, normally used for secondary waterproofing that allows for the transmission of water vapour.

1.4 SUBMISSIONS**Fire performance**

Fire hazard properties: Submit evidence of conformity to **FIRE PERFORMANCE, Fire hazard properties**.

Products and materials

Thermal insulation properties: Submit evidence of conformity to AS/NZS 4859.1 (2018) and AS/NZS 4859.2 (2018).

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties**.

1.5 INSPECTION**Notice**

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

- Insulation or pliable membrane materials after installation and before concealment.

2 PRODUCTS**2.1 GENERAL****Storage and handling**

Labelling: Deliver mineral fibre products to site in packaging with third party mark of conformity indicating product is bio-soluble and not listed as hazardous material in the Safe Work Australia *Hazardous Chemical Information System* (HCIS).

2.2 FIRE PERFORMANCE**Fire hazard properties**

Insulation materials: Tested to AS/NZS 1530.3 (1999). Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9 .
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index is more than 5.

Materials with reflective facing: Tested to AS/NZS 1530.3 (1999) and the recommendations of Appendix A6.

Pliable membranes: Flammability Index no more than 5 when tested to AS 1530.2 (1993).

2.3 MATERIALS

Thermal insulation

Standard: To AS/NZS 4859.1 (2018).

Wet process fibreboard (softboard): To AS/NZS 1859.4 (2018).

Mineral fibre insulation: Bio-soluble and not listed as a hazardous material in the Safe Work Australia *Hazardous Chemical Information System* (HCIS).

Pliable building membranes

Standard: To AS 4200.1 (2017).

Duty classification: To AS 4200.1 (2017) Table 1, as documented.

Vapour control membranes:

- Vapour barrier:
 - . Vapour control classification: Class 1 or Class 2, as documented.
- Vapour permeable (breathable) membrane:
 - . Vapour control classification: Class 3 or Class 4, as documented.

Water control (sarking) membrane (other than walls and gables):

- Water control classification: Water barrier.

2.4 COMPONENTS

Fasteners and supports

General: Metallic-coated steel.

Mesh support to roof insulation

Welded safety mesh: To AS/NZS 4389 (2015).

Thermal break strips

Product: Proprietary item.

R-Value (m².K/W): ≥ 0.2.

3 EXECUTION

3.1 GENERAL

Thermal insulation

Requirement: To AS 3999 (2015) and BCA (2022) J4D3.

Installation: Firmly butt together with no gaps except as follows:

- Access openings and vents: Do not obstruct.
- Light fittings: To AS/NZS 3000 (2018) clause 4.5.
- Electrical cables: To AS 3999 (2015) clause 2.6.

Pliable building membrane

Installation: To AS 4200.2 (2017) and BCA (2022) J4D3.

3.2 WALLS

Framed walls

Fibre batts: Friction fit between framing members. If other support is not provided, staple nylon twine to the framing and stretch tight.

Thermal break strips: If lightweight external cladding is supported by steel framing, provide thermal break strips fixed as follows:

- Screw fixing: Fix with button head screws at 1 m centres.
- Adhesive fixing: Fix with wallboard adhesive walnuts at 1 m centres.

Vapour permeable (breathable) membrane

Requirement: Provide a vapour permeable membrane behind external facing material that does not provide permanent weatherproofing or that may be subject to condensation forming on the internal face, including the following:

- Boards or planks fixed vertically or diagonally.
- Boards or planks fixed in exposed locations if wind driven rain can penetrate the joints.

- Unpainted or unsealed cladding.
- Masonry veneer.

Installation: Run the vapour permeable membrane horizontally on the outer face of external wall framing, over the flashing, from the bottom plate up. Pull taut over the framing and fix to framing members. Seal across the wall cavity at the top.

Horizontal laps: At least 150 mm wide, lapped to make sure water is shed to the outer face of the membrane.

End or vertical overlaps laps: At least 150 mm wide made over framing.

Openings: Run the vapour permeable membrane over the openings and leave covered until windows and doors are installed. Cut the membrane on a 45° diagonal from each corner of the opening, fold the flaps inside and fix to the inside frame of the opening. If the membrane is used to provide a continuous airtight layer, seal all joints with pressure sensitive adhesive tape.

Fixing method: Install as follows:

- Timber frames: Fix with metallic-coated clouts, 20 mm long 6 to 8 mm staples or punched multi-point metallic-coated steel brads.
- Steel or aluminium frames: Fix with hex head screws, with either 20 mm diameter washers or through hardboard strips.
- Plywood: Alternatives:
 - Fix with metallic-coated clouts, 20 mm long 6 to 8 mm staples or punched multi-point metallic-coated steel brads at minimum 300 mm centres.
 - Fix with water based contact adhesive with a 50% adhesive cover.

3.3 CEILINGS

Framed ceilings

Fibre batts: Fit tightly between framing members. If support is not otherwise provided, staple nylon twine to the framing and stretch tight.

Suspended ceilings

Fibre batts and blankets: Lay batts/blankets over the ceiling system close butted to each other and to the suspension rods.

3.4 COMPLETION

Warranties -Insulation and pliable membranes: Submit the manufacturer's published product warranties.

4 SELECTIONS

4.1 INSULATION

Wall insulation

Property	
Application	Bulk external wall insulation generally
Type/Product	Recycled polyester or mineral fibre batts
Location	Within stud framing -refer Drawings &/or Finishes Schedule
R-value	R2.5
Nom. thickness (mm)	90mm

4.2 PLIABLE MEMBRANES

Vapour-permeable membrane -Wall

Property	
Application	External wall vapour-permeable membranes generally
Product	Proctor Passive PyroPerm A2 PDS
Location	Fixed to face of stud framing (cavity side) - refer Drawings

0472 ACOUSTIC INSULATION**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide acoustic insulation to all internal framed walls and partitions not thermally-insulated.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the following definitions apply:

- Acoustic insulation: Materials or methods of construction to reduce the transmission of airborne and structure-borne sound through floors, walls and ceilings or other enclosing elements in buildings.
- Acoustic underlay: A resilient material laid between the subfloor and the flooring material to provide sound isolation.
- Airborne sound: Sound radiated directly from a source, such as a loudspeaker or machine, into the surrounding air.
- Batts: Flexible insulation supplied as factory cut pieces and composed of mineral fibre (glass and rock fibre) or polyester fibre.
- Bio-soluble: A product that dissolves in bodily fluids and is quickly cleared from the lungs.
- Blankets: Flexible insulation supplied as factory cut rolls and composed of mineral fibre (glass and rock fibre) or polyester fibre, and may be combined with reflective facings.
- Impact sound: Sound caused by impacts on building structure. Typical sources include footsteps, dropped objects on horizontal surfaces and the slamming of doors.
- Sound insulation (isolation): Reduction of sound energy passing through building elements.
- Structure-borne sound: Sound waves transmitted within the building structure and re-radiated into other spaces as airborne sound. Typical sources include direct impact from dropped objects and vibrating machinery.

1.4 SUBMISSIONS**Fire performance**

Fire hazard properties: Submit evidence of conformity to **FIRE PERFORMANCE, Fire hazard properties.**

Products and materials

Acoustic insulation properties: Submit evidence of conformity to documented requirements for insulation.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.5 INSPECTION**Notice**

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

- Insulation after installation and before concealment.

2 PRODUCTS**2.1 GENERAL****Storage and handling**

Labelling: Deliver mineral fibre products to site in packaging with third party mark of conformity indicating product is bio-soluble and not listed as hazardous material in the Safe Work Australia *Hazardous Chemical Information System (HCIS)*.

2.2 FIRE PERFORMANCE

Fire hazard properties

Insulation materials: Tested to AS/NZS 1530.3 (1999). Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9 .
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index is more than 5.

Facing materials: Flammability Index no more than 5 when tested to AS 1530.2 (1993).

2.3 MATERIALS

General

Mineral fibre insulation: Bio-soluble and not listed as a hazardous material in the Safe Work Australia *Hazardous Chemical Information System* (HCIS).

Bulk insulation

Mineral fibre blankets and batts: Glass wool or rock wool bonded with thermosetting resin.

Polyester blankets and batts: Thermally bonded polyester fibres.

Board insulation

Mineral fibre panels: High density glass wool or rock wool bonded with thermosetting resin.

Wet process fibreboard (including softboard): To AS/NZS 1859.4 (2018).

Composite plasterboard panels: Proprietary items.

Flexible sheet insulation

Impregnated vinyl: Mass loaded vinyl sheeting.

Recycled rubber/cork: Recycled rubber granules and/or cork bound with polymers.

2.4 COMPONENTS

Fasteners and supports

General: Metallic-coated steel.

Resilient mounts: Proprietary fixing clips with rubber or acrylic pads.

Adhesives

General: Compatible with the substrate and the insulation and conforming to the insulation manufacturer's recommendations.

Sealants

Acoustic sealant: Non-hardening sealant compatible with the substrate materials.

Fire-resisting sealant: Non-hardening sealant compatible with the substrate materials and having a fire-resistance rating equal to that of the building element it seals.

Sealant strips: Closed cell resilient foam.

3 EXECUTION

3.1 GENERAL

Bulk insulation

General: Firmly butt together with no gaps except as follows:

- Access openings and vents: Do not obstruct.
- Light fittings: To AS/NZS 3000 (2018) clause 4.5.
- Electrical cables: To AS 3999 (2015) clause 2.6.

3.2 WALLS

Framed walls and partitions

Fibre batts: Friction fit between framing members. If other support is not provided, staple nylon twine to the framing and stretch tight.

Mineral fibre panels: Fix to face of studs with adhesive and temporarily fix with single screw until plasterboard installed.

Full masonry cavity walls – external face of internal leaf

Mineral fibre panels:

- Installation: Fix panels firmly against the inner masonry skin. Keep boards clean, dry and free from mortar and grout. Do not bridge the cavity.

- Fixing method: Proprietary plastic clips on pre-installed wall ties.
- Sheet size: Select or cut to suit wall tie spacing.

Flashings: Install flashings before installing insulation. Prevent entry of water behind the insulation.

3.3 CEILINGS

Framed ceilings

Fibre batts: Fit tightly between framing members. If support is not otherwise provided, staple nylon twine to the framing and stretch tight.

Suspended ceilings

Fibre batts and blankets: Lay batts/blankets over the ceiling system close butted to each other and to the suspension rods.

3.4 FLANKING SOUND INSULATION

Baffles

General: Install plenum baffles tightly butted to building structure, service ducts, pipes and conduits and to the top of the partition or to the top of the suspended ceiling structure directly above the line of the partition. Seal joints, penetrations and intersections and maintain the required performance.

Bulk insulation: Install individual layers to fill space between building structure and the top of the partition or the top of the suspended ceiling.

Flexible sheet insulation: Fix to soffit through a continuous furring channel, hang to meet the top of the partition and extend horizontally 900 mm over the suspended ceiling.

Abutments

Trim: Install over sealant. Allow for movement at abutting surfaces.

Cable management

Power outlets: Do not install general purpose socket-outlets back to back. Separate adjoining socket-outlets with a continuous layer of the documented wall insulating material.

Ducted skirtings: If a ducted skirting extends continuously across an abutment, pack the cavities firmly with bulk insulating material for 300 mm each side of the abutment, and scribe and seal the joint.

0511B LINING**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide internal lining systems to the **SELECTIONS**.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 INSPECTION**Notice**

Inspection: Give sufficient notice so that inspection may be made of substrate or framing before installation of linings.

1.4 TOLERANCES**Surface**

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

2 PRODUCTS**2.1 MATERIALS AND COMPONENTS****Plasterboard**

Standard: To AS/NZS 2588.

Location: refer Drawings

Grade: Standard, unless noted otherwise on the Drawings

Thickness (mm): 13mm, unless noted otherwise on the Drawings

Edge finish: as required for the location

Fibre cement

Standard: To AS/NZS 2908.2.

Wall and ceiling linings: Type B category 2.

Location: refer Drawings

Type & Category: Cladding and soffit linings to be Type A Category 3, internal linings to be Type B Category 2 and compressed sheets to be Type A Category 5

Thickness (mm): 9mm for internal wall linings, unless noted otherwise on the Drawings

Edge finish: as required for the location.

Plywood and blockboard

Plywood Species: In compliance with Appendix 10 -Plywood regulatory Information Report (note Table 4, page 7 -Species)

Interior use: To AS/NZS 2270

Exterior use: To AS/NZS 2271.

Visible surfaces: Veneer quality B.

Back/face veneer: Veneer quality C or D.

Emission Class: E0.

Presealed plywood: Plywood pre-sealed both sides and edges with a machine applied sealer.

Dry-processed fibreboard (including medium density fibreboard)

Standard: To AS/NZS 1859.2.

Melamine overlaid medium density fibreboard: Medium density fibreboard (STD MDF) overlaid on both sides with low pressure melamine.

Emission Class: E0.

Certification

General: Brand panels under the authority of a recognised certification program applicable to the product. Locate the brand on faces or edges which will be concealed in the works.

High pressure decorative laminate sheet

Standard: To AS/NZS 2924.1.

Coated steel

Standard: To AS 1397.

- Coating class interior: Z275.
- Coating class exterior: Z450.

Fasteners

Steel nails: Hot dip galvanized.

Adhesives

For wallboards: Gunnable synthetic rubber/resin based mastic contact adhesive formulated for bonding flooring and wallboards to a variety of substrates.

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.

Acoustic sealant: Non-hardening sealant compatible with the materials to be sealed and having a specific gravity of not less than 1.5 gm/cubic centimetre and of 100% polyurethane mastic.

3 EXECUTION

3.1 CONSTRUCTION GENERALLY

Conditions

Commencement: Do not commence lining work until such time as the building or zone in question is enclosed and weathertight and all wet trades have been completed.

Substrates or framing

General: Before fixing linings check and, if necessary, adjust the alignment of substrates or framing.

Battens

General: Fix at each crossing with structural framing members, or direct to solid walls or ceilings. Provide wall plugs in solid substrates.

Ceiling linings

General: Do not install until at least 14 days after the timber roof structure is fully loaded.

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.

3.2 PLASTERBOARD LINING

Supports

General: Install timber battens or 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.
- Where the lining is the substrate for tiled finishes.

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 and fibre reinforced gypsum lining: To AS/NZS 2589.

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.

Joints

Flush 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.

Dry joints: Provide square edged sheet and finish with a UPVC joining section.

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

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

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

3.3 FIBRE CEMENT AND PLY LININGS**Supports**

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

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

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.

Fixings: To expressed-joint cement sheet and ply linings –fix with stainless steel countersunk screws, neatly set-out and pre-drilled.

Wall framing:

- In tiled areas: Provide an extra row of noggings immediately above wall-to-floor flashings. Fix sheet at 150 mm centres to each stud and around the perimeter of the sheet.

Masonry wall construction:

- Fix to furring channels using screw or screw and adhesive.

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

Ply ceilings: Fix with stainless steel countersunk screws, neatly set-out and pre-drilled.

Wet areas: Do not use adhesive fixing alone.

3.4 TRIM AND ACCESSORIES**General**

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

Proprietary items: Provide complete with installation accessories.

Timber trim

Hardwood: AS 2796.1.

Cypress pine: AS 1810.

Softwood: To AS 4785.1.

- Grade: To AS 4785.2.

0525B CUBICLE SYSTEMS**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide cubicles as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 INSPECTION**Notice**

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

- Set-out before installation.
- Completion of installation.

1.4 TOLERANCES**General**

Deviation (from true grid lines and planes): 1:1000 up to 3 mm maximum.

Misalignment (of adjoining surfaces at grid junctions): ± 1 mm maximum.

Panel thickness: ± 0.5 mm.

Length and width: $\pm 1/1000$ th of the dimension or 0.5 mm, whichever is the greater.

Flatness, twist, winding and bow: ± 1 mm maximum deviation from a 2.4 mm straightedge placed in any position.

Maximum deviation of edges from the intended true line: ± 1 mm.

1.5 SUBMISSIONS**Samples**

General: Submit samples as follows:

- Each selected panel and door finish, at least 300 x 300 mm, with associated selected edge strips and trims.
- All hardware and metal components in the selected finish.

2 PRODUCTS**2.1 TOILET AND SHOWER CUBICLE PARTITIONS****General**

Supply and install as WC & shower cubicle systems as follows:

Proprietary Item: Laminex Compact Lamine Multipurpose partitioning system, or equivalent to approval.

Decorative finishes: All partition panels to be Laminex Compact Multipurpose 'Polar White' except door panels.

All Door panels to be Laminex Compact Multipurpose 'Zincworks'.

Divider panels to be 13mm panels, factory fabricated and secured to wall and frontal panels using aluminium channels.

Frontal & Nib panels to be 13mm panels, factory finished to match dividers, and installed with overhead channels.

Dividers/Frontals/Nibs to be fixed to the floor using **standard foot assembly** –DO NOT USE floor-mounted system with skirtings.

Head rail over doors to be finished with insert trim.

Wall nib/s to be secured to side wall/s with aluminium channel.

Cubicle doors to be panels coated on all surfaces and edges to match dividers and frontals.

Door hardware, consisting of two bolt-through hinges (lift-off gravity or spring-loaded), one slotted indicator, one bolt and staple, one coat hook bumper, to be installed to hardware manufacturer's instructions. Long lever snibs to be provided for ambulant and accessible cubicles.

Dimensions: Nominal cubicle sizes to be typically 1800 x 900 for showers, 1500 x 900 for WCs. Ambulant cubicles to be constructed to comply with AS1428 (ie 900-920 clear internal width).

Cubicles to be set 200 above finished floor, with divisions and doors finishing at 2000 high, frontals & nibs at 2125 high. Soap holders to be concealed fixed, set at 1200.

Shower nib panels & seats: Provide nib panels and seats to all shower cubicles, to manufacturer's standard details.

Guarantee: Obtain standard 10-year warranty.

2.2 ACCESSORIES

Hardware

Fixing hardware: Bolts, dowels, brackets, standards, cappings and stabilising bars supplied to complete the cubicle assembly.

Door furniture: Manufacturers standard.

3 EXECUTION

3.1 PANELS

Manufactured cubicle systems

Assembly: Attach divisions and nibs to walls and fronts with purpose-made proprietary fixings. Cut nibs and divisions that abut walls as required to plumb the assembly and seal edges as instructed by the manufacturer.

Floor mounted/overhead braced type: Fix fronts to the floor with proprietary fittings and fix at the top to a metal channel headrail, supplied as part of the system, running continuously across the fronts and fixed to the walls at each end. Form the channel into a box section over doorways by snapping in a mating channel insert.

Heads of openings: Fix stabilising head channels, screwed to the tops of the partitions. Provide an infill strip to the channel across the opening.

Ceiling hung type: Hang the fronts from a suspension beam with galvanized mild steel M10 bolts and attachments, incorporating a means of height adjustment, supplied as part of the system.

Freestanding type: Fix fronts to the floor with proprietary fittings.

3.2 COMPONENTS

Shower seats

Fixing: Fix to structural elements using one of the following methods:

- Anodised aluminium channel to exposed edge, secured to walls at each end.
- Product assembly detail.
- Proprietary wall bracket.

Suspension beam

Installation: Install suspension beam as follows:

- Build the ends into masonry structure or provide end fastenings to the structure, as necessary, to transfer the load.
- Drill the bottom flange of the channel for the partition fasteners.

3.3 COMPLETION

Operation and maintenance manuals

Requirement: Prepare a manual that includes the following:

- Full product information for each system, including product designations, components list, colours and finishes, and accessories.
- Information on all doors and hardware supplied as part of the system including door type, size, finishes, and hardware details.
- Maintenance recommendations.

0531B SUSPENDED CEILINGS & SOFFITS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide suspended ceilings and soffits as documented and as follows:

- Consistent in finish treatment.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 STANDARDS**General**

Suspended ceilings: To AS/NZS 2785 (2020).

Luminaire and air diffuser interface: To AS 2946.

1.4 INTERPRETATION**Definitions**

- General: For the purposes of this worksection, the definitions given in AS/NZS 2785 (2020) and the following apply:
- Ceiling unit: Tile, panel, plank, strip or open grid supported within a ceiling suspension system.

1.5 TOLERANCES**Suspension system**

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

Deflection: To AS/NZS 2785 (2020) Table 2.4.5.

Setting out and levelling: To AS/NZS 2785 (2020) Appendix D.

Sheeted or flush ceiling suspension system

Suspension system bearing surface for flush lined ceiling: To AS/NZS 2589 (2017) Table 4.2.2.

Deflection: To AS/NZS 2589 (2017) Table 3.5.1.2.

1.6 SUBMISSIONS**Drawings**

Set-out drawings: Submit proposed set-out, indicating cut ceiling units if any, before installation. Coordinate with plenum services layouts, building structure and other factors impacting on the layout.

Tests

Type tests: Submit results, as follows:

- Fire hazard properties:
 - . Average specific extinction area (non-sprinklered buildings): < 250 m²/kg to AS/NZS 3837.
 - . Group number: To AS/NZS 3837 and BCA Spec A2.4 or AS ISO 9705.
 - . Smoke growth rate index (non-sprinklered buildings): < 100 to AS ISO 9705 and BCA Spec A2.4.
- Fire-resistance level: To AS 1530.4.
- Weighted suspended ceiling normalized level difference: To AS/NZS ISO 717.1.
- Weighted sound absorption coefficient: AS ISO 11654, as tested to AS ISO 354.

1.7 INSPECTION**Notice**

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

- The suspension system before the installation of ceiling units or lining.
- The ceiling assembly before the installation of fittings and site painting, if applicable.
- The completed ceiling.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Requirement: Store suspended ceiling components in a dry and secure area, and to the manufacturer's recommendations.

Tests

Weighted suspended ceiling normalised level difference: To the NCC cited AS/NZS ISO 717.1 (2004).

Weighted sound absorption coefficient: To AS ISO 11654 (2002), as tested to AS ISO 354 (2006).

Weighted sound reduction index: To the NCC cited AS/NZS ISO 717.1 (2004).

2.2 FIRE PERFORMANCE

Fire hazard properties

Group number: To AS 5637.1 (2015).

Fire-resistance of building elements

Fire-resistance level: Tested to AS 1530.4 (2014).

2.3 SUSPENSION SYSTEM

Ceiling suspension system

Consistency: Provide ceiling systems as complete proprietary systems, fabricated by one manufacturer, as documented.

Materials

Coated steel: To AS 1397 (2021).

Aluminium: To AS 1866 (1997).

Protective coatings for steel components: To AS/NZS 2785 (2020) Appendix F.

Protection against atmospheric corrosion: To AS 2312.1 (2014) and AS/NZS 2312.2 (2014).

2.4 LINING

Plasterboard

Standard: To AS/NZS 2588.

Fibre cement

Standard: To AS/NZS 2908.2.

Wall and ceiling linings: Type B category 2.

Minimum thickness: refer Finishes Schedule

Plywood

Plywood Species: In compliance with Appendix 10 -Plywood regulatory Information Report (note Table 4, page 7 -Species)

Interior use: To AS/NZS 2270

Exterior use: To AS/NZS 2271.

Visible surfaces: Veneer quality B.

Back/face veneer: Veneer quality C or D.

Emission Class: E0.

Presealed plywood: Plywood pre-sealed both sides and edges with a machine applied sealer.

Sealants

Fire-resistance level sealant: Non-hardening sealant compatible with the ceiling materials and documented fire-resistance level.

Acoustic sealant: Non-hardening sealant compatible with the ceiling materials and rated to R_w 65.

3 EXECUTION

3.1 CONSTRUCTION GENERALLY

Working environment

General: Do not start work before the building is enclosed, wet work is complete and dry, and all work above the ceiling, including services, is complete.

Protection

General: Protect existing work from damage during the installation.

Partitions

General: If partitions are attached to the underside of the ceiling systems, include the partition mass in the seismic mass of the ceiling.

Stability

General: Install the ceilings level and fix to prevent looseness or rattling of ceiling components under normal conditions.

Structure-borne sound

General: Provide a ceiling system which does not amplify structure-borne sound. Provide suitable proprietary products or systems for reducing contact vibrations between structure and ceiling.

Control of movement

Abutments: Install the ceiling to allow for differential movement at abutting surfaces.

Alignment: Align ceiling control joints with structural control joints. Do not bridge structural control joints.

Prefinishes

General: Repair damaged prefinishes by recoating.

Curtain recesses

General: Provide curtain recesses, including the following:

- Lining.
- Curtain track support.
- Accommodation for motors and cabling.

3.2 SUSPENSION SYSTEM**Suspension system**

Support members: Provide support members as follows:

- Space as required by the loads on the system and the type of ceiling.
- Allow for the installation of services and accessories, including ductwork, light fittings and diffusers.
- Provide additional back support or suspension members for the fixing of services and accessories to prevent distortion, overloading or excessive vertical deflection.

Failure: Provide a ceiling system where failure of any one suspension point does not cause a progressive failure of the ceiling.

Height adjustment: Provide height adjustment with a length adjustment device at each suspension point, permitting length variation of at least 50 mm.

Grid members: If required, notch grid members at the junction with the perimeter trim to make sure the ceiling units lie flat on the perimeter trim.

Restriction: Do not attach the suspension system to the lip or flange of purlins.

Services

Support: Conform to the following:

- If the service has not been designed to accept the ceiling load, do not fix suspension members to services (e.g. ductwork).
- If services obstruct the ceiling supports, provide bridging and suspension on each side of the services.
- Do not support services terminals on ceiling units.

Bracing

General: Provide bracing to prevent lateral movement and to resist the imposed horizontal seismic force.

Bulkheads

General: Integrate bulkheads with the ceiling structure and brace to prevent lateral movement. If the ceiling is terminated at a bulkhead, provide for seismic requirements.

External suspended soffits

General: Support external suspended soffits on rigid members capable of carrying the loads from imposed actions. Install members to minimise any eccentricity, and carry the upward and downward loads from wind actions through to the supporting structure.

Fasteners

General: Provide concealed fasteners. If material supporting hangers is less than 3 mm thick, do not use screw fasteners.

3.3 FIBRE CEMENT LINING

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.

Suspended flush ceilings: Screw or screw and adhesive fix to ceiling members or support frame.

Multiple sheet layers

Application: Fire-resistance rated and acoustic rated ceilings.

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.

Joints

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

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

Dry joints: Provide square edged sheet and finish with a PVC-U joining section.

Control joints: Align lining control joints with structural control joints and as follows:

- Ceilings: To divide into bays not larger than 10.8 x 7.2 m.
- Soffit linings: To divide into bays not larger than 4.2 x 4.2 m or 5.6 x 3.6 m.
- Control joint beads: Purpose-made metallic coated.
- Support: Provide framing parallel to the joint on each side. Do not fix the lining to abutting building surfaces.
- Location: If possible, position joints to intersect light fixtures, vents or air diffusers.

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

3.4 ACCESS PANELS

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.

3.5 TRIM

General

Trim: Provide trim at junctions with other building elements and surfaces, including walls, beams and penetrations, consistent with the materials and finishes of the ceiling system.

Accessories

General: Provide accessories as part of the proprietary ceiling system necessary to complete the installation.

0551 JOINERY**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Fabricate and install joinery items to substrates undamaged, plumb, level, straight and free of distortion and to the **Tolerances table**.

Tolerances table

Property	Tolerance criteria
Plumb and level	1 mm in 800 mm
Offsets in flush adjoining surfaces	< 0.5 mm
Offsets in revealed adjoining surfaces	< 2 mm
Alignment of adjoining doors	< 0.5 mm
Difference in scribe thickness for joinery items centred between walls	< 2 mm
Doors centred in openings	zero
Joints in finished surfaces	zero

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 INSPECTION**Notice**

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

- Shop fabricated or assembled items ready for delivery to the site.
- Surfaces prepared for, and immediately before, site applied finishes.
- Completion of installation.

1.4 SUBMISSIONS**Verification of timber**

Certificate: Submit a supplier's certificate (which may be included on an invoice or delivery docket) verifying conformance to grading, species, and noting moisture content.

Inspection: If neither branding nor certification is adopted, submit a report by an independent inspecting authority verifying conformance.

Environmental rating

Evidence or certification: delivery docket or suppliers order

Timing: Before fabrication.

2 PRODUCTS**2.1 JOINERY MATERIALS AND COMPONENTS****Visible work**

Clear finished timber and veneer: Ensure all visible surfaces are free of branding, crayon or chalk marks and of blemishes caused by handling.

Joinery timber

Hardwood: To AS 2796.3.

Finished sizes: For milled timbers actual dimensions which are at least the required dimensions, except for dimensions qualified by a term such as nominal or out of to which industry standards for finished sizes apply.

Plywood

Interior use generally: To AS/NZS 2270.

Interior use, exposed to moisture: To AS/NZS 2271.

Visible surfaces: Veneer quality B.

Emission class: E0 (Austral ply, or similar to approval).

Non-structural glued laminated timber

Standard: AS 5067.

Service class: to AS5067.

Appearance grade: to AS5067

Particleboard

Standard: To AS/NZS 1859.1.

- Classification: MR

Melamine overlaid particleboard: Particleboard overlaid on both sides with low pressure melamine.

Emission class: E0

Product: Laminex Structural MR prefinished board, or similar to approval.

Dry-processed fibreboard (including medium density fibreboard)

Standard: To AS/NZS 1859.2.

Melamine overlaid medium density fibreboard: Medium density fibreboard (STD MDF) overlaid on both sides with low pressure melamine.

Emission class: E0

Certification

General: Brand panels under the authority of a recognised certification program applicable to the product. Locate the brand on faces or edges which will be concealed in the works.

Plywood formaldehyde emission class to AS/NZS 2270: E0

Reconstituted wood-panel formaldehyde emission class to AS/NZS 1859.2: E0

High-pressure decorative laminate sheets

Standard: To AS/NZS 2924.1.

Class	Definition	Typical applications
CG (S or F)	Compact general purpose	High performance, self supporting vertical or horizontal surfaces
HD (S or F)	Horizontal heavy duty	High performance horizontal surfaces
HG (S or P)	Horizontal general purpose	General horizontal surfaces and high performance vertical surfaces
VG (S or P)	Vertical general purpose	General vertical surfaces and light duty horizontal surfaces
VL (S)	Vertical light duty	Light duty vertical surfaces

Thickness (minimum):

- For horizontal surfaces fixed to a continuous substrate: 1.2 mm.
- For vertical surfaces fixed to a continuous substrate: 0.8 mm.
- For post formed laminate fixed to a continuous substrate: 0.8 mm.
- For vertical surfaces fixed intermittently (e.g. to studs): 3.0 mm.
- For edge strips: 0.4 mm.

2.2 JOINERY ITEMS

General

Refer to documents as follows:

- Drawings: Joinery units and their location, indicative construction details, scribes and trims, materials, dimensions and thicknesses, and finishes.
- Drawings: Confirm on site all dimensions noted, after the completion of partitions.
- Finishes schedules or drawings: Finishes selections.
- Specification: Joinery hardware fittings and systems.

2.3 JOINERY ASSEMBLIES

Standard

General: To AS/NZS 4386.1.

Plinths

Material: Select from the following:

- Exterior general purpose plywood.
- High moisture resistant particleboard.
- High moisture resistant medium density fibreboard.

Thickness: 16 mm.

Fabrication: Form up with front and back members and full height cross members at not more than 900 mm centres.

Finish: High-pressure decorative laminated sheet –colour Charcoal: refer Finishes Schedule

- Fasteners: Conceal with finish.

Installation: Scribe to floor and secure to wall to provide level platform for carcasses.

Carcasses

Laminated joinery:

- Melamine overlaid high moisture resistant particleboard.
- Melamine overlaid high moisture resistant medium density fibreboard.

Thickness: 16 mm.

Joints: Select from the following:

- Proprietary mechanical connections.
- Dowels and glue.
- Screws and glue.
- Proprietary joining plates and glue.

Adjustable shelves: Support on proprietary pins in holes bored at equal centres vertically.

- Spacing: 32 mm.

Fasteners: Conceal with finish.

Installation: Secure to walls at not more than 600 mm centres.

Drawer fronts and doors

Material: refer Drawings

Laminated joinery:

- Melamine overlaid high moisture resistant particleboard.
- Melamine overlaid high moisture resistant medium density fibreboard.

Thickness: 16 mm.

Maximum door size: 2400 mm high, 900 mm wide, 1.5 m² on face.

Drawer fronts: Rout for drawer bottoms.

Finish & colour: Refer Finishes Schedule

Drawer backs and sides

Material: PVC film wrapped particleboard.

Thickness: 12 mm.

Colour: white

Installation: Mitre corners leaving outer skin of foil intact, finish with butt joints, glue to form carcass and screw to drawer front. Rout for drawer bottoms.

Drawer bottoms

Material: PVC film laminated hardboard.

Thickness: 3 mm.

Colour: white

Drawer and door hardware

Hinge types: Concealed metal hinges with the following features:

- Adjustable for height, side and depth location of door.
- Self closing action.

- Hold open function.
 - . Angle of opening: 120deg
- Nickel plated.

Piano hinges: Chrome plated steel, extending full height of doors.

Slides: Metal runners and plastic rollers with the following features:

- 30 kg loading capacity.
- Closure retention.
- White thermoset powder coating or nickel plated.

Pull knobs: 25mm dia. satin stainless steel or brushed aluminium cylindrical pull, with undercut finger grip.

2.4 WORKING SURFACES

Laminated benchtops

- Material: High moisture resistant particleboard.

Finish: High-pressure decorative laminated sheet –refer Finishes Schedule.

Exposed edges: Extend laminate over shaped nosing, finishing more than 50 mm back on underside. Splay outside corners at 45°.

Balance underside: Extend laminate to the undersides of benchtops.

Installation: Scribe to walls. Fix to carcass at least twice per 600 mm length of benchtop.

Joint sealing: Fill joint with sealant matching finish and clamp with proprietary mechanical connectors.

Benchtop backing: Balance underside: Laminate undersides of benchtops.

3 EXECUTION

3.1 JOINERY

General

Joints: Provide materials in single lengths whenever possible. If joints are necessary make them over supports.

Framing: Frame and trim where necessary for openings, including those required by other trades.

Accessories and trim

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

Fasteners

Visibility: Do not provide visible fixings except in the following locations:

- Inside cupboards and drawer units.
- Inside open units in which case provide proprietary caps to conceal fixings.

Visible fixings: Where fastenings are unavoidable on visible joinery faces, sink the heads below the surface and fill the sinking flush with a material compatible with the surface finish. In surfaces which are to have clear or tinted finish provide matching wood plugs showing face (not end) grain. In surfaces which are to have melamine finish provide proprietary screws and caps finished to match.

Fix joinery units to substrates as follows:

- Floor mounted units: 600 mm centres max.
- Wall mounted units: To each nogging and/or stud stiffener.

Fixings: Screws with washers into timber or steel framing, or masonry anchors.

Adhesives

General: Provide adhesives to transmit the loads imposed and to ensure the rigidity of the assembly, without causing discolouration of finished surfaces.

Finishing

Junctions with structure: Scribe, plinths, benchtops, splashbacks, ends of cupboards, kickboards and returns to follow the line of structure.

Joints: Scribe internal and mitre external joints.

Edge strips: Finish exposed edges of sheets with edge strips which match sheet faces.

Matching: For surfaces which are to have clear or tinted finish, arrange adjacent pieces to match the grain and colour.

3.2 DELIVERY AND STORAGE

General

General: Deliver joinery units to site in unbroken wrapping or containers and store so that its moisture content is not adversely affected. Do not store in areas of wet plaster. Keep storage to a minimum by delivering items only when required for installation.

Concealed surfaces: Prime surfaces concealed by substrates.

Deficiencies: Examine joinery units for completeness and remedy deficiencies.

Acclimatisation

General: Acclimatise the joinery items by stacking it in the in-service conditions with air circulation to all surfaces after the following construction operations are complete:

- Air conditioning operational.
- Lighting operational.
- Site drainage and stormwater works are complete.
- Space fully enclosed and secure.
- Wet work complete and dry.

Substrate

General: Damp clean and vacuum substrate surfaces that will be permanently concealed.

3.3 COMPLETION

Cleaning

Temporary coatings: 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.

General: Remove all dust, marks and rubbish from all surfaces and internal spaces. Clean and polish all self finished surfaces such as anodised and powdercoated metals, sanitaryware, glass, tiles and laminates.

0552B METALWORK**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide metal fixtures that are:

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

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 INSPECTION**Notice**

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

- Site erected assemblies on completion of erection, before covering up by cladding and encasing.
- Steel surfaces prepared for, and immediately before, site applied finishes.

1.4 SUBMISSIONS**Subcontractors**

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

Materials

Manufacturer's data: Submit manufacturer's published product data including standard drawings and details.

Stainless steel: For each batch of stainless steel supplied to the works, submit the certificate of compliance or test certificate specified in the applicable standard.

1.5 STANDARDS**General**

Access for maintenance: To AS 1657.

Tactile indicators: To AS/NZS 1428.4.1.

2 PRODUCTS**2.1 MATERIALS AND COMPONENTS****Metals and components**

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

3 EXECUTION**3.1 CONSTRUCTION GENERALLY****Aluminium structures**

Standard: To AS/NZS 1664.1 or AS/NZS 1664.2.

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.

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

To copper and copper alloys: Provide copper or copper-alloy fixing devices only.

To 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.

Tube bends: Form bends in tube without visibly deforming the cross section.

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

Thermal movement: Accommodate thermal movement in joints and fastenings.

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.

Self-finished metals: Free of surface colour variations, after jointing. 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.

3.2 WELDING

General

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

Site welds: Avoid site welding wherever possible. If required 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.

3.3 STAINLESS STEEL FABRICATION

Welding stainless steel

Certification of welders: To AS 1796.

Riveting

General: Riveting may be used only to join stainless steel sheet or strip less than 1 mm thick. Drill (not punch) the rivet hole, and drive the rivet cold. On completion, clean and passivate the riveted assembly.

Soldering

General: Do not solder stainless steel.

3.4 METAL FIXTURES

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.
- Confirm on site all dimensions noted on drawings.
- Finishes selections as documented.

3.5 COMPLETION

Maintenance manual

General: Submit manufacturer's published recommendations for service use.

Cleaning

Temporary coatings: 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

0573 FIRE EXTINGUISHERS AND BLANKETS**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide fire extinguishers and fire blankets as required to conform to all regulations.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s): -*General requirements*.

1.3 SUBMISSIONS**Products and materials**

Requirement: Submit evidence of suitability for use, to NCC (2022) A5G1, for all fire protection products.

Records

Requirement: Submit routine service records to AS 1851 (2012).

1.4 AUTHORISED PRODUCTS**General**

General: Provide equipment listed in the ActivFire Register of Fire Protection Equipment.

2 PRODUCTS**2.1 EXTINGUISHERS****Portable fire extinguishers**

General: To AS/NZS 1841.1 (2007).

Type:

- Water: To AS/NZS 1841.2 (2007).
- Wet chemical: To AS/NZS 1841.3 (2007).
- Foam: To AS/NZS 1841.4 (2007).
- Powder: To AS/NZS 1841.5 (2007).
- Carbon dioxide: To AS/NZS 1841.6 (2007).
- Non-rechargeable: To AS/NZS 1841.8 (2007).

Selection, location and distribution: To AS 2444 (2001).

2.2 BLANKETS**Fire blankets**

General: To AS/NZS 3504 (2006).

Selection and location: To AS 2444 (2001).

3 EXECUTION**3.1 INSTALLATION****Firefighting equipment**

Standard: To AS 2444 (2001).

Signage: Provide signs to **STATUTORY SIGNS** in 0581 Signage.

3.2 COMPLETION**Baseline data**

Requirement: Provide baseline data to AS 1851 (2012).

3.3 MAINTENANCE**Routine service**

Portable fire extinguishers: To AS 1851 (2012) Section 10.

Fire blankets: To AS 1851 (2012) Section 11.

0581B SIGNAGE**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide signage systems, as documented (refer Signage Schedule).

Performance

Requirement: Provide signage as follows:

- Appropriately secured.
- Located within a clear line of vision.
- With characters and symbols contrasting with the background.
- With clean, well-defined edges or arrises, and free from blemishes.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARDS**Signs**

Safety signs - design and use: To AS 1319 (1994).

Signs and graphics for disability access: To the NCC cited AS 1428.1 (2009) and AS 1428.2 (1992).

Tactile wayfinding signs: To AS 1428.4.2 (2018).

2 PRODUCTS**2.1 MATERIALS****Standards**

Aluminium:

- Plate for engraving: Alloy and temper designation 6063-0 to AS 2848.1 (1998).
- Casting: To AS 1874 (2000).
- Finishes:
 - . Anodising: To AS 1231 (2000).
 - . Powder coating: To AS 3715 (2025) and AAMA 2604 (2022).

Stainless steel:

- External: Type 316. Mirror electropolish surface finish.
- Internal: Type 304. No. 4 brushed (general purpose polished) surface finish.

Plastics:

- PVC-U sheet: Semi-rigid sheet.
- Rigid cellular polystyrene: To AS 1366.3 (1992), class VH for cut-out shapes.

Brass and bronze: Plate, sheet and strip: To AS 1566 (1997).

- Finish: Patinated.

Glass type and thickness: To AS 1288 (2021).

Photoluminescent exit signs: To BCA (2022) E4D8(a)(ii).

Adhesive

General: Proprietary solvent based contact adhesive compatible with the substrate and signage material.

3 EXECUTION

3.1 WORKMANSHIP

Production

General: Form signage and graphic items accurately with clean, well-defined edges or arises, free from blemishes.

Engraving to two-layer plastic laminate: Engrave lettering to expose the lower laminate.

Engraved and filled: Lettering precision cut and filled colouring material. Clean faces of all filling material.

Casting: Produce shapes free of pits, scale, blow holes or other defects, hand or machine-finished if necessary.

Laser cut lettering: Individual vinyl letters with self-adhesive backing.

Printed lettering: Lettering and graphic images screen/digitally printed on:

- Film with self-adhesive backing.
- Acrylic sheet.
- Aluminium plate.
- Stainless steel plate.

Large format digital printing: Lettering and graphic images screen printed film with self-adhesive backing.

Signwriting: Lettering and graphic images hand painted direct to the background by a tradesman with recognised qualifications and demonstrated skills.

Fabricated: Three dimensional, formed as follows:

- Laser cutting from solid material and hand finished as necessary.
- Moulding: Individual plastic hollow three dimensional characters and shapes formed by:
 - . Injection moulding.
 - . Vacuum forming.
- Built-up individual shapes by fabricating the faces and edges from separate pieces neatly and securely joined.

3.2 INSTALLATION

General

Requirement: Install signage and graphic items level and plumb, securely mounted, with concealed corrosion and theft-resistant fixings.

Self-adhesive signs

Requirement: Fix free of bubbles and creases.

Aluminium and stainless steel signs

Pin fixing: Epoxy fix to substrate.

Illuminated signs

Electrical fittings: Provide a junction box for power connection, necessary lamps with proper mountings, protection and accessories including wiring transformers and insulators. Install signs and conceal cabling to 0921 Low voltage power systems.

3.3 COMPLETION

Cleaning

General: Remove protective coverings, replace damaged signage and leave the work clean, polished, free from defects and in good condition.

3.4 STATUTORY SIGNS

Termite protection

Location	In or near meter box or similar
Message	Details of termite management system Indicate: - The method of protection - The date of installation - The life expectancy of a chemical barrier as listed on the appropriate authority's pesticides register label - The installer's recommendation for inspections

Sign type	Laminated page(s)
Conformance	BCA (2022) B1D4(i)(ii) AS 3660.1 (2014) Appendix A

Braille and tactile exit signage

Location	To BCA (2022) Spec 15 for every door described in BCA (2022) E4D5
Message	Exit (and) Level (followed by the floor level number) (Braille and tactile signage)
Letter height (minimum)	BCA (2022) Spec 15
Mounting height	Braille and tactile signage between 1200 mm and 1600 mm above finished floor level
Sign type	
Conformance	BCA (2022) E4D5, BCA (2022) D4D7 and BCA (2022) Spec 15

Fire hose reels and fire hydrants

Location	Cupboard door or adjacent the FHR
Message	FIRE HYDRANT (and/or) FIRE HOSE REEL
Letter height (minimum)	50 mm
Sign type	Adhesive backed vinyl
Conformance	AS 2441 (2005) clause 10.4.4 AS 2419.1 (2021) clause 11.3.5

Fire hose reel – Location sign

Location	Above or adjacent the FHR if located in a recess, cavity or obscure location
Message	To AS 2441 (2005) Figure 10.1
Letter height (minimum)	16 mm
Mounting height (minimum)	2000 mm above finished floor level or at a height visible to a person approaching the fire hose reel location
Sign type	Adhesive backed vinyl
Conformance	AS 2441 (2005) clause 4.1

Portable fire extinguishers – Location sign

Location	To AS 2444 (2001) clause 3.2 at every installed extinguisher nominated in BCA (2022) E1D14
Message	FIRE EXTINGUISHER (and prescribed graphic)
Letter height (minimum)	16 mm
Mounting height (minimum)	2000 mm above finished floor level
Sign type	Computer generated adhesive backed vinyl graphic
Conformance	AS 2444 (2001) clause 3.3

Fire blankets

Location	To AS 2444 (2001) clause 6.4 at every blanket location nominated in AS 2444 (2001) clause 6.3
Message	FIRE BLANKET (and prescribed graphic)
Letter height (minimum)	16 mm
Mounting height (minimum)	2000 mm above finished floor level
Sign type	Computer generated adhesive backed vinyl graphic

Conformance	AS 2444 (2001) clauses 6.3, 6.4 and Figure 6.1
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Regulatory car park signs – Accessible parking facilities

Location	Designated car space
Symbol	Graphic size and position nominated in the NCC cited AS/NZS 2890.6 (2009) clause 3.1, Figure 3.1. Space delineation and shared space markings to the NCC cited AS/NZS 2890.6 (2009) clause 3.2.
Sign type	Pavement marking paint.
Conformance	NCC cited AS/NZS 2890.6 (2009) clause 3.1

Unisex accessible sanitary facilities

Location	To BCA (2022) Spec 15
Message	-Braille & tactile signage incorporating the international symbol of access. -Indicate suitability for left or right handed use.
Symbol size	AS 1428.2 (1992) clause 16, Table 1.
Letter height (minimum)	Braille: BCA (2022) Spec 15 Raised characters: Sans serif type font 20 mm.
Sign type	
Conformance	NCC cited AS 1428.1 (2009) clause 8.1 BCA (2022) D4D7

Ambulant sanitary facilities

Location	To BCA (2022) Spec 15
Message	Braille & tactile signage incorporating the male/ female ambulant symbol.
Symbol size	AS 1428.2 (1992) clause 16, Table 1.
Letter height (minimum)	Braille: BCA (2022) Spec 15 Raised characters: Sans serif type font 20 mm.
Sign type	
Conformance	NCC cited AS 1428.1 (2009) clause 8.1 BCA (2022) D4D7

Main switchboard – Main entry

Location	Each entry that may be used by emergency services or at Fire detection control and indicating equipment (FDCIE)
Message	Indicate location of main switchboard. Incorporate the term Main Switchboard into notice
Letter height (minimum)	
Sign type	
Conformance	AS/NZS 3000 (2018) clause 2.10.2.4

Main switchboard – Room or enclosure

Location	The room or enclosure containing the main switchboard
Message	MAIN SWITCHBOARD
Letter height (minimum)	
Sign type	
Conformance	AS/NZS 3000 (2018) clause 2.10.2.4

0621 WATERPROOFING - WET AREAS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide wet area waterproofing systems, as documented.

Performance

Requirements:

- Graded to floor wastes, to dispose of water without ponding.
- Able to prevent moisture entering the substrate or adjacent areas.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 *General requirements*.

1.3 STANDARDS**Waterproofing wet areas**

Standard: To AS 3740 (2021).

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the definitions given in AS 3740 (2021) and the following apply:

- Membranes (waterproof): Impervious barriers to liquid water, which may be:
 - . Installed below floor finishes.
 - . Installed behind the wall sheeting or render.
 - . Installed to the face of the wall sheeting or render.
 - . Applied in liquid or gel form and air cured to form a seamless film.
 - . Applied in sheet form with joints lapped and sealed.
- Waterproofing system: Combinations of membranes, flashings, drainage and accessories that form waterproof barriers and that may be:
 - . Loose-laid.
 - . Bonded to substrates.
- Wet area: An area within a building supplied with a floor waste.

1.5 SUBMISSIONS**Products and materials**

Manufacturer's data: Submit product data sheets.

Type tests: Submit test results for the following:

- Membranes: To **MEMBRANES, Tests**.

Records

General: Submit photographic records to EXECUTION, **GENERAL, Reporting**.

Flood tests: Submit photographic records to **TESTING, Flood tests**.

Samples

Requirement: Submit samples to PRODUCTS, **GENERAL, Samples**.

Shop drawings

Requirement: Submit shop drawings showing the following:

- Junctions with vertical surfaces and upstands.
- Junctions at perimeters.
- Drainage details.
- Control joints.
- Flashings.

- Penetrations.
- Corners.
- Terminations and connections.
- Membrane layers.

Subcontractors

General: Submit names and contact details of proposed suppliers and installers as recommended by the manufacturer.

Substrate acceptance

Requirement: Submit evidence of installer's acceptance of the flooring substrate before starting installation.

Tests

Site tests: Submit results, as follows:

- Substrate moisture content test.
- Flood test.
- Electronic leak detection test.
- Seam probe test.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.6 INSPECTION**Notice**

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

- Substrates prepared and ready for installation of the wet area waterproofing systems.
- Secondary layers prepared and ready for subsequent layers.
- Membranes after installation and before concealment.
- Flood tests, if applicable.
- After flood testing, if applicable.

2 PRODUCTS**2.1 GENERAL****Samples**

Requirement: Provide 300 x 300 mm samples of each type of membrane.

Storage and handling

General: Store and handle to the manufacturer's recommendations and as follows:

- Protect materials from damage.

2.2 MEMBRANES**Standards**

Standard: To AS/NZS 4858 (2004).

Membrane system

Requirement: Proprietary membrane system suitable for the intended internal wet area waterproofing.

Certification: a current BRANZ Appraisal Certificate.

Tests

Standard: To AS/NZS 4858 (2004) Table 8.1.

Total VOC limits

Requirement: Conform to the following maximum total VOC content:

- Waterproof membrane: 250 g/L.

2.3 ACCESSORIES**Shower tray**

General: Purpose-made jointless shower tray, with wall upstands at least 50 mm higher than the hob upstands. Set hob on the inside of the tray upstands.

Waterstop angles

Material: Rigid, corrosion-resistant angles compatible with the waterproof membrane system.

Bond breakers

Requirement: Compatible with the extensibility class of the membrane to be used.

Material: Purpose-made bond breaker tapes or fillets of sealant.

Flashings

Requirement: Flexible waterproof flashings compatible with the waterproof membrane system.

Liquid membrane reinforcement

Requirement: Flexible fabric compatible with the waterproof membrane system.

Sealants

Requirement: Waterproof or water resistant, flexible, mould-resistant and compatible with the waterproofing system and to the manufacturer's recommendations.

Adhesives

Requirement: Waterproof and compatible with the waterproofing system.

3 EXECUTION

3.1 GENERAL**Reporting**

General: Make progressive photographic records of the waterproofing installation. Label photographs with the date and location.

Timing: Record at the following stages:

- After substrate preparation.
- After primer application.
- After membrane installation.
- After protection from traffic provided.

Liquid applied membranes:

- Record wet film thickness once every 10 m² and compare to the manufacturer's requirements.
- On completion of every 100 m² of each coat, compare the amount of membrane used with the manufacturer's application rate and record the result.

3.2 PREPARATION**Substrates**

General: Prepare substrates as follows:

- Clean and remove any deposit or finish that may impair adhesion of membranes.
- If walls are plastered, remove loose sand.
- If walls or floors are framed or discontinuous, make sure support members are in full lengths without splicing.
- If floors are solid or continuous:
 - . Remove excessive projections.
 - . Fill voids and hollows greater than 10 mm with abrupt edges with a cement:sand mix not stronger than the substrate nor weaker than the bedding.
 - . Fill depressions less than 10 mm with a latex modified cementitious product with feathering eliminated by scabbling the edges.
 - . Fill cracks in substrates wider than 1.5 mm with a filler compatible with the membrane system.

Concrete substrates: Cure for more than 28 days.

External corners: Round or arris edges.

Moisture content

Requirement: Verify that the moisture content of the substrate is compatible with the water vapour transmission rate of the membrane system by testing to the recommendations of AS 3740 (2021) Appendix F.

Falls

Membrane applied to substrate: Make sure the fall in the substrate conforms to the fall documented for the finish.

Sheet substrate fixing

Requirement: Provide fasteners compatible with the substrate. Mechanically fix to the supporting structure.

Waterstop angles

Requirement: Provide waterstop angles at door thresholds and shower enclosures to support the waterproof membrane at junctions between waterproofed and non-waterproofed areas.

Sizing: Size the vertical leg of the waterstop angle to conform to the requirements of AS 3740 (2021).

Corners: Cut the horizontal leg and bend the vertical leg at corners instead of forming vertical joints between separate lengths of angle.

Fixing: Fix waterstop angles to the substrate with compatible sealant or adhesive and corrosion-resistant countersunk or wafer head screws.

Priming

Compatibility: If required, prime the substrates with compatible primers for adhesion of the membrane system.

Bond breakers

Requirement: After the priming of surfaces, provide bond breakers at wall/floor junctions, hob/wall junctions and at control joints where the membrane is bonded to the substrate.

Sealant fillet bond breakers:

- Application: Form a triangular fillet or cove of sealant to internal corners within the period recommended by the membrane manufacturer after the application of the primer.
- Width: Conform to AS 3740 (2021) Table 4.10.

3.3 INSTALLATION**Ambient conditions**

Requirement: Do not install in conditions outside the manufacturer's recommendations.

Protection

Damage: Protect membrane from damage during installation and for the period after installation until the membrane achieves its service characteristics that resist damage and an overlaying finish is installed.

Extent of waterproofing

Waterproof or water resistant surfaces: To BCA (2022) F2D2.

Sheet membrane joints

Bituminous sheet membranes:

- Side laps: ≥ 75 mm.
- End laps: ≥ 150 mm.

Synthetic rubber membranes:

- Factory-vulcanized laps: ≥ 40 mm.
- Field side laps: ≥ 50 mm.
- Field end laps: ≥ 100 mm.

PVC membranes:

- Factory-welded laps: ≥ 40 mm.
- Field-welded laps: ≥ 75 mm.

Flashings

Junctions between waterproof surfaces: Provide a bond breaker at internal corners behind flashings.

Junctions between waterproof surfaces and other surfaces: Provide a bead of sealant at the following junctions:

- Waterproof and water resistant surfaces.
- Water resistant and water resistant surfaces.
- Water resistant and non-water resistant surfaces.

Perimeter flashings: Provide continuous flashings to the full perimeter of waterproof areas at wall/floor junctions and to waterstop angles.

Vertical flashings: Provide vertical corner flashings continuous across wall/wall junctions to at least 1800 mm above finished floor level of the shower or base of the bath or tray, or 50 mm above the shower rose, whichever is the higher.

Vertical liquid applied flashings:

- Return legs at least 40 mm on each wall.
- Overlap the vertical termination of the floor waterproofing membrane at least 20 mm.

Vertical sheet flashings:

- Return legs at least 50 mm on each wall.

- Overlap shower tray upstands at least 50 mm.
- Do not penetrate flashing with wall lining fasteners.

Reinforcement: At coves, corners and wall/floor junctions with gaps greater than 3 mm, reinforce liquid applied membranes with reinforcement fabric tape recommended by the membrane manufacturer. Fold the tape in half lengthways and embed it in the first coat of membrane with one half of the tape on each side of the corner or joint. Apply a second coat of membrane to seal the fabric.

Drainage connections

Floor wastes: Provide floor wastes of sufficient height to accommodate the thickness of floor finishes and bedding at the outlet position. Position leak control flange to drain at membrane level. Turn membrane down 50 mm minimum into the floor waste leak control flanges, and adhere to form a waterproof connection.

Floor wastes in shower trays: Provide drainage of the tile bed and a waterproof connection between the tray and the drain.

Preformed drainage channels:

- With continuous leak control flanges: Provide a continuous waterproof connection between the membrane and the channel.
- Without leak control flanges: Provide continuous waterproofing under the channel and terminate the membrane at a floor waste with a recessed leak control flange.

Leak control flanges: Conform to BCA (2022) F2D2.

Vertical membrane terminations

Anchoring: Secure sheet membranes along the top edge.

Edge protection: Protect edges of the membrane.

Showers without hobs or step-downs

Framed shower screens:

- Install a waterstop angle directly below where the base of the shower screen sill will be installed.
- Size the angle so that the vertical leg finishes at least 5 mm above the level of the tiles.
- Support and adhere the membrane over the waterstop angle and extend the membrane at least 50 mm into the adjacent area.

Frameless shower screens:

- Install a waterstop angle directly below where the base of the shower screen will be installed.
- Support and adhere the membrane over the waterstop angle and extend the membrane at least 50 mm in to the adjacent area.
- Install a capping angle over the membrane and vertical leg of the waterstop angle to protect the exposed membrane.
- Install the shower screen over the capping angle.

Framed or frameless shower screens with trench drain located below screen:

- Install a waterstop angle where the outer edge of the trench drain to the perimeter of the shower will be installed.
- Size the angle so that the vertical leg finishes at the underside of the tiles.
- Support and adhere the membrane over the waterstop angle and terminate the membrane at floor wastes to **Drainage connections**.
- Install the trench drain with the shower screen located vertically above it.

Unenclosed showers

Requirement: Extend membrane at least 1500 mm into the room from the shower rose outlet, on the walls and floor.

Taps and spouts

Requirement: Waterproof penetrations for taps and spouts with preformed flange systems or a sealant.

Provision for servicing: Install taps so tap washers or ceramic discs can be serviced without damaging the waterproofing or seal.

Wall recesses

Requirement: Support all faces of the recess and line with the same sheet material as the adjacent wall. Fall base of recess towards the shower area. Flash all junctions and waterproof all surfaces.

Curing of liquid membrane systems

General: To the manufacturer's recommendations.

Curing: Allow membrane to fully cure before tiling.

Overlaying finishes on membranes

Requirement: Protect waterproof membranes with compatible water resistant surface materials that do not cause damage to the membrane.

Suitable materials: Conform to AS 3740 (2021).

Bonded or partially bonded membranes: If the topping or bedding mortar is to be bonded to the membrane, provide sufficient control joints in the topping or bedding mortar to reduce the movement over the membrane.

3.4 TESTING**Substrate tests**

Moisture content: Test substrate for suitability for the installation of membranes to AS 3740 (2021) Appendix F.

- Maximum relative humidity of concrete or cementitious screeds: To AS 3740 (2021) Appendix F2.4.
- Moisture content of timber and plywood substrates: To AS 3740 (2021) Appendix F2.3.

Flood tests

Requirement: To AS 3740 (2021) Appendix C2.

Records:

- Make photographic records of the flooded areas and adjacent areas.
- Label photographs with the date and location.

Electronic leak detection test

Requirement: To AS 3740 (2021) Appendix C3.

Seam probe test

Requirement: To AS 3740 (2021) Appendix C4.

3.5 COMPLETION**Reinstatement**

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

Warranty

Waterproofing: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and the applicator.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the supplier.

0631B CERAMIC TILING**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide tiling systems to walls and other substrates as documented and as follows:

- Consistent in colour and finish.
- Firmly bonded to substrates for the expected life of the installation.
- Set out with joints accurately aligned in both directions and wall tiling joints level and plumb.
- To direct all water flowing from supply points to drainage outlets without leakage to the substrate or adjacent areas.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following worksection(s):

- *General requirements.*
- *0621 Waterproofing –Wet Areas*

1.3 STANDARDS**Tiling**

General: Conform to the recommendations of those parts of AS 3958 (2023) referenced in this worksection.

1.4 INSPECTION**Notice**

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

- Substrate immediately before tiling.
- Trial set-outs before execution.
- Control joints before sealing and grouting.
- Grout and sealant colours before application.

1.5 TOLERANCES**Completed tiling**

Requirement: To the recommendations of AS 3958 (2023) clause 5.4.8.

1.6 SUBMISSIONS**Samples**

General: Submit labelled samples of tiles, including fittings, accessories, grout and sealants, illustrating the range of variation in colour and finish.

2 PRODUCTS**2.1 MARKING****Identification**

General: Deliver materials to the site in the manufacturer's original sealed containers legibly marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Dimensions and quantity.
- Product reference code and batch number.
- Date of manufacture.
- Material composition and characteristics such as volatility, flash point, light fastness, colour and pattern.
- Handling and installation instructions.

2.2 TILES

Ceramic tiles

Standard: To AS 13006 (2020).

Exposed edges: Provide purpose-made border tiles with the exposed edge (whether round, square or cushion) glazed to match the tile face. If such tiles are not available, mitre tiles on external corners or use proprietary trim.

Tests

Slip resistance: To AS 4586 (2013).

Accelerated wear: Tested for slip resistance after being subjected to accelerated wear conditioning, as evidence of the permanence of slip resistance.

2.3 ADHESIVES

General

Standard: To AS ISO 13007.1 (2020).

Type

General: Provide adhesives compatible with the materials and surfaces to be adhered, and as documented.

Prohibited uses: Do not provide the following combinations:

- Cement-based adhesives on wood, metal, painted or glazed surfaces, gypsum-based plaster.
- Organic solvent-based adhesives on painted surfaces.
- Organic PVC-based adhesives and organic natural rubber latex adhesives in damp or wet conditions.
- PVA (polyvinyl acetate) based adhesives in wet areas or externally.

2.4 MORTAR

Materials

Cement type to AS 3972 (2010): GP.

- White cement: Iron salts content $\leq 1\%$.
- Off-white cement: Iron salts content $\leq 2.5\%$.

Lime: To AS 1672.1.

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

Measurement of volume: Measure binders and sand by volume using buckets or boxes. Do not allow sand to bulk by absorption of water.

Bedding mortar

Proportioning: Select proportions from the range 1:3 – 1:4 cement: sand (by volume) to obtain satisfactory adhesion. Provide minimum water.

Mixing: To AS 3958.1 clause 2.15.

Water

General: Clean and free from any deleterious matter.

2.5 GROUT

General

Standard: To AS ISO 13007.3 (2013).

Type

Cement based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.

General purpose cement based grout: Mix with fine sand. Provide minimum water consistent with workability.

- For joints < 3 mm: 1 cement: 2 sand (by volume).
- For joints ≥ 3 mm: 1 cement: 3 sand (by volume).

Pigments

Pigments for coloured grout: Provide colourfast fillers compatible with the grout material. For cement-based grouts, provide lime-proof natural or synthetic metallic oxides compatible with cement.

2.6 CONTROL JOINTS

Control joint materials

Control joint strip: A proprietary expansion joint consisting of a neoprene filler sandwiched between plates with lugs or ribs for mechanical keying. Set flush with the finished surface.

Proprietary slide plate divider strip: An arrangement of interlocking metal plates grouted into pockets formed in the concrete joint edges.

Sealant: One-part self-levelling non-hardening mould resistant, silicone or polyurethane sealant applied over a backing rod. Finish flush with the finished surface.

- Floors: Trafficable, shore hardness > 35.

Backing rod: Compressible closed cell polyethylene foam with a bond-breaking surface.

2.7 ACCESSORIES

General

Requirement: Provide tile accessories that match the composition, colour and finish of the surrounding tiles, as documented.

Tile trim: Provide proprietary **powdercoated white** trim for wall tiles and floor tiles, unless documented otherwise.

3 EXECUTION

3.1 SUBSTRATES

Drying and shrinkage

General: Before tiling, allow at least the following times to elapse (for initial drying out and shrinkage) for these substrates:

- Concrete slabs: 42 days.
- Concrete blockwork: 28 days.
- Toppings on slabs and rendering on brick or blockwork: A further 21 days.
- Rendering on swimming pool shell: A further 28 days minimum.

3.2 PREPARATION

Standard

Preparation: To AS 3958.1 Section 4.

Ambient temperature

General: If the ambient temperature is < 5 or > 35°C, do not lay tiles.

Substrates without wet area membranes

General: Ensure substrates are as follows:

- Clean and free of any deposit or finish which may impair adhesion or location of tiles.
- If framed or discontinuous, support members are in full lengths without splicing.
- If solid or continuous:
 - . Excessive projections are removed.
 - . Voids and hollows > 10 mm with abrupt edges are filled with a cement:sand mix not stronger than the substrate or weaker than the bedding.
 - . Depressions < 10 mm are filled with a latex modified cementitious product with feathering eliminated by scabbling the edges.

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

Substrates with wet area membranes

General: Ensure substrates are as follows:

- Clean and free of any deposit or finish which may impair adhesion or location of tiles.

3.3 TILING GENERALLY

Cutting and laying

Cutting: Cut tiles neatly to fit around fixtures and fittings and at margins where necessary. Drill holes without damaging tile faces. Cut recesses for fittings such as soap holders. Rub edges smooth without chipping.

Laying: Return tiles into sills, reveals and openings. Butt up to returns, frames, fittings, and other finishes. Strike and point up beds where exposed. Remove tile spacers before grouting.

Variations

General: Distribute variations in hue, colour, or pattern uniformly, by mixing tiles or tile batches before laying.

Protection

Cleaning: Keep the work clean as it proceeds and protect finished work from damage.

3.4 SETTING OUT

Tile joints

Joint widths: Set out tiles to give uniform joint widths within the following limits:

- Walls:
 - . Dry pressed tile: 1.5 mm.
 - . Extruded tile: 6 mm.

Joint alignment: Set out tiling with joints accurately aligned in both directions and wall tiling joints level and plumb.

Joint position: Set out tiles from the centre of the floor or wall to be tiled.

Margins

General: Provide whole or purpose-made tiles at margins where practicable, otherwise set out to give equal margins of cut tiles. If margins less than half a tile width are unavoidable, locate the cut tiles where they are least conspicuous.

Fixtures

General: If possible position tiles so that holes for fixtures and other penetrations occur at the intersection of horizontal and vertical joints or on the centre lines of tiles. Continue tiling fully behind fixtures which are not built in to the tiling surface. Before tiling ensure that fixtures interrupting the tile surfaces are accurately positioned in their designed or optimum locations relative to the tile layout.

3.5 BEDDING

Standard

Cement mortar: To AS 3958.1 clause 5.5.

Adhesive: To AS 3958.1 clause 5.6.

Preparation of tiles

Adhesive bedding: Fix tiles dry; do not soak.

Mortar bedding: Soak porous tiles in water for half an hour and then drain until the surface water has disappeared.

Terra cotta tiles: Use pre-sealed tiles or apply a breathable sealer and lay dry. If a final sealed finish is selected, use a compatible laying sealer.

Bedding

General: Use bedding methods and materials which are appropriate to the tile, the substrate, the conditions of service, and which leave the tile firmly and solidly bedded in the bedding material and adhered to the substrate. Form falls integral with the substrate.

Thin adhesive beds

General: Provide only if the substrate deviation is less than 3 mm when tested with a 3 m straight edge. Cover the entire tile back with adhesive when the tile is bedded.

Thickness: 1.5 – 3 mm.

Thick adhesive beds

General: Provide on substrates with deviations up to 6 mm when tested with a 3 m straight edge, and with tiles having deep keys or frogs.

Nominal thickness: 6 mm.

Adhesive bedding application

General: Apply adhesive by notched trowel to walls and floors and direct to tiles if required, to provide evenly distributed coverage after laying as follows:

- Walls: > 90%.
- Wet areas and bench tops: 100%.

Pattern of distribution of adhesive: As described in AS 3958.1 clause 5.6.4.3. Verify by examining one tile in ten as work proceeds.

Wall tile spacers: Do not use spacer types that inhibit the distribution of adhesive.

Curing: Allow the adhesive to cure for the period nominated by the manufacturer prior to grouting or allowing foot traffic.

3.6 CONTROL OF MOVEMENT

General

General: Provide control joints carried through the tile and the bedding to AS 3958.1 clause 5.4.5 and as follows:

- At abutments with the building structural frame and over supporting walls or beams where flexing of the substrate is anticipated.
- Wall location:
 - . Over structural control joints.
 - . At junctions with different substrate materials when the tiling is continuous.
 - . At vertical corners in shower compartments.
- Depth of joint: Right through to the substrate.
- Sealant width: 6 – 25 mm.
- Depth of elastomeric sealant: One half the joint width, or 6 mm, whichever is the greater.

3.7 GROUTED AND SEALANT JOINTS

Grouted joints

General: Commence grouting as soon as practicable after bedding has set. Clean out joints as necessary before grouting.

Face grouting: Fill the joints solid and tool flush. Clean off surplus grout. Wash down when the grout has set. When grout is dry, polish the surface with a clean cloth.

Edges of tiles: Grout exposed edge joints.

Epoxy grouted joints: Ensure that tile edge surfaces are free of extraneous matter such as cement films or wax, before grouting.

Sealant joints

General: Provide joints filled with sealant and finished flush with the tile surface as follows:

- Where tiling is cut around sanitary fixtures.
- At corners of walls in showers.
- Around fixtures interrupting the tile surface, for example pipes, brackets, bolts and nibs.
- At junctions with elements such as window and door frames and built-in cupboards.

Material: Anti-fungal modified silicone.

Width: 5 mm.

Depth: Equal to the tile thickness.

3.8 COMPLETION

Spare tiles

Supply spare matching tiles and accessories of each type for future replacements. Store spares on site.

Quantity: 1% of the quantity installed. Storage location: TBC

Cleaning

General: Clean tiled surfaces using an appropriate tile cleaning agent, and polish.

4 SELECTIONS

4.1 SCHEDULES

Wall tiling schedule (Note: substitutions will be approved if similar colours can be achieved, but the CT2 & CT3 tiles generally have limited substitution options, and a 12-week lead time is unavoidable - placing a tile order early is *highly recommended* in order to avoid additional shipping costs).

Wall tiling schedule

Property	CT1	CT2 & CT3	CT4
Tile: Type	Johnson tiles, rectified (or similar to approval)	Classic Ceramics Vogue System (or similar to approval), rectified, in vertical inset stack to CT1 -refer drawings	Classic Ceramics Vogue System (or similar to approval), rectified, in basin splashbacks
Tile: Adhesive	To tile manufacturer's recommendation	To tile manufacturer's recommendations	To tile manufacturer's recommendations

Property	CT1	CT2 & CT3	CT4
Tile: Size (mm)	600 x 300	200 x 100 or 200 x 75 or 200 x 50 (do not mix sizes)	200 x 200
Tile: Colour	Gloss white	Four colours, in equal quantities (refer detail) in alternating 300w band -refer Drawings & Sched. of Finishes	Refer Schedule of Finishes
Tile pattern	Horizontal stack bond	Vertical stack band to CT1, refer Drawings	Horizontal, stack bond
Grout: Cementitious Grout to AS ISO 13007	Bostik Designer Grout	As CT1	As CT1
Grout: Colour	Bostik Coloured Grout 55 Charcoal	As CT1	As CT1
Grout:	Mould-resistant	As CT1	As CT1
Trims:	White powdercoated trims to external corners, reveals etc.	Charcoal powdercoated (ie to match grout) angle to each side of vertical stack, to finish against CT1	n/a

0651B RESILIENT FINISHES**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide resilient floor finishes to substrates, as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.3 STANDARDS**General**

Installation: To AS 1884 (2021).

1.4 SUBMISSIONS**Fire performance**

Fire hazard properties: Submit evidence of conformity to **FIRE PERFORMANCE, Fire hazard properties.**

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals.**

Products and materials

Manufacturer's data: Submit the manufacturer's product data sheets for each type of finish, and the manufacturer's recommendations for its application including the following, as appropriate:

- Thickness and width of sheet, or size of tile or plank.
- Adhesive and jointing method.
- Resistance to wear, indentation, chemicals, light and fire.
- Flexibility and bending strength.

Type tests: Submit test results for the following:

- Slip resistance: To PRODUCTS, **GENERAL, Tests.**

Subcontractors

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

Substrate acceptance

Requirement: Submit evidence of installer's acceptance of the flooring substrate before starting installation.

Tests

Site tests: Submit results, as follows:

- Substrate moisture content test.
- Surface pH test.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

1.5 INSPECTION**Notice**

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

- Substrate immediately before fixing resilient finishes or underlay.
- Completed underlay, if any.
- Finished surface before applying sealers or polishes, if any.
- Completed installation.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Requirement: Store and handle to the manufacturer's recommendations.

Tests

Slip resistance: To AS 4586 (2013).

2.2 FIRE PERFORMANCE

Fire hazard properties

Critical radiant flux: Tested to AS ISO 9239.1 (2003).

2.3 UNDERLAYS

Cementitious

General: Polymer modified cementitious smoothing and self-levelling compound.

Thickness: 3 mm minimum.

Fibre cement

Standard: To AS/NZS 2908.2 (2000). Type B, category 2 minimum.

Sheet thickness: 5 mm minimum.

2.4 ADHESIVES

General

Requirement: To the resilient finishes manufacturer's recommendations.

2.5 SHEETS, TILES AND PLANKS

Polyvinyl chloride (PVC)

Standard: To AS 1884 (2021) and as follows:

- Homogeneous: To EN ISO 10581 (2020).
- Heterogeneous: To EN ISO 10582 (2018).
- PVC on jute or polyester felt backing: To EN 650 (2012).
- Heterogeneous PVC on foam layer: To ISO 11638 (2020).
- PVC with particle based enhanced slip resistance: To EN 13845 (2017).
- PVC semi-flexible vinyl composition tiles (VCT): To EN ISO 10595 (2012).

2.6 OTHER MATERIALS

Edge strips and threshold strips

General: Heavy duty metal moulding or extruded edge strip appropriate to the floor covering type, capable of accommodating different levels of adjacent floor finishes, if necessary.

Type: As documented.

Location: At exposed edges of the floor covering, and at junctions with differing floor finishes or finishes of a different thickness. If edge strips occur at doorways, locate the junctions directly below the closed door.

Stair and landing nosings

Standard: To BCA (2022) D3D14 and BCA (2022) D3D15.

Type: As documented.

Tactile ground surface indicators

Standard: To AS/NZS 1428.4.1 (2009).

3 EXECUTION

3.1 GENERAL

Subcontractors

Requirement: Use specialist installers recommended by the material manufacturers.

3.2 PREPARATION

Substrates

General: To AS 1884 (2021) Section 3.

Substrate tolerance table

Property	Length of straightedge laid in any direction (mm)	Maximum deviation under the straightedge (mm)
Planeness	2000	4
Abrupt deviation tolerance	150	0.5

Concrete substrates

Requirement: Do not start installation of the resilient finishes until the concrete substrate conforms to AS 1884 (2021) clause 3.1 and the adhesive and resilient finish manufacturers' recommendations. Apply a suitable waterproof membrane coating if required to concrete substrates prior to laying resilient finishes if the slab has not cured in time to commence finishes laying to meet the programme.

Substrate rectification: Conform to the following:

- Surface treatments: Mechanically remove any incompatible surface treatments, including the following:
 - . Sealers and hardeners.
 - . Curing compounds.
 - . Waterproofing additives.
 - . Surface coatings and contamination.
- Surface quality: Remove projections and fill voids and hollows with a smoothing and self-levelling compound compatible with the adhesive. Allow filling or levelling compound to dry to manufacturer's recommendations.

Cleaning: Remove loose materials or dust.

Timber, plywood, particleboard and fibre cement sheet substrates

Requirement: Do not start installation of the resilient finishes until the timber, plywood, particleboard and fibre cement substrate conforms to AS 1884 (2021) clause 3.6.

Substrate rectification: Remove projections. If conformance to the **Substrate tolerance table** cannot be achieved, provide an underlay in brick pattern with joints avoiding substrate joints.

Cleaning: Remove oil, grease, traces of applied finishes and loose materials or dust.

Working environment

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

3.3 TESTING**Moisture content tests**

General: Test substrate for suitability for the installation of resilient floor coverings to AS 1884 (2021) Appendix A.

- Maximum relative humidity of concrete: To AS 1884 (2021) Appendix A3.2.
- Moisture content of timber, plywood and particleboard subfloors: To AS 1884 (2021) Appendix A3.3.

Surface pH tests

General: Test concrete subfloor for suitability for the installation of resilient floor coverings to AS 1884 (2021) Appendix C.

- Maximum pH: 10.

3.4 INSTALLATION**General**

Requirement: To AS 1884 (2021) Section 5 and the manufacturer's recommendations.

Sheet set-out

General: Set out sheets to give the minimum number of joints. Position joints away from areas of high stress. Run sheet joints parallel with the long sides of floor areas, vertically on non-horizontal surfaces.

Tile set-out

General: Set out tiles from centre of room. If possible, cut tiles at margins only to give a cut dimension of at least 100 mm x full tile width. Match edges and align patterns. Arrange the tiles so that any variation in appearance is minimised.

Plank set-out

General: Set out planks from centre of room. Align patterns, texture and grain in one direction.

Change of finish

General: Maintain finished floor level across changes of floor finish including carpet.

Cleaning

General: Keep the surface clean as the work proceeds.

Edges

General: Make sure edges are firm, unchipped and machine-cut accurately to size and square to the face, and that edges are square to each other before installation.

Expansion joints

General: To the manufacturer's recommendations for joint widths, and area and length limitations.

Joints

Non-welded: Butt edges together to form tight neat joints showing no visible open seams.

Doorways: If changes of floor finish occur at doorways, locate the joint on the centreline of the door leaf in the closed position.

Junctions

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

Rolling

General: If rolling is required, roll the finish in multiple directions before the adhesive sets.

Scrap recycling

Participating supplier: manufacturer's standard scheme.

3.5 TILING**Vinyl tiles and planks**

Laying: Lay as follows:

- Loose lay: Interlock tongue and groove edges of rigid planks. Tap down with rubber mallet.
- Adhesive fix: Apply acrylic adhesive over whole subfloor surface.

3.6 SHEETING**Welded joints**

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

Chemical welding: Apply seaming compound 100 mm wide to the substrate centrally under the seam. Roll the seam until the compound is forced up into the joint. Clean off flush with a damp cloth.

Epoxy jointing: Join seams with epoxy adhesive.

3.7 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 nosings, coves, skirtings, edge cover strips and finishes at junctions, margins, and angles, if available. Otherwise form accessories from the sheet material. Provide solid backing for radiused coves and nosings.

Accessories schedule

Accessory type	Location
Gradus RT247F4 anodised aluminium ramp edge trim 40 wide, or similar to approval.	Transitions between floor finishes of different types and/or thicknesses.
	Ceramic floor tiles or sheet rubber flooring at junction of new and existing slabs.

Control joints

Location: Provide control joints as follows:

- Over structural control joints –between new and existing slabs.
- At junctions between different substrates.

Depth of joint: Right through to the substrate.

Sealant width: 6 – 25 mm.

Depth of elastomeric sealant: One half the joint width, or 6 mm, whichever is the greater.

Control joint materials – sheet flooring

Proprietary slide plate divider strip: An arrangement of interlocking metal plates grouted into pockets formed in the concrete joint edges to finish flush with the flooring surface.

Vinyl skirting

Feather edge: Moulded PVC skirting section.

Fixing: Scribe as necessary. Mitre corners. Fix to walls with contact adhesive.

Minimum height: 100 mm.

3.8 COMPLETION**Seal coating**

Apply seal coatings to Manufacturers recommendations to all resilient finishes.

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.

Warranties

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

Warranty terms: Manufacturer's standard warranty

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 the date for practical completion, mop and leave the finished surface clean and undamaged on completion.

Protection

Finished floor surface: Keep traffic off floors for a minimum of 24 hours after laying or until bonding has set, whichever period is longer. Avoid contact with water for minimum 7 days after laying.

Spare materials

General: Supply spare matching resilient finishes and accessories of each type for future replacement purposes. Store the spare materials on site where directed.

Quantity: At least 1% of the quantity installed.

0671B PAINTING**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide coating systems to new or previously painted substrates as follows:

- With sound adhesion and durability.
- 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**

Requirement: Conform to the following worksection(s):

- *General requirements.*

1.3 STANDARDS**Painting**

General: Comply with the recommendations of those parts of AS/NZS 2311 (2017) which are referenced in this worksection.

1.4 SUBMISSIONS**Paint**

General: Submit the selected manufacturer's details at least 3 weeks before the paint is required, as follows:

- Paint brand name and paint line quality statement.
- Material safety data sheets (MSDS) showing the health and safety precautions to be taken during application.
- The published recommendations for maintenance.

2 PRODUCTS**2.1 PAINTS****Paints**

All paints, unless noted otherwise, shall be low or no-Volatile Organic Compound (VOC) paints and free from dangerous solvents and chemicals such as formaldehyde, glycol ethers, benzene or ammonia. Paints shall be supplied by Haymes paints and tinted at their approved sales centres.

All other paints & coatings to comply with APAS requirements.

Paint brand

Quality: If the product is offered in a number of levels of quality, provide premium quality lines.

Combinations

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

Clear timber finish systems: Provide only the combinations of putty, stain and sealer recommended by the manufacturer of the top coats.

Delivery

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

Putty and fillers

Material: To the recommendation of the paint system manufacturer, as suitable for the substrate and compatible with the primer.

Tinting

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

Toxic ingredients

General: Comply with the requirements of Appendix I Uniform Paint Standard to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

3 EXECUTION**3.1 PREPARATION****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

General: Before painting, clean the area and protect it against dust entry. Use drop sheets and masking to protect finished surfaces or other surfaces at risk of damage during painting.

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

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

Repair

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

Substrates

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:

- Removal of bruises.
- Removal of discolourations, including staining by oil, grease and nailheads.
- Bleaching where necessary to match the timber colour sample.
- Puttying.
- Fine sanding (last abrasive no coarser than 220 grit) to show no scratches across the grain.

Unpainted surfaces

Standard: To AS/NZS 2311 Section 3.

Previously painted surfaces

Preparation of a substrate in good condition: To AS/NZS 2311 clause 7.4.

Preparation of a substrate in poor condition: To AS/NZS 2311 clause 7.5.

Preparation of steel substrates with protective coatings: To AS/NZS 2312 Section 10 and AS 1627.1.

Additional preparation:

- Seal stained ceilings before the application of latex paints.
- Clean PVC with methylated spirit and a nylon scouring pad.
- Remove wall paper and glue size with clean water and seal before painting.
- Remove water based kalsomine or lime wash paints by brushing with warm water.

3.2 PAINT SYSTEMS**General**

Number of coats: Except where one or two coat systems are documented, provide each coating system with at least 3 coats or to the manufacturer's recommendations.

New unpainted interior surfaces

Standard: To AS/NZS 2311 (2017) Table 5.1.

New unpainted exterior surfaces

Standard: To AS/NZS 2311 (2017) Table 5.2.

Previously painted interior surfaces

Standard: To AS/NZS 2311 (2017) Table 8.2.

Previously painted exterior surfaces

Standard: To AS/NZS 2311 (2017) Table 8.3.

Specialised paint systems

Standard: To AS/NZS 2311 (2017) clause 5.2.

3.3 APPLICATION**General**

Standard: To AS/NZS 2311 (2017) Section 6.

Timing: 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.

Light levels

General: ≥ 400 lux.

Conditions

General: Unless the coating is recommended by the manufacturer for such conditions, do not apply under the following conditions:

- Rainy conditions.
- Dusty conditions.
- Relative humidity: $> 85\%$.
- Surface temperature: $< 10^{\circ}\text{C}$ or $> 35^{\circ}\text{C}$.
- Temperature: Within 3°C of the dew point.

Priming timber before fixing

General: Before fixing in position, apply 1 coat of wood primer and 2 coats to end grain to the back of the following:

- External fascia boards.
- Timber door and window frames.
- Tops and bottoms of external doors.
- Associated trim and glazing beads.
- Timber board cladding.

Spraying

General: If the application is by spraying, use conventional or airless equipment that conforms to the following:

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

Coatings with known health hazards: Not permitted on site.

Sanding

Clear finishes: Sand the sealer using abrasives no coarser than 320 grit without cutting through the colour. Take special care with round surfaces and edges.

Repair

Requirement: Clean off marks, paint spots and stains progressively and restore damaged surfaces to their original condition.

Repair of galvanizing

Cleaning: For galvanized surfaces that have been subsequently welded, power tool grind to remove all surface contaminants, including rust and weld splatter. Prime affected area immediately after cleaning.

Primer: Type 2 organic zinc-rich coating for the protection of steel to AS/NZS 3750.9 (2009).

Windows

Operation: Make sure opening windows function correctly before and after painting.

Doors

Drying: Maintain door leaf in the open position during drying. Do not allow door hardware or accessories to damage the door finish during the drying process.

Wet paint warning

Notices: Place notices in a conspicuous location and do not remove until the paint is dry.

3.4 PAINTING SCHEDULES

General

Final coat selection: To the **Painting schedule**.

Low VOC emitting paints

Comply with the following:

Product type

Maximum VOC content, g/litre

Walls and ceilings – interior semi gloss	16
Walls and ceilings – interior low sheen	16
Walls and ceilings – interior flat washable	16
Ceilings – interior flat	14
Trim – gloss, semi gloss, satin, varnishes and woodstains	75
Timber and binding primers	30
Latex primer for galvanised iron and zincalume	60
Interior Latex Undercoat	65
Interior Sealer	65
One and two pack performance coatings for floors	140
Any solvent-based coatings whose purpose is not covered in table	200

Paint colours

Number of separate colours: Supply paint to the Painting Schedule below.

3.5 PAINTING SCHEDULE

Surface / Substrate	FinSched Code	Coating System	Colour Reference
Internal fibre cement, blockwork and plasterboard walls	P1	Haymes Ultra Premium Expressions Interior: 1 coat sealer, 1 undercoat, 2 finishing coats Low Sheen, all to manufacturers recommendations.	Refer Finishes Schedule
Internal timber doors	P2 P3 P4b	Haymes Ultra Premium Acrylic Enamel: 1 coat sealer/primer, 1 undercoat, 2 finishing coats Semi-Gloss, all to manufacturers recommendations.	Refer Finishes Schedule
Internal timber frames, reveals	P4a	Haymes Ultra Premium Acrylic Enamel: 1 coat sealer/primer, 1 undercoat, 2 finishing coats Gloss, all to manufacturers recommendations.	Refer Finishes Schedule
Internal plasterboard or cement sheet ceiling linings	P5	Haymes Ultra Premium Expressions Ceiling White: 1 coat sealer, 1 undercoat, 2 finishing coats Matt, all to manufacturers recommendations.	Refer Finishes Schedule
Exposed steelwork	P6	Dulux Metalshield Premium , alkyd enamel, including preparation, priming, build coats and topcoats to manufacturers recommendations.	Refer Finishes Schedule
Internal timber trim, ply wall linings	CF1	Quantum Microclear Interior Clear solventless oil-based urethane coating, preparation and min. two coats to manufacturer's recommendations. Sand back ply surface between coats to remove raised ply grain.	Clear, satin
Ply wall linings (Stores)	CF2	Quantum Microclear Interior Clear solventless oil-based urethane coating, preparation and min. one coat to manufacturer's recommendations.	Clear, satin
Stores, Services enclosures slabs	SE1	Dulux Luxaflor ACS , water-based penetrative sealer, incl. preparation and min. 2 coats to manufacturer's recommendations.	Clear

0673 POWDER COATINGS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide powder coating systems to substrates, as documented.

1.2 CROSS REFERENCES**General**

Requirement: Conform to the following: *0171 General requirements*.

1.3 STANDARDS**General**

Application to aluminium and aluminium alloy substrates for architectural applications: To AAMA 2603 (2022), AAMA 2604 (2022) and AAMA 2605 (2022), as appropriate, and AS 3715 (2025).

Application to metal substrates other than aluminium for architectural applications: To AS 4506 (2024).

1.4 INTERPRETATION**Definitions**

General: For the purposes of this worksection, the following definitions apply:

- Powder coating: The process of preparing, applying, fusing and curing a thermoset powder coating material to a substrate.
- Thermoset powder coating: A mixture of finely ground particles of pigment and resin sprayed onto a prepared substrate. Charged powder particles adhere to electrically grounded surfaces until heated and fused into a smooth coating in a curing oven.
- Substrate: The surface to which a material or product is applied.

1.5 SUBMISSIONS**Products and materials**

Coating manufacturer: Submit the following details at least 3 weeks before fabrication:

- Recommended coating system for the nominated service condition.
- Brand name.
- Product data sheets.
- Maintenance recommendations.

Samples

Requirement: Submit samples to PRODUCTS, **GENERAL**, **Samples**.

Subcontractors

Specialist applicators: Submit name and contact details of proposed specialist applicators as registered by the coating manufacturer.

Warranties

Requirement: Submit warranties to **COMPLETION**, **Warranties**.

2 PRODUCTS**2.1 GENERAL****Samples**

Requirement: Provide labelled samples of each coating system on representative substrates, showing surface preparation, colour, gloss level, texture and physical properties.

Coated samples schedule

Substrate	Coating system	Colour/texture	Number of samples	Sample size
Aluminium window framing	Dulux -as Schedules	as Schedules	1 No. of each different system and colour	Min. 300 long standard frame extrusion

Storage and handling

General: To AS 3715 (2025) Appendix D for powder coated aluminium and AS 4506 (2024) Appendix D for all other powder coated materials.

2.2 MATERIALS

Performance requirements

Powder coating to aluminium and aluminium alloy: To AS 3715 (2025) Section 8.

Powder coating to metals, other than aluminium: To AS 4506 (2024) Section 2.

3 EXECUTION

3.1 PREPARATION

Substrate pre-treatment

Powder coating to aluminium: To AS 3715 (2025) Appendix G.

Powder coating to metals, other than aluminium: To AS 4506 (2024) Appendix I.

3.2 APPLICATION

General

Requirement: To manufacturer's recommendations.

3.3 COMPLETION

Cleaning

Aluminium architectural applications: Clean completed assembly to AS 3715 (2025) Appendix C.

Metal, other than aluminium, architectural applications: Clean completed assembly to AS 4506 (2024) Appendix E.

Warranties

Type: manufacturers' standard warranty

Period: manufacturers' standard warranty period for the product

0811S SANITARY FIXTURES

1 GENERAL

1.1 RESPONSIBILITIES**General**

General: Provide sanitary fixtures.

Selections: As documented –refer Sanitary Fixtures & Tapware Schedule.

1.2 STANDARDS**Authorised products**

Standard: Listed in the WaterMark Product Database, unless otherwise required by the Network Utility Operator.

Standards

Sanitary fixtures: To ATS 5200.

Design for access and mobility: AS/NZS 1428.1, AS 1428.2 and AS 1428.3.

Labelling

Water efficiency labelling: Provide only products conforming to and labelled to the Water Efficiency Labelling Scheme (WELS).

2 SELECTIONS

2.1 SANITARY FIXTURES

Refer Sanitary Fixtures & Tapware Schedule

0812S TAPWARE**1 GENERAL****1.1 RESPONSIBILITIES****General**

General: Provide tapware.

Selections: As documented –refer Sanitary Fixtures & Tapware Schedule.

Standards

Authorised products

Standard: Listed in the WaterMark Product Database, unless otherwise required by the Network Utility Operator.

Standards

Tapware: To ATS 5200.

Design for access and mobility: AS/NZS 1428.1, AS 1428.2 and AS 1428.3.

Labelling

Water efficiency labelling: Provide only products conforming to and labelled to the Water Efficiency Labelling Scheme (WELS).

2 SELECTIONS**2.1 TAPWARE**

Refer Sanitary Fixtures & Tapware Schedule

0900 BUILDERS WORK IN CONNECT. WITH ENGINEERING SERVICES

1 GENERAL

1.1 RESPONSIBILITIES

General

General: Ensure that all builders work in connection with Engineering Services is allowed for by each trade, whether expressly covered in the contract documents or otherwise required to complete all elements, components and systems as required. These works include the below as applicable, but are not necessarily confined to:

Mechanical ~ Builder Interface

Item	Work by	Associated work
General	Builder	• All openings, chasing and penetrations in walls, floors, ceilings, roof, doors, partitions etc. for passage of pipes, ducts, cables, conduits, grilles, registers, relief air, etc. • Cutting, drilling, welding, fixing of any structural element or member. • Provision of structural elements. • All weatherproofing, flashings and over-flashing. • All access panels (allow 35 off), cutting of ceiling tiles including removal and reinstatement of ceilings. • Access ladders, platforms, walkways etc. as nominated on the drawings. • Undercut doors where nominated on drawings. • Power for installation, testing and commissioning. • Generally airtight building construction. • Steel lintels for penetrations. • Concrete pad and security enclosure for LPG cylinders. • Making good to a workmanlike finish where services removed, including patchwork/paintwork etc. • Fire and smoke seal all services penetrations.

Electrical ~ Builder Interface

Item	Work by	Associated work
General	Builder and/or associated Contractors	• All openings, chasing and penetrations in walls, floors, ceilings, roof, doors, partitions etc. for passage of cables, conduits, trays etc. • Cutting, drilling, welding, fixing of any structural element or member. • Provision of structural elements. • All weatherproofing, flashings and over-flashing. • All access panels (allow 10 off), cutting of ceilings and ceiling tiles including reinstatement of ceilings. • Power for installation, testing and commissioning. • Coordinate new building structure with required services routes and access. • Steel lintels for penetrations. • Making good to a workman like finish where services are removed, including patchwork/paintwork etc. • Provision of structural elements to support electrical equipment. Electrical Contractor to provide all required secondary support structures for switchboards and cable tray. • Coordination of electrical equipment within concrete structures including precast panels, blockwork walls and poured concrete slabs. • Fire and smoke seal all penetrations. Identify and record as part of Baseline Data AS 1851-2012.
	Electrical	• Making good to a workmanlike finish where redundant services are removed, including patchwork/paintwork etc.

Hydraulic ~ Builder Interface

Item	Work by	Associated work
General	Builder	All associated works to building structure/fabric including: - Allow for removal and reinstatement of ceilings to accommodate new or modified hydraulics services in existing building. - Platforms, 8x access panels, ceiling tiles. - Temporary power.] - Power for installation, testing and commissioning. - Concrete pads, plinths, bunds. - Coordinate new building structure with required services routes and access. - Connection and extension of irrigation system pipework from isolation valves (provided by Hydraulics services) to irrigation system. - All noggins as required for support of hydraulic services (basins, toilets, HW plant etc.) - Platform for roof mounted hot water plant
	Hydraulic	- All openings, chasing and penetrations in walls, floors, ceilings, roof, partitions etc. for passage of pipes, etc. including coordination with other relevant trades. - All weatherproofing, flashings, and over-flashing. - Making good to a workmanlike finish where redundant services are removed, including patchwork/paintwork etc. - Fire and smoke seal all services penetrations where passing through fire or smoke walls. Identify and record as part of Baseline Data AS 1851-2012.

0901 EXTERNAL NETBALL STORAGE SHED -PROPRIETARY ITEM**1 GENERAL****1.1 SCOPE OF WORK****Shed Description (Netball External Store 10.3)**

Supply and construct a new shed for external storage of sports equipment. The shed will be a standard colorbond unit from a suitable shed supplier (see 1.2 SHED CONSTRUCTION below) on a new concrete slab. All Specification sections apply to this shed construction unless otherwise detailed below.

1.2 SHED CONSTRUCTION**General**

The shed is to be a conventional small skillion-roofed shed, supplied, delivered and erected to the basic dimensions as shown on the drawings, with additional items (eg linings) as detailed below, in the Finishes Schedule and on the drawings. The preferred overall dimensions (length, width, heights, roof angle etc) can be varied to suit the particular manufacturer and shed offered by the Tenderer, but the shed must not be less than 6m² in clear internal area and should comply with the Shed Specification below.

The Tenderer should identify in their tender which manufacturer and product is being offered and full details of the shed are to be provided with the Tender to allow evaluation, including details of any items or components of non-compliance with the requirements of the Tender documents.

Shed Specification

Dimensions: refer drawings, not less than 6m² (clear internal area).

Slab: on/part of insitu concrete paving.

Roof pitch: between 5-10deg.

Steel frame: Galvanised RHS/SHS sections, with galv or zincalume purlins & girts.

Roofing: Colorbond steel profiled sheeting, minimum 0.42 BMT. Colour TBC from standard range offered by shed supplier.

Cladding: Colorbond steel profiled sheeting, minimum 0.42 BMT. Single colour TBC from standard range offered by shed supplier. Provide vermin-sealing flashing between the cladding and the slab.

Flashings: Colorbond to match.

Internal linings: Refer Finishes Schedule for internal linings and finishes.

Roller Door: 1 No. Colorbond door minimum clear opening 2.7m high x 3.5m wide manually-operated and including windlock guides. Doors to have solid slats (no slots or punches etc).

1.3 SHOP DRAWINGS & CERTIFICATIONS**Submissions**

Refer: 0171b General Requirements. Provide Shop Drawings for approval as per these requirements and any other requirements in this Specification, Schedules and Appendix sections.

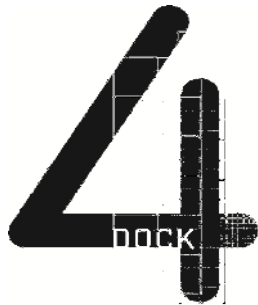
Dock4 Architects

L4, 152 Elizabeth Street
Melbourne VIC 3000
+613 8376 6169

L1, 100 Collins Street
Hobart TAS 7000
+613 6231 0469

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES

FINISHES, SANITARY, DOOR, FITTINGS
and SIGNAGE SCHEDULE



EXTERNAL FINISHES SCHEDULE			
CODE	ITEM	NOTES	FINISH
BK	BRICKWORK	EXISTING	RETAIN EXISITNG UNDAMAGED BRICKS FROM DEMOLITION WORKS AND REMOVE TO CLIENT STORAGE DEPOT LOCATION (WITHIN WANGARATTA CITY LOCATION)
CB1	HORIZONTAL METAL CLADDING	TO MATCH EXISTING (TO ROLLER SHUTTER PELMETS)	MATCH EXISTING
	FLASHINGS & CAPPINGS GENERALLY	TO MATCH EXISTING (IE TO CB1)	MATCH EXISTING
AWG	WINDOWS	DOUBLE GLAZED AS SPEC, REFER WINDOW SCHEDULE & SPECIFICATION	POWDERCOATED, PC1
ZN1	ZINCALUME SHEET	MIN. 2.0 BMT ZINCALUME SHEET FABRICATED WASTE PIPEWORK COVER (REFER DETAIL)	NATURAL FINISH, C/W STEEL FRAMING AND ACCESS PANELS (REFER DETAIL)
MCG1	FIXED HORIZONTAL LOUVRES	P'COATED STEEL C/W INSECT MESH, AS SPECIFIED (REFER DRGS)	POWDERCOATED TO MATCH EXISTING COLORBOND VERTICAL CLADDING OR EXISTING PAINTED CEMENT SHEET CLADDING (REFER DRAWINGS)

FINISHES SCHEDULE LEGEND					
ITEM		FINISH			
CODE	MATERIAL	CODE	MATERIAL/PRODUCT	PRODUCT DETAILS	COLOUR/FINISH/NOTES
CON	CONCRETE	FLOORS & SKIRTINGS			
EX. CON	EXISTING CONCRETE	CP1	FORBO CARPET TILES	FORBO FLOTEX FLOCKED CARPET	METRO LAGOON (BLUE), t546020
PMF	PRESSED METAL DOOR FRAME	CM1	CARPET MATTING	SPECTRUM EXCELLENCE FLOOR MATTING	BLUE, PE602
FTD	FLUSH TIMBER DOOR	ASV1	TARKETT SAFETY VINYL FLOORING	GRANIT SAFE-T	GRANIT BLUE, 0515, SLIP RESISTANCE R11
TMF	TIMBER DOOR FRAME/ REVEAL	SV1	TARKETT SAFETY VINYL FLOORING	iQ GRANIT	BLUE, 0340, SLIP RESISTANCE R10
TRL	TIMBER WINDOW REVEAL LININGS	SV2	TARKETT SAFETY VINYL FLOORING	iQ GRANIT	LIGHT BLUE, 0341, SLIP RESISTANCE R10
AWG	ALUMINIUM FRAMED WINDOW	SV3	FORBO VINYL FLOORING	ETERNAL MATERIAL	SAPPHIRE STONE, 12232, SLIP RESISTANCE R10
ADG	ALUMINIUM FRAMED GLZ DOOR	SE1	CONCRETE SEALER	CLEAR DULUX LUXAFLO ACS	OR SIMILAR TO APPROVAL
SST	STRUCTURAL STEEL FRAMING	SK1	SKIRTING -COVED FLOOR FINISH 100 UP WALL	N/A	N/A
RSG	ROLLER SHUTTER OR GRILLE	SK2	SKIRTING -KDHW, NOM. 18 THICK x 90/100 HIGH	BULLNOSE TOP	CF1 CLEAR FINISH -PROFILE & HEIGHT TO MATCH EXISTING WSAC VENTED SKIRTINGS
PB	PLASTERBOARD	SK3	SKIRTING -150 HIGH VINYL	FEATHER EDGE, PRODUCT TO APPROVAL	BLACK
FCC	FIBRE-CEMENT SHEET	MFR	SEALING TO MANUFACTURER'S RECOMMENDATIONS	AS REQUIRED	COAT OR SEAL TO MANUFACTURER'S RECOMMENDED PRODUCT DATA SHEET DETAILS
WALLS					
CT1	VITRIFIED WALL TILE 600 x 300			WHITE RECTIFIED GLOSS PORCELAIN, JOHNSON OR SIMILAR TO APPROVAL	GLOSS WHITE, 1.5mm JOINTS, BOSTIK 55 CHARCOAL GROUT
CT2	VITRIFIED WALL TILE 200 x 100 or 200 x 75 or 200 x 50 AS INSET PATTERN TO CT1 (NOTE: DO NOT MIX SIZES)			CLASSIC CERAMICS VOGUE SYSTEM, GLOSS OR SATIN RECTIFIED (OR SIMILAR SOLID-COLOURED RECTIFIED GLAZED PORCELAIN TILE TO APPROVAL)	COLOURS: Lavanda 'PURPLE', Ceruleo 'BLUE', Perla 'GREY', Ghiaccio 'WHITE' - IN EQUAL QUANTITIES (REFER DETAIL). 1.5mm JOINTS, BOSTIK 55 CHARCOAL GROUT - NOTE UP TO 12-WEEK LEAD TIME, PLACE ORDER AT CONTRACT COMMENCEMENT. ALTERNATIVE TILES CAN BE OFFERED BUT THESE NEED TO BE THE SAME OR IN VERY SIMILAR COLOURS.
CT3	VITRIFIED WALL TILE 200 x 100 or 200 x 75 or 200 x 50 AS INSET PATTERN TO CT1 (NOTE: DO NOT MIX SIZES)			CLASSIC CERAMICS VOGUE SYSTEM, GLOSS OR SATIN RECTIFIED (OR SIMILAR SOLID-COLOURED RECTIFIED GLAZED PORCELAIN TILE TO APPROVAL)	COLOURS: Pistacchio 'GREEN', Ceruleo 'BLUE', Perla 'GREY', Ghiaccio 'WHITE' - IN EQUAL QUANTITIES (REFER DETAIL). 1.5mm JOINTS, BOSTIK 55 CHARCOAL GROUT - NOTE UP TO 12-WEEK LEAD TIME, PLACE ORDER AT CONTRACT COMMENCEMENT. ALTERNATIVE TILES CAN BE OFFERED BUT THESE NEED TO BE THE SAME OR IN VERY SIMILAR COLOURS.
CT4	VITRIFIED WALL TILE 200 x 200 (BASIN SPLASHBACKS)			CLASSIC CERAMICS VOGUE SYSTEM, GLOSS OR SATIN RECTIFIED (OR SIMILAR SOLID-COLOURED RECTIFIED GLAZED PORCELAIN TILE TO APPROVAL)	COLOUR: Perla 'GREY' - REFER DETAIL. 1.5mm JOINTS, BOSTIK 55 CHARCOAL GROUT - NOTE UP TO 12-WEEK LEAD TIME, PLACE ORDER AT CONTRACT COMMENCEMENT. ALTERNATIVE TILES CAN BE OFFERED BUT THESE NEED TO BE THE SAME OR IN VERY SIMILAR COLOURS.
PLY1	9 THICK PLY SHEET, FACE QUALITY B, NOM. 2400 x 1200 PANELS			E0 EMISSION CLASS, SPECIES AS SPEC.	EXPRESSED JOINTS ON BLACK BACKING, C'SUNK FACE-FIXED. INSTALL FRAMING BEHIND FOR BENCH SEATS ETC, CF1 FINISH, INCL. BATTENS/TOPHATS AS REQUIRED.
PLY2	9 THICK PLY SHEET, FACE QUALITY C, NOM. 2400 x 1200 PANELS			E0 EMISSION CLASS, SPECIES AS SPEC.	EXPRESSED JOINTS, COUNTERSUNK FACE-FIXED, CF2 FINISH. INSTALL ADDITIONAL WALL FRAMING BEHIND FOR RACKING ETC, INCL. BATTENS/TOPHATS AS REQD.
PB1	13 MOISTURE RESISTANT PLASTERBOARD			GYPROCK AQUACHEK OR EQUAL	FLUSH JOINTS, PAINT FINISH, TO STUD FRAMING
PB2	13 ACOUSTIC PLASTERBOARD			GYPROCK SOUNDCHek OR EQUAL	FLUSH JOINTS, PAINT FINISH, TO STUD FRAMING
FC1	9 THICK FC SHEET, TO STUD FRAMING			HARDIES VILLABOARD OR EQUAL	EXPRESSED JOINTS, COUNTERSUNK FACE-FIXED, PAINT FINISH, INCL. BATTENS/TOPHATS AS REQD.
FRW1	2-HR CERTIFIED FIRE-RATED SHAFT WALL SYSTEM			GYPROCK SHAFT WALL SYSTEM OR EQUAL	NOM. 1500 HIGH FOR MECHANICAL SERVICES (UPPER FLOOR LEVEL), INCL. TOP AND ALL FIRE SEALING
SBB	NOM. 15 THICK CALCIUM SILICATE FIRE-RESISTANT BOARD			BELLIS FIREMASTER 550 OR EQUAL	BEHIND KITCHEN EQUIPMENT, TO MANUFACTURERS DETAIL & TO VIC ENERGYSAFE COMPLIANCE APPROVAL AND ALL OTHER RELEVANT REGULATIONS, ON & INCL. TOPHATS/BATTENS

Dock4 Architects
L4, 152 Elizabeth Street
Melbourne VIC 3000
+613 8376 6169

L1, 100 Collins Street
Hobart TAS 7000
+613 6231 0469

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES
FINISHES, SANITARY, DOOR, FITTINGS
and SIGNAGE SCHEDULE



DELETED	CEILINGS (Square set to walls unless noted otherwise)		
	PLY3	9 THICK PLY SHEET, FACE QUALITY B, NOM. 2400 x 1200 PANELS	E0 EMISSION CLASS, SPECIES AS SPEC.
	PLY4	9 THICK PLY SHEET, FACE QUALITY C, NOM. 2400 x 1200 PANELS	E0 EMISSION CLASS, SPECIES AS SPEC.
	PB3	13 MOISTURE RESISTANT PLASTERBOARD	GYPROCK AQUACHEK OR EQUAL
	PB4	13 ACOUSTIC PLASTERBOARD	GYPROCK SOUNDCEK OR EQUAL
	FC2	9 THICK FC SHEET	HARDIES VERSILUX OR EQUAL
	EXPRESSED JOINTS ON BLACK BACKING, C'SUNK FACE-FIXED, CF1 FINISH, INCL. FRAMING AS REQD.		
	EXPRESSED JOINTS, COUNTERSUNK FACE-FIXED, CF2 FINISH, INCL. FRAMING AS REQD.		
	FLUSH JOINTS, PAINT FINISH, INCL. SUSPENSION SYSTEM/ FRAMING AS REQD.		
	FLUSH JOINTS, PAINT FINISH, INCL. SUSPENSION SYSTEM/ FRAMING AS REQD.		
	EXPRESSED JOINTS, COUNTERSUNK FACE-FIXED, PAINT FINISH, INCL. BATTENS/TOPHATS AS REQD.		
	JOINERY		
	MW1	MODWOOD BENCH SEAT SLATS	88 x 23 DECKING BOARDS
	CUB1	SHOWER & TOILET CUBICLES	LAMINEX COMPACT 13mm MULTIPURPOSE
	SS1	STAINLESS STEEL BENCHTOPS/ SPLASHBACK UPSTAND	REFER KITCHEN DRAWING
	SSR	STAINLESS STEEL SERVERY COUNTER & JAMB REVEALS	REFER KITCHEN DRAWING
	LAM1	JOINERY LAMINATE -CARCASS & FRONTS	LAMINEX
	LAM2	JOINERY LAMINATE -BENCHTOPS	LAMINEX
	LAM3	JOINERY LAMINATE -KICKERS/PLINTHS	LAMINEX
	LAM4	JOINERY LAMINATE -CLEANERS SHELVING	MELAMINE
	COLOUR 'BLACK BEAN', SMOOTH FINISH		
	ZINCWORKS TO DOORS, POLAR WHITE ALL OTHER PANELS		
	COUNTERS TO BE OVER 32mm SUBSTRATE, JAMBS OVER 16mm SUBSTRATE		
	CALM WHITE 8522, NATURAL FINISH (MATCHING ABS EDGING)		
	BROOK PEBBLE 544, NATURAL FINISH (MATCHING ABS EDGING)		
	CHARCOAL		
	WHITE -2 No. FIXED SHELVES x 300 DEEP & LENGTH AS SHOWN ON PLAN AT 1800 & 2100, ON & INCL. WHITE		
	POWDERCOATED HD BRACKETS TO SUIT		
	PAINTS & COATINGS (refer SPECIFICATION -PAINTING SCHEDULE for Haymes system details. Note Dulux paint colours are used for reference only, the equivalent Haymes colour formulas to be used)		
	P1	INTERNAL PLASTERBOARD/FCS & EXISTING BLOCKWORK WALLS	DULUX 'VIVID WHITE' 1W -WALLS GENERALLY, SATIN
	P2a	INTERNAL TIMBER DOORS	COLOUR: TBC, SEMI-GLOSS
	P2b	INTERNAL TIMBER DOORS	COLOUR: TBC, SEMI-GLOSS
	P3	EXTERNAL TIMBER DOORS	COLOUR: TBC, SEMI-GLOSS
	P4a	TIMBER FRAMES & REVEAL LININGS	COLOUR: TO MATCH P1 -INTERNAL TIMBER DOOR FRAMES, TIMBER REVEALS, GLOSS
	P4b	JOINERY DOORS	COLOUR: TO MATCH P1 -SERVICE CUPBOARD DOORS, SEMI-GLOSS
	P5	INTERNAL CEILINGS	DULUX 'WHITE POLAR QUARTER' 2W -CEILINGS GENERALLY, FLAT
	P6	EXPOSED STEELWORK (INTERNAL)	COLOUR: TO MATCH P1
	CF1	CLEAR FINISH TO INTERNAL TIMBER	MIN. 2 COATS (QUANTUM MICROCLEAR INT. OR EQUAL) -LOW VOC, LOCAL PRODUCT
	CF2	CLEAR FINISH TO INTERNAL TIMBER	1 No. SEAL COAT (QUANTUM MICROCLEAR INT. OR EQUAL) -LOW VOC, LOCAL PRODUCT
	PC1	POWDERCOAT DULUX DURATEC ZEUS (20-YR GUARANTEE), COLOUR TBC	-METAL LOUVRES, WINDOW FRAMES, EXTERNAL ROLLER SHUTTERS & GUIDES
	PC2	POWDERCOAT DULUX DURALLOY (10-YR GUARANTEE), COLOUR 'PEARL WHITE' 272-1114G	-INTERNAL ROLLER SHUTTERS & GUIDES, JOINERY LEGS
	PC3	POWDERCOAT DULUX DURALLOY (10-YR GUARANTEE), COLOUR 'CHARCOAL SATIN' 272-88351	-BENCH SEAT BRACKETS/ LEGS

Dock4 Architects
L4, 152 Elizabeth Street
Melbourne VIC 3000
+613 8376 6169

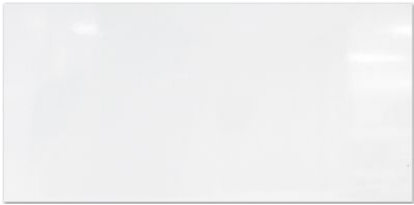
L1, 100 Collins Street
Hobart TAS 7000
+613 6231 0469

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES

FINISHES, SANITARY, DOOR, FITTINGS and SIGNAGE SCHEDULE



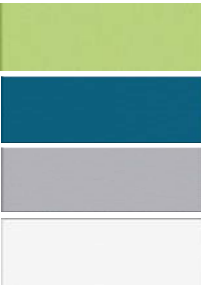
PLY1, 2, 3 & 4



CT1



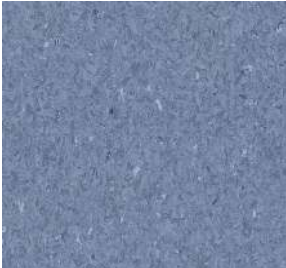
CT2



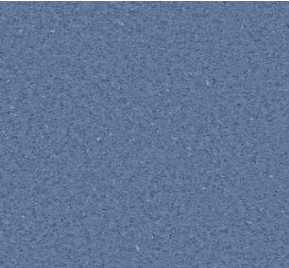
CT3



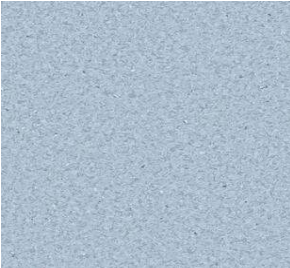
CT4



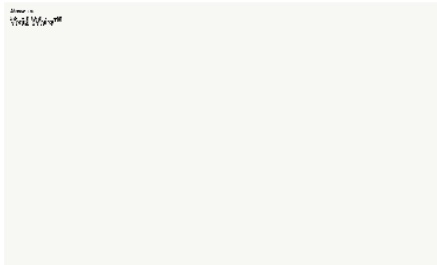
ASV1



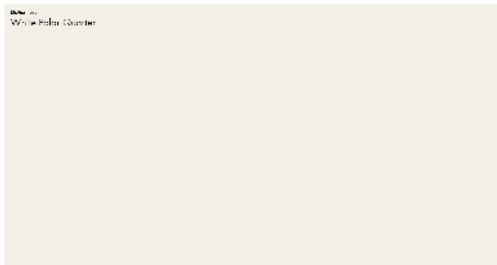
SV1



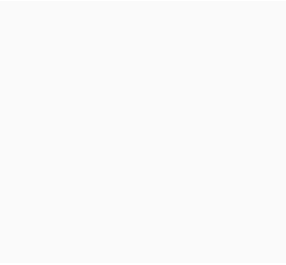
SV2



P1



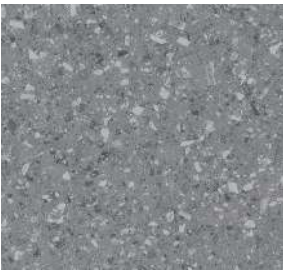
P5



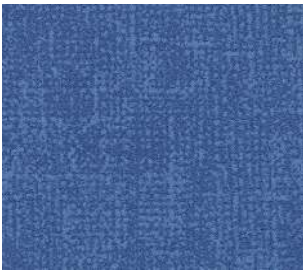
LAM1



SS1/ SSR



SV3

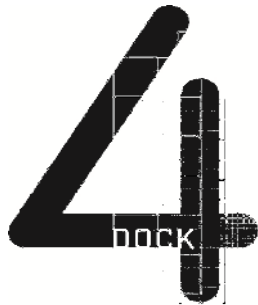


CP1



CM1

FINISHES, SANITARY, DOOR, FITTINGS
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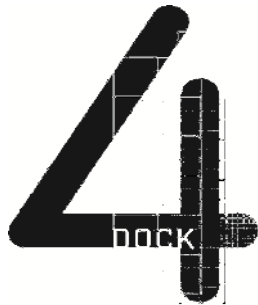
INTERNAL FINISHES SCHEDULE						
ROOM/SPACE		FLOOR/WALLS/CEILINGS			INT. DOORS & OPENINGS	FITTINGS & NOTES
No.	DESCRIPTION	LOCATION	MATERIAL	FINISH	FINISH	
1.0	CHANGE 1	FLOOR	SV1		ROLLER DRs & GUIDES = PC2	BENCH SEATS BS1 -MW1 SEAT SLATS, POWDERCOAT SEAT BRACKETS = PC3
2.0	CHANGE 2	WALLS TO 2500 AFL	PLY1	CF1	DOOR FRAME = P4a	
3.0	CHANGE 3	WALLS ABOVE 2500 AFL	FC1	P1	DOOR = P2a	
4.0	UMPIRES/REFEREES	SKIRTINGS	SK1			
	DUTY ROOM	CEILINGS	PLY3	CF1		
1.1	AMENITIES 1	FLOOR	ASV1	MFR	ROLLER DRs & GUIDES = PC2	SHOWER & TOILET CUBICLES = CUB1 TILE JAMBS OF OPENING REVEALS INTO AMENITIES = CT1
2.1/ 2.2	AMENITIES 2/ DDA	WALLS TO 2200 AFL	PB1	CT1+CT2		
3.1/ 3.2	AMENITIES 3/ DDA	WALLS ABOVE 2200 AFL	PB1	P1		
4.1	AMENITIES 4	SKIRTINGS	SK1			
		CEILINGS	PB3	P5		
5.0	UMP/ REF. CHANGE 1	FLOOR	ASV1	MFR	DOOR FRAME = P4a	
6.0	UMP/ REF. DDA	WALLS TO 2200 AFL	PB1	CT1+CT3	DOOR = P2a	
	CHANGE 2	WALLS ABOVE 2200 AFL	PB1	P1		
		SKIRTINGS	SK1			
		CEILINGS	PB3	P5		
7.1	SPECTATOR MALE WC	FLOOR	ASV1	MFR	DOOR FRAME = P4a	
7.2	SPECTATOR FEM. WC	WALLS TO 2200 AFL	PB1	CT1+CT3	DOOR = P2b	
7.3	SPECTATOR DDA WC	WALLS ABOVE 2200 AFL	PB1	P1		
		SKIRTINGS	SK1			
		CEILINGS	PB3	P5		
8.0	KIOSK	FLOOR	SV2	MFR	R8.1 ROLLER DRs & GUIDES = PC1	JOINERY FITOUT, REFER DRAWINGS -BENCHTOP, SPLASHBACK, FRAMES = SS1 SERVERY, REFER DRAWINGS -BECNHTOP =SSR REFER DETAILS -INSTALL FIRE-RESISTANT WALL LINING (SBB) WITH STAINLESS STEEL SHEET OVER TO COOKING AREA
		WALLS TO 2200 AFL	PB1	CT1+CT3	R8.2 ROLLER DRs & GUIDES = PC2	
		WALLS ABOVE 2200 AFL	PB1	P1	DOOR FRAME = P4a	
		SKIRTINGS	SK1		DOOR = P2a	
		CEILINGS	PB3	P5		
9.1	NETBALL REG.	FLOOR	CP1		R13.1 ROLLER DRs & GUIDES = PC1	SERVERY -REFER DRAWINGS -BECNHTOP =SSR
		WALLS	PB2	P1	DOOR FRAME = P4a	
		SKIRTINGS	SK2	CF1	DOOR = P2a	
		CEILINGS	PB4	P5		
9.2	NETBALL OFFICE	FLOOR	CP1		DOOR FRAME = P4a	
		WALLS	PB2	P1	DOOR = P2a	
		SKIRTINGS	SK2	CF1		
		CEILINGS	PB4	P5		
9.3	NETBALL MEETING	FLOOR	CP1/ CM1		EXISTING DOOR & FRAME	
		WALLS	EX.WALLS	P1	=REPAINT TO MATCH EXISTING	
		SKIRTINGS	SK2	CF1		
		CEILINGS	EX.PB	P5		
10.1	NETBALL INT. STORE	FLOOR	CON	SE1	DOOR FRAME = P4a	RACKING/ SHELVING -BY CLUB, NOT IN CONTRACT 10mm GAP BETWEEN FLOOR AND WALL LINING, SILICON SEALED
		WALLS	PLY2	CF2	DOOR = P2a	
		SKIRTINGS	N/A - REFER NOTES			
		CEILINGS	FC2	P5		

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES
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10.2	NETBALL STORAGE	FLOOR	EX.CON	SE1	DOOR FRAMES = P4a	RACKING/ SHELVING -BY CLUB, NOT IN CONTRACT
11.3	STORAGE	WALLS (TYPICAL)	EX.CON	NO WORKS	DOORS = P2a	INFILLS TO EXISTING BLOCKWORK OPENING ABOVE NEW DOORS, WITH MECH. SERVICES PENETRATIONS
		NEW STUD WALL INFILL ABOVE DOORS	PB1	P1		PROVIDE SHADOWLINE OR SIMILAR STOPPING BEAD TO ALL NEW WALL ENDS AND TOP AGAINST EXISTING BLOCKWORK OR CONCRETE AND FINISH JUNCTIONS WITH WHITE SILICON BEADS
		NEW INTERNAL DIVIDING WALL	FC1	P1		
		SKIRTINGS (TO NEW DIVIDING WALL)	SK3			
		CEILINGS	EX.CON	NO WORKS		
11.2	STORAGE	FLOOR	CON	SE1	DOOR FRAMES = P4a	RACKING/ SHELVING -BY CLUB, NOT IN CONTRACT
		WALLS	EX.CON	NO WORKS	DOORS = P2a	INFILLS TO EXISTING BLOCKWORK OPENING ABOVE NEW DOORS, WITH MECH. SERVICES PENETRATIONS
		NEW STUD WALL INFILL ABOVE DOORS	PB1	P1		
		SKIRTINGS	N/A			
		CEILINGS	EX.CON	NO WORKS		
10.3	NETBALL EXT. STORE	FLOOR	CON	SE1		RACKING/ SHELVING -BY CLUB, NOT IN CONTRACT
		WALLS	PLY2	CF2		10mm GAP BETWEEN FLOOR AND WALL LINING, SILICON SEALED
		SKIRTINGS	N/A - REFER NOTES			
		CEILINGS	PLY2	CF2		
11.1	CLEANERS/ STORAGE	FLOOR	EX.CON	SE1	DOOR FRAME = P4a	J01, REFER DRAWINGS -SHELVES = LAM4
		WALLS (TYPICAL)	EX.CON	NO WORKS	DOOR = P2a	INFILLS TO EXISTING BLOCKWORK OPENING ABOVE NEW DOOR, WITH MECH. SERVICES PENETRATION
		NEW STUD WALL INFILL ABOVE DOOR	PB1	P1		PROVIDE SHADOWLINE OR SIMILAR STOPPING BEAD TO ALL NEW WALL ENDS AND TOP AGAINST EXISTING BLOCKWORK OR CONCRETE AND FINISH JUNCTIONS WITH WHITE SILICON BEADS
		NEW INTERNAL DIVIDING WALL	FC1	P1		PROVIDE 1500H x 2000L SPLASHBACK TO WALLS BEHIND CLEANERS SINK AND WASHDOWN TAP
		CLEANERS SINK SPLASHBACK	FC1	CT4		
		SKIRTINGS (TO NEW DIVIDING WALL)	SK3			
		CEILINGS	EX.CON	NO WORKS		
12.1	ELEC. SERVICES	FLOOR	CON	SE1	DOOR FRAMES = P4a	SEALED SLAB FINISH
12.2	FHR SERVICES	WALLS	FC1	P1	DOORS = P4b	NOTE 12.1 TO BE SMOKE-SEALED LINED TO NCC CLAUSE D2.7
12.3	SERVICES	SKIRTINGS	N/A - REFER NOTES			10mm GAP BETWEEN FLOOR AND WALL LINING, SILICON SEALED
12.4	SERVICES	CEILINGS	FC2	P5		
13.4	MECH. DUCT	WALLS/TOP	FRW1	n/a		2-HR FIRE-RATED SHAFT TO APPROX. 1500 AFL FOR MECHANICAL SERVICES DUCTWORK AT UPPER FLOOR LEVEL
14.1	CORRIDOR 1	FLOOR	CM1/ SV3	MFR		REFER FITTINGS & EQUIPMENT SCHEDULE FOR EXTERNAL CORNER WALL GUARDS
14.3	CORRIDOR 3	WALLS	PB2	P1		
		SKIRTINGS	SK2			
		CEILINGS	PB4	P5		
14.2	CORRIDOR 2	FLOOR	SV3	MFR		EX. CORRIDOR LININGS MAY BE RETAINED WHERE PRACTICABLE, WITH MODIFICATIONS AS REQUIRED, NEW P1 PAINT FINISH, REFER FITTINGS & EQUIPMENT SCHEDULE FOR EXTERNAL CORNER WALL GUARDS
14.4	CORRIDOR 4	WALLS	PB2	P1		
14.5	CORRIDOR 5	SKIRTINGS	SK2			
		CEILINGS	PB4	P5		
15.0	EXISTING FIRST AID	FLOOR	EX.FLOOR	NO WORKS		
16.0	EXISTING CLEANERS	WALLS	EX.WALLS	NO WORKS		
		SKIRTINGS	EX.SKIRTING	NO WORKS		
		CEILINGS	EX.CEILINGS	NO WORKS		

FINISHES, SANITARY, DOOR, FITTINGS
and SIGNAGE SCHEDULE



SANITARY FIXTURES & TAPWARE SCHEDULE								
NOTES: 1. WC SUITES (ACCESSIBLE AND AMBULANT WCs) TO INCLUDE CISTERN, SEAT, BACKREST (TO CARE SUITES) AND ALL CONNECTORS ETC. SEATS TO CARE SUITES TO BE CARAVELLE CARE, GREY COLOUR, ENSURE MIN. LUMINANCE CONTRAST OF 30% WITH THE BACKGROUND. ALLOW TO PROVIDE WALL EXTENSION TO ACCESSIBLE CARE PANS AS REQUIRED, FULLY TILED TO MATCH WALLS. 2. ALL WALL BASINS EXCEPT HB2 & HB4 TO HAVE CHROME-PLATED BOTTLE TRAP -IE CAROMA 687295C. ALL HB2 (CARE) BASINS TO HAVE TRAP SHROUD -IE CAROMA 873170W 3. CONTRACTOR TO CHECK & VERIFY SANITARY FIXTURE & TAPWARE MODEL NUMBERS, P-TRAP & S-TRAP WC LOCATIONS ETC -DO NOT ORDER DIRECT FROM SCHEDULE 4. COATHOOKS TO CHANGE AREAS (CHANGEROOMS + REFEREES/UMPIRES) & AMENITIES -TO BE ST/STEEL METLAM ML4159. TWO HOOKS PER ACCESSIBLE SHOWER CUBICLE, ONE PER WC CUBICLE AND AT 600 CENTRES ABOVE ALL BENCH SEATS 5. SHOWER HEAD (IE CENTRE OF ROSE) MOUNTING HEIGHT TO BE AT 2100 AFL. 6. BASINS WITHIN ACCESSIBLE WC CUBICLES TO BE INSTALLED AT A HEIGHT OF 830MM, AS PER AS1428.1								
RM. No.	SPACE	CODE	No.	ITEM	MANUFACT.	MODEL/DETAILS	FINISH	NOTES
1.1	AMENITIES 1	WC1	4	WC SUITE	CAROMA	LIANO CLEANFLUSH WALL FACED SUITE 766200W	WHITE	WITH CLOSE COUPLED CISTERN
2.1	AMENITIES 2	WC2	4	AMBUL. WC SUITE	CAROMA	LIANO CLEANFLUSH EASY HEIGHT WALL FACED SUITE 766450W	WHITE	WITH CLOSE COUPLED CISTERN & LIANO CARE DOUBLE FLAP WHITE SEAT, TO AS 1428.1
3.1	AMENITIES 3	GR1	4	WC GRABRAIL SET	TO APPROVAL	GRABRAILS TO AMBULANT CUBICLE	CHR/BRASS	TO SUIT WC INSTALLATION, COMPLIANT TO AS1428 ETC.
4.1	AMENITIES 4	TR1*	8	WC ROLL HOLDER	ESG	ESG FLETCHERS SLIM 3-ROLL CONTROLLED USE TOILET TISSUE DISPENSER, SD404, SKU NUMBER: 33371	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		HB1-L	11	HAND BASIN	CLARK	SQUARE WALL BASIN, LHS, CL40008.W1LH	WHITE	1 No. TAPHOLE, LEFT-HAND SIDE SHELF
		TP1	11	TAPWARE	ENWARE	VEGA SERIES BASIN MIXER, SLM606-6	CHROME	AERATED, WELS 6-STAR -TO HB1
		MR1	11	MIRROR	TO APPROVAL	6mm MIRRORED CFG TO SUIT	-	300W x 900H, INSET FLUSH WITH WALL TILING -REFER DRAWINGS FOR POSITION, TO HB1
		HD1	8	HAND DRYER	JD MCDONALD	TOUCHDRY, SG BUTTON & NOZZLE –HDTDWHTSG	WHITE	REFER DRAWINGS FOR MOUNTING POSITION. TO AS 1428 TO ACCESSIBLE CUBICLES
		SD1*	11	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		FW1	12	SHOWER WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT SHOWER	CHR/BRASS	TO SHOWERS AND ACCESSIBLE SHOWERS, REFER DRAWINGS FOR APPROX. LOCATIONS, TO AS1428
		FW2	4	FLOOR WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT FLOORING	CHR/BRASS	REFER DRAWINGS FOR APPROX. LOCATIONS
		WS1	12	SHOWER HEAD	CAROMA	CIVIC ANTI-LIGATURE WALL SHOWER, 96418C4E	CHROME	WELS 4 STAR FLOR RATE, 7.5L/min, FOR ST1
		ST1	12	SHWR TAPWARE	ENWARE	ENWARE SEQUENTIAL LEVA SHOWER MIXER	CHROME	TO WS1 & ST2
		SO1	12	SOAP HOLDER	METLAM	S/STEEL SOAP DISH ML241S	SATIN	TO SHOWERS. TO AS 1428 TO ACCESIBLE SHOWERS
		TP4	4	BOTTLE FILLER	BRITEX	WALL-MOUNTED BOTTLE FILLER TW-BF-WE	CHR/BRASS	MOUNTED AT 1000 AFL, REFER DRAWING FOR POSITION
		TP5	4	WASHDOWN BIB	ENWARE	KEY OPERATED HOSE TAP, VP350 M/F	CHROME	WALL MOUNT 800 AFL
		HAIR	2	HAIR DRYER	DOLPHY	WALL MOUNT DRYER (1800W-HOT & COLD) SKU P-DPH0017	WHITE	WALL MOUNT 1000 AFL, 1.1 AMENITIES 1 & 3.1 AMENITIES 3
		CH1	29	COATHOOKS	METLAM	S/STEEL COAT HOOK ML4158	SATIN	TO ALL WC & SHWR CUBICLE DOORS AND OVER SHOWER BENCHES AT 1350 TO 1500 ABOVE FLOOR. REFER NOTE 4 ABOVE FOR CHANGE AREA COATHOOKS
2.2	DDA WC	WC3	2	ACCESS. WC SUITE	CAROMA	CARE 660 CLEANFLUSH CONNECTOR SUITE, 982941BAG	WHITE	WITH GREY SINGLE FLAP SEAT AND BACKREST, TO AS 1428.1
3.2	DDA WC	GR2	2	WC GRABRAIL SET	CAROMA	GRABRAILS TO ACCESSIBLE CUBICLE -CARE SUPPORT GRAB RAIL - 90 DEGREE ANGLED 1110x1030x600	CHR/BRASS	R- OR L-HANDED TO SUIT WC INSTALLATION (& NOTE BACKREST), COMPLIANT TO AS1428 ETC.
		TR1*	2	WC ROLL HOLDER	ESG	ESG FLETCHERS SLIM 3-ROLL CONTROLLED USE TOILET TISSUE DISPENSER, SD404, SKU NUMBER: 33371	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		HB2	2	HAND BASIN	CAROMA	CARE 600 WALL BASIN, 873110W	WHITE	1 No. TAPHOLE, SETOUT TO AS1428, C/W CARE TRAP SHROUD 873170W
		TP2	2	TAPWARE	ENWARE	VEGA SERIES EXTEND. LEVER BASIN MIXER, SLM606-D6	CHROME	AERATED, WELS 6-STAR -TO HB2, TO AS1428
		MR2	2	MIRROR	TO APPROVAL	6mm MIRRORED CFG TO SUIT	-	400W x 1070H, INSET FLUSH WITH WALL TILING -REFER DRAWING FOR POSITION, TO HB2
		SL1	2	SHELF	METLAM	ML950-12, 300 WIDE x 128 DEEP	ST/STEEL	MOUNTED TO AS1428, ADJACENT HB2
		HD1	2	HAND DRYER	JD MCDONALD	TOUCHDRY, SG BUTTON & NOZZLE –HDTDWHTSG	WHITE	REFER DRAWINGS FOR MOUNTING POSITION. TO AS 1428 TO ACCESSIBLE CUBICLES
		SD1*	2	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		FW1	2	SHOWER WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT SHOWER	CHR/BRASS	TO SHOWERS AND ACCESSIBLE SHOWERS, REFER DRAWINGS FOR APPROX. LOCATIONS, TO AS1428
		ST1	2	SHWR TAPWARE	ENWARE	ENWARE SEQUENTIAL LEVA SHOWER MIXER	CHROME	TO WS1 & ST2

FINISHES, SANITARY, DOOR, FITTINGS
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		ST2	2	SHOWER TAPWARE	ENWARE	T-RAIL SHOWER SGR028 CTL OR CTR	CHROME	SHOWER SET WITH WALL-MOUNTED RAIL, INSTALL TO AS1428 (NOTE: CHECK L OR R)
		SO1	2	SOAP HOLDER	METLAM	S/STEEL SOAP DISH ML241S	SATIN	TO SHOWERS. TO AS 1428 TO ACCESIBLE SHOWERS
		SE1	2	SHOWER SEAT	METLAM	ML995_PH FOLD AWAY SHOWER SEAT	CHR/WHITE	PHENOLIC SEAT. MOUNTED TO AS1428 , SIZE 960W X 400D
		CUR1	2	SHW.CURTAIN	METLAM	MLSCT1616 SHOWER CURTAIN TRACK + CURTAIN	CHR/WHITE	1600 x 1600 WALL & CEILING-HUNG C/W MLSC SERIES NYLON CURTAIN, ALL TO AS 1428.1
		CH1	6	COATHOOKS	METLAM	S/STEEL COAT HOOK ML4158	SATIN	TO ALL WC & SHWR CUBICLE DOORS AND OVER SHOWER BENCHES AT 1350 TO 1500 ABOVE FLOOR. REFER NOTE 4 ABOVE FOR CHANGE AREA COATHOOKS
5.0	UMPIRES/REFS. CHANGE 1	WC1	1	WC SUITE	CAROMA	LIANO CLEANFLUSH WALL FACED SUITE 766200W	WHITE	WITH CLOSE COUPLED CISTERN
		TR1*	1	WC ROLL HOLDER	ESG	ESG FLETCHERS SLIM 3-ROLL CONTROLLED USE TOILET TISSUE DISPENSER, SD404, SKU NUMBER: 33371	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		HB1-L	1	HAND BASIN	CLARK	SQUARE WALL BASIN, LHS, CL40008.W1LH	WHITE	1 No. TAPHOLE, LEFT-HAND SIDE SHELF
		TP1	1	TAPWARE	ENWARE	VEGA SERIES BASIN MIXER, SLM606-6	CHROME	AERATED, WELS 6-STAR -TO HB1
		MR1	1	MIRROR	TO APPROVAL	6mm MIRRORED CFG TO SUIT	-	300W x 900H, INSET FLUSH WITH WALL TILING -REFER DRAWINGS FOR POSITION, TO HB1
		HD1	1	HAND DRYER	JD MCDONALD	TOUCHDRY, SG BUTTON & NOZZLE –HDTDWHTSG	WHITE	REFER DRAWINGS FOR MOUNTING POSITION. TO AS 1428 TO ACCESSIBLE CUBICLES
		SD1*	1	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		FW1	1	SHOWER WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT SHOWER	CHR/BRASS	TO SHOWERS AND ACCESSIBLE SHOWERS, REFER DRAWINGS FOR APPROX. LOCATIONS, TO AS1428
		ST1	1	SHWR TAPWARE	ENWARE	ENWARE SEQUENTIAL LEVA SHOWER MIXER	CHROME	TO WS1 & ST2
		ST2	1	SHOWER TAPWARE	ENWARE	T-RAIL SHOWER SGR028 CTL OR CTR	CHROME	SHOWER SET WITH WALL-MOUNTED RAIL, INSTALL TO AS1428 (NOTE: CHECK L OR R)
		SO1	1	SOAP HOLDER	METLAM	S/STEEL SOAP DISH ML241S	SATIN	TO SHOWERS. TO AS 1428 TO ACCESIBLE SHOWERS
		SE1	1	SHOWER SEAT	METLAM	ML995_PH FOLD AWAY SHOWER SEAT	CHR/WHITE	PHENOLIC SEAT. MOUNTED TO AS1428 , SIZE 960W X 400D
		CUR1	1	SHW.CURTAIN	METLAM	MLSCT1616 SHOWER CURTAIN TRACK + CURTAIN	CHR/WHITE	1600 x 1600 WALL & CEILING-HUNG C/W MLSC SERIES NYLON CURTAIN, ALL TO AS 1428.1
		TP5	1	WASHDOWN BIB	ENWARE	KEY OPERATED HOSE TAP, VP350 M/F	CHROME	WALL MOUNT 800 AFL
		HAIR	1	HAIR DRYER	DOLPHY	WALL MOUNT DRYER (1800W-HOT & COLD) SKU P-DPH0017	WHITE	WALL MOUNT 1000 AFL
		CH1	4	COATHOOKS	METLAM	S/STEEL COAT HOOK ML4158	SATIN	TO ALL WC & SHWR CUBICLE DOORS AND OVER SHOWER BENCHES AT 1350 TO 1500 ABOVE FLOOR. REFER NOTE 4 ABOVE FOR CHANGE AREA COATHOOKS
		BC1	1	BABY CHANGE	KOALA KARE	VERTICAL BABYCHANGE TABLE, KB301 WHITE GRANITE 05	WHITE	INSTALLATION TO AS1428.1
6.0	UMPIRES/REFS. DDA CHANGE 2	WC3	1	ACCESS. WC SUITE	CAROMA	CARE 660 CLEANFLUSH CONNECTOR SUITE, 982941BAG	WHITE	WITH GREY SINGLE FLAP SEAT AND BACKREST, TO AS 1428.1
		GR2	1	WC GRABRAIL SET	CAROMA	GRABRAILS TO ACCESSIBLE CUBICLE -CARE SUPPORT GRAB RAIL - 90 DEGREE ANGLED 1110x1030x600	CHR/BRASS	R- OR L-HANDED TO SUIT WC INSTALLATION (& NOTE BACKREST), COMPLIANT TO AS1428 ETC.
		TR1*	1	WC ROLL HOLDER	ESG	ESG FLETCHERS SLIM 3-ROLL CONTROLLED USE TOILET TISSUE DISPENSER, SD404, SKU NUMBER: 33371	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		HB2	1	HAND BASIN	CAROMA	CARE 600 WALL BASIN, 873110W	WHITE	1 No. TAPHOLE, SETOUT TO AS1428, C/W CARE TRAP SHROUD 873170W
		TP2	1	TAPWARE	ENWARE	VEGA SERIES EXTEND. LEVER BASIN MIXER, SLM606-D6	CHROME	AERATED, WELS 6-STAR -TO HB2, TO AS1428
		MR2	1	MIRROR	TO APPROVAL	6mm MIRRORED CFG TO SUIT	-	400W x 1070H, INSET FLUSH WITH WALL TILING -REFER DRAWING FOR POSITION, TO HB2
		SL1	1	SHELF	METLAM	ML950-12, 300 WIDE x 128 DEEP	ST/STEEL	MOUNTED TO AS1428, ADJACENT HB2
		HD1	1	HAND DRYER	JD MCDONALD	TOUCHDRY, SG BUTTON & NOZZLE –HDTDWHTSG	WHITE	REFER DRAWINGS FOR MOUNTING POSITION. TO AS 1428 TO ACCESSIBLE CUBICLES
		SD1*	1	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		FW1	1	SHOWER WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT SHOWER	CHR/BRASS	TO SHOWERS AND ACCESSIBLE SHOWERS, REFER DRAWINGS FOR APPROX. LOCATIONS, TO AS1428
		ST1	1	SHWR TAPWARE	ENWARE	ENWARE SEQUENTIAL LEVA SHOWER MIXER	CHROME	TO WS1 & ST2
		ST2	1	SHOWER TAPWARE	ENWARE	T-RAIL SHOWER SGR028 CTL OR CTR	CHROME	SHOWER SET WITH WALL-MOUNTED RAIL, INSTALL TO AS1428 (NOTE: CHECK L OR R)
		SO1	1	SOAP HOLDER	METLAM	S/STEEL SOAP DISH ML241S	SATIN	TO SHOWERS. TO AS 1428 TO ACCESIBLE SHOWERS
		SE1	1	SHOWER SEAT	METLAM	ML995_PH FOLD AWAY SHOWER SEAT	CHR/WHITE	PHENOLIC SEAT. MOUNTED TO AS1428 , SIZE 960W X 400D
		CUR1	1	SHW.CURTAIN	METLAM	MLSCT1616 SHOWER CURTAIN TRACK + CURTAIN	CHR/WHITE	1600 x 1600 WALL & CEILING-HUNG C/W MLSC SERIES NYLON CURTAIN, ALL TO AS 1428.1
		TP5	1	WASHDOWN BIB	ENWARE	KEY OPERATED HOSE TAP, VP350 M/F	CHROME	WALL MOUNT 800 AFL
		HAIR	1	HAIR DRYER	DOLPHY	WALL MOUNT DRYER (1800W-HOT & COLD) SKU P-DPH0017	WHITE	WALL MOUNT 1000 AFL
		CH1	3	COATHOOKS	METLAM	S/STEEL COAT HOOK ML4158	SATIN	TO ALL WC & SHWR CUBICLE DOORS AND OVER SHOWER BENCHES AT 1350 TO 1500 ABOVE FLOOR. REFER NOTE 4 ABOVE FOR CHANGE AREA COATHOOKS

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7.1	SPEC. M. WC	WC1	4	WC SUITE	CAROMA	LIANO CLEANFLUSH WALL FACED SUITE 766200W	WHITE	WITH CLOSE COUPLED CISTERN
7.2	SPEC. F. WC	WC2	2	AMBUL. WC SUITE	CAROMA	LIANO CLEANFLUSH EASY HEIGHT WALL FACED SUITE 766450W	WHITE	WITH CLOSE COUPLED CISTERN & LIANO CARE DOUBLE FLAP WHITE SEAT, TO AS 1428.1
		UR1	2	URINAL	CAROMA	CUBE SERIES II, ELECTRONIC FLUSH 678800W/ 678803	WHITE	COMPLETE IN-WALL INSTALLATION WITH ROUGH-IN KIT, POWER & SENSOR UNITS ETC.
		GR1	2	WC GRABRAIL SET	TO APPROVAL	GRABRAILS TO AMBULANT CUBICLE	CHR/BRASS	TO SUIT WC INSTALLATION, COMPLIANT TO AS1428 ETC.
		TR1*	6	WC ROLL HOLDER	ESG	ESG FLETCHERS SLIM 3-ROLL CONTROLLED USE TOILET TISSUE DISPENSER, SD404, SKU NUMBER: 33371	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		HB1-L	4	HAND BASIN	CLARK	SQUARE WALL BASIN, LHS, CL40008.W1LH	WHITE	1 No. TAPHOLE, LEFT-HAND SIDE SHELF
		TP1	4	TAPWARE	ENWARE	VEGA SERIES BASIN MIXER, SLM606-6	CHROME	AERATED, WELS 6-STAR -TO HB1
		MR1	4	MIRROR	TO APPROVAL	6mm MIRRORRED CFG TO SUIT	-	300W x 900H, INSET FLUSH WITH WALL TILING -REFER DRAWINGS FOR POSITION, TO HB1
		HD1	4	HAND DRYER	JD MCDONALD	TOUCHDRY, SG BUTTON & NOZZLE –HDTDWHTSG	WHITE	REFER DRAWINGS FOR MOUNTING POSITION. TO AS 1428 TO ACCESSIBLE CUBICLES
		SD1*	4	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		FW2	2	FLOOR WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT FLOORING	CHR/BRASS	REFER DRAWINGS FOR APPROX. LOCATIONS
		TP5	2	WASHDOWN BIB	ENWARE	KEY OPERATED HOSE TAP, VP350 M/F	CHROME	WALL MOUNT 800 AFL
		CH1	6	COATHOOKS	METLAM	S/STEEL COAT HOOK ML4158	SATIN	TO ALL WC & SHWR CUBICLE DOORS AND OVER SHOWER BENCHES AT 1350 TO 1500 ABOVE FLOOR. REFER NOTE 4 ABOVE FOR CHANGE AREA COATHOOKS
7.3	SPEC. DDA WC	WC3	1	ACCESS. WC SUITE	CAROMA	CARE 660 CLEANFLUSH CONNECTOR SUITE, 982941BAG	WHITE	WITH GREY SINGLE FLAP SEAT AND BACKREST, TO AS 1428.1
		GR2	1	WC GRABRAIL SET	CAROMA	GRABRAILS TO ACCESSIBLE CUBICLE -CARE SUPPORT GRAB RAIL - 90 DEGREE ANGLED 1110x1030x600	CHR/BRASS	R- OR L-HANDED TO SUIT WC INSTALLATION (& NOTE BACKREST), COMPLIANT TO AS1428 ETC.
		TR1*	1	WC ROLL HOLDER	ESG	ESG FLETCHERS SLIM 3-ROLL CONTROLLED USE TOILET TISSUE DISPENSER, SD404, SKU NUMBER: 33371	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		HB2	1	HAND BASIN	CAROMA	CARE 600 WALL BASIN, 873110W	WHITE	1 No. TAPHOLE, SETOUT TO AS1428, C/W CARE TRAP SHROUD 873170W
		TP2	1	TAPWARE	ENWARE	VEGA SERIES EXTEND. LEVER BASIN MIXER, SLM606-D6	CHROME	AERATED, WELS 6-STAR -TO HB2, TO AS1428
		MR2	1	MIRROR	TO APPROVAL	6mm MIRRORRED CFG TO SUIT	-	400W x 1070H, INSET FLUSH WITH WALL TILING -REFER DRAWING FOR POSITION, TO HB2
		SL1	1	SHELF	METLAM	ML950-12, 300 WIDE x 128 DEEP	ST/STEEL	MOUNTED TO AS1428, ADJACENT HB2
		HD1	1	HAND DRYER	JD MCDONALD	TOUCHDRY, SG BUTTON & NOZZLE –HDTDWHTSG	WHITE	REFER DRAWINGS FOR MOUNTING POSITION. TO AS 1428 TO ACCESSIBLE CUBICLES
		SD1*	1	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		FW2	1	FLOOR WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT FLOORING	CHR/BRASS	REFER DRAWINGS FOR APPROX. LOCATIONS
		TP5	1	WASHDOWN BIB	ENWARE	KEY OPERATED HOSE TAP, VP350 M/F	CHROME	WALL MOUNT 800 AFL
		CH1	2	COATHOOKS	METLAM	S/STEEL COAT HOOK ML4158	SATIN	TO ALL WC & SHWR CUBICLE DOORS AND OVER SHOWER BENCHES AT 1350 TO 1500 ABOVE FLOOR. REFER NOTE 4 ABOVE FOR CHANGE AREA COATHOOKS
		BC1	1	BABY CHANGE	KOALA KARE	VERTICAL BABYCHANGE TABLE, KB301 WHITE GRANITE 05	WHITE	INSTALLATION TO AS1428.1
8.0	KIOSK	KS1	1	KITCHEN SINK	TO APPROVAL	300 (W) X 300 (L) X 250 (D) INTEGRATED	ST/STEEL	FULLY INTEGRATED WITH STAINLESS BENCHTOP + INTEGRAL DRAINER, WASHUP
		KS2	1	KITCHEN SINK	TO APPROVAL	300 (W) X 300 (L) X 200 (D) INTEGRATED	ST/STEEL	FULLY INTEGRATED WITH STAINLESS BENCHTOP, WASHUP (note smaller second sink)
		TP3	1	TAPWARE	ENWARE	VEGA SINK MIXER SLM607D-6	CHROME	WELS 6 Star, WITH EXTENDED HANDLE, BENCHTOP-MOUNTED BETWEEN KS1/KS2
		TP9	1	TAPWARE	ENWARE	ULTRA-RINSE UNIT WITH CONCEALED MIXER & POT FILLER	CHROME	FHS121 HOB-MOUNTED AT KS1
		ZIP1	1	BOIL.WATER UNIT	ZIP	HYDROTAP G5 BC CLASSIC PLUS, BOILING AND CHILLED, H55784Z00AU	CHROME	BENCH-MOUNTED AT KS2 + UNDERBENCH UNIT PRODUCES 60 CUPS OF BOILING WATER & 75 CUPS OF CHILLED WATER PER HOUR, BASED ON 200ml CUPS)
		FW2	3	FLOOR WASTE	TO APPROVAL	CHROME-PLATED BRASS TO SUIT FLOORING	CHR/BRASS	REFER DRAWINGS FOR APPROX. LOCATIONS
		TP5	1	WASHDOWN BIB	ENWARE	KEY OPERATED HOSE TAP, VP350 M/F	CHROME	WALL MOUNT 800 AFL
		HB3	1	HANDWASH BASIN	CAROMA	CUBUS WALL BASIN, 633615W	WHITE	OVERFLOW, 1 No. TAPHOLE -SETOUT TO AS1428, INC. CHROME POP-UP PLUG + AND WASTE 687329C
		TP6	1	TAPWARE	ENWARE	VEGA SENSOR ACTIVATED BASIN TAP -ENM6222	CHROME	WELS 6-STAR, MAINS POWER, STANDARD SINGLE TEMPERATURE SETUP, TO HB3. COORDINATE WITH ELECTRICAL SERVICES FOR CONCEALED HARD-WIRED PO LOCATION BELOW BASIN (NO VISIBLE CABLE)
		SD1*	1	SOAP DISPENSER	GOJO	GOJO 5150 FMX MANUAL FOAM SOAP DISPENSER, SKU NUMBER: 00454	WHITE	*INSTALL ONLY, SUPPLIED BY OTHERS
		PD1*	1	PAPER TOWEL DISP.	ESG	ESG SIMPLICITY AUTO ROLL TOWEL DISPENSER HD503, SKU NUMBER: 26820	BLACK	*INSTALL ONLY, SUPPLIED BY OTHERS

Dock4 Architects |
L4, 152 Elizabeth Street
Melbourne VIC 3000
+613 8376 6169

L1, 100 Collins Street
Hobart TAS 7000
+613 6231 0469

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES FINISHES, SANITARY, DOOR, FITTINGS and SIGNAGE SCHEDULE



11.1	CLEANERS/ STORAGE	CS1	1	CLEANERS SINK	STODDART	CS.01.450 CLEANER'S SINK	S/STEEL	C/W S/STEEL HINGED GRATE AND LEGS AND INTEGRAL SPLASHBACK
		TP8a	1	BIB TAP	ENWARE	WELLBEING LEVA 80mm BIB TAP - 15mm FEMALE - ANTI-CLOCKWISE-TO-CLOSE, RED INDICATOR (HOT)	CHROME	WALL MOUNTED ON SPLASHBACK ABOVE CLEANER'S SINK
		TP8b	1	BIB TAP	ENWARE	WELLBEING LEVA 80mm BIB TAP - 15mm FEMALE - CLOCKWISE-TO-CLOSE, BLUE INDICATOR (COLD)	CHROME	WALL MOUNTED ON SPLASHBACK ABOVE CLEANER'S SINK
		MP1	1	MOP RACK	METLAM	MOP & BROOM HOLDER, ML983-5	-	LOCATED ON OPPOSITE WALL TO CLEANERS SINK AT 1600 AFL
		TP7	1	WASHDOWN BIB	ENWARE	TYPE 47 SPRING ACTION BIB TAP FI 15mm - CAM ACTION, BUB208C	CHROME	WALL MOUNT 800 AFL (BUCKET FILLING)

FINISHES, SANITARY, DOOR, FITTINGS
and SIGNAGE SCHEDULE



WC1



HB1-L



TP1



TP2



TP3



TP4



TP5



TP6



TP7



TP8



WC2



HB2



TP9



ZIP1



KS1/ KS2



CS1



MP1



WC3



HB3



*TR1



CH1



HD1



*PD1



*SD1



SL1



UR1



SE1



ST1



ST2



WS1



SO1



HAIR

*ITEMS SUPPLIED BY OTHERS FOR BUILDER INSTALL ONLY

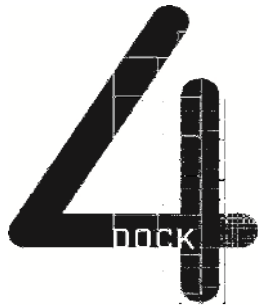
WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES
FINISHES, SANITARY, DOOR, FITTINGS
and SIGNAGE SCHEDULE



DOOR SCHEDULE LEGEND				
FRAME CODE		SUNDRIES		NOTES
TMF	TIMBER FRAME (KDHW)	VP1	VISION PANEL -150w x 500h	ALL HARDWARE TO BE ASSA-ABLOY (LOCKWOOD) COMMERCIAL RANGE, AS SCHEDULED IN DOOR HARDWARE SCHEDULE (NOTE: HANDLES TO HAVE RETURNS TO AS1428.1). CLOSERS TO BE HEAVY-DUTY COMMERCIAL TYPE, MAX 20N FORCE, INTERNALLY-MOUNTED, INCL. OPENING DAMPER, ANGLED MOUNTING PLATE AND BACKCHECK. ALL DOORS TO EACH HAVE MIN. 1.5 PAIRS x 100 HEAVY-DUTY STAINLESS STEEL HINGES UNLESS NOTED OTHERWISE. DOORS MIN. 900MM CLEAR OPENING UNLESS NOTED OTHERWISE. DOORS TO AMBULANT WCs MIN 750MM CLEAR OPENING. EXTERNAL DOORS TO REQUIRE MAXIMUM OF 20N OF FORCE TO OPERATE AT DOOR HANDLE. MANUALLY OPERATED INTERNAL DOORS TO HAVE OPENING FORCE OF LESS THAN 20N. ALL SWING DOORS - SINGLE HAND DOWNWARD ACTION @1000 AFL OPENABLE WITHOUT THE USE OF KEY FROM EGRESS SIDE. DOOR HARDWARE TO COMPLY WITH AS1428.1 AND CLEARANCE OF 40mm TO BACKPLATE. ALL DOOR HANDLES TO BE INSTALLED AT 1000 AFL AND HAVE A LUMINANCE CONTRAST OF 30% TO DOOR LEAF. 30% LUMINANCE CONTRAST BETWEEN DOORS, WALLS AND/OR DOOR FRAME IS TO BE ACHIEVED. GR1 DOOR GRILLES -WIDTH TO BE AS DOOR x HEIGHT TO SUIT OPEN AREA AS REQUIRED ON MECH. SERVICES DRGS. IF NO DOOR GRILLE IS CALLED UP ON THE MECH. SERVICES DRGS, DOOR GRILLE IS STILL REQUIRED AND IS TO BE DOOR WIDTH x 200H. ALL ACCESS CONTROLS AND PUSH RELEASE BUTTONS TO BE INSTALLED AT 1000AFL AND MIN DISTANCE OF 500mm TO INTERNAL CORNER AND MAX DISTANCE OF 2m FROM DOORWAY. TACTILE AND BRAILLE SIGNS TO NCC CLAUSE 3 AND 6 OF SPECIFICATION D3.6 . TO AMBULANT AND ACCESSIBLE CUBICLE DOORS GENERALLY -INSTALL LIFT-OFF HINGES, IN-USE INDICATOR BOLT WITH MIN 45MM LONG-ARM SNIB TO AS1428.1. BILOCK CYLINDERS: SUPPLY AND INSTALL TEMPORARY CONSTRUCTION CYLINDERS AS REQUIRED, THEN INSTALL ONLY REPLACEMENT CYLINDERS SUPPLIED BY OTHERS (IE COUNCIL'S NOMINATED SECURITY CONTRACTOR) AT PROJECT COMPLETION
TJF	KDHW JOINERY FRAME/ LININGS	KP1	PAIR KICKPLATES 150 HIGH, STAINLESS STEEL	
GAL	GALVANISED PRESSED STEEL FRAME	WS1	WEATHER SEALS TO PERIMETER INCL. THRESHOLD (RAVEN OR EQUIV.)	
AWF	POWDERCOATED ALUMINIUM	AS1	ACOUSTIC SEALS TO HEAD & JAMBS (RAVEN OR EQUIV.)	
RGP	ROLLER SHUTTER/ GRILLE & GUIDES, PC	GR1	DOOR GRILLE -HEAVY DUTY, P'COATED TO MATCH DOOR -REFER NOTES FOR SIZE	
		UC1	UNDERCUT NOM 50MM, NO THRESHOLD	
		IBS	IN-USE INDICATION, BOLT AND SNIB MIN 45MM LONG, TO AS1428.1	
		AUTO	MOTORISED OPERATION	
		SM1	SMOKE SEALS, COMPLIANT TO NCC CLAUSE D2.7	
		NCL	NON-COMBUSTIBLE LINING TO DOOR INTERIOR FACE, COMPLIANT TO NCC CLAUSE D2.7	
LEAF CODE		OPERATION/KEYING SYSTEM		
SFT	SOLID CORE FLUSH TIMBER	BILOCK	INSTALL ONLY BILOCK CYLINDERS SUPPLIED BY COUNCIL'S SECURITY CONTRACTOR (SEE NOTES)	
SSFT	SEMI-SOLID CORE FLUSH TIMBER			
AFG	ALUMINIUM FRAMED & GLAZED	AC	ELECTRONIC ACCESS CONTROL -REFER ELECTRICAL DRAWINGS	
RSD	ROLLER SHUTTER/ GRILLE	WP1	MOTORISED AUTO OPERATION (REFER SPEC)	
		WP2	AUTO OPERATION WITH MOUNTED PUSH-BUTTON ESCAPE FUNCTION TO INSIDE WALL (REFER SPEC)	

DOOR SCHEDULE											
No.	ZONE/AREA	STYLE	MIN. CLEAR OPENG.	NOM. LEAF SIZE(S)	NOM. WALL OPENING	FRAME CODE	LEAF CODES	OP/KEY-ING	FINISH	SUNDRIES	NOTES
D1.0 D2.0 D3.0 D4.0	CHANGE 1 CHANGE 2 CHANGE 3 UMPIRE/REF.DUTY RM	Hinged	920	970 x 2040	1050 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	KP1, GR1, AS1	LOCKING, CLOSER, HOLDOPEN.
R1.1 R3.1	CHANGE 1/2 CHANGE 3/4	Roller Shutter	3000	3000 x 2500	3000 x 2500	RGP	RSD	WP1	PC2	AUTO	MOTORISED AUTO OPERATION (REFER SPEC). GUIDES TO BE RECESSED INTO WALL FINISHES, REFER DETAIL
R1.2 R2.1	AMENITIES 1 AMENITIES 2	Roller Shutter	1200	1200 x 2100	1200 x 2100	RGP	RSD	WP1	PC2	AUTO	MOTORISED AUTO OPERATION (REFER SPEC). GUIDES TO BE RECESSED INTO WALL FINISHES, REFER DETAIL
D5.0 D6.0 D7.1 D7.2 D7.3	UMP./REF. CHANGE 1 UMP./REF. DDA CH. 2 SPEC. MALE WC SPEC. FEMALE WC SPEC. DDA WC	Hinged	920	970 x 2040	1050 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	KP1, GR1	LOCKING, CLOSER, HOLDOPEN
D8.0	KIOSK	Hinged	920	970 x 2040	1050 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	VP1, KP1, GR1	LOCKING, CLOSER, HOLDOPEN
R8.1	KIOSK	Roller Shutter	2400	2400 x 1270	2400 x 1270	RGP	RSD	WP2	PC1	AUTO	MOTORISED AUTO OPERATION (REFER SPEC). GUIDES TO BE RECESSED INTO WALL FINISHES, REFER DETAIL

FINISHES, SANITARY, DOOR, FITTINGS
and SIGNAGE SCHEDULE



R8.2	KIOSK	Roller Shutter	2400	2400 x 1270	2400 x 1270	RGP	RSD	WP2	PC2	AUTO	MOTORISED AUTO OPERATION (REFER SPEC). GUIDES TO BE RECESSED INTO WALL FINISHES, REFER DETAIL
D9.1 D9.2 D10.1	NETBALL REG. NETBALL OFFICE NETBALL INT. STORE	Hinged	920	970 x 2040	1050 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	KP1, GR1	LOCKING, CLOSER, HOLDOPEN
EX.D 9.3	NETBALL MEETING	Hinged	EX.	EX.	EX.	EX.	EX.	BILOCK	REFER INT. FINISHES SCHEDULE	KP1, GR1	EXISTING DOOR WITH NEW LOCK, NEW KICKPLATES, NEW DOOR GRILLE & REPAINTED
D10.2 D10.3 D11.1 D11.2 D11.3 D11.4 D11.5	NETBALL STORAGE NETBALL STORAGE CLEANER/ STORAGE STORAGE STORAGE STORAGE STORAGE	Hinged	NOM. 820+ 820 (CHECK EX. OPEN.)	NOM. 870+870 x 2040 (CHECK EXISTING OPENING WIDTH)	NOM.1820 X 2100 (CHECK EXISTING OPENING WIDTH)	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	GR1 x2	LOCKING, PAIR CLOSERS, HOLDOPEN BOTH LEAVES. DOOR WIDTHS TBC (TO FIT EXISTING REVEAL WIDTHS, WITH STUDWORK INFILL PANELS OVER FOR MECH. REGISTER/DUCT -REFER SERVICES DRGS & FINISHES SCHEDULE)
R10.4	NETBALL EXT. STORE	Roller Shutter	3500	3500 x 2700	3500 x 2700	RGP	RSD		PC1		MANUAL ROLLER SHUTTER AS PART OF PROPRIETARY SHED SUPPLY
D12.1	ELEC. SERVICES	Hinged	920+ 920	970+970 x 2040	2020 x 2100	TJF	SSFT	BILOCK	REFER INT. FINISHES SCHEDULE	SM1, NCL	LOCKING, PAIR CLOSERS, HOLDOPEN BOTH LEAVES, TOWER BOLTS TO INACTIVE LEAF. DOOR FRAME AND LEAFS FACE SET FLUSH TO CORRIDOR. NOTE CUPBOARD INTERIOR NON-COMBUSTIBLE COMPLIANT TO NCC CLAUSE D2.7
D12.2	SERVICES	Hinged	920+ 920	970+970 x 2040	2020 x 2100	TJF	SSFT	BILOCK	REFER INT. FINISHES SCHEDULE	GR1 x1	LOCKING, PAIR CLOSERS, HOLDOPEN BOTH LEAVES, TOWER BOLTS TO INACTIVE LEAF. DOOR FRAME AND LEAFS FACE SET FLUSH TO NETBALL MEETING
D12.3	SERVICES	Hinged	920	970 x 2040	1050 x 2100	TJF	SSFT	BILOCK	REFER INT. FINISHES SCHEDULE		LOCKING, CLOSER, HOLDOPEN. DOOR FRAME AND LEAFS FACE SET FLUSH TO NETBALL REG.
D14.1	CORRIDOR 1	Hinged	920+ 600	970+650 x 2040	1700 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	AS1, VP1 (TO ACTIVE LEAF), KP1	LOCKING, PAIR CLOSERS, HOLDOPEN BOTH LEAVES, TOWER BOLTS TO INACTIVE LEAF.
D14.2	CORRIDOR 2	Hinged	920+ 400	970+450 x 2040	1500 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	VP1 (TO ACTIVE LEAF), KP1	LOCKING, PAIR CLOSERS, HOLDOPEN BOTH LEAVES, TOWER BOLTS TO INACTIVE LEAF.
D14.3	CORRIDOR 3	Hinged	920+ 600	970+650 x 2040	1700 x 2100	TMF	SFT	BILOCK	REFER INT. FINISHES SCHEDULE	AS1, VP1 (TO ACTIVE LEAF), KP1	LOCKING, PAIR CLOSERS, HOLDOPEN BOTH LEAVES, TOWER BOLTS TO INACTIVE LEAF.
EX.D 15.1 EX.D 15.2	CORRIDOR 1 CORRIDOR 3	Hinged	EX.	EX.	EX.	EX.	EX.	EX.	EX.	EX.	EXISTING DOOR, NO WORK
EX.D 16.1 EX.D 16.2	FIRST AID FIRST AID	Hinged	EX.	EX.	EX.	EX.	EX.	EX.	EX.	EX.	EXISTING DOOR, NO WORK
D 17.0	GYM CONNECTION	Sliding	920	970 x 2040	1050 x 2100	TMF	SFT	AC	REFER INT. FINISHES SCHEDULE	AS1	LOCKING
D 18.0	UPPER FLOOR EXTERNAL DOOR	Hinged	920	970 x 2040	1050 x 2100	GAL	SFT	BILOCK	P3 PAINT FINISH	AS1	LOCKING, CLOSER, HOLDOPEN. ESCAPE FUNCTION.

Dock4 Architects
L4, 152 Elizabeth Street
Melbourne VIC 3000
+613 8376 6169

L1, 100 Collins Street
Hobart TAS 7000
+613 6231 0469

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES

FINISHES, SANITARY, DOOR, FITTINGS

and SIGNAGE SCHEDULE

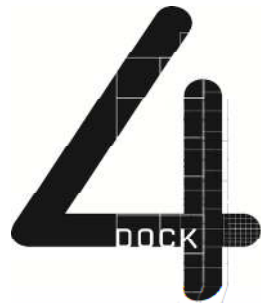


FITTINGS & EQUIPMENT SCHEDULE							
ROOM/SPACE		ITEM			DETAILS		NOTES
No.	DESCRIPTION	DRG. CODE	SUPPLIER/MANUFACTURER/MODEL		No	MATERIAL, COLOUR	
8.0 KIOSK	DISPLAY FRIDGES	DF1	NOT IN CONTRACT	N/A	0	FRIDGE SPACE ALLOWED: 1200W X 750D mm. SUPPLIED & INSTALLED BY OTHERS, PROVIDE GPOs AS PER ELECTRICAL AND INTERNAL ELEVATION DRAWINGS	
						EXAMPLE USED FOR KITCHEN JOINERY SETOUT ONLY (FRIDGES NOT IN CONTRACT): POLAR G-SERIES HINGED DOOR UPRIGHT DISPLAY COOLER WITH LIGHT BOX, 950L, GE580-A, DIMENSIONS 2068H x 1200W x 728D mm	
8.0 KIOSK	REFRIGERATOR FREEZER	FR1 FZ1	NOT IN CONTRACT	N/A	0	FRIDGE/ FREEZER SPACE ALLOWED (2No.): 1350mm W X 650mm D. SUPPLIED & INSTALLED BY OTHERS, PROVIDE GPOs AS PER ELECTRICAL AND INTERNAL ELEVATION DRAWINGS	
						EXAMPLES USED FOR KITCHEN JOINERY SETOUT ONLY (FRIDGES NOT IN CONTRACT): POLAR C-SERIES, UPRIGHT FRIDGE, WHITE, 400L, PC003-A, DIMENSIONS 1855H x 600W x 635D mm POLAR C-SERIES, UPRIGHT FREEZER, WHITE, 365L, CD613-A, DIMENSIONS 1850H x 600W x 600D mm	
8.0 KIOSK	PIE WARMERS COFFEE MACHINE, BENCH AIR FRYER	N/A	NOT IN CONTRACT	N/A	0	N/A	SUPPLIED & INSTALLED BY OTHERS, PROVIDE GPOs AS PER ELECTRICAL AND INTERNAL ELEVATION DRAWINGS
8.0 KIOSK	WALL OVEN	OV1	WESTINGHOUSE		2	STAINLESS STEEL	WESTINGHOUSE, 600mm, MULTI-FUNCTION SIDE-OPENING OVEN, STAINLESS STEEL, WVES6314SD-L (DEFAULT DOOR HING: LEFT), DIMENSIONS 597H x 596W x 573D mm
8.0 KIOSK	COOKTOP	OV2	WESTINGHOUSE		1	BLACK	WESTINGHOUSE, 900mm, 4 ZONE CERAMIC COOKTOP, BLACK, WHC942BC, DIMENSIONS 46H x 900W x 520D mm
8.0 KIOSK	DISHWASHER	DW1	BOSCH SMU88TS02A		1	STAINLESS STEEL	BOSCH, UNDERBENCH DISHWASHER, SMU88TS02A, 598W x 573D X 875H mm
8.0 KIOSK	RANGEHOOD	RH1	REFER MECHANICAL SERVICES & INTERNAL ELEVATIONS DRAWINGS		1	STAINLESS STEEL	
EXTERNAL	BENCH SEATS	BS2	SEATS PLUS, DOUBLE PLANK BOLT-DOWN BENCH 3000L, HEIGHT TBC		3	POWDERCOAT FINISH, COLOUR TBC	PLAIN (NATURAL) FINISH, WITH & INLCUDING FLAT TOP SKATEBOARD DETERRENTS BY ENCAT, SDFT01, 3 No. PER BENCH SEAT. SEATS PLUS: 29 DRUMMOND ROAD, SHEPPARTON, VIC 3630 1800 722 726 info@seatsplus.com.au
	FIXED/ DROP DOWN SCREENS AND SCREEN PROJECTORS	N/A	SUPPLIED BY CLIENT	NOT IN CONTRACT	0	N/A	SUPPLIED & INSTALLED BY OTHERS, PROVIDE GPOs AND DATA CONNECTIONS AS PER ELECTRICAL AND INTERNAL ELEVATION DRAWINGS
14.1-14.5 CORRID- ORS	WALL CORNER GUARDS	N/A	50 x 50 S/S CORNER GUARD TO EXTERNAL CORNERS OF CORRIDOR WALLS, TO 1200 AFL		12	STAINLESS STEEL, SATIN FINISH	ALL EXPOSED EXTERNAL CORNERS, MIX OF NEW AND EXISTING LINGS

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES

FINISHES, SANITARY, DOOR, FITTINGS

and SIGNAGE SCHEDULE



SIGNAGE SCHEDULE							
NOTE: ALL SIGNAGE TO BE REVIEWED BY SIGNAGE SUPPLIER FOR COMPLIANCE BEFORE SUPPLY & INSTALLATION. ALL SILVER SIGNS ON WHITE WALLS TO HAVE BLACK BORDER FOR LUMINANCE CONTRAST							
1.1 2.1 3.1 4.1	AMENITIES 1 AMENITIES 2 AMENITIES 3 AMENITIES 4	SN1	BRAILLE UNISEX WC SIGN		4	SILVER POLY, 210 WIDE x 180 HIGH, MOUNTED ALONGSIDE AMENITIES ENTRY TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	REFER COMPLIANCE PLAN FOR LOCATION
1.1 2.1 3.1 4.1	AMENITIES 1 AMENITIES 2 AMENITIES 3 AMENITIES 4	SN2	BRAILLE UNISEX AMBULANT WC CUBICLE SIGN		4	SILVER POLY, 210 WIDE x 180 HIGH, MOUNTED ON WC DOOR/ CUBICLE DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	REFER COMPLIANCE PLAN FOR LOCATION
2.2 3.2 6.0	AMENITIES 2 AMENITIES 3 D6.0	SN3a & SN3b	BRAILLE UNISEX DDA WC & SHOWER SIGN		3	SILVER POLY, 310 WIDE x 180 HIGH, MOUNTED ON CUBICLE DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	CONFIRM LH/ RH, REFER COMPLIANCE PLAN FOR LOCATION
7.1 7.2	D7.1 D7.2	SN4a & SN4b	BRAILLE FEMALE/ MALE WC WITH AMBULANT WC CUBICLE SIGN		2	SILVER POLY, 210 WIDE x 180 HIGH, MOUNTED ON/ ALONGSIDE WC DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	CONFIRM MALE/ FEMALE (ONE OF EACH), REFER COMPLIANCE PLAN FOR LOCATION
7.1 7.2	SPEC. M. WC SPEC. F. WC	SN5a & SN5b	BRAILLE FEMALE/ MALE AMBULANT WC CUBICLE SIGN		2	SILVER POLY, 210 WIDE x 180 HIGH, MOUNTED ON CUBICLE DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	CONFIRM MALE/ FEMALE (ONE OF EACH), REFER COMPLIANCE PLAN FOR LOCATION
7.3	D7.3	SN6	BRAILLE UNISEX DDA WC & BABYCHANGE SIGN		1	SILVER POLY, 310 WIDE x 180 HIGH, MOUNTED ON WC DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	CONFIRM LH/ RH, REFER COMPLIANCE PLAN FOR LOCATION
5.0	D5.0	SN7	BRAILLE UNISEX WC, SHOWER & BABYCHANGE SIGN		1	SILVER POLY, 310 WIDE x 180 HIGH, MOUNTED ON WC DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	REFER COMPLIANCE PLAN FOR LOCATION
11.1	D11.1	SN8	BRAILLE CLEANER SIGN		1	SILVER POLY, 210 WIDE x 180 HIGH, MOUNTED ON WC DOOR TO AS1428.1. AND CLAUSE D3.6 NCC PICTOBRILLE (OR EQUAL TO APPROVAL)	REFER COMPLIANCE PLAN FOR LOCATION
INTERNAL	EXTERNAL EXIT DOORS	SN9	BRAILLE EXIT SIGN		TBC	SILVER POLY. MIN. 180 WIDE x 50 HIGH, MOUNTED TO INTERNAL WALL TO AS1428.1. PICTOBRILLE (OR EQUAL TO APPROVAL)	AT EXTERNAL DOORS HAVING ILLUMINATED EXIT SIGNAGE, LOCATIONS TBC ON SITE
INTERNAL	D1.0 D2.0 D3.0 D4.0	SN10	BRAILLE SIGNS OUTSIDE CHANGE ROOM DOORS	CHANGEROOM 1 CHANGEROOM 2 CHANGEROOM 3 UMPIRES/ REFEREES DUTY ROOM 4	4	STAINLESS STEEL MIN. 50mm HIGH, TO AS1428.1 AND CLAUSE D3.6 NCC PICTOBRILLE, WIDTH TO SUIT TEXT	VANDAL-PROOF, INTERNAL SIGN -FIXINGS TO APPROVAL, TEXT TO BE CONFIRMED BEFORE ORDERING, REFER DRAWING DETAILS FOR MOUNTING POSITIONS

Dock4 Architects

L4, 152 Elizabeth Street
Melbourne VIC 3000
+613 8376 6169

L1, 100 Collins Street
Hobart TAS 7000
+613 6231 0469

WANGARATTA SPORTS and AQUATIC CENTRE (WSAC) AMENITIES

FINISHES, SANITARY, DOOR, FITTINGS

and SIGNAGE SCHEDULE



INTERNAL	D8.0 D9.1 D9.2 EX.D 9.3 D10.1-D1.03 D11.2-D11.5 D12.1-D12.3	SN11	BRAILLE SIGNS OUTSIDE ROOM DOORS	KIOSK NETBALL REGISTRATION NETBALL OFFICE NETBALL MEETING NETBALL STORE STORE ROOM SERVICES	14	STAINLESS STEEL MIN. 50mm HIGH, TO AS1428.1 AND CLAUSE D3.6 NCC PICTOBRILLE, WIDTH TO SUIT TEXT	VANDAL-PROOF, INTERNAL SIGN -FIXINGS TO APPROVAL, TEXT TO BE CONFIRMED BEFORE ORDERING, REFER DRAWING DETAILS FOR MOUNTING POSITIONS
EXTERNAL	EXTERNAL WALL	SN12	BRAILLE SIGN MOBILITY SCOOTER CHARGING		1	COLORBBOND STEEL 220 WIDE x 220 HIGH, MOUNTED ALONGSIDE CHARGING POINT TO AS1428.1. AND CLAUSE D3.6 PICTOBRILLE (OR EQUAL TO APPROVAL)	REFER COMPLIANCE PLAN FOR LOCATION

Cover Letter | Door Hardware Schedule

22/06/2026 02:53 PM

Project Name:

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES

Project ID:

108275 - (2)

Revision Note:

Project Address:

41 Schilling Drive WANGARATTA VIC 3677 AUSTRALIA

Keying System:

ALC Bi-Lock (Existing)

Architect Company:

DOCK4 ARCHITECTURE

Architect Project ID:

Consultant:

Darren Wallin

This schedule is based on the following documentation.

Project Comments:

Spence Doors, an ASSA ABLOY group company, can provide a full compliant solution for rated and non-rated door and frame requirements excluding aluminium solutions.

ASSA ABLOY Hardware specified within this project is compatible with applicable Spence door applications (at time of production of this documentation).

For questions concerning details of the Spence doors and frames, their specifications, and their utilisation, please contact Spence Doors salesmelb.spence@assaabloy.com. Alternatively visit www.spencedoors.com.au. For hardware related queries, please contact ASSA ABLOY consultant Darren Wallin at Darren.Wallin@assaabloy.com.

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish	
Mark:	D1.0	To/From Room:	CHANGE 1	Level:	Building:		
Height:	2040	Width:	920	Thick:	40	HW Set:	2.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER		
Arc Door Type:				Arc Frame Type:			
Arc Door MatAerial:				Arc Frame Material:			
Fire Rating:	Smoke Rating:		Acoustic Rating:				
Handing:							
LW10075BBSSS	4	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS	
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS	
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC	
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE	
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC	
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC	
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL	
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD		
2616-153	1	2616 SERIES OPENING DAMPER			LOCKWOOD		
ASF KICKPLATE 150MM HIGH	1	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS	
LAS7001/SDS/S	1	SLIM-LINE DOOR PERIMETER SEAL BULB SGL DR SET SIL			LORIENT	SIL	
LAS8001/0920/S	1	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT	SIL	
Mark:	D2.0	To/From Room:	CHANGE 2	Level:	Building:		
Height:	2040	Width:	920	Thick:	40	HW Set:	2.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER		
Arc Door Type:				Arc Frame Type:			
Arc Door MatAerial:				Arc Frame Material:			
Fire Rating:	Smoke Rating:		Acoustic Rating:				
Handing:							
LW10075BBSSS	4	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS	
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS	
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC	
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE	
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC	
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC	
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL	
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD		
2616-153	1	2616 SERIES OPENING DAMPER			LOCKWOOD		
ASF KICKPLATE 150MM HIGH	1	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS	
LAS7001/SDS/S	1	SLIM-LINE DOOR PERIMETER SEAL BULB SGL DR SET SIL			LORIENT	SIL	
LAS8001/0920/S	1	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT	SIL	

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D3.0	To/From Room:	CHANGE 3	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 2.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
LW10075BBSSS	4		HINGES 100X75X2.5 BALL BEARING SSS		LOCKWOOD	SSS
3772V-SS	1		3772 - ANTI-VANDAL ESCAPE LOCK		LOCKWOOD	SS
MASTER KEYED CYLINDER	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	SC
CUT KEY	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	NONE
1801/70SC	1		1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER		LOCKWOOD	SC
1905/70SC	1		1905 SQUARE END PLATE WITH 70 LEVER		LOCKWOOD	SC
2615DASIL	1		2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED		LOCKWOOD	SIL
2616-152	1		2616 SERIES HOLD OPEN DEVICE		LOCKWOOD	
2616-153	1		2616 SERIES OPENING DAMPER		LOCKWOOD	
ASF KICKPLATE 150MM HIGH	1		1.2MM KICKPLATE X DOOR WIDTH SSS		OTHER	SSS
LAS7001/SDS/S	1		SLIM-LINE DOOR PERIMETER SEAL BULB SGL DR SET SIL		LORIENT	SIL
LAS8001/0920/S	1		DROP SEAL MORTICE 0920 SIL SQUARE END PLATE		LORIENT	SIL
Mark:	D4.0	To/From Room:	UMPIRES / REFEREES DUTY ROOM	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 2.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
LW10075BBSSS	4		HINGES 100X75X2.5 BALL BEARING SSS		LOCKWOOD	SSS
3772V-SS	1		3772 - ANTI-VANDAL ESCAPE LOCK		LOCKWOOD	SS
MASTER KEYED CYLINDER	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	SC
CUT KEY	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	NONE
1801/70SC	1		1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER		LOCKWOOD	SC
1905/70SC	1		1905 SQUARE END PLATE WITH 70 LEVER		LOCKWOOD	SC
2615DASIL	1		2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED		LOCKWOOD	SIL
2616-152	1		2616 SERIES HOLD OPEN DEVICE		LOCKWOOD	
2616-153	1		2616 SERIES OPENING DAMPER		LOCKWOOD	
ASF KICKPLATE 150MM HIGH	1		1.2MM KICKPLATE X DOOR WIDTH SSS		OTHER	SSS
LAS7001/SDS/S	1		SLIM-LINE DOOR PERIMETER SEAL BULB SGL DR SET SIL		LORIENT	SIL
LAS8001/0920/S	1		DROP SEAL MORTICE 0920 SIL SQUARE END PLATE		LORIENT	SIL
Mark:	R1.1	To/From Room:	CHANGE 1/2	Level:	Building:	
Height:	2500	Width:	3000	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
ROLLER SHUTTER	1		BY DOOR MANUFACTURER		OTHER	

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	R3.1	To/From Room:	CHANGE 3/4	Level:	Building:	
Height:	2500	Width:	3000	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
ROLLER SHUTTER		1	BY DOOR MANUFACTURER			OTHER
Mark:	R1.2	To/From Room:	AMENITIES 1	Level:	Building:	
Height:	2100	Width:	1200	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
ROLLER SHUTTER		1	BY DOOR MANUFACTURER			OTHER
Mark:	R2.1	To/From Room:	AMENITIES 2	Level:	Building:	
Height:	2100	Width:	1200	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
ROLLER SHUTTER		1	BY DOOR MANUFACTURER			OTHER
Mark:	D5.0	To/From Room:	FAMILY CHANGE & SHOWER	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 4.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS		4	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD SSS
3772V-SS		1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD SS
3571PTSC		1	3571 MORTICE DEADLOCK PRIMARY LOCK THROUGH FIXABLE 60mm BACKSET			LOCKWOOD SC
MASTER KEYED CYLINDER		1	TO END USERS EXISTING SYSTEM			LOCKWOOD SC
CUT KEY		1	TO END USERS EXISTING SYSTEM			LOCKWOOD NONE
1801/70SC		1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD SC
1368/9PSC		1	1360 SERIES PRIV IND EMER TURN AND PRIV IND DTURN ESCUTCH KIT			LOCKWOOD SC
1905/70SC		1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD SC
2615DASIL		1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD SIL
2616-152		1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD
ASF KICKPLATE 150MM HIGH		2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER SSS
A350SC		1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD SC

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D6.0	To/From Room:	DDA CHANGE & SHOWER	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 4.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
LW10075BBSSS	4		HINGES 100X75X2.5 BALL BEARING SSS		LOCKWOOD	SSS
3772V-SS	1		3772 - ANTI-VANDAL ESCAPE LOCK		LOCKWOOD	SS
3571PTSC	1		3571 MORTICE DEADLOCK PRIMARY LOCK THROUGH FIXABLE 60mm BACKSET		LOCKWOOD	SC
MASTER KEYED CYLINDER	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	SC
CUT KEY	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	NONE
1801/70SC	1		1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER		LOCKWOOD	SC
1368/9PSC	1		1360 SERIES PRIV IND EMER TURN AND PRIV IND DTURN ESCUTCH KIT		LOCKWOOD	SC
1905/70SC	1		1905 SQUARE END PLATE WITH 70 LEVER		LOCKWOOD	SC
2615DASIL	1		2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED		LOCKWOOD	SIL
2616-152	1		2616 SERIES HOLD OPEN DEVICE		LOCKWOOD	
ASF KICKPLATE 150MM HIGH	2		1.2MM KICKPLATE X DOOR WIDTH SSS		OTHER	SSS
A350SC	1		A350 WALL MOUNTED DOOR STOP TP		LOCKWOOD	SC
Mark:	D7.1	To/From Room:	SPEC.M.WC	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 5.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
LW10075BBSSS	4		HINGES 100X75X2.5 BALL BEARING SSS		LOCKWOOD	SSS
3772V-SS	1		3772 - ANTI-VANDAL ESCAPE LOCK		LOCKWOOD	SS
3571PTSC	1		3571 MORTICE DEADLOCK PRIMARY LOCK THROUGH FIXABLE 60mm BACKSET		LOCKWOOD	SC
MASTER KEYED CYLINDER	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	SC
CUT KEY	1		TO END USERS EXISTING SYSTEM		LOCKWOOD	NONE
1801/70SC	1		1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER		LOCKWOOD	SC
1368/9PSC	1		1360 SERIES PRIV IND EMER TURN AND PRIV IND DTURN ESCUTCH KIT		LOCKWOOD	SC
1905/70SC	1		1905 SQUARE END PLATE WITH 70 LEVER		LOCKWOOD	SC
2615DASIL	1		2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED		LOCKWOOD	SIL
2616-152	1		2616 SERIES HOLD OPEN DEVICE		LOCKWOOD	
2616-153	1		2616 SERIES OPENING DAMPER		LOCKWOOD	
ASF KICKPLATE 150MM HIGH	2		1.2MM KICKPLATE X DOOR WIDTH SSS		OTHER	SSS

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D7.2	To/From Room:	SPEC.F.WC	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 6.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	3	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
ASF KICKPLATE 150MM HIGH	2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS
A350SC	1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC
Mark:	D7.3	To/From Room:	SPEC.DDA.WC	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 4.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	4	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS
3571PTSC	1	3571 MORTICE DEADLOCK PRIMARY LOCK THROUGH FIXABLE 60mm BACKSET			LOCKWOOD	SC
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1368/9PSC	1	1360 SERIES PRIV IND EMER TURN AND PRIV IND DTURN ESCUTCH KIT			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
ASF KICKPLATE 150MM HIGH	2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS
A350SC	1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC
Mark:	D8.0	To/From Room:	KIOSK	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 6.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	3	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
ASF KICKPLATE 150MM HIGH	2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS
A350SC	1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	R8.1	To/From Room:	KIOSK	Level:	Building:	
Height:	1270	Width:	2400	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
ROLLER SHUTTER		1	BY DOOR MANUFACTURER			OTHER
Mark:	R8.2	To/From Room:	KIOSK	Level:	Building:	
Height:	1270	Width:	2400	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
ROLLER SHUTTER		1	BY DOOR MANUFACTURER			OTHER
Mark:	D9.1	To/From Room:	NETBALL REG.	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 6.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS		3	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD SSS
3772V-SS		1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD SS
MASTER KEYED CYLINDER		1	TO END USERS EXISTING SYSTEM			LOCKWOOD SC
CUT KEY		1	TO END USERS EXISTING SYSTEM			LOCKWOOD NONE
1801/70SC		1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD SC
1905/70SC		1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD SC
2615DASIL		1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD SIL
2616-152		1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD
ASF KICKPLATE 150MM HIGH		2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER SSS
A350SC		1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD SC
Mark:	D9.2	To/From Room:	NETBALL OFFICE	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 6.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS		3	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD SSS
3772V-SS		1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD SS
MASTER KEYED CYLINDER		1	TO END USERS EXISTING SYSTEM			LOCKWOOD SC
CUT KEY		1	TO END USERS EXISTING SYSTEM			LOCKWOOD NONE
1801/70SC		1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD SC
1905/70SC		1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD SC
2615DASIL		1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD SIL
2616-152		1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD
ASF KICKPLATE 150MM HIGH		2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER SSS
A350SC		1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD SC

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D10.1	To/From Room:	NETBALL INT.STORE	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 6.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	3	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
ASF KICKPLATE 150MM HIGH	2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS
A350SC	1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC
Mark:	EX.D9.3	To/From Room:	NETBALL MEETING	Level:	Building:	
Height:	1	Width:	1	Thick:	1	HW Set: 3.1
Door Type:	EXISTING			Frame Type:	EXISTING	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
ASF KICKPLATE 150MM HIGH	2	1.2MM KICKPLATE X DOOR WIDTH SSS			OTHER	SSS
EXISTING DOOR	1	REUSE EXISTING DOOR HARDWARE			OTHER	
Mark:	D10.2	To/From Room:	NETBALL STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS

Door Hardware Schedule

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D10.3	To/From Room:	NETBALL STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS
Mark:	D11.1	To/From Room:	CLEANER / STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS
Mark:	D11.2	To/From Room:	STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS

Door Hardware Schedule

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D11.3	To/From Room:	STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS

Mark:	D11.4	To/From Room:	STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS

Mark:	D11.5	To/From Room:	STORAGE	Level:	Building:	
Height:	2040	Width:	820 + 820	Thick:	40	HW Set: 7.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791O/SX600SC	1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
A3000X230 CAN	1	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS			LOCKWOOD	CAN
7726HDASIL	2	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS

Door Hardware Schedule

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	R10.4	To/From Room:	NETBALL EXT.STORE	Level:	Building:	
Height:	2700	Width:	3500	Thick:	18	HW Set: 1.0
Door Type:	ROLLER SHUTTER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
ROLLER SHUTTER		1	BY DOOR MANUFACTURER			OTHER
Mark:	D12.1	To/From Room:	ELEC.SERVICES	Level:	Building:	
Height:	2040	Width:	920 + 920	Thick:	40	HW Set: 8.0
Door Type:	SEMI-SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
EZY JAMB HINGES		8	BY OTHERS			OTHER
507SSS		1	507 NIGHTLATCH			LOCKWOOD SSS
MASTER KEYED CYLINDER		1	TO END USERS EXISTING SYSTEM			LOCKWOOD SC
CUT KEY		1	TO END USERS EXISTING SYSTEM			LOCKWOOD NONE
P2SS		2	STAINLESS STEEL P2 PULL HANDLE			LOCKWOOD SS
791O/SX600SC		1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD SC
791X300SC		1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD SC
857SP		2	857 DOOR HOLDER TP			LOCKWOOD SP
LAS1212/DDS/B		1	BATWING SEAL 12X12 DBL DR SET BLACK			LORIENT BLK
LAS8001/0920/S		2	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT SIL
IS7071si-2500		2	KILARGO MEETING STILE SEAL 2500MM			KILARGO SIL
Mark:	D12.2	To/From Room:	SERVICES	Level:	Building:	
Height:	2040	Width:	920 + 920	Thick:	40	HW Set: 8.0
Door Type:	SEMI-SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
EZY JAMB HINGES		8	BY OTHERS			OTHER
507SSS		1	507 NIGHTLATCH			LOCKWOOD SSS
MASTER KEYED CYLINDER		1	TO END USERS EXISTING SYSTEM			LOCKWOOD SC
CUT KEY		1	TO END USERS EXISTING SYSTEM			LOCKWOOD NONE
P2SS		2	STAINLESS STEEL P2 PULL HANDLE			LOCKWOOD SS
791O/SX600SC		1	VISIBLE FIX OFFSET PANIC BOLT 600M TP			LOCKWOOD SC
791X300SC		1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD SC
857SP		2	857 DOOR HOLDER TP			LOCKWOOD SP
LAS1212/DDS/B		1	BATWING SEAL 12X12 DBL DR SET BLACK			LORIENT BLK
LAS8001/0920/S		2	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT SIL
IS7071si-2500		2	KILARGO MEETING STILE SEAL 2500MM			KILARGO SIL

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item	Qty	Description	Brand	Finish			
Mark:	D12.3	To/From Room:	SERVICES	Level:	Building:		
Height:	2040	Width:	920	Thick:	40	HW Set:	9.0
Door Type:	SEMI-SOLID CORE TIMBER			Frame Type:	TIMBER		
Arc Door Type:				Arc Frame Type:			
Arc Door MatAerial:				Arc Frame Material:			
Fire Rating:	Smoke Rating:		Acoustic Rating:				
Handing:							
EZY JAMB HINGES	4	BY OTHERS			OTHER		
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS	
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC	
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE	
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC	
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC	
7726HDASIL	1	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION			LOCKWOOD	SSS	
A350SC	1	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC	
Mark:	D14.1	To/From Room:	CORRIDOR 1	Level:	Building:		
Height:	2040	Width:	920 + 600	Thick:	40	HW Set:	10.0
Door Type:	SOLID CORE TIMBER (2)			Frame Type:	TIMBER		
Arc Door Type:				Arc Frame Type:			
Arc Door MatAerial:				Arc Frame Material:			
Fire Rating:	Smoke Rating:		Acoustic Rating:				
Handing:							
LW10075BBSSS	6	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS	
3772VTASS	1	3772 - ANTI-LOCKOUT ANTI-VANDAL ESCAPE LOCK WITH TURN			LOCKWOOD	SS	
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC	
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE	
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC	
1939/70SC	1	1939 SQUARE END PLATE WITH DISABLED TURN & 70 LEVER			LOCKWOOD	SC	
791X600SC	1	VISIBLE FIX PANIC BOLT 600MM TP			LOCKWOOD	SC	
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC	
2616DASIL	1	2616 SERIES CAM ACTION CLOSER WITH DELAYED ACTION			LOCKWOOD	SIL	
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD		
A350SC	2	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC	
LAS4011/2100/S	1	LOW PROFILE THRESHOLD PLATE 100W 2100 SIL			LORIENT	SIL	
LAS7001/DDS/S	1	SLIM-LINE DOOR PERIMETER SEAL BULB DBL DR SET SIL			LORIENT	SIL	
LAS7004/2100/S	2	SLIM-LINE DOOR PERIMETER SEAL DBL FIN 2100 SIL			LORIENT	SIL	
LAS8001/0920/S	1	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT	SIL	
LAS8001/0635/S	1	DROP SEAL MORTICE 0635 SIL SQUARE END PLATE			LORIENT	SIL	
Set Notes:							

Door Hardware Schedule

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D14.2	To/From Room:	CORRIDOR 2	Level:	Building:	
Height:	2040	Width:	920 + 400	Thick:	40	HW Set: 11.0
Door Type:	SOLID CORE TIMBER			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	8	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772V-SS	1	3772 - ANTI-VANDAL ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
791X600SC	1	VISIBLE FIX PANIC BOLT 600MM TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
2615DASIL	1	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
A350SC	2	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC
Mark:	D14.3	To/From Room:	CORRIDOR 3	Level:	Building:	
Height:	2040	Width:	920 + 600	Thick:	40	HW Set: 10.0
Door Type:	SOLID CORE TIMBER (2)			Frame Type:	TIMBER	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
LW10075BBSSS	6	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772VTASS	1	3772 - ANTI-LOCKOUT ANTI-VANDAL ESCAPE LOCK WITH TURN			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1939/70SC	1	1939 SQUARE END PLATE WITH DISABLED TURN & 70 LEVER			LOCKWOOD	SC
791X600SC	1	VISIBLE FIX PANIC BOLT 600MM TP			LOCKWOOD	SC
791X300SC	1	VISIBLE FIX PANIC BOLT 300MM TP			LOCKWOOD	SC
2616DASIL	1	2616 SERIES CAM ACTION CLOSER WITH DELAYED ACTION			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
A350SC	2	A350 WALL MOUNTED DOOR STOP TP			LOCKWOOD	SC
LAS4011/2100/S	1	LOW PROFILE THRESHOLD PLATE 100W 2100 SIL			LORIENT	SIL
LAS7001/DDS/S	1	SLIM-LINE DOOR PERIMETER SEAL BULB DBL DR SET SIL			LORIENT	SIL
LAS7004/2100/S	2	SLIM-LINE DOOR PERIMETER SEAL DBL FIN 2100 SIL			LORIENT	SIL
LAS8001/0920/S	1	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT	SIL
LAS8001/0635/S	1	DROP SEAL MORTICE 0635 SIL SQUARE END PLATE			LORIENT	SIL
Set Notes:						
Mark:	EX.D15.1	To/From Room:	CORRIDOR 1	Level:	Building:	
Height:	1	Width:	1	Thick:	1	HW Set: 3.0
Door Type:	EXISTING			Frame Type:	EXISTING	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:						
EXISTING DOOR	1	REUSE EXISTING DOOR HARDWARE			OTHER	

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
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Item		Qty	Description		Brand	Finish
Mark:	EX.D15.2	To/From Room:	CORRIDOR 2	Level:	Building:	
Height:	1	Width:	1	Thick:	1	HW Set: 3.0
Door Type:	EXISTING			Frame Type:	EXISTING	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
EXISTING DOOR		1	REUSE EXISTING DOOR HARDWARE		OTHER	
Mark:	EX.D16.1	To/From Room:	FIRST AID	Level:	Building:	
Height:	1	Width:	1	Thick:	1	HW Set: 3.0
Door Type:	EXISTING			Frame Type:	EXISTING	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
EXISTING DOOR		1	REUSE EXISTING DOOR HARDWARE		OTHER	
Mark:	EX.D16.2	To/From Room:	FIRST AID	Level:	Building:	
Height:	1	Width:	1	Thick:	1	HW Set: 3.0
Door Type:	EXISTING			Frame Type:	EXISTING	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
EXISTING DOOR		1	REUSE EXISTING DOOR HARDWARE		OTHER	
Mark:	D17.0	To/From Room:	GYM CONNECTION	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 12.0
Door Type:	SOLID CORE TIMBER			Frame Type:		
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:		Smoke Rating:		Acoustic Rating:		
Handing:						
TRACK SYSTEM		1	BY OTHERS		OTHER	
3573WTSCNCYLLS		1	SLIDING DOOR CYLINDER AND TURN DEADLOCK NO CYLINDER WITH LATCHING STRIKE		LOCKWOOD	SC
MASTER KEYED CYLINDER		1	TO END USERS EXISTING SYSTEM		LOCKWOOD	SC
CUT KEY		1	TO END USERS EXISTING SYSTEM		LOCKWOOD	NONE
21825NA/P2SS		1	218 EXTERIOR PLATE WITH CYLINDER HOLE & P2 PULL HANDLE		LOCKWOOD	SS
21942NN/P2SS		1	219 INTERIOR PLATE WITH DISABLED TURN & P2 PULL HANDLE		LOCKWOOD	SS
LAS5010/1000/S		2	BRUSH SEAL 13H 1000 SIL		LORIENT	SIL

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Item		Qty	Description		Brand	Finish
Mark:	D18.0	To/From Room:	UPPER FLOOR	Level:	Building:	
Height:	2040	Width:	920	Thick:	40	HW Set: 14.0
Door Type:	SOLID CORE TIMBER			Frame Type:	STEEL	
Arc Door Type:				Arc Frame Type:		
Arc Door MatAerial:				Arc Frame Material:		
Fire Rating:	Smoke Rating:		Acoustic Rating:			
Handing:	RH OO					
LW10075BBSSS	3	HINGES 100X75X2.5 BALL BEARING SSS			LOCKWOOD	SSS
3772X-SS	1	3772 - KEY ENTRY ESCAPE LOCK			LOCKWOOD	SS
MASTER KEYED CYLINDER	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	SC
CUT KEY	1	TO END USERS EXISTING SYSTEM			LOCKWOOD	NONE
1801/70SC	1	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER			LOCKWOOD	SC
1905/70SC	1	1905 SQUARE END PLATE WITH 70 LEVER			LOCKWOOD	SC
2616DASIL	1	2616 SERIES CAM ACTION CLOSER WITH DELAYED ACTION			LOCKWOOD	SIL
2616-104SIL	1	2616 SERIES ANGLED MOUNTING PLATE			LOCKWOOD	SIL
2616-152	1	2616 SERIES HOLD OPEN DEVICE			LOCKWOOD	
2616-153	1	2616 SERIES OPENING DAMPER			LOCKWOOD	
LAS4011/1000/S	1	LOW PROFILE THRESHOLD PLATE 100W 1000 SIL			LORIENT	SIL
LAS7001/SDS/S	1	SLIM-LINE DOOR PERIMETER SEAL BULB SGL DR SET SIL			LORIENT	SIL
LAS8001/0920/S	1	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE			LORIENT	SIL

Brand	Item	Description	Qty	Finish	
LOCKWOOD	LW10075BBSSS	HINGES 100X75X2.5 BALL BEARING SSS	126	SSS	
OTHER	EZY JAMB HINGES	BY OTHERS	20		
OTHER	TRACK SYSTEM	BY OTHERS	1		
LOCKWOOD	3772X-SS	3772 - KEY ENTRY ESCAPE LOCK	9	SS	
LOCKWOOD	3772V-SS	3772 - ANTI-VANDAL ESCAPE LOCK	15	SS	
LOCKWOOD	507SSS	507 NIGHTLATCH	2	SSS	
LOCKWOOD	3772VTASS	3772 - ANTI-LOCKOUT ANTI-VANDAL ESCAPE LOCK WITH TURN	2	SS	
LOCKWOOD	3571PTSC	3571 MORTICE DEADLOCK PRIMARY LOCK THROUGH FIXABLE 60mm BACKSET	4	SC	
LOCKWOOD	3573WTSCNCCYLLS	SLIDING DOOR CYLINDER AND TURN DEADLOCK NO CYLINDER WITH LATCHING STRIKE	1	SC	
LOCKWOOD	MASTER KEYED CYLINDER	TO END USERS EXISTING SYSTEM	29	SC	
LOCKWOOD	CUT KEY	TO END USERS EXISTING SYSTEM	29	NONE	

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Brand	Item	Description	Qty	Finish	
LOCKWOOD	1801/70SC	1801 SQUARE END PLATE WITH CYLINDER HOLE & 70 LEVER	26	SC	
LOCKWOOD	1939/70SC	1939 SQUARE END PLATE WITH DISABLED TURN & 70 LEVER	2	SC	
LOCKWOOD	1368/9PSC	1360 SERIES PRIV IND EMER TURN AND PRIV IND DTURN ESCUTCH KIT	4	SC	
LOCKWOOD	1905/70SC	1905 SQUARE END PLATE WITH 70 LEVER	24	SC	
LOCKWOOD	P2SS	STAINLESS STEEL P2 PULL HANDLE	4	SS	
LOCKWOOD	21825NA/P2SS	218 EXTERIOR PLATE WITH CYLINDER HOLE & P2 PULL HANDLE	1	SS	
LOCKWOOD	21942NN/P2SS	219 INTERIOR PLATE WITH DISABLED TURN & P2 PULL HANDLE	1	SS	

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Brand	Item	Description	Qty	Finish	
LOCKWOOD	791O/SX600SC	VISIBLE FIX OFFSET PANIC BOLT 600M TP	9	SC	
LOCKWOOD	791X600SC	VISIBLE FIX PANIC BOLT 600MM TP	3	SC	
LOCKWOOD	791X300SC	VISIBLE FIX PANIC BOLT 300MM TP	12	SC	
LOCKWOOD	A3000X230 CAN	SEQUENCE SELECTOR TO SUIT 2300MM WIDE DOORS	7	CAN	
LOCKWOOD	2615DASIL	2615 SERIES CAM ACTION DOOR CLOSER SIZE 1-5 DELAYED	14	SIL	
LOCKWOOD	2616DASIL	2616 SERIES CAM ACTION CLOSER WITH DELAYED ACTION	3	SIL	
LOCKWOOD	2616-104SIL	2616 SERIES ANGLED MOUNTING PLATE	1	SIL	

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Brand	Item	Description	Qty	Finish	
LOCKWOOD	2616-152	2616 SERIES HOLD OPEN DEVICE	17		
LOCKWOOD	2616-153	2616 SERIES OPENING DAMPER	6		
LOCKWOOD	7726HDASIL	7726 SERIES SIZE 2-6 HOLD OPEN CLOSER ADJUSTABLE BACKCHECK DELAYED ACTION	15	SSS	
OTHER	ASF KICKPLATE 150MM HIGH	1.2MM KICKPLATE X DOOR WIDTH SSS	24	SSS	
LOCKWOOD	857SP	857 DOOR HOLDER TP	4	SP	
LOCKWOOD	A350SC	A350 WALL MOUNTED DOOR STOP TP	15	SC	
LORIENT	LAS4011/1000/S	LOW PROFILE THRESHOLD PLATE 100W 1000 SIL	1	SIL	
LORIENT	LAS4011/2100/S	LOW PROFILE THRESHOLD PLATE 100W 2100 SIL	2	SIL	

Door Hardware Schedule

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

Brand	Item	Description	Qty	Finish	
LORIENT	LAS1212/DDS/B	BATWING SEAL 12X12 DBL DR SET BLACK	2	BLK	
LORIENT	LAS7004/2100/S	SLIM-LINE DOOR PERIMETER SEAL DBL FIN 2100 SIL	4	SIL	
LORIENT	LAS7001/SDS/S	SLIM-LINE DOOR PERIMETER SEAL BULB SGL DR SET SIL	5	SIL	
LORIENT	LAS7001/DDS/S	SLIM-LINE DOOR PERIMETER SEAL BULB DBL DR SET SIL	2	SIL	
LORIENT	LAS5010/1000/S	BRUSH SEAL 13H 1000 SIL	2	SIL	
LORIENT	LAS8001/0920/S	DROP SEAL MORTICE 0920 SIL SQUARE END PLATE	11	SIL	
LORIENT	LAS8001/0635/S	DROP SEAL MORTICE 0635 SIL SQUARE END PLATE	2	SIL	
KILARGO	IS7071si-2500	KILARGO MEETING STILE SEAL 2500MM	4	SIL	
OTHER	EXISTING DOOR	REUSE EXISTING DOOR HARDWARE	5		
OTHER	ROLLER SHUTTER	BY DOOR MANUFACTURER	7		

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804

Owner of the Declaration	ASSA ABLOY Australia Pty Ltd	 
Programme holder	Institute Bauen und Umwelt e.V. (IBU)	
Publisher	Institute Bauen und Umwelt e.V. (IBU)	
Declaration number	EPD-ASA-20160079-IBA1-EN	
Issue date	27.04.2016	
Valid to	26.04.2021	

ASSA ABLOY Australia Pty Ltd
Lockwood 1800 Series Plate Door Furniture - Lever and Cylinder Hole 1801/70SC
For more information please visit www.lockweb.com.au

ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804

Owner of the Declaration	ASSA ABLOY Australia Pty Ltd	 
Programme holder	Institute Bauen und Umwelt e.V. (IBU)	
Publisher	Institute Bauen und Umwelt e.V. (IBU)	
Declaration number	EPD-ASA-20160081-IBA1-EN	
Issue date	27.04.2016	
Valid to	26.04.2021	

ASSA ABLOY Australia Pty Ltd
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For more information please visit www.lockweb.com.au

ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804

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Valid to	26.04.2021	

ASSA ABLOY Australia Pty Ltd
Single-point locks - Lockwood 3772SS Commercial Mortice Lock
For more information please visit www.lockweb.com.au

Project Name: WANGARATTA SPORTS AQUATIC CENTRE - CHANGE AMENITIES
Schedule No: 108275 - (2)

ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804

Owner of the Declaration	ASSA ABLOY Australia Pty Ltd	
Programme holder	Institute Bauen und Umwelt e.V. (IBU)	
Publisher	Institute Bauen und Umwelt e.V. (IBU)	
Declaration number	EPD-ASA-20140209-IBC1-EN	
Issue date	13.02.2015	
Valid to	12.02.2020	

ASSA ABLOY Australia Pty Ltd
Lockwood DC 2615
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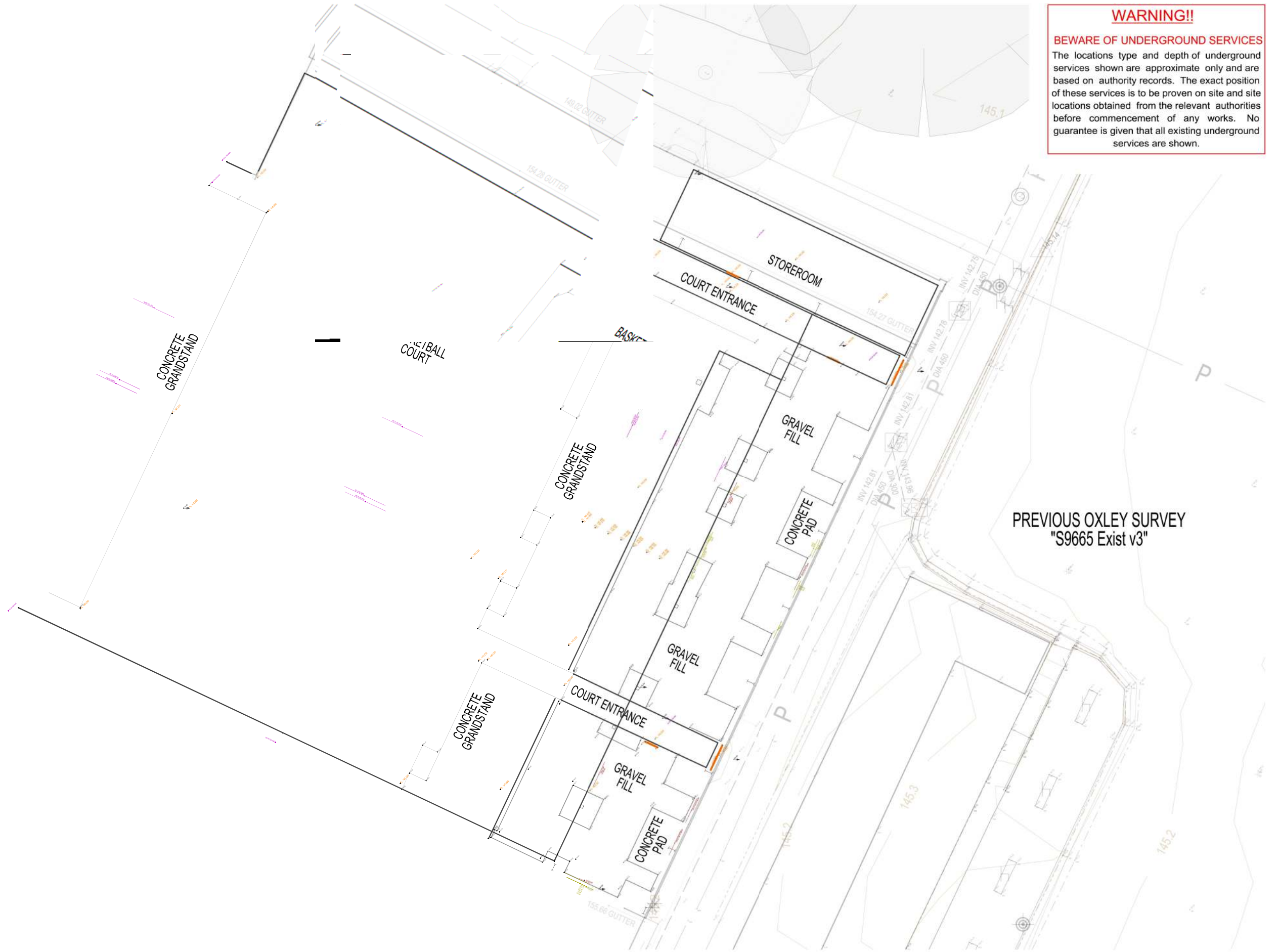
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ASSA ABLOY Australia Pty Ltd
235 Huntingdale Road
Oakleigh, Victoria, 3166
Australia
ABN 90 086 541 907
1300 LOCK UP (1300 562 587)
lockweb.com.au
MELBOURNE FAX 1800 647 673
BRISBANE FAX 1800 626 140



WARNING!!

BEWARE OF UNDERGROUND SERVICES

The locations type and depth of underground services shown are approximate only and are based on authority records. The exact position of these services is to be proven on site and site locations obtained from the relevant authorities before commencement of any works. No guarantee is given that all existing underground services are shown.

CLIENT: **Millar Architects**
SHEET NO: 1 OF 2

DAY	22	29	03	06	10	16	07	08	20		
MONTH	10	10	12	12	02	03	04	04	07		
YEAR	21	21	21	21	22	22	22	22	22		

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EDGE HILL QLD 4870
T (07) 4031 6788
ACN 106 749 320

SIGNATURE:.....CY

DRAWING REGISTER/TRANSMITTAL



JOB No: **M21037**
PROJECT: **ALTERATIONS & ADDITIONS TO WANGARATTA INDOOR SPORTS & AQUATIC CENTRE**

CLIENT: **Millar Architects**
SHEET NO: 2 OF 2

We enclose ~~CONTROLLED~~ / UNCONTROLLED
Copies of documents listed below:

DAY	22	29	03	06	01	10	16	07	08	20	
MONTH	10	10	12	12	02	02	03	04	04	07	
YEAR	21	21	21	21	22	22	22	22	22	22	

NO:	TITLE	REVISION									
S50	FRAMING SECTIONS & ELEVATION - SHEET 1				P1		P2	T1			C1
S51	FRAMING SECTIONS & ELEVATION - SHEET 2				P1		P2	T1			C1
S52	FRAMING SECTIONS & ELEVATION - SHEET 3				P1		P2	T1			C1
S53	FRAMING SECTIONS & ELEVATION - SHEET 4				P1		P2	T1			C1
S54	FRAMING SECTIONS & ELEVATION - SHEET 5				P1		P2	T1			C1
S55	FRAMING SECTIONS & ELEVATION - SHEET 6				P1		P2	T1			C1
S56	FRAMING SECTIONS & ELEVATION - SHEET 7				P1		P2	T1			C1
S57	FRAMING SECTIONS & ELEVATION - SHEET 8				P1		P2	T1			C1
S58	FRAMING SECTIONS & ELEVATION - SHEET 9						P1	T1			C1
S59	FRAMING SECTIONS & ELEVATION - SHEET 10						P1	T1			C1
S70	MEMBER SCHEDULES	P1	P2	P3			P4	T1		T2	C1
S71	TRUSS ELEVATIONS						P1	T1			C1
S80	STEELWORK DETAILS SHEET 1			P1	P2		P3	T1			C1
S81	STEELWORK DETAILS SHEET 2			P1	P2		P3	T1			C1
S82	STEELWORK DETAILS SHEET 3			P1	P2		P3	T1			C1
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S84	STEELWORK DETAILS SHEET 5			P1	P2		P3	T1			C1
S85	STEELWORK DETAILS SHEET 6				P1		P2	T1			C1
S86	STEELWORK DETAILS SHEET 7						P1	T1			C1
S87	STEELWORK DETAILS SHEET 8						P1	T1	T2		C1
S88	STEELWORK DETAILS SHEET 9							T1			C1
S89	STEELWORK DETAILS SHEET 10							T1			C1
S90	STEELWORK DETAILS SHEET 11							T1	T2		C1
S91	STEELWORK DETAILS SHEET 12							T1			C1
S100	SLAB DETAILS					P1	P2	T1			C1

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T (07) 3250 9000
ACN 126 939 768

SUITE 1, GROUND FLOOR
55 WALSH STREET
WEST MELBOURNE VIC 3003
T (03) 9328 4166
ACN 093 367 072

SHOP 6, 120 COLLINS AV
EDGE HILL QLD 4870
T (07) 4031 6788
ACN 106 749 320

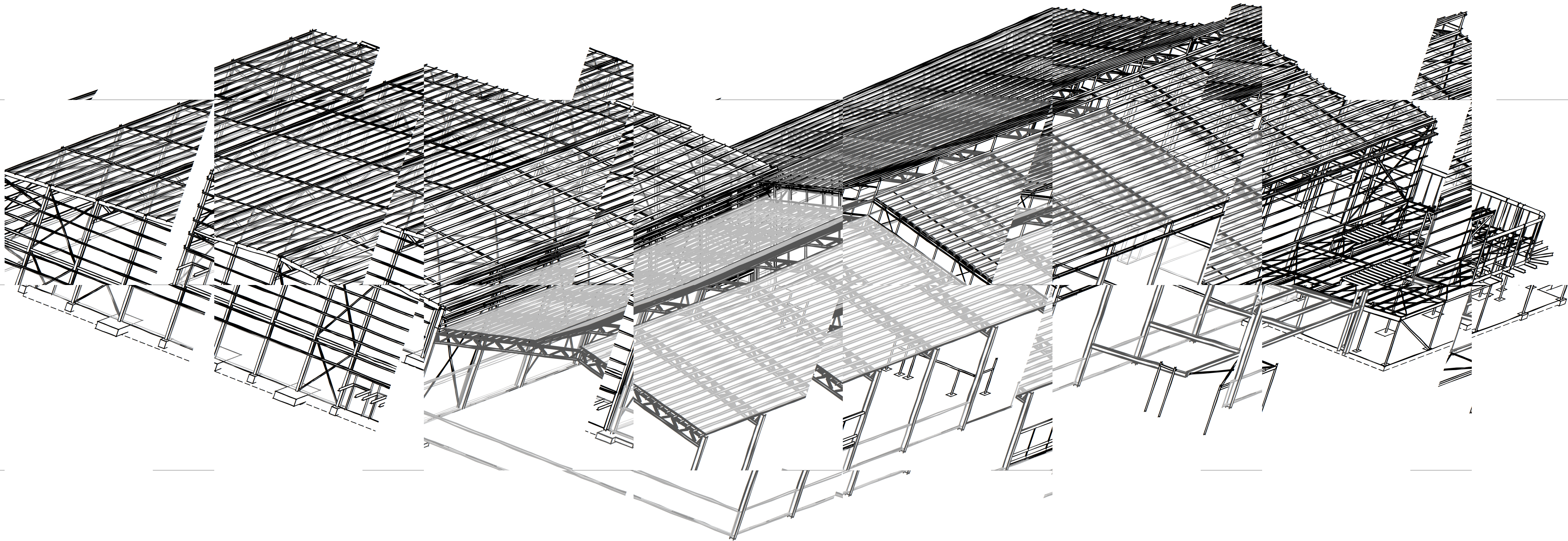
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M21037 - ALTERATIONS & ADDITIONS TO WANGARATTA INDOOR SPORTS & AQUATIC CENTRE

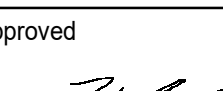
41 SCHILLING DR WANGARATTA, VIC

STRUCTURAL DRAWINGS

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S02	GENERAL NOTES - SHEET 2
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S04	SHOW COURTS GROUND FLOOR SLAB & FOOTING PLAN
S05	GYM GROUND FLOOR SLAB & FOOTING PLAN
S07	FOOTING & GROUND FLOOR SLAB DETAIL - SHEET 1
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S100	SLAB, STAIR & MASONRY DETAILS



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					SUITE 1 GROUND FLOOR, 55 WALSH STREET WEST MELBOURNE, VIC 3003 P.O. BOX 192, NORTH MELBOURNE VIC 3051		TELEPHONE (03) 9328 4166 EMAIL mail@lar.net.au WEB www.lar.net.au	Draftsperson VF	Checked CY		JOB No	Drawing No.		
C1								Designer CY	Approved 	M21037	S00			
No								Scale	Sheet Size A1	Date OCT 2021	REV C1			
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1. THESE DRAWINGS SHALL BE READ IN ACCORDANCE WITH ALL ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH OTHER WRITTEN INSTRUCTION AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORKS.
2. DIMENSIONS SHALL BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
3. ALL SET-OUT DIMENSIONS ARE TO BE CHECKED ON-SITE AND VERIFIED BY THE BUILDER BEFORE CONSTRUCTION COMMENCES.
4. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. THE STRUCTURAL DESIGN OUTLINED IN THE CONTRACT DOCUMENTS IS FOR THE SERVICE CONDITIONS ONLY. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROPS BRACING AND SUPPORTS ADDITIONAL TO THOSE SHOWN IN THE DOCUMENTS TO MAINTAIN STABILITY, STRENGTH AND SERVICEABILITY OF THE COMPONENT THROUGHOUT CONSTRUCTION FOR THE SUPPORT OF THE DEAD LOADS, CONSTRUCTION LOADS AND WIND LOADS DURING CONSTRUCTION. THE CONTRACTOR SHALL ENGAGE AND PAY ALL COSTS FOR AN ERECTION ENGINEER TO ASSESS AND MONITOR THE STABILITY OF STRUCTURAL ELEMENTS THROUGHOUT CONSTRUCTION AS REQUIRED BY CURRENT WORKSAFE REQUIREMENTS.
5. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE S.A.A. CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITY. ALL CODES SHALL BE CURRENT EDITIONS.
6. SUBSTITUTIONS FOR SPECIFIED ITEMS, MATERIALS, etc. MUST BE APPROVED BY THE SUPERINTENDENT PRIOR TO THEIR USE.
7. THE SUPERINTENDENT MAY REQUEST CALCULATIONS AND / OR CERTIFICATION OF ELEMENTS DESIGNED BY MANUFACTURERS OR SUPPLIERS. THESE MUST BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.
8. ANY CONFLICT BETWEEN THESE NOTES AND THE SPECIFICATION OF THESE DRAWINGS SHALL BE RESOLVED BY THE SUPERINTENDENT.
9. IT IS THE BUILDERS RESPONSIBILITY TO PROVIDE AND INSTALL TEMPORARY PROPPING AND BRACING DURING BUILDING CONSTRUCTION.
10. RFIs TO HAVE A MINIMUM 72 HOURS RESPONSE TIME UNLESS STATED OTHERWISE BY LAMBERT & REHBEIN.

1. THE STRUCTURAL WORK SHOWN ON THESE DRAWINGS HAS BEEN DESIGNED FOR THE FOLLOWING LIVE LOADS UNLESS NOTED OTHERWISE:

<u>ACTIVITY/OCCUPANCY</u>	<u>LIVE LOAD (kPa)</u>
GROUND FLOOR	5.0
GYM FLOOR	5.0
GRANDSTAND	5.0
ROOF	0.25kPa OR (1.81kA + 0.12)kPa/ 1.4kN

2. WIND LOADING HAS BEEN DETERMINED IN ACCORDANCE WITH AS/NZS1170.2:

REGION:	A3
TERRAIN CATEGORY:	3
ULTIMATE GUST WIND SPEED (Vdes):	45m/s

1. THE CONTRACTOR IS TO ENSURE STABILITY OF ALL EXCAVATIONS AND EXISTING STRUCTURES DURING CONSTRUCTION.
2. WHERE MATERIAL IS REMOVED FROM BESIDE OR BELOW EXISTING FOUNDATIONS ALL BACKFILL MUST BE CONCRETE OR STABILISED SAND (5 SAND:1 CEMENT). CONTRACTOR MUST ENSURE COMPACTION OF FILL AND COMPLETE FILLING OF ALL VOIDS. THE CONTRACTOR SHALL ENGAGE A GEOTECHNICAL ENGINEER TO MONITOR THE STABILITY OF ALL WORK ADJACENT TO EXISTING FOOTINGS.
3. EXISTING PAVEMENTS MUST NOT BE LOADED DURING EXCAVATION FOR A MINIMUM DISTANCE OF 3.0m FROM THE EXCAVATION EDGE. IF IN DOUBT, ASK!

1. STRIP THE AREA TO BE OCCUPIED BY BUILDINGS TO REMOVE GRASS AND ROOT ZONE MATERIAL TO A MINIMUM DEPTH OF 150mm BELOW EXISTING SURFACE LEVEL. EXCAVATE TO A GREATER DEPTH IF REQUIRED TO ACHIEVE THE MINIMUM DEPTH. EXCAVATION SHALL BE APPROVED BY THE SURVEYOR AND EXCAVATE BELOW 150mm WITHOUT FIRST SEEKING APPROVAL FROM THE SUPERINTENDENT/ ARCHITECT
2. PROOF ROLL THE EXCAVATED SUBGRADE EXPOSED AFTER STRIPPING TO ACHIEVE A MINIMUM DRY DENSITY RATIO OF AT LEAST 100% AS MEASURED BY STANDARD COMPACTION TESTING AS DEFINED IN AS1289.
3. ANY HOT SPOTS OR HEAVY AREAS EXPOSED DURING THE PROCESS OF ROLLING ARE TO BE REMOVED DOWN TO A SOLID BASE AND TO BE REPAIRED WITH A FILLED SUBSTRUCTURE. THE FILLING SHALL BE AS SPECIFIED UNDER STRUCTURAL FILLING NOTES. THIS DOES NOT APPLY TO AREAS OF SUSPENDED SLABS.
4. REFER TO CIVIL DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS.

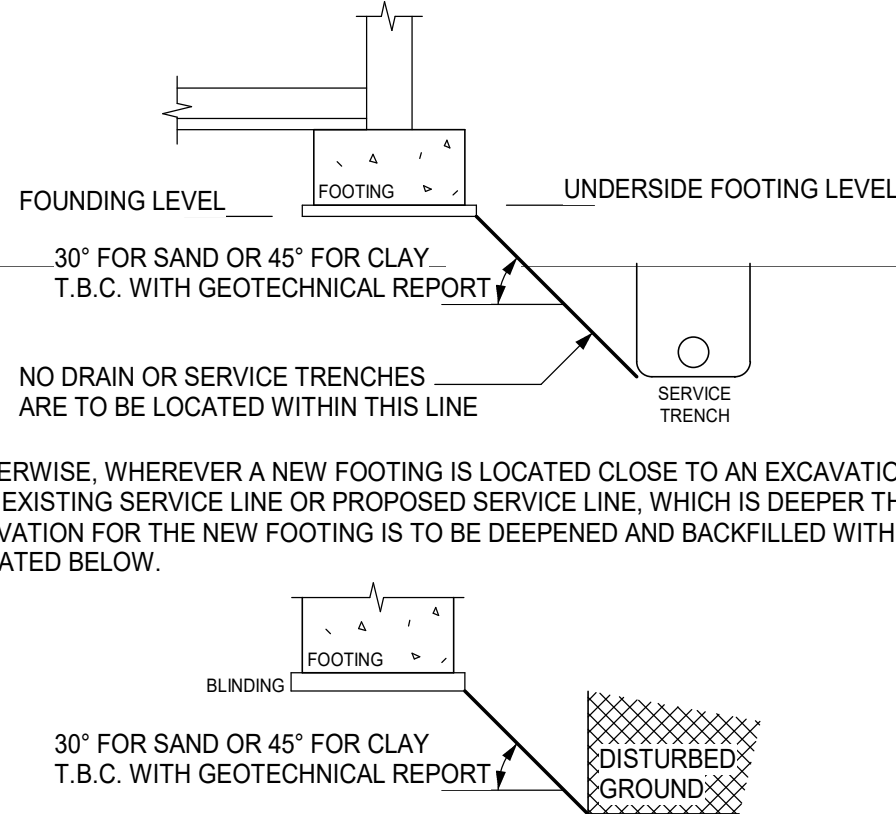
NOTWITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE ENGINEER OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ALL UNDERGROUND SERVICES PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS FOR DAMAGE CAUSED AS A RESULT OF THE WORKS.

IF A DISCREPANCY APPEARS BETWEEN CIVIL AND STRUCTURAL NOTES REGARDING STRUCTURAL FILLING AND SUBGRADE PREPARATION, CIVIL DRAWING NOTES ARE TO TAKE PRIORITY

1. STRUCTURAL DEMOLITION WORKS TO THE BUILDING INCLUDE THE REMOVAL OF AREAS OF EXISTING FLOORS, WALLS, ROOF, CUTTING NEW OPENINGS IN EXISTING WALLS, PENETRATION IN EXISTING WALLS. TEMPORARY PROPS AND PROVISION FOR STEEL NEEDLES MAY ALSO BE REQUIRED.
2. IN ADDITION TO ANY SPECIFIED TEMPORARY SUPPORTS, THE DEMOLITION SUBCONTRACTOR SHALL PROVIDE ALL ADDITIONAL TEMPORARY SUPPORTS DEEMED NECESSARY TO SAFELY SUPPORT THE EXISTING STRUCTURE.
3. TEMPORARY PROPPING AND TIE-DOWN WILL BE REQUIRED TO INSTALL ALL NEW BEAMS AND COLUMNS UNLESS NOTED OTHERWISE. THE DETAILS SHOWN DO NOT ABSOLVE THE DEMOLITION SUBCONTRACTOR OF THE RESPONSIBILITY TO SUPPORT THE EXISTING STRUCTURE IN A SAFE MANNER AT ALL TIMES THROUGHOUT THE WORKS.
4. THE DEMOLITION SUBCONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING, PACKING, SPREADER PLATE, BOARDING, WEDGES, PROPS AND THE LIKE TO CARRY OUT THE DEMOLITION WORKS AS SPECIFIED.
5. CUTTING OF MASONRY WALLS, CONCRETE FLOORS AND STRUCTURAL STEEL SHALL BE CARRIED OUT IN STRAIGHT AND UNINTERRUPTED RUNS. NO WALLS, FLOOR SLABS OR STEEL IS TO BE OVERTURN. PROVIDE AT LEAST 150mm DIA CORE HOLES THROUGH WALLS FOR PENETRATIONS AND OPENINGS TO AVOID OVERTURNING OF A SPECIFIED DEMOLITION ZONE.
6. SUBCONTRACTOR SHALL LIMIT THE LIMITED INVESTIGATION HAS BEEN CARRIED OUT INTERNALLY TO THE BUILDING TO VERIFY THE EXISTING STRUCTURE, OTHER THAN VISUAL INSPECTIONS. SUBCONTRACTOR SHALL ALSO ASSUME LIMITED EXPLORATION HAS BEEN CARRIED OUT TO VERIFY STRUCTURAL DETAILS. SHOULD ANY ASSUMPTIONS SHOWN ON THE DRAWINGS NOT BE CORRECT THEN REFER TO LAMBERT & REHBEIN PTY LTD FOR FURTHER ADVICE.
7. WHILST ALL ATTEMPTS HAVE BEEN MADE TO SHOW INFORMATION CORRECTLY, THE ACCURACY OF ALL DIMENSIONS AND ALL OTHERS AND THESE DRAWINGS CANNOT BE GUARANTEED. GENERAL FRAMING LAYOUTS HAVE BEEN DETERMINED FROM INFORMATION BASED ON EXISTING ARCHITECTURAL DOCUMENTATION. THE ACCURACY OF THE DETAILS ON THE ORIGINAL DOCUMENTATION ALSO CANNOT BE GUARANTEED.

1. FOR INFORMATION REGARDING FOUNDATION MATERIAL REFER GEOTECHNICAL REPORT FILE No
DATED PREPARED BY
FOUNDATION SLABS DESIGN IS BASED ON A SITE CLASSIFICATION
2. THE MINIMUM BEARING CAPACITIES ARE:

3. BEFORE ANY REINFORCEMENT OR CONCRETE IS PLACED, THE SAFE BEARING CAPACITY OF THE GROUND IS TO BE VERIFIED BY A GEOTECHNICAL ENGINEER. EXCAVATION SHALL CONTINUE UNTIL THE REQUIRED BEARING CAPACITY IS FOUND. OVER-EXCAVATION SHALL BE BACK-FILLED WITH BLINDING CONCRETE TO THE ASSUMED FOUNDING LEVEL.
4. THE ASSUMED FOUNDING LEVELS OF THE FOOTINGS ARE TO BE AS INDICATED ON THE DRAWINGS. BEFORE ANY REINFORCEMENT OR CONCRETE IS PLACED, THE SAFE BEARING CAPACITY OF THE GROUND IS TO BE VERIFIED BY A GEOTECHNICAL ENGINEER. EXCAVATION SHALL CONTINUE UNTIL THE REQUIRED BEARING CAPACITY IS FOUND. OVER-EXCAVATION SHALL BE BACK-FILLED WITH BLINDING CONCRETE TO THE ASSUMED FOUNDING LEVEL.
5. THE BUILDER SHALL OBTAIN APPROVAL OF THE FOUNDATION MATERIAL BY THE GEOTECHNICAL ENGINEER BEFORE PLACING REINFORCEMENT. PROBEHOLES, IF REQUIRED BY THE GEOTECHNICAL ENGINEER, SHALL BE PROVIDED BY THE CONTRACTOR.
6. SELECT FILL MATERIAL UNDER FOUNDATIONS (WHERE APPROVED) TO BE COMPACTED IN 225mm (MAXIMUM) LAYERS TO 98% IS COMPACTED. TO ACHIEVE 200KPa MINIMUM ALLOWABLE BEARING CAPACITY. IF REQUESTED THE BUILDER SHALL PROVIDE EVIDENCE FROM A NATA REGISTERED LABORATORY THAT THESE RESULTS HAVE BEEN ACHIEVED. DEPTHS AND FOUNDATION MATERIAL TO BE VERIFIED BY AN ENGINEER.
7. PILES, IF SPECIFIED, ARE TO BE DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECH REPORT AND ARE TO BE CERTIFIED BY THE SUCCESSFUL PILING SUB-CONTRACTOR.
8. ATTENTION IS DRAWN TO THE RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
9. THE CONTRACTOR IS TO ALLOW FOR THE ENGAGEMENT OF THE GEOTECHNICAL ENGINEER TO VERIFY THE FOUNDING MATERIAL PRIOR TO PLACEMENT OF CONCRETE.
10. THE CONTRACTOR IS TO IMPLEMENT ALL THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT.
11. SITE CLASSIFICATION IN ACCORDANCE WITH AS2870 IS CLASS
12. OVER-EXCAVATION WITHIN THE INFLUENCE ZONE (45° LINE DOWN FROM BASE OF FOOTING AND/OR WALL) OF ANY FOOTING AND/OR RETAINING WALL IS NOT ALLOWED WITHOUT THE PRIOR APPROVAL OF THE EXCAVATION SEQUENCE BY THE SUPERINTENDENT.



14. FOR CLASS 'H' AND 'P' SITES SERVICE LINES, IN PARTICULAR SEWER AND STORM WATER, SLABS AND FOOTING EDGES MUST BE ARTICULATED WITH PROPRIETARY SLIDING AND OR SWIVELLING JOINTS FOR UP TO 100mm of MOVEMENT OR AS OTHERWISE ADVISED BY THE GEOTECHNICAL ENGINEER.
15. DEWATER ALL STRIP AND PAD FOOTINGS. ALL FOOTING CONCRETE TO BE VIBRATED.
16. SITE DRAINAGE: PROPER MAINTENANCE OF SUCH CLAY SITES REQUIRES THAT THE MOISTURE CONTENT OF THE SOIL SHOULD BE MAINTAINED AT OR BELOW THE PLASTIC LIMIT. AT NO TIME DURING CONSTRUCTION, OR SUBSEQUENTLY, SHOULD WATER BE ALLOWED TO POND ON OR NEAR THE FOOTING.
17. TERMITE TREATMENT: PROVIDE PROTECTION OF BUILDING FROM SUBTERRANEAN TERMITES AS BELOW.
PROTECTION SYSTEM SHALL BE:
 - a. IN ACCORDANCE WITH AS3660.1-2000;
 - b. FOR SLABS CONSTRUCTION, STAINLESS STEEL MESH BARRIERS (PERIMETER INSTALLATION, PENETRATION INSTALLATION, CONSTRUCTION AND CONTROL JOINT INSTALLATION) IN ACCORDANCE WITH AS3660.1-2000 SECTION 6 OR APPROVED EQUIVALENT PHYSICAL BARRIER
 - c. NOTE THAT FOOTINGS/SLAB/PENETRATION AND SUBSTRUCTURE DETAILS ON THE DRAWINGS DO NOT SHOW REQUIREMENTS. PERIMETER TREATMENT USING EDGE EXPOSURE OF PERIMETER BEAMS IS NOT ACCEPTABLE.

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL DESIGN, CERTIFICATION AND INSTALLATION OF ALL ELEMENTS AS REQUIRED BY PART B OF THE BUILDING CODE OF AUSTRALIA FOR SEISMIC MOVEMENT IN ACCORDANCE OF AS1170.4-2007.
2. THE CONTRACTOR MUST ENGAGE AND PAY ALL COSTS FOR A REGISTERED PROFESSIONAL ENGINEER TO:
 - PREPARE A DESIGN TO ACHIEVE THE SEISMIC REQUIREMENTS OF SECTION 8 OF AS 1170.4-2007.
 - PROVIDE REGULATION 126 CERTIFICATION OF COMPLIANCE (DESIGN) FOR PROPOSED BUILDING WORKS
 - DURING CONSTRUCTION UNDERTAKE INSPECTIONS & CONFIRM COMPLIANCE WITH THE DESIGN INTENT AND PROVIDE REGULATION 126 CERTIFICATE OF COMPLIANCE (BUILDING WORKS) TO THE SATISFACTION OF THE RELEVANT BUILDING SURVEYOR.
3. THE CONTRACTOR MUST CONFIRM THE IMPORTANCE LEVEL AND DESIGN LIFE WITH THE REGISTERED BUILDING CERTIFIER/SURVEYOR AND THESE PARAMETERS MUST BE LISTED ON THE REGULATION 126 CERTIFICATE FOR THE PROPOSED BUILDING WORKS.
4. ALL PROPRIETARY SYSTEMS MUST BE ORDERED AND INSTALLED WITH ALL CERTIFIED SEISMIC INFRASTRUCTURE TO ACHIEVE THE ABOVE.

THE CONTRACTOR SHALL ALLOW TO CARRY OUT THEIR OWN BUILDING SURVEY TO CONFIRM EXISTING BUILDING DIMENSIONS AND SIZES OF STRUCTURAL ELEMENTS WHICH ARE BEING MODIFIED OR TO WHICH NEW MEMBERS ARE BEING CONNECTED PRIOR TO THE PREPARATION OF SHO DRAWINGS.

2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600.
CONCRETE QUALITY (U.N.O.):

- CEMENT SHALL BE TYPE 'A' NORMAL CLASS PORTLAND CEMENT;
- CONCRETE SHALL HAVE 80mm SLUMP DURING PLACEMENT;
- MAX SIZE OF COARSE AGGREGATE SHALL BE 20mm.

ELEMENT	AS3600 FC	SPECIAL REQUIREMENTS	ADMIXTURE	COVER, mm		
				TOP	BTM	SIDE
SLAB ON GROUND	32		NIL	25	30	30
GROUND BEAM	32			25	25	40
PAD FOOTING	32			40	40	40
GRANDSTAND SUSPENDED	40			25	25	25
SLAB	32					

3. SIZES OF CONCRETE DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

4. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.

5. NO HOLES OR CHASES OTHER THAN THAT SHOWN ON THE STRUCTURAL DRAWING SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

6. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.

7. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS BEFORE REINFORCEMENT IS COMPLETED. THE CONTRACTOR SHALL ALLOW AFTER COMPLETION OF THE REINFORCEMENT, TWO HOURS FOR THE ENGINEERS INSPECTION.

8. CONCRETE SHALL NOT BE ORDERED UNTIL REINFORCEMENT IS APPROVED BY THE ENGINEER.

9. CONCRETE CURING AND STRIPPING TO BE IN ACCORDANCE WITH THE RELEVANT S.A.A. CODES. ALL CONCRETE SURFACES ARE TO BE CURED FOR 7 (SEVEN) DAYS AFTER CASTING USING A CURING COMPOUND THAT CONFORMS TO THE RELEVANT AUSTRALIAN STANDARDS, AND IS COMPATIBLE WITH THE SPECIFIED FINISHES.

10. REINFORCEMENT SYMBOLS:

- R - DENOTES 250R HOT ROLLED PLAIN BAR TO AS1303;
- F - DENOTES HARD-DRAWN RIBBED WIRE FABRIC TO AS1304;
- N - DENOTES GRADE 500N HOT ROLLED DEFORMED BAR TO AS4671;
(AS4671 AMALGAMATES AS1302, AS1303 AND AS1304 INTO A SINGLE STANDARD).

11. THE NUMBER PRECEDING THE BAR SYMBOL DENOTES THE NUMBER OF BARS IN THE GROUP AND THE NUMBER FOLLOWING THE BAR SYMBOL DENOTES THE BAR DIAMETER. ALTERNATIVELY, THE NUMBER FOLLOWING THE BAR DIAMETER DENOTES THE MAXIMUM CENTRES.

12. CLEAR COVER TO CONCRETE REINFORCEMENT SHALL BE AS INDICATED.

13. CONCRETE TESTING AS PER REQUIREMENTS OF AS3600 ARE TO BE CARRIED OUT AND THE RESULTS OF THE 7 DAY AND 28 DAY TEST ARE TO BE FORWARDED TO THE ENGINEER FOR REVIEW.

14. UNLESS NOTED OTHERWISE, ALL FORMED EDGES AND CORNERS OF CONCRETE MEMBERS SHALL HAVE 20mm CHAMFERS.

15. EXACT SIZE AND LOCATION OF PENETRATIONS ARE TO BE OBTAINED FROM WORKSHOP DRAWINGS PRIOR TO SCHEDULING OF REINFORCEMENT, AND ARE NOT TO EXCEED DIMENSIONS WHERE SHOWN ON STRUCTURAL DRAWINGS.

16. CONDUITS CAST INTO CONCRETE MEMBERS SHALL BE SPACED AT MAXIMUM DISTANCE POSSIBLE AND UNDER NO CIRCUMSTANCES CLOSER THAN CLEAR SPACING OF TWICE THE LARGER CONDUIT DIAMETER FROM PARALLEL REINFORCEMENT OR ANY OTHER CONDUIT.

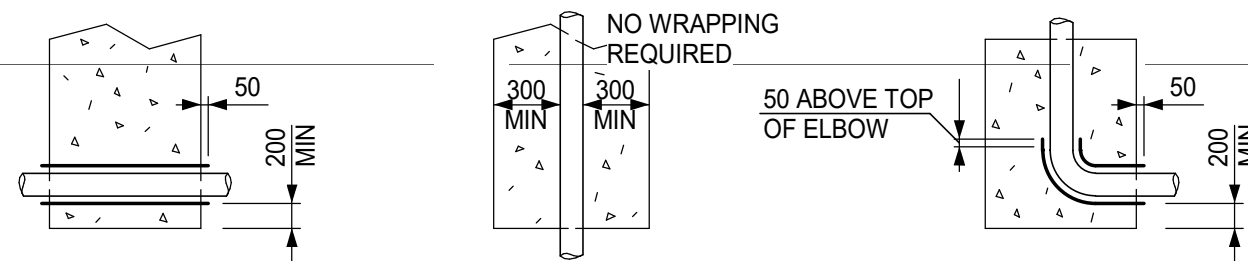
17. ALL FORMWORK SHALL CONFORM TO AS3610. RESHORING IS NOT PERMITTED. ALL REINFORCEMENT TO BE IN ACCORDANCE WITH AS1302, AS1303 AND AS1304.

18. CLASS 2 FORMWORK SHALL BE USED FOR ALL EXPOSED CONCRETE.

19. REINFORCEMENT LAPS SHALL BE 60 BAR DIAMETERS U.N.O.

BAR DIAMETER	VERTICAL BARS	HORIZONTAL BARS LESS THAN 300mm CONCRETE UNDER BAR	HORIZONTAL BARS GREATER THAN 300mm CONCRETE UNDER BAR
N12	720	720	550
N16	960	960	750
N20	1200	1200	1100
N24	1440	1440	1300
N28	1680	1680	1400
N32	1920	1920	1600
N36	2160	2160	1800

20. MESH LAPS SHALL BE
- SUSPENDED SLABS - 420mm (3 CROSS WIRES + 20mm);
 - SLABS ON GROUND - 220mm (2 CROSS WIRES + 20mm)
21. TRENCH MESH LAPS SHALL BE 500 MIN. U.N.O.
22. THE FOLLOWING ABBREVIATIONS APPLY TO THE LOCATION OF REINFORCEMENT:
- EW - EACH WAY
 - EF - EACH FACE
 - BTM - BOTTOM
 - TOP - TOP
23. ALL REINFORCEMENT BENDS, HOOKS AND COGS SHALL COMPLY WITH AS3600.
24. CHAIR UP ALL REINFORCING AT 800mm MAX CENTRES TO ENSURE CORRECT COVERS DURING CONCRETE POUR.
25. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION.
26. SLAB REINFORCEMENT SHALL EXTEND AT LEAST 12 BAR DIAMETERS ONTO MASONRY SUPPORT WALLS UNLESS NOTED OTHERWISE.
27. DO NOT CUT REINFORCEMENT ON SITE TO CLEAR PENETRATIONS. DISPLACE REINFORCEMENT SLIGHTLY AS NECESSARY TO CLEAR BLOCKOUTS.
28. WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.
29. ALL OPENINGS AND RE-ENTRANT AND IN THE CONCRETE SHALL HAVE 216x1500mm LONG TIED TO UNDERSIDE OF SLAB TOP REINFORCEMENT.
30. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN.
31. WHERE SERVICE PIPES PENETRATE FOOTINGS INCREASE DEPTH OF FOOTING TO A MINIMUM OF 200mm BELOW THE UNDERSIDE OF THE PIPE FOR A DISTANCE OF 300mm BOTH SIDES OF THE PIPE. DEFLECT BOTTOM REINFORCEMENT UNDER THE SERVICE PIPE, MAINTAINING MINIMUM SPECIFIED COVER.
32. WHERE SLAB PENETRATIONS ARE LESS THAN 200mm DIA AND REQUIRE CUTTING OF SLAB FABRIC, CUT OUT MINIMUM EXTENT OF FABRIC POSSIBLE, AND REPLACE EACH CUT BAR WITH 1 N12 x1000mm LONG BAR. LOCATE N12 BARS AS CLOSE TO CUT BAR AS POSSIBLE, MAINTAINING MINIMUM COVER REQUIREMENTS.
33. INCREASE WIDTH OF BEAM BY DIA. OF PENETRATION FOR LENGTH OF N12 BARS PLUS 200mm.
34. WHERE SERVICE PIPES PENETRATE SLAB, BEAMS, STRIP FOOTINGS, PAD FOOTING OR INTERNAL, & EDGE BEAMS BLINDING CONCRETE, WRAP THE PIPE WITH 50 THICK CLOSED CELL POLYETHYLENE FOAM, EQUIVALENT TO FOSROC NONPORITE® EXPANDAFOAM® TAPED OR TIED INTO POSITION AS FOLLOWS:



34. WHERE PENETRATION IS THROUGH A PERIMETER BEAM, FOOTING OR BLINDING, FILL OUTER SIDE OF BEAM, FOOTING OR BLINDING, WITH AN APPROVED WATERTIGHT FLEXIBLE SEALANT 25 MM. DEPTH INTO CONCRETE OR SLEEVE.
35. WHERE SERVICE PIPES PENETRATE BEAMS OR STRIP FOOTINGS INCREASE THE DEPTH OF THE BEAM OR STRIP FOOTING TO A MINIMUM OF 200mm BELOW THE UNDERSIDE OF THE PIPE FOR A DISTANCE OF 300mm BOTH SIDES OF THE PIPE. DEFLECT BOTTOM REINFORCEMENT UNDER THE SERVICE PIPE MAINTAINING MINIMUM SPECIFIED COVER.

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100, AS1554, AS1163 and AS3679.
2. UNLESS OTHERWISE SHOWN, STEEL QUALITY SHALL CONFORM WITH THE FOLLOWING AUSTRALIAN STANDARDS:
• STEEL PLATES AND SECTIONS - AS3679 GRADE 300
• RECTANGULAR HOLLOW SECTIONS (RHS) - AS1163 GRADE C350L0
• CIRCULAR HOLLOW SECTIONS (CHS) - AS1163 GRADE C350L0
• SQUARE HOLLOW SECTIONS (SHS) - AS1163 GRADE C350L0
3. UNLESS OTHERWISE SHOWN, ALL GUSSET PLATES SHALL BE 10mm THICK, ALL END PLATES SHALL BE 10mm THICK AND ALL BOLTS SHALL BE M20 8.8'S.
4. UNLESS OTHERWISE SHOWN, ALL INTERFACES BETWEEN STEELWORK SHALL BE EITHER BOLTED OR CONTINUOUSLY WELDED. ALL WELDS NOT SPECIFIED SHALL BE 6mm CONTINUOUS FILLET WELDS ON BOTH SIDES.
5. UNLESS NOTED OTHERWISE, ALL ANCHOR BOLTS BUILT INTO CONCRETE SHALL BE GALVANISED. COMMERCIAL GRADE 4.6 CONFORMING TO AS1111. ALL OTHER BOLTS SHALL BE GALVANISED HIGH STRENGTH STRUCTURAL GRADE 8.8 CONFORMING TO AS1252. ALL BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH AS1511.
6. BOLT DESIGNATION - EXAMPLE: 4/ M20 8.8/S
• NUMBER OF BOLTS - 4;
• SIZE - M20 - 20mm DIA.;
• GRADE - 8.8 - HIGH STRENGTH;
• TIGHTENING - S - SNUG TIGHTENED;
7. THE CONTRACTOR SHALL PROVIDE ALL CLEATS AND HOLES WHETHER OR NOT SHOWN FOR FIXING NON-STRUCTURAL ELEMENTS TO STEELWORK.
8. INTERNAL STRUCTURAL STEELWORK SHALL BE SANDBLASTED TO CLASS 2.5' SURFACE PREPARATION AND COATED WITH A SINGLE COAT OF INORGANIC ZINC SILICATE.
9. EXTERNAL STRUCTURAL STEELWORK SHALL BE HOT DIPPED GALVANISED.
10. ALL SHARP EDGED AND BURS TO BE REMOVED FROM STEELWORK.
11. BEFORE FABRICATION IS COMMENCED THE CONTRACTOR SHALL SUBMIT 3 COPIES OF THE WORKSHOP DRAWINGS TO THE SUPERINTENDENT.
• THE SHOP DRAWINGS ARE TO BE SUBMITTED IN PDF FORMAT BASED ON A3 DRAWING SIZE.
• THE 3D MODEL IS ALSO TO BE SUBMITTED IN IFC FORMAT. THE MODEL IS TO CONTAIN ALL RELEVANT INFORMATION INCLUDING MEMBER MARKING, MEMBER SIZES, TYPE AND MEMBER DIMENSIONS.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
13. ALL BOLTS, NUTS AND WASHERS, INCLUDING H.D. BOLTS ARE TO BE HOT DIP GALVANISED. ALL CAST-IN FERRULES AND MASONRY ANCHORS ARE TO BE PASIVATED ZINC COATED.
14. AT LEAST SEVEN DAYS PRIOR TO THE ANTICIPATED COMMENCEMENT OF FABRICATION, SUBMIT SHOP DRAWINGS TO LAMBERT AND REHEIN PTY LTD FOR REVIEW TO CHECK GENERAL COMPLIANCE WITH THE STRUCTURAL DESIGN INTENT. THIS REVIEW IN NO WAY EXEMPTS THE CONTRACTOR FROM RESPONSIBILITY FOR WORK SHOWN ON THE DRAWINGS, AND THE CONTRACTOR REMAINS FULLY RESPONSIBLE FOR ALL DIMENSIONS AND AGREEMENT WITH THE CONTRACT. SHOP DRAWINGS SHALL BE THOROUGHLY CHECKED BY THE CONTRACTOR FOR COMPLETENESS AND FOR COMPLIANCE WITH THE CONTRACT DOCUMENT BEFORE SUBMITTING THEM TO LAMBERT AND REHEIN PTY LTD. DO NOT COMMENCE FABRICATION OF STEELWORK UNTIL THE RELEVANT SHOP DRAWING HAS BEEN REVIEWED, ANY COMMENTS FOR CONSIDERATION HAVE BEEN INCORPORATED AND APPROVAL GIVEN BY THE SUPERINTENDENT TO PROCEED.
15. RETAIN THE SERVICES OF AND PAY ALL COSTS FOR AN APPROVED STEEL FABRICATION INSPECTION SERVICE TO:
A. CONDUCT ALL NECESSARY INSPECTIONS OF STEEL FABRICATION AND ERECTION TO ENSURE THAT ALL WORKMANSHIP COMPLIES WITH THIS SPECIFICATION, WITH PARTICULAR ATTENTION TO:
a. TESTING AND APPROVAL OF WELDING PROCEDURES AND OPERATORS,
b. PREPARATION AND CONSTRUCTION OF ALL JOINTS,
c. QUALITY, SIZE AND LENGTHS OF WELDS,
d. PREPARATION FOR SHOP PAINTING,
e. SHOP PAINTING,
f. HIGH STRENGTH BOLTING TECHNIQUE,
g. ERECTION PROCEDURES.
B. SUBMIT REPORTS TO THE SUPERINTENDENT, WITH COPIES TO THE CONTRACTOR AND THE STRUCTURAL STEEL WORK CONTRACTOR, DETAILING PROGRESS OF THE WORK WHILE FABRICATION AND/OR ERECTION IS IN PROGRESS.
C. ON COMPLETION OF FABRICATION AND ERECTION, ISSUE THE SUPERINTENDENT WITH A CERTIFICATE STATING THAT ALL WORKMANSHIP COMPLIES WITH THE SPECIFICATION AND SHOP DRAWINGS.
16. ALL STEELWORK SHALL BE SECURELY AND TEMPORARILY BRACED AS NECESSARY TO STABILIZE THE STRUCTURE DURING ERECTION.

1. ALL WELDS SHALL BE CATEGORY "SP" IN ACCORDANCE WITH AS1554 UNLESS NOTED OTHERWISE. ALL WELDING SHALL COMPLY WITH AS1554 AND AS3410.
2. BEFORE COMMENCING FABRICATION SUBMIT DETAILS OF PROPOSED WELDING PROCEDURES USING THE FORM APPENDIX "E" OF AS1554.
3. DO NOT COMMENCE FABRICATION UNTIL WELDING PROCEDURES HAVE BEEN ACCEPTED.
4. OTHER THAN SITE WELDS, IF ANY, SHOWN ON THE SHOP DRAWINGS, DO NOT WELD ON SITE WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT. WHEREVER POSSIBLE, LOCATE SITE WELDS IN POSITIONS FOR DOWN HAND WELDING.
5. ALL BUTT WELDS, EXCEPT WHEN PRODUCED WITH THE AID OF BACKING MATERIAL, SHALL HAVE THE ROOT OR INTERNAL LAYER GOUGED OR CHIPPED OUT ON THE BACK SIDE BEFORE WELDING IS STARTED FROM THAT SIDE. BUTT WELDS MADE WITH THE USE OF A BACKING STRIP SHALL HAVE THE WELD METAL FUSED WITH THE BACKING STRIP. ENDS OF BUTTS SHALL HAVE THE START AND STOP ZONES REMOVED BY THE USE OF RUN ON AND RUN OFF PLATES. SUCH PLATES SHALL BE REMOVED AFTER USE.
6. WELDING SHALL BE CARRIED OUT UNDER THE IMMEDIATE AND CONTINUOUS SUPERVISION OF A SUPERVISOR EMPLOYED BY THE FABRICATOR. THIS PERSON SHALL HAVE QUALIFICATIONS AS DESCRIBED IN AS1554 SECTION 4.11 AND THESE QUALIFICATIONS SHALL BE SUBMITTED TO THE SUPERINTENDENT ON REQUEST. WELDING SHALL BE PERFORMED ONLY BY WELDERS WITH QUALIFICATIONS AS DESCRIBED IN AS1554 SECTION 4.11.
7. WHERE NOT IS SPECIFIED FOR INDIVIDUAL WELDS ON THE DRAWINGS, IT SHALL MEAN NON-DESTRUCTIVE TEST BY EITHER RADIOGRAPHIC OR ULTRASONIC MEANS.
8. THE WELD EXAMINATION SHALL BE PERFORMED BY AN INDEPENDENT TESTING AUTHORITY AT THE CONTRACTORS EXPENSE. THE TEST REPORTS SHALL BE SUBMITTED TO THE SUPERINTENDENT.
9. AFTER REPAIRING A FAULTY WELD REVEALED BY NON-DESTRUCTIVE EXAMINATION, REPEAT THE SPECIFIED EXAMINATION AND FURNISH THE TESTING AUTHORITY'S REPORT TO THE SUPERINTENDENT.
10. WELDING SYMBOLS:
 - FSWB - FULL STRENGTH BUTT WELD
 - PSBW - PARTIAL STRENGTH BUTT WELD
 - CFW - CONTINUOUS FILET WELD (ALL AROUND)

1. ALL CLEATS AND DRILLING FOR FIXING OF ARCHITECTURAL ELEMENTS, SUCH AS TIMBER FRAMING, FLASHINGS, SUPPORTS FOR WALL AND ROOF SHEETING AT JUNCTIONS, FURRING CHANNELS ETC. SHALL BE PROVIDED BY THE FABRICATOR. THE STRUCTURAL DRAWINGS ARE DEEMED TO PROVIDE FOR ALL NECESSARY MAJOR STRUCTURAL STEELWORK AND CONNECTIONS. MINOR NON-STRUCTURAL ITEMS SUCH AS TRIMMERS, CLEATS AND OTHER ITEMS SHOWN ON THE ARCHITECTURAL DRAWINGS BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS, SHALL BE ALLOWED FOR BY THE CONTRACTOR IN HIS TENDER PRICE, AND DETAILED AT THE SHOP DRAWING STAGE WHERE REQUIRED.

ISSUED
FOR
CONSTRUCTION

C1	20.07.2022	VF	ISSUED FOR CONSTRUCTION	CY
No	DATE	BY	AMENDMENT	CHECKED

LAMBERT & REHBEIN
ENGINEERS • MANAGERS • SCIENTISTS

SUITE 1
GROUND FLOOR, 55 WALSH STREET
WEST MELBOURNE, VIC 3003
P.O. BOX 192, NORTH MELBOURNE VIC 3051

CONSTAT AUSTRALIA

TELEPHONE (03) 9328 4166
EMAIL mail@lar.net.au
WEB www.lar.net.au

Project: ALTERATIONS & ADDITIONS TO WANGARATTA
INDOOR SPORTS & AQUATIC CENTRE
41 SCHILLING DR WANGARATTA, VIC

Title: GENERAL NOTES - SHEET 1

Client *Millar Architects*

Draftsperson	VF	Checked	CY	JOB No	Drawing No.
Designer	CY	Approved	Sheet Size	M21037	S01
Scale	1 : 1		A1	Date	OCT 2021
				REV	C1

SAFETY IN DESIGN

IN ACCORDANCE WITH WORK HEALTH AND SAFETY ACT AND REGULATIONS THE FOLLOWING TASKS HAVE BEEN IDENTIFIED AS POTENTIAL CONSTRUCTION HAZARDS ASSOCIATED WITH IMPLEMENTING THE DESIGN AS DOCUMENTED.

- DEMOLITION:
- GROUND VIBRATIONS; SURROUNDING PROPERTY AND INFRASTRUCTURE;
- NEEDLING, PROPPING AND PENETRATIONS THROUGH EXISTING STRUCTURAL ELEMENTS;
- UNDERGROUND AND ABOVE GROUND SERVICES AND OBSTRUCTIONS;
- LIFTING AND POSITIONING OF STRUCTURAL COMPONENTS;
- HAZARDOUS MATERIALS;
- OVERLOADING DUE TO CONSTRUCTION LOADS;
- FORMWORK CONSTRUCTION;
- WORKING AT HEIGHTS;
- GENERAL SITE WORKS AND USE OF CONSTRUCTION EQUIPMENT;
- HOT WORKS ASSOCIATED WITH SITE WELDING;

THE ABOVE LISTED HAZARDS ARE TO BE ADDRESSED BY IMPLEMENTING AND COMPLYING WITH THE FOLLOWING NOTES AND ANY OTHER RELEVANT DOCUMENTATION RELATING TO THIS PROJECT:

- IT IS THE CLIENT'S RESPONSIBILITY TO PROVIDE A 'SAFETY IN DESIGN REPORT' TO THE BUILDER, PROJECT MANAGER AND/ OR PRINCIPAL CONTRACTOR;
- IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORKS STRICTLY IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND NOT TO MAKE ANY VARIATIONS TO THE CONSTRUCTION WITHOUT THE SPECIFIC WRITTEN APPROVAL OF THE DESIGNERS;
- IT IS THE CLIENT'S RESPONSIBILITY, THROUGH CONSULTATION AND ENGAGEMENT OF SUITABLY QUALIFIED PROFESSIONALS, TO MAKE THE DESIGNERS AWARE OF ANY INFORMATION RELATING TO HAZARDS AND RISKS WHERE CONSTRUCTION WORK IS TO BE CARRIED OUT, INCLUDING BUT NOT LIMITED TO: THE LOCATION OF UNDER GROUND AND ABOVE GROUND SERVICES, IDENTIFICATION OF CONTAMINATED SOILS AND OTHER MATERIALS OR THE PRESENCE OF DANGEROUS MATERIALS INCLUDING ASBESTOS;
- THIS DESIGN HAS BEEN DOCUMENTED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS, LOCAL AUTHORITY REGULATIONS AND STANDARD BUILDING CODES OF PRACTICE UNLESS NOTED OTHERWISE. EACH LEVEL OF CONSTRUCTION IS TO BE STRUCTURALLY COMPLETED AND INSPECTED TO CHECK DESIGN COMPLIANCE BY THE CERTIFYING AUTHORITY PRIOR TO ADVANCING TO THE NEXT STAGE OF WORK. IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO PROGRAM THE WORKS IN A SAFE MANNER TO ACHIEVE THE STRUCTURAL DESIGN INTENT AND TO HIGHLIGHT TO THE DESIGNERS ANY ASPECTS OF THE WORK THAT MAY REQUIRE FURTHER CLARIFICATION OR ADVICE WITH REGARD TO THE HEALTH AND SAFETY ASSOCIATED WITH THE PROJECT;
- ALL ASPECTS DETAILED OR NOTED IN THE STRUCTURAL DOCUMENTS ARE THOSE REQUIRED FOR THE COMPLETED STRUCTURE ONLY. THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY NECESSARY TEMPORARY CONNECTIONS AS WELL AS SUPPORTS AND BRACING TO MAINTAIN THE STABILITY AND SAFETY OF THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD. THIS INCLUDES ELEMENTS SUCH AS PREFABRICATED TIMBER AND STEEL ELEMENTS, UNRESTRAINED WALLS, CONCRETE COLUMNS, BEAMS AND SLABS, PRECAST PANELS, ETC. WHICH REQUIRE TEMPORARY SUPPORT OR PROPPING TO PREVENT OVER STRESS, EXCESSIVE DEFORMATION OR INSTABILITY UNTIL THE FINAL STRUCTURAL SYSTEM IS COMPLETED. THE DESIGNER IS TO BE CONTACTED FOR FURTHER ADVICE IF REQUIRED
- WHERE THESE DESIGN DRAWINGS ONLY DOCUMENT PART OF A STRUCTURE, IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL DESIGN DRAWINGS ARE CO-ORDINATED BETWEEN CONSULTANTS SUCH THAT THE SCOPE OF WORK IS CLEAR. FOR EXAMPLE, CO-ORDINATION TO ENSURE APPROPRIATE SLAB THICKENINGS AND DETAILING FOR LOAD-BEARING AND BRACING WALL ELEMENTS, CAST IN FIXINGS, ETC.
- NO ALLOWANCE HAS BEEN MADE FOR CONSTRUCTION LOADS INCLUDING STACKING OF MATERIALS ON DECKS, FLOORS OR ROOF PLATFORMS, LOADS IMPOSED DUE TO PLANT, MACHINERY, LIFTING DEVICES, IMPACT/VIBRATION/CYCLIC LOADS, ETC. IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE DESIGNER OF ANY LOADS, THAT ARE NOT DOCUMENTED, TO WHICH THE STRUCTURE MAY BE SUBJECTED DURING CONSTRUCTION;
- UNLESS NOTED ON THE DRAWINGS NO STRUCTURAL ALLOWANCE HAS BEEN MADE FOR SPECIFIC LOADS ASSOCIATED WITH THE MAINTENANCE OF THE STRUCTURE. THE DESIGNER IS TO BE INFORMED OF ANY REQUIREMENTS NECESSARY TO EXTERNALLY SUPPORT PLATFORMS, SCAFFOLDS ETC AS REQUIRED;
- DURING CONSTRUCTION, THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR SHALL PROTECT NEIGHBOURING PROPERTIES FROM NOISE IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS, RADIATION, GROUND VIBRATIONS AND OTHER CONSTRUCTION HAZARDS. CONDITION (DILAPIDATION) REPORTS ON NEIGHBOURING PROPERTIES AND STRUCTURES ARE RECOMMENDED PRIOR TO CONSTRUCTION;
- THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR IS REQUIRED TO VERIFY AND IF NECESSARY CONDUCT FURTHER SEARCHES TO ACCURATELY LOCATE EASEMENTS, UNDER GROUND AND ABOVE GROUND SERVICES, PROPERTY BOUNDARIES, TREES, EXISTING STRUCTURES AND OTHER OBSTRUCTIONS PRIOR TO CONSTRUCTION. THE DESIGNER IS TO BE IMMEDIATELY NOTIFIED OF ANY ELEMENTS NOT SHOWN ON THE APPROVED DRAWINGS AS THE DESIGN AND SAFETY DESIGN REPORT MAY REQUIRE AMENDING;
- THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR MUST OBTAIN DESIGN AND INSPECTION CERTIFICATES ON ALL SUNDRY ELEMENTS OF THE STRUCTURE INCLUDING BUT NOT LIMITED TO CLADDING DESIGN AND FIXINGS, WINDOWS, BALUSTRADES, STAIRS, SUSPENDED CEILINGS, INTERNAL FIT-OUT ITEMS AND ALL OTHER ELEMENTS NOT DETAILED IN THE DESIGN DOCUMENTS;
- THE CONSTRUCTION IS TO BE FULLY CARRIED OUT IN ACCORDANCE WITH ALL DESIGN DRAWINGS AND NOTES AS DOCUMENTED. IF CONSTRUCTION CEASES AT ANY STAGE, THE DESIGNERS ARE TO BE NOTIFIED TO PROVIDE ADVICE ON THE SAFETY OF COMPLETED CONSTRUCTION WORK AT THAT TIME;
- IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO INFORM THE DESIGNERS OF ANY CHANGE TO CONTRACTUAL ARRANGEMENTS BETWEEN THE CLIENT AND THEMSELVES WHICH MAY IMPACT ON THE DESIGN AND SAFETY OF THE DESIGN;
- THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR SHALL PROVIDE SUITABLE FENCING AROUND ALL EXCAVATIONS AND AT NO STAGE SHOULD AN EXCAVATION BE APPROACHED OR ENTERED INTO UNLESS AN APPROVED AND CERTIFIED SHORINGS SYSTEM HAS BEEN INSTALLED OR THE BANKS HAVE BEEN BATTERED AND/OR BENCHED IN ACCORDANCE WITH THE PROJECT'S GEOTECHNICAL ENGINEERING SPECIFICATION AND/OR WRITTEN INSTRUCTIONS BY THE INSPECTING GEOTECHNICAL ENGINEER;
- AT NO STAGE SHALL SITE PERSONNEL PASS UNDER MATERIALS BEING LIFTED AND MOVED AROUND ON SITE. IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT SITE MATERIALS ARE ELIVERED, TRANSPORTED, STORED AND POSITIONED IN A SAFE MANNER AND IN ACCORDANCE WITH THE PRODUCT SPECIFICATION, THE SITE SPECIFIC SAFETY PLAN AND GENERAL SAFETY INDUCTION REGULATIONS;
- CONTRACTORS ARE REQUIRED TO OBTAIN AND COMPLY WITH MATERIAL OR PROPRIETARY PRODUCT SPECIFICATIONS AND RECOMMENDATIONS WHEN USING MATERIALS SPECIFIED IN THE DESIGN DOCUMENTS;
- THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR MUST ELIMINATE OR LIMIT (SO FAR AS REASONABLE AND PRACTICABLE) SLIP HAZARDS AND PROTRUDING, SHARP OR ABRASIVE ELEMENTS ON SITE. HAZARDOUS ELEMENTS MUST BE CAPPED, ADEQUATELY SCREENED OR CLEARLY MARKED TO ENSURE SITE SAFETY;
- IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT SITE WORKERS ARE SUITABLY QUALIFIED, TRAINED AND INSURED FOR THE TASKS BEING UNDERTAKEN ON SITE;
- IT IS THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL SITE PERSONNEL ARE PROVIDED ADEQUATE SPACE, VENTILATION AND APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT TO UNDERTAKE THE WORKS REQUIRED. ALL CONSTRUCTION EQUIPMENT IS TO BE USED IN ACCORDANCE WITH BEST INDUSTRY SAFETY PRACTICES AND REGULATIONS;
- DEMOLITION WORKS ARE REQUIRED TO BE CARRIED OUT IN A SAFE, SYSTEMATIC AND ORDERLY MANNER IN ACCORDANCE WITH THE SITE SPECIFIC SAFETY PLAN AND ALL GENERAL SAFETY INDUCTION REGULATIONS. TEMPORARY PROPPING OF MEMBERS MAY BE REQUIRED IN ACCORDANCE WITH THE DIRECTION OF A SUITABLY QUALIFIED PROFESSIONAL IN ACCORDANCE WITH INDUSTRY SAFETY PRACTICES AND REGULATIONS;
- AT ALL TIMES THE BUILDER, PROJECT MANAGER, OR PRINCIPAL CONTRACTOR IS TO PROVIDE SAFE ACCESS ONTO AND AROUND THE BUILDING SITE INCLUDING ADEQUATE STAIRS, SCAFFOLDING, SECURE LADDER ACCESS, SAFE WORKING PLATFORMS, ACCESS PATHS FREE FROM FALLING OBJECTS, ADEQUATE RAILINGS, FALL ARREST SYSTEMS, ETC.;
- ALL FORMWORK AND SCAFFOLDING SYSTEMS ARE TO BE DESIGNED AND CERTIFIED BY A LICENSED CONTRACTOR TO COMPLY WITH RELEVANT AUSTRALIAN STANDARDS AND KEPT AND MAINTAINED IN A GOOD WORKING ORDER. REGULAR CHECKS ON ERECTED MEMBERS AND FIXINGS MUST BE CARRIED OUT BY A QUALIFIED PROFESSIONAL TO ENSURE COMPLIANCE WITH THE DESIGN;
- CLIMBING ON SCAFFOLDING OR FORMWORK OR WORKING AT HEIGHTS WITHOUT SUITABLY APPROVED RAILINGS, BARRIERS AND RESTRAINTS FIXED OFF TO CERTIFIED ANCHOR POINTS IS STRICTLY PROHIBITED;

- ALL SITE MACHINERY AND ELECTRICAL EQUIPMENT IS TO BE KEPT IN GOOD WORKING ORDER WITH CURRENT SAFETY TAGGING AND SERVICING WHERE APPLICABLE. THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR IS TO ADEQUATELY TREAT AND DISPOSE OF DANGEROUS SITE MATERIALS INCLUDING CONTAMINATED SOILS AND ASBESTOS IN ACCORDANCE WITH AUTHORITY REGULATIONS, INDUSTRY STANDARDS AND PRACTICES;
- THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR IS TO ENSURE THAT THE SITE IS MAINTAINED IN A SAFE WORKING MANNER AND THAT ALL SITE PRACTICES ARE IN ACCORDANCE WITH CURRENT WORK PLACE HEALTH AND SAFETY LAWS AND REGULATIONS;
- THE BUILDER, PROJECT MANAGER OR PRINCIPAL CONTRACTOR IS TO ENSURE THAT ANY WORKS DO NOT AFFECT THE STRUCTURAL STABILITY OF NEIGHBOURING PROPERTIES. IT HAS BEEN ASSUMED UNLESS SHOWN OTHERWISE ON THE DRAWINGS THAT THE NEIGHBOURING PROPERTIES ARE SELF SUPPORTING, AND IN NO WAY ARE RELYING ON THE SUBJECT SITE FOR STRUCTURAL STABILITY. SHOULD THERE BE ANY INDICATION THAT THE WORKS ON SITE WOULD AFFECT THE STABILITY OF THE ADJOINING PROPERTIES THEN THE DESIGNER IS TO BE CONTACTED FOR FURTHER ADVICE IF REQUIRED.

MASONRY (BLOCKWORK & BRICKWORK)

- ALL BLOCKWORK SHALL COMPLY WITH THE FOLLOWING:
 - AS3700 - MASONRY CODE;
 - AS2733 - CONCRETE MASONRY UNITS.
- ALL BLOCKS SHALL HAVE AN UNCONFINED COMPRESSIVE STRENGTH OF 25MPa.
- MORTAR PROPORTIONS FOR BLOCKWORK SHALL BE:
 - 1 PART CEMENT;
 - 0.5 PART LIME;
 - 4.5 PARTS CLEAN SAND.
- ALL REINFORCED CORES SHALL BE CONCRETE FILLED AND SHALL HAVE CLEAN-OUT BLOCKS AT BASE COURSE.
- ALL MORTAR DAGS TO BE REMOVED BEFORE FILLING CORES. REINFORCEMENT OF BLOCKWORK TO BE AS SHOWN ON THE DRAWINGS.
- REINFORCEMENT SHALL BE PLACED CENTRALLY WITHIN THE CORE U.N.O.
- FACE SHELLS AND CROSS WEBS SHALL BE FULLY BEDDED IN MORTAR. CORE FILLING CONCRETE SHALL HAVE A MIN. 10mm NOMINAL AGGREGATE SIZE WITH 250mm MAX. SLUMP. REFER TO REINFORCED CONCRETE NOTES FOR CONCRETE STRENGTH. GROUT FILLING SHALL BE THOROUGHLY RODDED USING A PLAIN ROUND BAR.
- PROVIDE VERTICAL CONTROL JOINTS TO BE LOCATED AT MAX 7.6m CENTRES, OR WHERE INDICATED ON THE DRAWINGS.
- NO CHASES OR HOLES SHALL BE MADE WITHOUT WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER.
- ALL FORMWORK AND PROPS UNDER SUSPENDED CONCRETE WORK SHALL BE REMOVED BEFORE ANY BRICKWORK OR BLOCKWORK IS BUILT ABOVE U.N.O.
- 'H' SERIES BLOCKS SHALL BE USED THROUGHOUT. STANDARD BLOCKS SHALL NOT BE USED. ALL BLOCKS SHALL HAVE TOP GROOVES TO ALLOW FOR HORIZONTAL REINFORCEMENT.
- STRUCTURAL MASONRY SHOWN ON STRUCTURAL DRAWINGS. OTHER MASONRY IS SHOWN ON ARCHITECTURAL DRAWINGS.
- ALL WALL TIES SHALL COMPLY WITH AS2699, BE COLOUR CODED, AND HAVE A DURABILITY CLASSIFICATION 'R2' IN ACCORDANCE WITH TABLES F1 & F2 OF AS3700

SUGGESTED CONSTRUCTION METHODOLOGY FOR SHOW COURT

- REMOVE SHEETING FROM GRID 12 TO MINIMUM EXTENT WEST OF GRID 7 TO ALLOW FOR SUFFICIENT SPACE FOR NEW WORKS TO EXISTING TRUSS ON GRID 7 AND FOR RAISING OF EXISTING ROOF STRUCTURE.
- REMOVE WALL SHEETING AND GIRTS TO EXISTING EAST ELEVATION ON GRID 12.
- REMOVE WALL SHEETING AND GIRTS TO EXISTING NORTH ELEVATION ON GRID A.
- REMOVE BRICKWORK TO EXISTING NORTH FAÇADE ON GRID A.
- POUR NEW SLAB AND FOOTINGS FROM GRIDS 8-A AND 8-C AND B1-12 TO B1-16.
- TEMPORARILY PROP EACH MULLION ON THE EAST FAÇADE (5 NO.) IN EAST WEST AND NORTH SOUTH DIRECTION.
- TEMPORARILY PROP EACH COLUMN ON NORTH FAÇADE BETWEEN GRIDS 9 AND 12 IN NORTH SOUTH AND EAST WEST DIRECTION.
- REMOVE EXISTING PURLINS FROM GRID 7 TO GRID 12. STORE ON SITE AND KEEP COVERED TO MAINTAIN IN DRY CONDITION OR STORE OFFSITE IN DRY CONDITIONS.
- REMOVE EXISTING BRACING BETWEEN GRIDS 11 AND 12. STORE ON SITE AND KEEP COVERED TO MAINTAIN IN DRY CONDITION OR STORE OFFSITE IN DRY CONDITIONS.
- DISCONNECT EXISTING TRUSSES ON GRIDS 9 TO 12. STORE ON SITE AND KEEP COVERED TO MAINTAIN IN DRY CONDITION OR STORE OFFSITE IN DRY CONDITIONS.
- REMOVE EXISTING COLUMNS BETWEEN GRIDS 9 AND 12 AND EXISTING MULLIONS ON EXISTING EAST FAÇADE. MAINTAIN COLUMNS IN A STABLE CONDITION WHILST TEMPORARY PROPPING IS BEING REMOVED. CUT EXISTING HOLDING DOWN BOLTS FLUSH WITH CONCRETE SURFACE.
- EXTEND EXISTING COLUMNS WITH C01 BY SITE WELDING NEW TO EXISTING AS SHOWN ON TYPICAL 'EXISTING COLUMN EXC1 EXTENSION AT SHOW COURT DETAIL' DRG. NO. S82 ALONG GRIDS B1-7 TO B1-12.
- CARRY OUT WORKS TO EXISTING TRUSS ON GRID 7
- CONSTRUCT NEW STEEL STRUCTURE FROM GRID 8A, 8C TO B1-13 AND B1-16. MAINTAIN STRUCTURE IN STABLE CONDITION AT ALL TIMES
- RE-INSTALL EXISTING TRUSSES ON GRIDS 9 TO 12 AND CONNECT AS DETAILED. MAINTAIN STRUCTURE IN STABLE CONDITION AT ALL TIME.
- REINSTALL EXISTING BRACING BETWEEN GRIDS 11 & 12.
- CONSTRUCT NEW PURLINS BETWEEN GRIDS 12 & 13 AND GRIDS A & B1.
- REINSTALL EXISTING PURLINS EXP1 BETWEEN GRIDS A & B1 AND 7 & 12. CONNECT EXISTING FLY BRACING TO EXISTING AND NEW PURLINS AND TO TRUSS BOTTOM CHORD.

NOTE:
THE CONTRACTOR SHALL ENGAGE AND PAY ALL COSTS FOR A REGISTERED STRUCTURAL ENGINEER TO DESIGN AND CERTIFY ALL TEMPORARY PROPPING DURING CONSTRUCTION TO ENSURE STABILITY DURING DEMOLITION AND ERECTION. REFER TO NOTE 4 ON DRG. NO. S01

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SUITE 1
GROUND FLOOR, 55 WALSH STREET
WEST MELBOURNE, VIC 3003
P.O. BOX 192, NORTH MELBOURNE VIC 3051



TELEPHONE (03) 9328 4166
EMAIL mail@lar.net.au
WEB www.lar.net.au

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Title: GENERAL NOTES - SHEET 2

Client: Millar Architects

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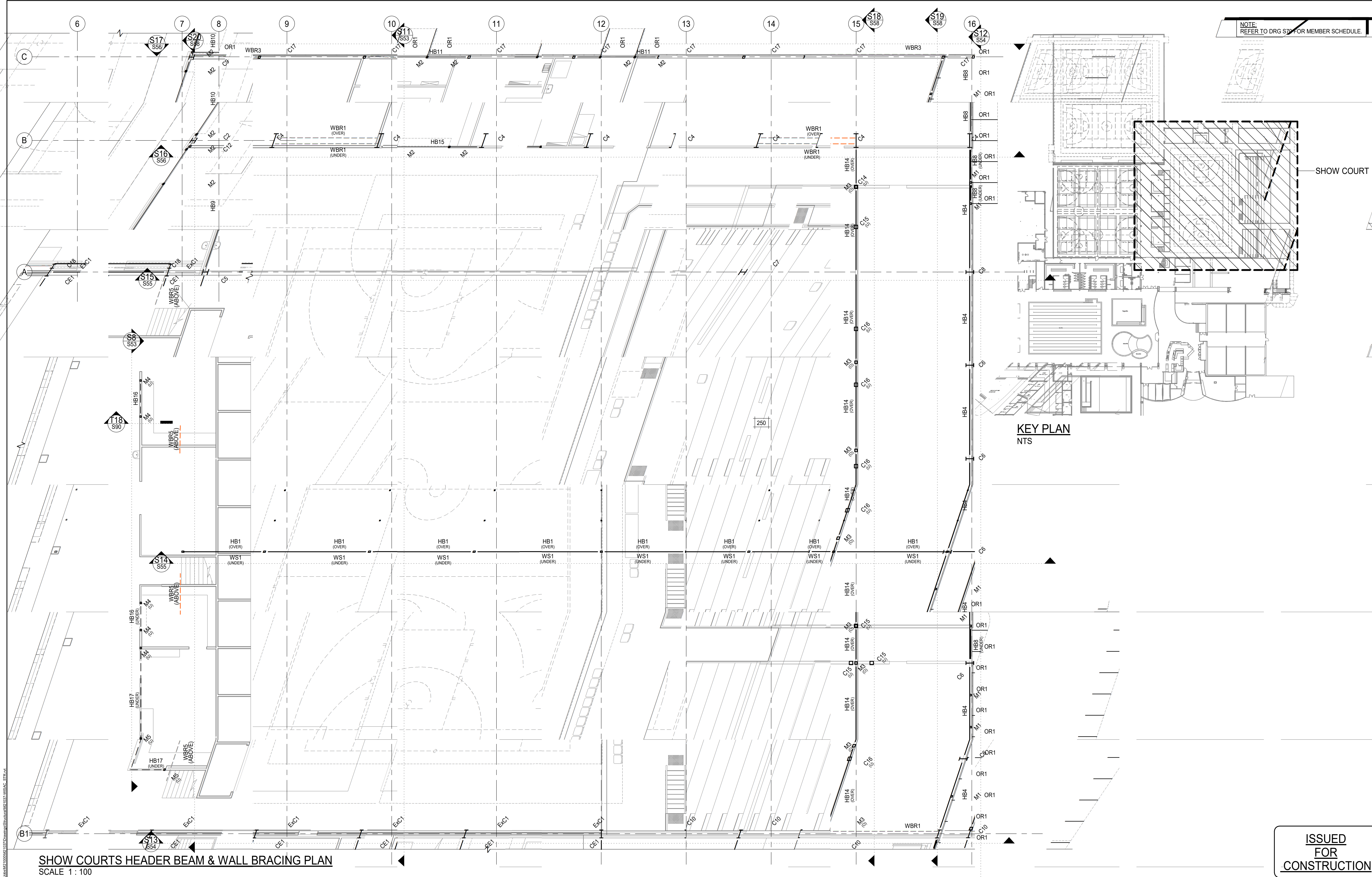
 TELEPHONE (03) 9328 4166
EMAIL mail@lar.net.au
WEB www.lar.net.au

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INDOOR SPORTS & AQUATIC CENTRE
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Title: SHOW COURTS GROUND FLOOR SLAB & FOOTING PLAN

Client	<i>Millar Architects</i>
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SHOW COURTS HEADER BEAM & WALL BRACING PLAN
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SUITE 1
GROUND FLOOR, 55 WALSH STREET
WEST MELBOURNE, VIC 3003
P.O. BOX 192, NORTH MELBOURNE VIC 3051

CONSULT AUSTRALIA

TELEPHONE (03) 9328 4166
EMAIL m.r@lar.net.au
WEB www.lar.net.au

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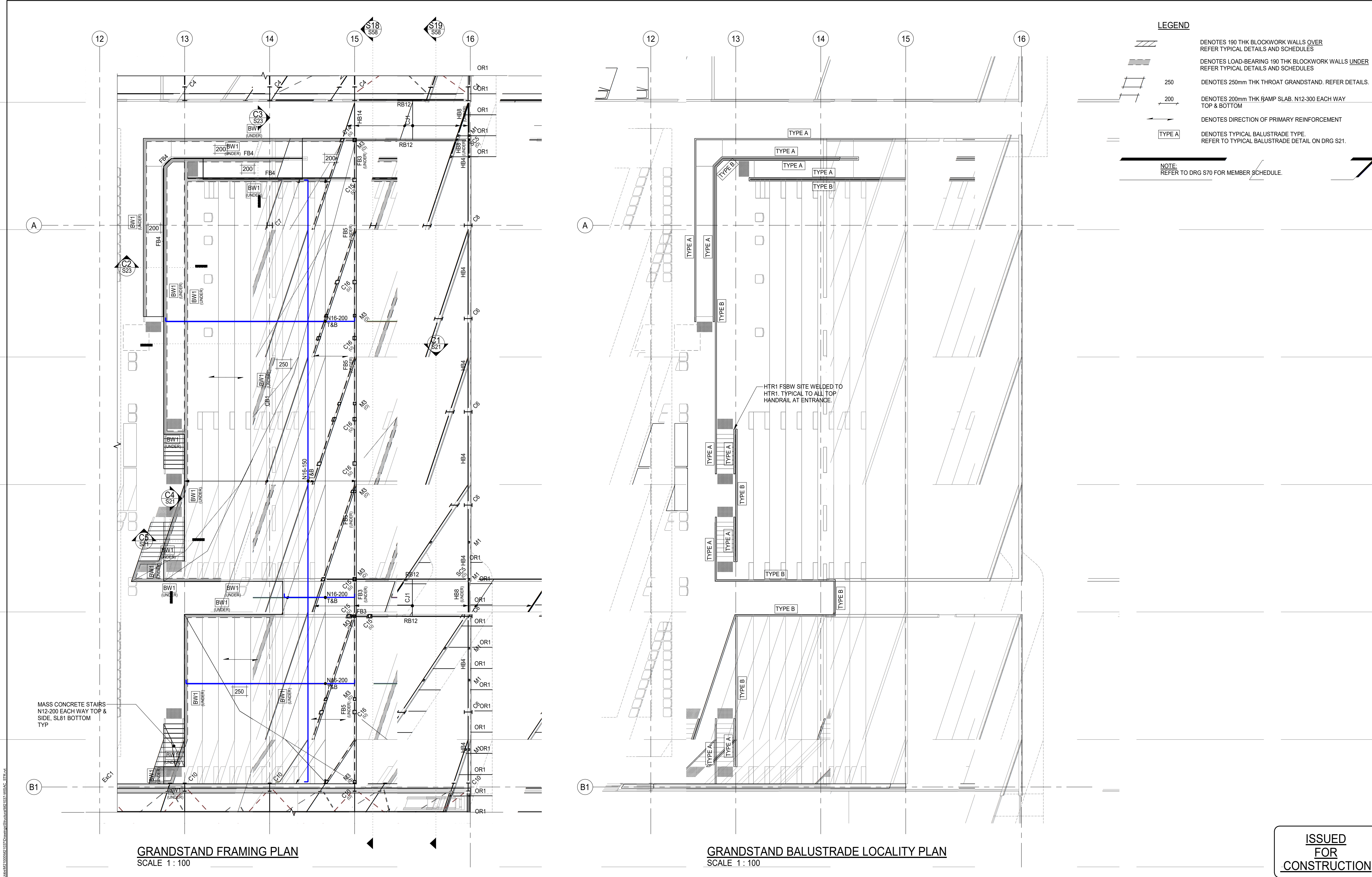
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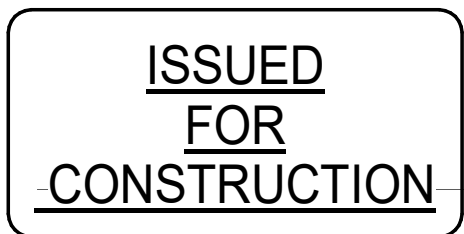


GRANDSTAND FRAMING PLAN
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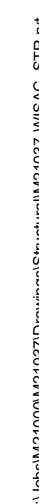
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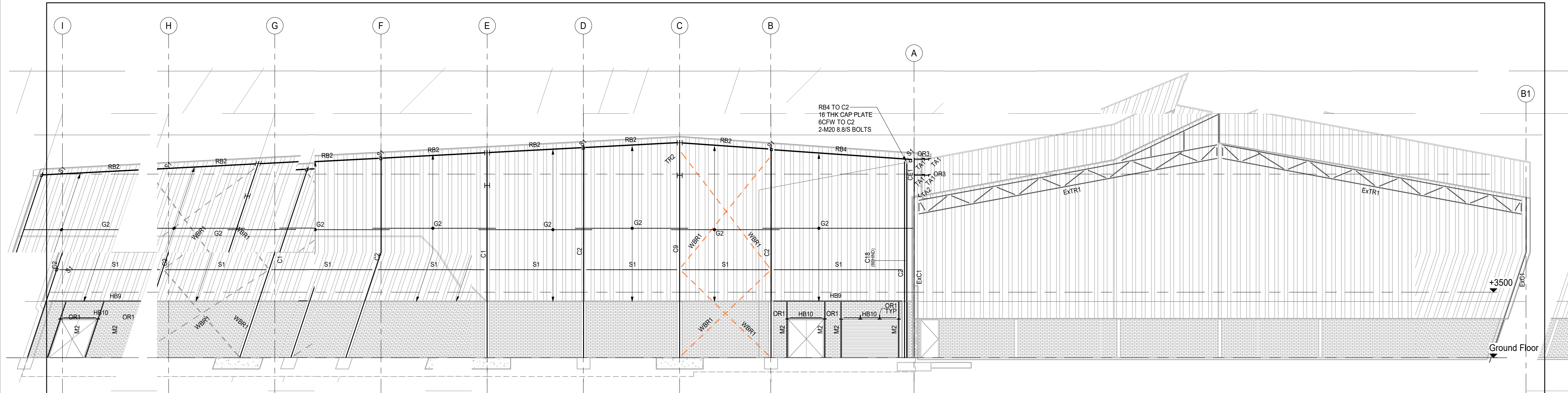
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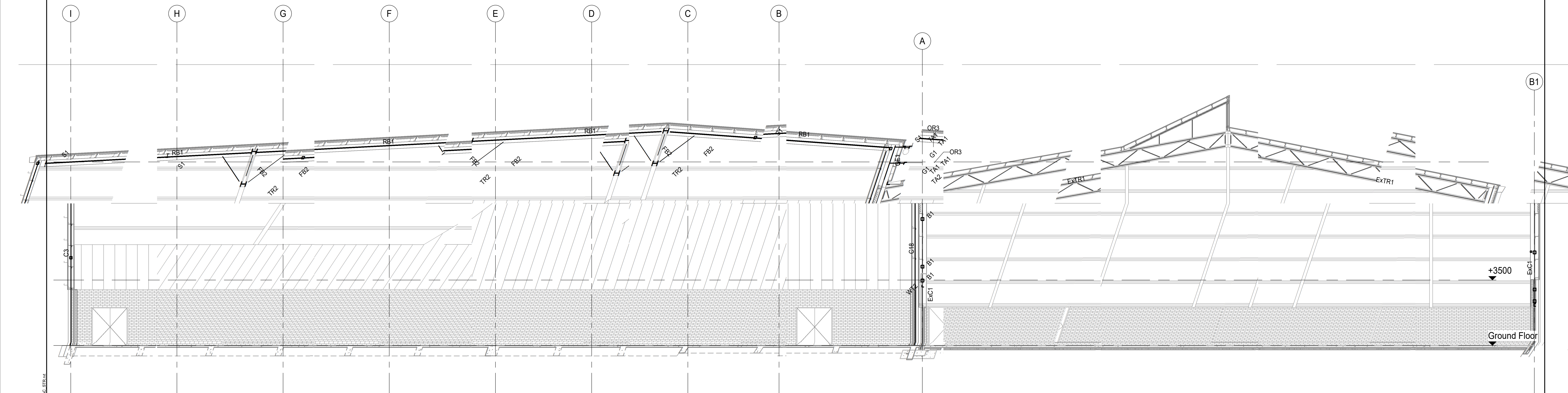
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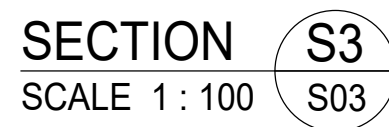
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EMAIL mail@lar.net.au
WEB www.lar.net.au

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Title: FRAMING SECTIONS & ELEVATION - SHEET 1

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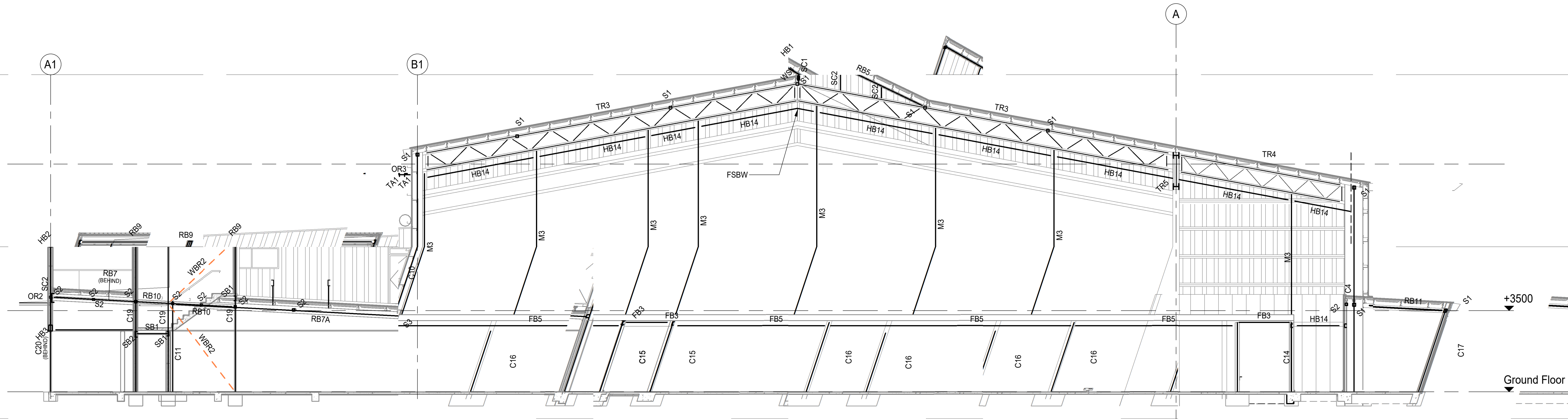
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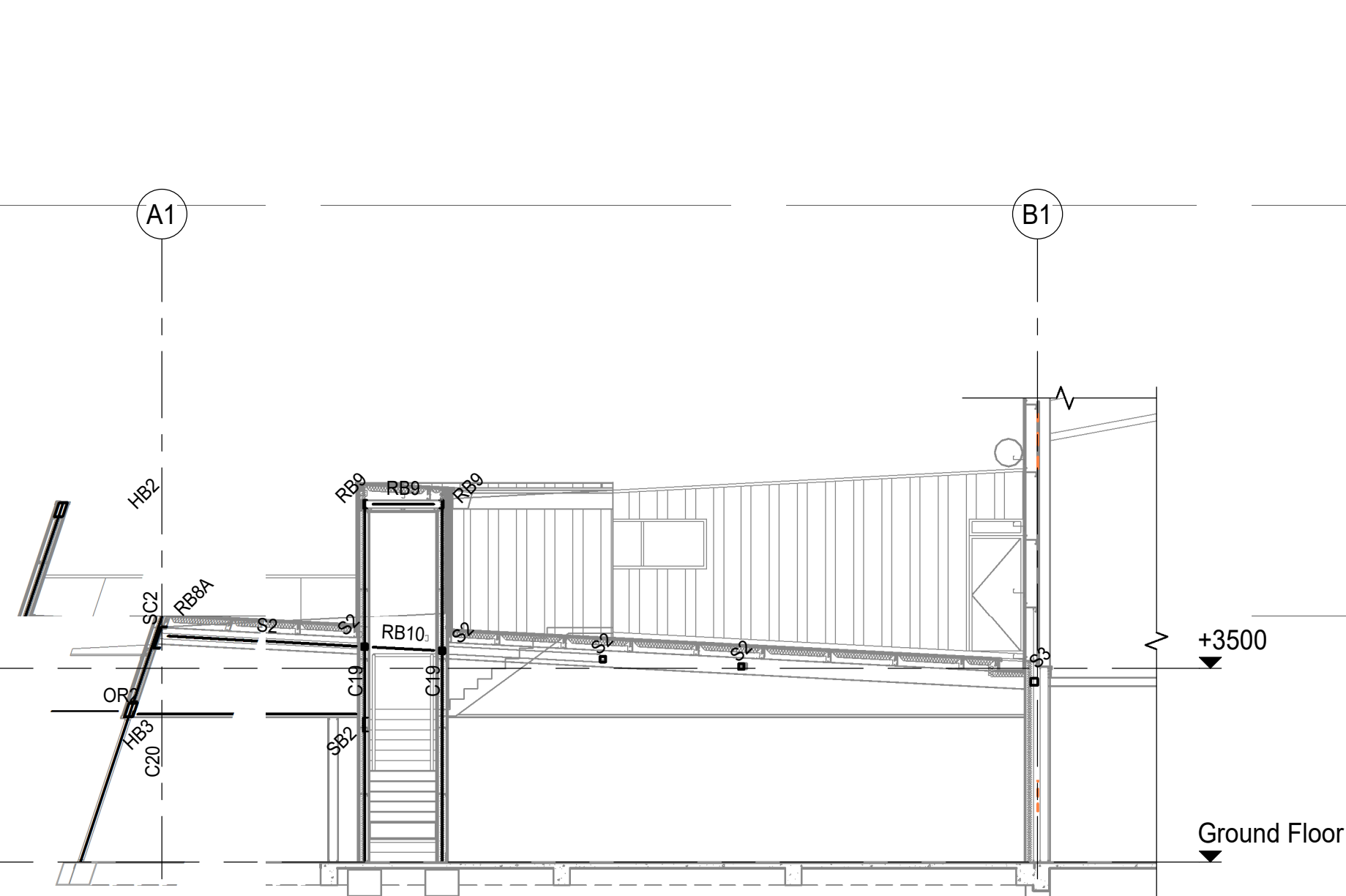
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WEB www.lar.net.au

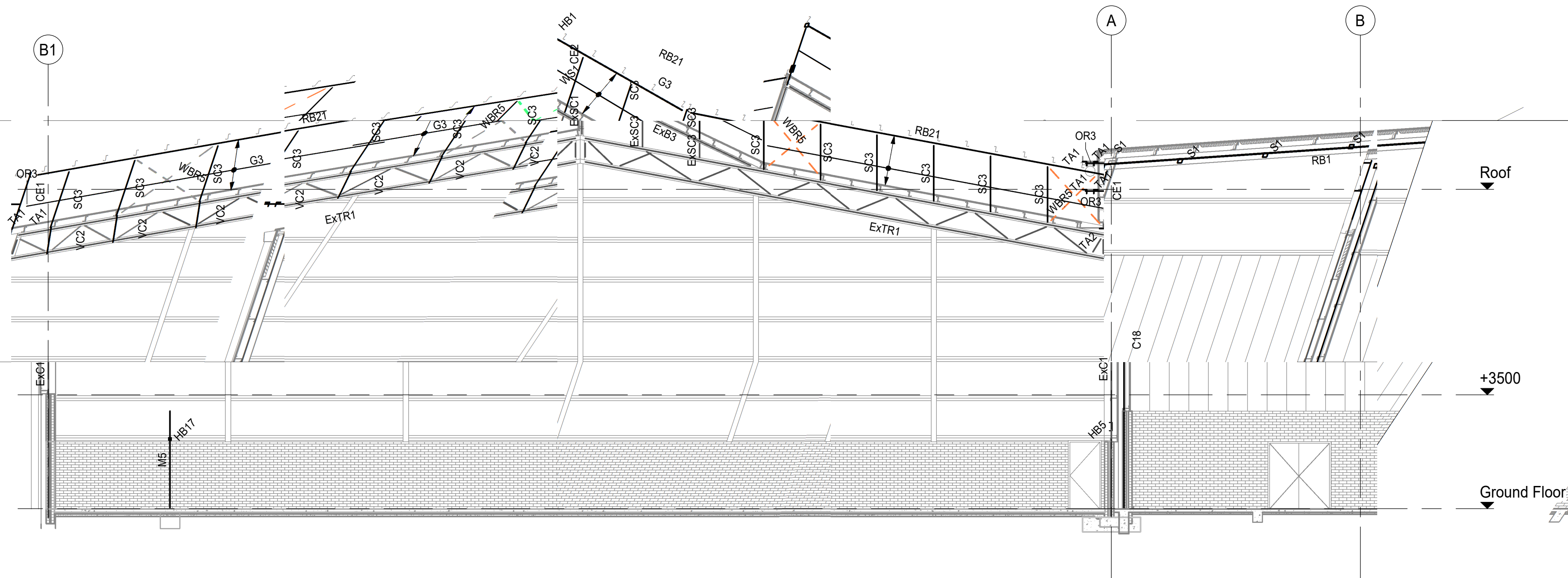
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SUITE 1
GROUND FLOOR, 55 WALSH STREET
WEST MELBOURNE, VIC 3003
P.O. BOX 192, NORTH MELBOURNE VIC 3051



TELEPHONE (03) 9328 4166
EMAIL mail@lar.net.au
WEB www.lar.net.au

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Title: FRAMING SECTIONS & ELEVATION - SHEET 9

Client **Millar Architects**

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Sustainable Council Building Policy

Responsible Officer	Adoption Date	February 2023
Manager Economic Development, Environment & Compliance	Approved By	CEO
	Review Date	February 2024
Authorising Officer	Policy Type	Corporate Policy
Director Sustainability & Culture		

Statement and Purpose

The policy purpose is to provide guidance for Environmentally Sustainable Design (ESD) for Council owned and/or managed buildings. It seeks to minimise environmental impacts throughout their lifecycle and to improve resilience of Council's building to the impacts of climate change that will deliver a range of improved sustainability outcomes for Council, the community and the environment and a good return on investment.

Scope

- This policy applies to all new Council owned and/or managed buildings and all substantial renewals, renovations, upgrades and demolitions to existing Council buildings and facilities.
- It does not cover residential or commercial buildings through the planning scheme.
- The policy will not undermine relevant legislative requirements and regulations such as building requirements for bushfire prone areas.
- This policy' focus is on environmental sustainability, however in addition it is acknowledged that cultural, social and financial aspects of sustainability will be considered within the scope of delivery.

Policy

Guiding Principles

The Rural City of Wangaratta is committed to deliver buildings that represent value for money while achieving improvements in sustainability.

Procurement will be carried out on the basis of obtaining value for money, noting, lowest cost is not necessarily an indicator of value for money and both social and environmental factors need to be balanced with economic considerations.

It will view upfront projects costs to incorporate ESD requirements that considers the financial savings for operation and maintenance costs and other benefits over the life of the asset.

It is recognised that heritage buildings have specific protection guidelines where it may not be possible or practical to achieve the standards of the policy.

Objectives

The key objective is to ensure environmental sustainable design opportunities are considered during building and retrofitting of Council buildings. This will ensure;

1. Energy performance of council assets are improved by increasing renewable energy generation and storage.
2. Council owned buildings and facilities are future proofed against utility price increases through the improvement of energy & water efficiency .
3. Increased waste avoidance and recycling during construction and demolition.
4. Improved conservation of biodiversity around Council buildings.
5. Demonstrated corporate responsibility and environmental leadership to the community by adopting and promoting sustainable building design.

Implementation

To implement the policy officers will:

- consider items 1-4 from Table 1 during the project design where applicable and;
- request data from contractors applying for tenders on how they propose to meet items 1-4 of Table 1.
- Advocate and review opportunities to further implement ESD best practice at Council as per item 5 in Table 1.

Table 1.

No.	Objective	Outcome
1.	Energy performance of council assets are improved by increasing renewable energy generation and storage.	- Review building orientation for optimal heating/cooling and solar opportunities. - Seek to install solar pv systems where feasible - Reduce gas consumption by installing electric for efficient heating, cooling and hot water. - Review opportunities for battery storage to increase building operational resilience when direct solar is not available or during grid failures.
2.	Council owned buildings and facilities are future proofed against utility price increases through the improvement of energy & water efficiency.	- Minimise stormwater runoff, use permeable materials and maximise onsite harvesting to reduce runoff volumes. - Ensure star rating of appliances is reviewed at times of purchase to ensure decisions are directed by energy & water efficiency ratings.
3.	Increased waste avoidance and recycling during	- Recycling/reuse opportunities are reviewed to reduce waste sent to landfill.

	construction and demolition.	- Review opportunities for recycled, low-emission eco-certified content in building construction materials. - Recover and reuse organic waste onsite where possible. - Seek to reduce contamination of waste and recycling streams.
4.	Improved conservation of biodiversity around Council buildings.	- Seek to retain and plant canopy trees to maximise biodiversity connectivity, reduce urban heat island effect and contribute to urban greening in line with our tree management strategy. - Ensure majority of new plantings are indigenous where feasible and adaptable to a changing a climate.
5.	Demonstrated corporate responsibility and environmental leadership to the community by adopting and promoting sustainable building design.	- Continue to request ESD report for major projects. Request two cost pathways for different star ratings to identify opportunities and understand costs: i.e for new building design: minimum 4 green star rating for non-residential vs 5 green star rating (Australian excellence) and for retrofitting: minimal NABERS 4.5 stars vs 6 (Market Leading). - Develop Climate Resilient Infrastructure checklists into relevant processes after completion of the Climate Adaptation Plan Review resourcing opportunities for a funded position to further drive ESD at council that would: - Develop a framework/procedural flowchart for ESD assessment and internal processes at Council for both new and when retrofitting facilities. - Test framework on pilot project . - Set a minimum Green Star rating target for projects of various types (Significant, major & minor) - Review existing buildings through NABERS to measure ongoing operational energy efficiency. - Provide ongoing support to both internal & external customers in regards to ESD advice.

Roles and responsibilities

All staff, contractors and stakeholders involved in capital work projects are required to work in collaboration to ensure the policy is achieved.

Breaches

Breaches of this policy may lead to disciplinary action in accordance with Councils Enterprise Agreement.

Monitoring and evaluation

Sustainable Building Policy objectives will be measured for retrofitted sites by reporting:

- Reduced potable water usage (kl)
- Reduced operational energy use (% and kWh)

For new sites:

- Increased onsite generation of renewable energy (kW)

Details are to be recorded by project manager where recycled materials are used, star ratings of new builds, waste diverted from landfill during construction/demolition and star ratings of all appliances purchased.

Definitions

Environmental Sustainable Development (ESD)	The design and development of property and infrastructure that attempts to minimise impact on the environment. It meets the needs of the present without compromising the ability of future generations to meet their own needs.
Green Star Rating	Building rating tool administered by Green Building Council of Australia, for large and high profile buildings which offers certification and promotion benefits.
NABERS	National Australian Built Environment Rating System tool to measure ongoing performance of buildings in operation.

References

Legislation

- Local Government Act 2020
- Environment Protect and Biodiversity Act 1999
- Planning and Environment Act 1987
- Climate Change Act 2017

Internal policies

- Council Plan
- Asset Management Policy 2016
- Climate Mitigation and Adaptation Policy 2022
- Environmental Sustainability Strategy 2021-2026
- Procurement Policy 2021
- Waste Management Strategy

Review

Any change or update which materially impacts and/or alters this policy must be approved by the Director Infrastructure Services. Otherwise the policy will be reviewed by the Manager 3 every three years.



SAFE AIR CONSULTING

ABN: 84 633 254 967

Asbestos Risk Assessment



Client: Rural City of Wangaratta

Site: Wangaratta Netball Facility

Site Address: HP Barr Reserve - 41 Schilling Dr,
Wangaratta VIC 3677

Client Reference: RCW

Job Number: J26218

Date: 27/05/2026

Report Created By

Jason McKinnon – Director

P: 0491 976 825

jason@safeairconsulting.com.au

Safe Air Consulting Pty Ltd

15 Sanctuary Blvd

Wodonga VIC 3690



Statement of Limitations

This report has been prepared in accordance with the agreement between the client and Safe Air Consulting Pty Ltd.

The works undertaken have been performed in a professional manner in accordance with the generally accepted practices and the scope of the services provided. This audit has been conducted using a degree of skill and care ordinarily exercised by members of the profession. No other warranty, expressed or implied is made.

While the survey has attempted to locate the asbestos-containing materials within the site it should be noted that the review was a visual inspection and a limited sampling program was conducted and/or the analysis results of the previous report were used. Representative samples of suspect asbestos materials for collected for analysis. Other asbestos materials of similar appearance are assumed to have a similar content.

Not all suspected asbestos materials were sampled. Only those asbestos materials that were physically accessible could be located and identified. Therefore, it is possible that asbestos materials, which may be concealed within inaccessible areas/voids, may not have been located during the audit. Such inaccessible areas fall into a number of categories.

- Behind locked doors
- Within ceiling or wall cavities
- Sub floor areas
- Those areas accessible only by dismantling equipment or performing localised demolition works
- Service shafts, ducts etc., concealed within the building structure.
- Energised services - gas, electrical, pressurised vessels and chemical lines
- Voids or internal areas of machinery, plant, equipment, HVAC ducts etc.
- Height restricted areas
- Areas deemed unsafe or asbestos at time of audit

In addition to areas that were not accessible, the possible presence of asbestos building materials may not have been assessed because it was not considered practicable as:

- It would require unnecessary dismantling of equipment
- It was considered disruptive to the normal operations of the building
- It may have caused unnecessary damage to equipment, furnishings or surfaces
- The asbestos material was not considered to represent a significant exposure risk
- The time taken to determine the presence of the asbestos building material was considered prohibitive

Only minor destructive auditing and sampling techniques were employed to gain access to those areas documented in Appendix A. Consequently, without substantial demolition of the building, it is not possible to guarantee that every source of asbestos material has been detected. Access to areas greater than 2 metres must be accessed using approved lifting platforms or platform ladders, if equipment was not supplied during the audit the areas will be assumed to contain asbestos until access becomes available

During the course of normal site works care should be exercised when entering any previously inaccessible areas or areas mentioned above and it is imperative that work cease pending further sampling if materials suspected of containing asbestos materials. In accordance with Regulations inaccessible areas that are likely to contain asbestos must be assumed as containing asbestos-containing material until further inspection and analysis of samples has been undertaken by an approved analyst.

This report does not include any underground, soil or sub-soil areas unless otherwise noted.

This report is not intended to be used for the purposes of tendering, programming of works, refurbishment works or demolition works unless used in conjunction with a specification detailing the extent of the works. To ensure its contextual integrity, the report must be read in its entirety and should not be copied, distributed or referred to in part only.



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1 Introduction

This report documents the findings of an asbestos inspection audit conducted of the Wangaratta Netball Facility located at HP Barr Reserve, 41 Schilling Dr, Wangaratta VIC 3677. The assessment was performed by Jason Mckinnon of Safe Air Consulting Pty Ltd on the 26th May 2026, the assessment was requested by Allan Thrum of the Rural City of Wangaratta.

This report was performed in accordance with VIC regulation *Part 4.4, Division 5 of the Victorian Occupational Health and Safety Regulations 2017*. The objective of a Division 5 assessment is to identify asbestos materials and assess the risk posed by the asbestos materials.

1.1 Site Background

The Wangaratta Netball Facility, located at HP Barr Reserve, is a single-storey brick veneer building consisting of change rooms and a clubroom.

2 Scope and Methodology

The site assessment for the presence of Asbestos-containing materials was conducted in accordance with Safe Work Australia's How To Manage And Control Asbestos In The Workplace Code Of Practice December 2019 and the Victorian Compliance Code for Managing Asbestos in Workplaces 2019.

The audit involved:

- Discussions with relevant personnel to ascertain the building age, history and relevant information pertaining to the proposed scope of works
- Review of relevant documentation including previous audit reports, abatement records and relevant information pertaining to the proposed scope of works
- A visual inspection of all accessible areas to ascertain the presence or absence of asbestos containing materials
- Asses the likelihood of asbestos containing materials being present within inaccessible areas
- The collection of representative samples in clip-lock, plastic bags to be sent via chain of custody (COC) to a NATA-accredited laboratory for analysis
- Take photographs of asbestos containing materials
- Where it is deemed that asbestos is present a risk assessment will be conducted taking into consideration the material type, location, condition and disturbance potential and a risk rating and management recommendation be drawn.
- Inaccessible areas that are likely to contain asbestos will be assumed to contain asbestos until such time that access can be gained.

A strategy of using representative samples of suspected asbestos materials has been used to minimise the number of samples and degree of disturbance. Because of this strategy, findings of the audit should be interpreted such that all visually similar materials in the same vicinity must be assumed to be composed of the same material until proven otherwise.

Where factors have indicated that there is a possibility of exposure to airborne asbestos fibres or other asbestos material, appropriate risk control measures are recommended. Recommendation for risk control and asbestos material abatement measures are made based upon the scope of the planned demolition and refurbishment activity.



Where information is not available, assumptions are made based on age and appearance.

This report is not adequate for the purposes of refurbishment or demolition works. The Asbestos Regulations require a more intrusive risk assessment to be conducted prior to commencement of such works.

2.1 Sampling Program

Seven (7) samples of suspected asbestos-containing materials were collected and sent via Chain of Custody to a NATA-accredited laboratory for analysis.

Details of the findings can be found in Appendix A: Asbestos Materials Register.

3 Findings

The following table provides a general overview of the areas inspected and those identified on site to contain asbestos, specific findings presented in the Asbestos Register.

Room/Area	No Access	No Asbestos Materials Observed	Non-Friable Asbestos Product	Friable Asbestos Product
External	X	-	-	-
Officials Room	-	-	X	-
Female Change Rooms	-	X	-	-
Female Toilets	-	X	-	-
Clubroom	-	X	-	-
Clubroom Store	-	X	-	-
Kitchen	-	X	-	-
Kitchen Store	-	X	-	-
Male Toilet	-	X	-	-
Netball Store	-	X	-	-

4 Recommendations

Based on the findings of this report, Safe Air Consulting recommends the following.

- If any asbestos is to be disturbed it must be removed using a Licensed Class A or B Asbestos Removal contractor
- Areas not accessed must be assumed to contain asbestos until access is made available. Prior to any planned works within these areas further investigation should be undertaken, and trades made aware of the likelihood of asbestos being present.
- Should any personnel come across any suspected asbestos material or materials unknown to them, work should cease immediately in the affected areas until further sampling and investigation is performed.
- Prior to demolition/refurbishment works undertake a destructive asbestos materials survey of the premises as per the requirements of AS 2601: 2001 The Demolition of Structures, Part 1.6.1, and Demolition Work Code of Practice (Safework Australia)



5 Areas Not Accessed

The following areas were unable to be accessed at the time of the audit. Caution should be exercised when accessing these areas, particularly in relation to the potential disturbance of the building fabric or concealed spaces.

Room/Area	Item	Suspected Asbestos Product	Reason Not Accessed
External	Metal Switchboard	Compress bituminous tar board	No access live
External	Windows	Packers Asbestos Cement Sheet	Destructive investigation required

Appendix A: Asbestos Materials Register

How to use the Asbestos Register

	Item Details	Status	Recommendations	Photo
Location	Where in the building can the item be found	Sample analysis result status Does the item contain Asbestos? (positive or negative)	Makes recommendation on the future management of the item in question. Eg - Is it safe to remain in situ. - Does it need some attention to make safe. - Is the item unsafe and should it be removed.	Photo of the item in question to assist in the identifying the product under assessment
Item	What is the item that is thought to contain a hazardous material			
Hazard	What hazard is the item thought to contain eg Asbestos, Lead Paint			
Sample Number	Sample number corresponds to results in attached sample analysis report			
Friability	What sort of matrix is the asbestos contained within, Is it friable or non friable.			
Condition	What is its condition and what risk does that pose			
Disturbance Potential	Is it likely to be disturbed and will that disturbance increase its risk			
Risk	Overall risk resulting from considering the condition and disturbance potential of the product			

Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	External	No Asbestos Detected Negative		
Item	Windows - Mastic			
Hazard	Asbestos			
Sample Number	J8953-01			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

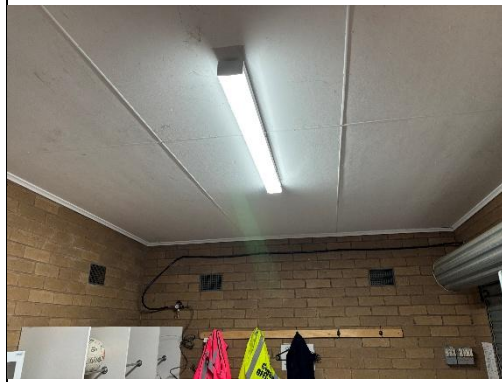
	Item Details	Status	Recommendations	Photo
Location	External	Further Investigation Required	Prior to any works involving the removal of windows, the window frames must be inspected for the presence of asbestos cement sheet packers.	
Item	Windows – Packers – No Access			
Hazard	Asbestos			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	External	Non-Asbestos Product	New style panel	
Item	Small Switchboards x 2 - Backing			
Hazard	Asbestos			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

	Item Details	Status	Recommendations	Photo
Location	External	Further Investigation Required	Prior to any works involving the disturbance of the switchboard, the metal cladding should be removed to inspect for the presence of ACM.	
Item	Metal Clad Switchboard – No Access			
Hazard	Asbestos			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	Officials Room	Asbestos Detected Positive	If asbestos cement sheet ceiling is to be disturbed it must be removed using a Licensed Class A or B Asbestos Removal contractor	
Item	Ceiling – Cement Sheet			
Hazard	Asbestos			
Sample Number	J8953-01			
Friability	Non-Friable			
Condition	Good			
Disturbance Potential	Low			
Risk	Low			
Priority Rating	P4			

	Item Details	Status	Recommendations	Photo
Location	Female Change Room	No Asbestos Materials Observed		
Item	-			
Hazard	-			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

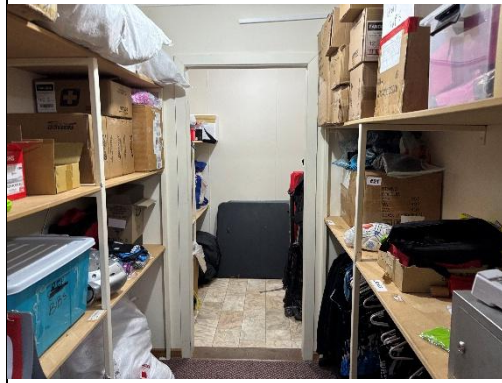
Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	Female Toilet	No Asbestos Detected Negative		
Item	Walls – Cement Sheet			
Hazard	Asbestos			
Sample Number	J8953-03			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

	Item Details	Status	Recommendations	Photo
Location	Female Toilet	No Asbestos Detected Negative		
Item	Partition Walls – Cement Sheet			
Hazard	Asbestos			
Sample Number	J8953-04			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	Clubroom	No Asbestos Materials Observed		
Item	-			
Hazard	-			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

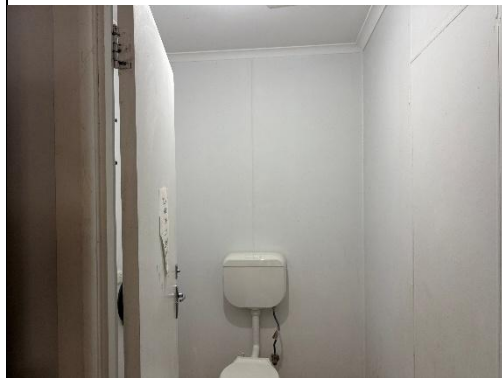
	Item Details	Status	Recommendations	Photo
Location	Clubroom Store	Similar to Sample J8953-05 Negative	No sample collected, material visually similar in age and appearance to referred sample, therefore assumed to be similar product	
Item	Shared Wall with Kitchen Store - Cement Sheet			
Hazard	Asbestos			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

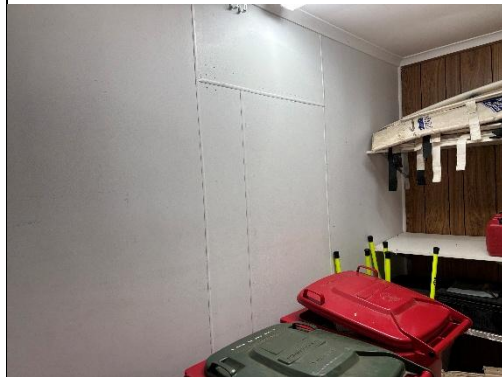
Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	Kitchen	No Asbestos Materials Observed		
Item	-			
Hazard	-			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

	Item Details	Status	Recommendations	Photo
Location	Kitchen Store	No Asbestos Detected Negative		
Item	Shared Wall with Clubroom Store - Cement Sheet			
Hazard	Asbestos			
Sample Number	J8953-05			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	Male Toilet	No Asbestos Detected Negative		
Item	Walls – Cement Sheet			
Hazard	Asbestos			
Sample Number	J8953-06			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

	Item Details	Status	Recommendations	Photo
Location	Netball Store	Similar to Sample J8953-06 Negative	No sample collected, material visually similar in age and appearance to referred sample, therefore assumed to be similar product	
Item	Shared Wall with Male Toilet - Cement Sheet			
Hazard	Asbestos			
Sample Number	-			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			

Asbestos Materials Register

	Item Details	Status	Recommendations	Photo
Location	Netball Store	No Asbestos Detected Negative		
Item	Infill to Window – Cement Sheet Plank			
Hazard	Asbestos			
Sample Number	J8953-07			
Friability	-			
Condition	-			
Disturbance Potential	-			
Risk	-			
Priority Rating	-			



Appendix B: Sample Analysis Result

Sample Analysis Report

1. Client Details	
Client:	Safe Air Consulting Pty Ltd
Client Contact:	Jason McKinnon
Client Address:	15 Sanctuary Blvd, Wodonga VIC 3690
Report Date:	Wednesday, 27 May 2026
iRisC Pty Ltd Reference:	J8953 HP Barr Reserve ID 20260527

2. Sample Analysis Details	
Sample Analysis Method:	Samples analysed using polarised light microscopy, including dispersion staining, in accordance with Australian Standard 4964 Method for the qualitative identification of asbestos in bulk samples and iRisC Pty Ltd Guidance Manual 5 - Fibre Identification. Accreditation No. 20120, Site No. 23721 Accredited for compliance with ISO/IEC 17025 - Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing providers and reference materials producers reports and certificates. This document shall not be reproduced, except in full. 
Job Location:	HP Barr Reserve, 41 Schilling Dr, Wangaratta VIC 3677
Received Date:	Wednesday, 27 May 2026
Sampled By:	Safe Air Consulting Pty Ltd Please note the sample/s were provided by the client and therefore iRisC Pty Ltd does not take responsibility for the sampling methodology or sample location description/s.
Analysis Date/s:	27-May-2026

3. Sample Analysis Results		
Sample No.	Sample Location - Description Approximate Sample Dimension	Results
J8953-01	As received, Netball Clubrooms, External, Windows - Mastic ~ 8 x 6 x 2 mm	No asbestos detected
J8953-02	As received, Netball Clubrooms, Officials Room, Ceiling - Cement sheet ~ 5 x 3 x 2 mm	Chrysotile (white asbestos) detected Organic fibres
J8953-03	As received, Netball Clubrooms, Female Toilets, Walls - Cement sheet ~ 10 x 8 x 2 mm	No asbestos detected Organic fibres
J8953-04	As received, Netball Clubrooms, Female Toilets, Partition Walls - Cement sheet ~ 25 x 16 x 3 mm	No asbestos detected Organic fibres
J8953-05	As received, Netball Clubrooms, Kitchen, Storeroom, Wall - Cement sheet ~ 13 x 5 x 2 mm	No asbestos detected Organic fibres
J8953-06	As received, Netball Clubrooms, Male Toilet, Wall - Cement sheet ~ 17 x 10 x 3 mm	No asbestos detected Organic fibres

J8953-07	As received, Netball Clubrooms, Storeroom, Infill - Cement sheet ~ 13 x 9 x 2 mm	No asbestos detected Organic fibres
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4. Approval	
Approved Identifier and Signatory:	
	Joel Tan Laboratory Manager / Consultant M: 0419 791 307 E: joel.tan@irisc.com.au

General notes:

- a. Results contained in this report relate only to the samples analysed.
- b. All soil results are reported on a dry weight basis, unless otherwise stated.

Sample specific notes:

- c. The sample result can be interpreted that the sample contains no detectable 'respirable' asbestos fibres by the trace analysis procedure.
- d. Although under the reporting limit of 0.1g/kg, asbestos fibres were unequivocally detected within the sample.
- e. Due to the -2mm fraction of the sieved sample being greater than 60g, sub-sampling was undertaken to reduce the size of the fraction to between 30-60g. This was done by the fractional shovelling procedure as outlined in BS EN 932-1 in accordance with AS 4964.
- f. Due to the nature of the sample, quantifying the asbestos content using a reporting limit of 0.1g/kg (0.01%) cannot be achieved.
- g. The analysis of dust samples collected on adhesive tape is outside the scope of accreditation.
- h. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres using trace analysis.
- i. Mineral fibres of unknown type detected by polarized light microscopy including dispersion staining. The fibres detected may or may not be asbestos fibres. Another independent analytical technique may be required to confirm the fibre identity.
- j. Due to the sample received being large (i.e. more than 100g), sub-sampling was undertaken to reduce the sample size. This was done by the quartering procedure as outlined in BS EN 932-1 in accordance with AS 4964.



Appendix C: Priority Assessment for Control of Asbestos Containing Materials

The following schedule of priority assessment system is adopted to assist in the programming and budgeting of the control of asbestos and/or hazardous materials risks identified in the assessment.

Priority 1 (P1) Organise Abatement Works Immediately before Commencement of Works

An area has asbestos containing materials, which are either damaged or are being exposed to continual disturbance. Due to these conditions, there is an increased potential for exposure and/or transfer of the material to other parts with continued unrestricted use of the area. Representative asbestos fibre monitoring should be conducted in the building area during normal building operation where recommended. Prompt abatement or remedial measure to eliminate the asbestos or control the hazardous material is recommended. As an interim, restrict access.

Priority 2 (P2) Organise Remedial Works Before Commencement of Works

Area has asbestos containing materials with a potential for disturbance due to the following conditions:

- Material has been disturbed or damaged and its current condition, while not posing an immediate hazard, is unstable.
- The material is accessible and can when disturbed, present a short-term exposure risk.
- Demolition, renovation, refurbishment, maintenance, modification or new installations, involving air-handling systems, ceilings, lighting, fire safety systems or floor layout.

Appropriate abatement measures should be taken as soon as practicable. A negligible exposure risk exists if materials remain under the control of a site safety or management plan.

Priority 3 (P3) No remedial Works Required – Monitor over Period of Works

Area has asbestos containing materials and other hazardous materials, where:

- The condition of the friable asbestos material is now stable and has low potential of being disturbed.
- The asbestos material is currently in a non-friable condition, may have slight damage, but do not present an exposure unless cut, drilled, sanded or otherwise abraded.
- The hazardous material is not earmarked for demolition and can be safely managed on site in accordance with recommended codes and guidelines.

This presents a low risk of exposure where the materials are not likely to be disturbed by the planned refurbishment and demolition works. Label the asbestos and document the presence of the hazardous materials in the employer's asbestos register at the site and maintain under the control of a site safety plan or asbestos management plan. Defer any major action unless materials are to be disturbed as a result of maintenance, refurbishment or demolition operations.

Priority 4 (P4) No remedial Works Required – Review Prior to Any New Works

The asbestos material is in a non-friable form and hazardous materials are stable and in good condition. It is unlikely that the asbestos materials can be disturbed under the proposed development, refurbishment or demolition activity. These materials should be left and their condition monitored during subsequent reviews. These asbestos and/or nominated hazardous materials must be removed prior to renovations that may impact on the asbestos hazardous materials.

Specification Appendix 07

WSAC Changerooms & Amenities -Tender Option scope detail

Option	TENDER OPTION for fitout of Changeroom 2 and Amenities 2.1 & 4.1 -refer Specification Preliminaries item 1.2 (page 4) and drawing 1.01.
1	Tender Pricing Adjustment (to Tender Sum) to delete the fitout of Changeroom 2 and Amenities 2.1 and 4.1 -total price adjustment including the cost of all trades (supply and fix/install) involved including ancillaries and sundry works required, Preliminaries overheads and profit etc, to reflect a single lump sum adjustment to be made reflecting the amendment in total.

Item	Description (the below is a guide to confirm the detail for Option 1 deletion. All items not specifically noted below are to remain part of the contract works and not part of the optional deletion)
1	<u>Deletion:</u> Sanitary Fixtures, Tapware and sundries as scheduled. <u>Inclusion:</u> Sewer waste reticulation to be installed to top of slab and capped, domestic hot and cold water reticulation to be installed up to future fixture points and capped -ie first fix to be completed, including TMVs etc).
2	<u>Deletion:</u> Wall linings (plasterboard, FC sheet and ply), acoustic insulation and tiling. <u>Inclusion:</u> All wall and partition framing to be completed.
3	<u>Deletion:</u> Cubicle systems, bench seating, coat rails, window reveal linings. <u>Inclusion:</u> Window installation to be completed.
4	<u>Deletion:</u> Roller shutters R1.1 and R2.1 (refer 1.01 for temporary wall/opening infills).
5	<u>Deletion:</u> Floor finishes and skirtings.
6	<u>Deletion:</u> Ceiling framing, suspension systems and linings (plasterboard, FC sheet and ply).
7	<u>Deletion:</u> Painting and clear finishes.
8	<u>Deletion:</u> Electrical Services -light fittings and fitoff of GPOs and wall switches. <u>Inclusion:</u> Emergency lighting to be installed. All other items/system to be fully completed other than above).
9	<u>Deletion:</u> Mechanical Services: Nil. <u>Inclusion:</u> All Mechanical Services systems to be completed including temporary suspension of air registers where ceilings are not installed.