MCG Architects Project No: 2218

Specification for:
Big Shed alternations
Shire of Waroona
South Western Highway
Shire of Waroona 6215

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TABLE OF CONTENTS

0110 PROJECT INTRODUCTION

1 PROJECT INTRODUCTION

1.1 PROJECT INFORMATION

The Proprietor / Client / Owner
Shire of Waroona

Outline description of the Works
Additions and alterations to existing 'BIG SHED'

Description of the site
Location: Lot 1 Fouracre Street, Waroona, 6215
Description: Existing shed currently used are a storage shed with surrounding landscape park

1.2 CONSULTANT TEAM

Consultant Team
The following Consultant Team have been engaged and retained for the purpose of procuring this project. Those identified with a "tick" have been retained for Contract Administration services during construction

Discipline	Company	Contact person	Tel	Email	Admin
Architect	MCG Architects	Des Robertson	97916993	desmond@mcgarchitects.com.au	
Civil	Forth Consulting	Michael Guhl	94852921	Michael.guhl@forth.com.au	
Structural	Forth Consulting	Michael Guhl	94852921	Michael.guhl@forth.com.au	
Mechanical	Tim Frankling Engineering	Tim Franklin	0419474070	tfe@westnet.com.au	
Electrical	3em Engineering	Deon Keet	0499992191	deon@3emconsultants.com	
Hydraulic	Hutchinson Associates	Mike Howard	93289155	mah@hutchass.com.au	
Building surveyor	Tecon	Gary Fitzgerald	61090468	gfitzgerald@teconaust.com.au	

0131 PRELIMINARIES

1 GENERAL

1.1 PURPOSE

The General Preliminaries document (this document) outlines the obligations of contractors or service providers (herein referred to as “Contractors”) working on this construction projects for the Principal. The intent of this document is to facilitate the Principal in verifying that Contractors are managing the risks of construction projects in the areas of occupational health and safety, environmental impact, quality assurance and business continuity.

The Contractor shall be deemed to have read and understood all provisions of this document and to have noted and complied with all requirements thereof and has ensured all sub-contractors and suppliers are informed and aware of these provisions.

1.2 RELEVANT LEGISLATION AND CODES

The construction of the Works must fully comply with current relevant legislation, including but not limited to:

- Relevant Australian or Australian / New Zealand Standards (AS/NZS);
- The National Construction Code (NCC);
- The Occupational Safety and Health (OSH) Act and Regulations;
- Approved (OSH) Codes of Practice;
- The Disability Discrimination Act (DDA);
- Local council and authority requirements.

1.3 DISCREPANCIES

This document outlines generic requirements for the Works above and beyond the above mentioned legislation. Where this document outlines a higher standard than within the relevant legislation and code, this document will take precedence.

If any discrepancies are found between any relevant legislation, this document and project specific documentation, these discrepancies shall be highlighted in writing to the Architect or Principal (in accordance with the Contract).

1.4 DEPARTURES

This document is intended to assist the Principal in verifying contractors are managing the risks of its construction projects in the areas of occupational health and safety, environmental impact, quality assurance and business continuity. Contractors are expected to propose ‘best practice / state of the art’ project management / construction techniques which may further reduce these risks.

In recognition of this, any departures from relevant legislation, or this document, if allowed, must be confirmed in writing by the Architect or Principal (in accordance with the Contract).

Any departures made without such written confirmation shall be rectified at no cost to Principal.

2 PERMITS AND APPROVALS

2.1 PLANNING, BUILDING AND OCCUPANCY APPROVALS AND FEES

The following approvals have already been submitted, applied for and obtained and all fees have been paid by the Principal. The Contractor has no obligation to allow for any work in relation to these approvals however the Contractor shall allow for and conform with the conditions within these approvals.

Planning / Development Approval – not required

The Contractor shall prepare applications for, make application for, and pay all necessary fees to the relevant authorities and obtain the required approvals, permits and notices required for the following:

Demolition License

Building Permit – allow for Building Permit, BCITF and BRB levy fees

Traffic Control approvals during construction

2.2 ROLES AND RESPONSIBILITIES

The Contractor shall direct all contractual related matters to the Principal as required under the Contract during the Works.

2.3 LABOUR RELATIONS AND INDUSTRIAL DISPUTES

All Industrial disputes and claims so far as they affect or involve the Works shall be dealt with by the Contractor.

3 PROJECT MANAGEMENT AND RESOURCING

3.1 REQUEST FOR INFORMATION (RFI)

The Contractor shall manage the RFI process and ensure that submitted requests and responses are managed consistently and efficiently for the duration of the Works.

3.2 TENDERS FOR PROVISIONAL SUMS

Provisional Sums are for works not detailed or finalised at the commencement of the Contract.

It is envisaged that these items will be fully detailed (either by the Principal or by the Contractor, as the case may be) during the course of the Works.

The Contractor will call tenders from no less than 3 suitably qualified Subcontractors/Suppliers for these works in keeping with the terms and conditions of the Contract and to the satisfaction of the Architect.

Adjustments for Provisional Sums will be net, ie without Contractor's profit, overheads or preliminaries. Adjustment will be based on the aggregated total of all Provisional Sum expenditure compared to the total of the Provisional Sums on completion of all Provisional Sums having been determined. An allowance for profit and overhead will be applied in accordance any increase over the aggregate value allowed in the Contract and in accordance with the stated percentage value as listed in the Contract Schedules at the end of this section.

4 SITE PREPARATION

4.1 SITE SURVEYS

The Contractor shall undertake the following survey works and shall inform the Architect of any discrepancies with the design survey

- Carry out pre-construction check of existing survey data and confirm levels, survey control and set out points prior to the commencement of any construction work. The Contractor
- Perform all ground surveys, to be undertaken by a suitable qualified Surveyor (eligible for *Surveying & Spatial Sciences Institute* accreditation).
- Identify all existing underground services and other landscape features to be retained. It is the Contractor’s responsibility to carry out an sub-surface survey to confirm existing service locations prior to commencement of the Works and to advise the Architect if existing services are found to be faulty or non-compliant.

4.2 DILAPIDATION SURVEYS

The Contractor shall undertake a dilapidation survey prior to commencement of the Works. The dilapidation survey report shall include detailed photographic records showing the existing condition of all existing property and services within the proposed Works area, any laydown areas and access routes to be utilised by the Contractor and where relevant the same for adjacent buildings that may be impacted by the Works.

A copy of the dilapidation survey report shall be provided to the Architect within 7 days of the date of possession of the Site, and will be used to determine the extent of any rectification works required to be undertaken by the Contractor at completion of the Works.

Any damage incurred by the Contractor or their sub-contractors will be required to be rectified or replaced to the Principal's satisfaction at the Contractor's cost.

5 COMPLETION

In addition to the requirements of the Contract, project documentation for Practical Completion, the following specific items must be completed prior to Practical Completion of each Stage of the Works being achieved:

5.1 INTERNAL CLEANING

The Contractor shall:

- Remove all loose debris; in particular from grills and vents, concealed spaces such as plumbing ducts, air conditioning shafts, cupboards and all other such spaces;
- Thoroughly clean all internal surfaces following the manufacturer's or supplier's directions where such have been provided and otherwise in accordance with the best cleaning practice;
- Remove all dust, paint spots, finger marks, stains, smears and other blemishes from the finished surfaces;
- Carefully remove all labels, protective paper or plastic, crayon markings etc. from all fittings and fixtures, including the underside of basins and sanitary ware;
- Take particular care to thoroughly clean all glass including doors, mirrors, door furniture and other hardware.

5.2 EXTERNAL CLEANING

The Contractor shall:

- Maintain clean roads and access. Remove and clean away mud, building debris from footpaths, gutters, drains, walls, etc.;
- Clean the entire external area, including those of adjacent buildings affected by the Works prior to Practical Completion.

5.3 FINAL CLEANING

Provide final cleaning of the Works, at time indicated, consisting of cleaning each surface of unit of work to normal 'clean' condition expected for a first-class building cleaning and maintenance program.

Examples of required cleaning are:

- Remove labels which are not required as permanent labels;
- Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent materials;
- Clean exposed exterior and interior hard surfaces finished, to a dirt free condition, free of dust, stains, finger marks, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition;
- Wipe clean surface of mechanical and electrical equipment, including lift and similar equipment; remove excess lubrication and other substances;
- Remove debris and surface dust from limited access spaces;
- Clean concrete floors broom clean;
- Clean plumbing fixtures to a sanitary and polished condition, free of stains including those resulting from water exposure;
- Clean light fixtures and lamps so as to function with full efficiency;

- If permanent lighting fixtures have been used for construction purposes replace globes with new;
- Clean project site, including planted sections and footpaths, of litter and foreign substances. Sweep paved areas to a broom clean condition. Remove stains, petro-chemical spills and other foreign deposits;

5.4 HARDWARE

The Contractor shall:

- Adjust and clean all hinges, closers and other hardware;
- Check all locks for satisfactory operation with the appropriate keys. Arrange for immediate remedial action where any key does not operate.
- Allow to key all keys under the Principal's current Master Key system or as otherwise stated in this Specification
- Account for all keys (in duplicate) delivered to the Site and pay for the supply and installation of new lock cylinders and duplicate keys for each lock.
- Systematically label all keys with stamped metal or plastic tags and hand these over to the Architect / Principal.

Consult with the Principal for preparation of keying schedule. Keying schedule shall be prepared at the commencement of the construction period. All locks shall be construction keyed. Final cylinders shall be changed over prior to Practical Completion.

5.5 SERVICES AND EQUIPMENT

The Contractor shall:

- Ensure that all public utility services are properly connected and metered prior to the date of occupation, including arranging for meter readings where necessary;
- Arrange with the various sub-contractors and ensure that all components of all installations are in working order;
- Ensure that final testing of all services and equipment has been satisfactorily carried out, including services and equipment in the various sub-contracts.
- Ensure successful Integrated Commissioning shall occur in line with the functional requirements for the building. These tests shall be all encompassing and witnessed by the Consultant Design Engineers.

5.6 PRE-PRACTICAL COMPLETION INSPECTION

The Contractor shall:

- Before giving notice in accordance with the Contract, make a complete and thorough inspection of the Works and make good any defects;
- Arrange inspection sufficiently in advance of Practical Completion to allow time within the construction commissioning program for making good any defects and the subsequent inspection of such remedial work.

5.7 AUTHORITY INSPECTIONS AND CERTIFICATION

The Contractor shall ensure that all necessary inspections and certifications by the relevant authorities, e.g., DFES, Watercorp, LPG Gas supplier, Western power etc. have been carried out in accordance with the Specifications. Certificates of compliance and other supporting documentation shall be provided within Operations and Maintenance Manuals.

5.8 SUBMISSIONS – MANUALS, WARRANTIES, GUARANTEES AND AS-CON DRAWINGS

At times as nominated and at Practical Completion, make submissions of all required certifictaes, test results, operation manuals, warranties, guarantees and as-constructed drawings as detailed in each trade Specification section and as listed in the Submissions Schedules below.

5.8.1 OPERATION, SERVICE AND MAINTENANCE MANUALS

Operation, service and Maintenance Manuals, all as stated in trade sections of this Specification the various Appendix Specifcations and the Practical Completion Submissions Schedule below.

5.8.2 WARRANTIES

The Contractor shall obtain warranties to extend beyond the 12 months defects liability period for the benefit of the Principal from the date of Practical Completion as detailed bleow. The period of each warranty shall be in accordance with the Specifications. If there is disagreement of the warranty periods, then reasonable warranty periods shall be determined by the Principal.

5.8.3 AS-BUILT AND FINAL RECORD DRAWINGS

As built and final record drawings shall be prepared and submitted in accordance with the Practical Completion Submissions Schedule, and as a minimum:

- Underground stormwater pipingwith reference to horizontal and vertical datums

5.8.4 SUBMISSIONS SCHEDULES

Refer to Submissions Schedule at the end of this section

6 DEFECTS LIABILITY PERIOD

The Contractor will be responsible for the preparation of the program for the rectification to ensure that all defects nominated at Practical Completion and during the Defects Liability Period are completed within the agreed time of overall Practical Completion and in accordance with the agreed program.

All rectification of defective work shall not inconvenience in any form the occupants within the building without the express permission of the Principal . Any defective work identified at Practical Completion and not rectified within two (2) months of Practical Completion, at the discretion of the Principal may be undertaken by others. The cost of this work shall be adjusted against security held against the Contractor.

Any critical defects that arise during the course of the Defects Liability Period should be attended to within 24 – 48 hours depending on the nature of the defect. This specifically related to defects that have potential to cause significant asset damage, compromise safety or have potential to cause adverse environmental impact. In the event of the Contractor not being able to respond within the timeframe, the Principal may arrange for the work to be undertaken by others and cost adjusted against security held against the Contractor.

7 SCHEDULES

7.1 SUBMISSIONS TO BE MADE DURING THE CONSTRUCTION PERIOD

The following items shall be submitted during the Construction Period as detailed in the various Trade Sections of this Specifcation and the appendicies

Trade	Item	Details	Remarks	Date Submitted
Earthworks	Compaction	Structural Engineer certified compaction certificate(s)	Submit before preparing slabs	
Concrete	Concrete test	Test report(s) for any required concrete test(s)	Submit after concrete poured or as required	
Steelwork	Shop drawings	Detailed shop drawings of steelworks to be fabricated	Submit prior to fabrication for review	
	Protective treatment (galv or paint system)	Treatment test results for thickness, quality and integrity	Submit before delivery of steel to site	
Electrical	Shop drawings	Electrical switch boards	Submit prior to fabrication for review	

7.2 PRACTICAL COMPLETION SUBMISSIONS INCLUDING WARRANTIES AND GUARANTEES

The following items shall be prepared in DUPLICATE Hard Copy, in bound folders, with an electronic copy in PDF format on a USB Stick in each folder and submitted at Practical Completion.

Late submission of these documents may delay the issuing of Practical Completion by the Architect.

Trade	Item	Details	Remarks PC = Practical Completion	Yrs	Date Submitted
Paving	Slip resistance	Certificate of compliance for slip resistance	Submit at PC		
Cladding	Cladding certification	Certification of cladding installation to confirm installation in accordance with manufacturer's installation instructions	Submit at PC		
		Warranty	Submit at PC		
Roofing	Roof watertightness	Warranty	Submit at PC	20	
	Roof access system	Certification of installation	Submit at PC		
Electrical	As-con drawings	As constructed Electrical drawings – including location of all underground services located with reference to horizontal and vertical datums	Submit at PC Refer to Electrical Specification for further details		
	Compliance certificate	Certificate of compliance for whole of installation in accordance with supply authority and statutory requirements	Submit at PC Refer to Electrical Specification for further details		
Hydraulic	As-con drawings	As constructed Hydraulic drawings – including location of all underground services located with reference to horizontal and vertical datums	Submit at PC Refer to Hydraulic Specification for further details		
Appliances	Manuals	Manufacturer's operating manuals and instructions as supplied with the appliance	Submit at PC		

Trade	**Item**	**Details**	**Remarks** PC = Practical Completion	**Yrs**	**Date Submitted**
	Warranty	Manufacturer's warranty as supplied by with the appliance	Submit at PC Warranty to be valid to commence from PC	1	
Spare materials	Paint	Leave on site any residual pots of paint marked clearly with colour name, sheen level and location	Submit at PC		

0171 GENERAL REQUIREMENTS

1 GENERAL

1.1 APPLICABILITY

General
Requirement: Conform to *0171 General requirements*, as appropriate, in all worksections.

1.2 PERFORMANCE

Structural design actions
Standard: To the AS/NZS 1170 series and AS 4055, as appropriate.

Importance level to AS/NZS 1170.0: Level 2.

1.3 STANDARDS

Current editions
General: Use referenced Australian or other standards (including amendments), and the BCA including state and territory variations which are current three months before the date of the contract except where other editions or amendments are required by statutory authorities. Any local authority requirements take precedence.

1.4 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 / or
  Volume Two: Building Code of Australia Class 1 and Class 10 buildings.

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

- Owner: Owner has the same meaning as client, principal or proprietor and is the party to whom the contractor is legally bound to construct the works.
- Contractor: Means the same as builder.
- Documented: Documented, as documented and similar terms mean contained in the contract documents.
- Metallic-coated: Steel coated with zinc or aluminium-zinc alloy via a continuous hot-dip process.
- Hot-dip galvanized: Zinc coated to AS/NZS 4680 after fabrication.
- Professional engineer: As defined by the BCA.
- Proprietary: Identifiable by naming manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Provide: Provide and similar expressions mean supply and install and include development of the design beyond that documented.
- Required: Means required by the contract documents, the local council or statutory authorities.
- Supply: Supply, furnish and similar expressions mean supply only.

1.5 BUSHFIRE PROTECTION

General
Bushfire Attack Level (BAL) to AS 3959 and BCA 3.7.4: To the **Building performance schedule**.

2 PRODUCTS

2.1 GENERAL

Manufacturers' or suppliers' recommendations

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

Proprietary items/systems/assemblies: Assemble, install or fix to substrate in accordance with the current written recommendations and instructions of the manufacturer or supplier.

Product identification

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

Substitution

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 for approval. Approval for alternatives shall not be assumed or relied upon and shall be at the sole discretion of the Owner or their Agent.

2.2 TIMBER

Moisture content

General: Make milled products from timbers seasoned as follows:

- To within 3% of the equilibrium moisture content appropriate to the timber and its intended conditions of use.
- With no more than 3% difference between any 2 pieces in any one group.

Acclimatisation

General: Acclimatise timber fitouts by stacking them for two weeks in the in-service conditions with air circulation to all surfaces after the following are complete:

- Air conditioning operational.
- Lighting operational.
- Site drainage and stormwater works are complete.
- Space fully enclosed and secure.
- Wet work complete and dry.

Unseasoned timber

General: If unseasoned timber is provided, or variation in moisture content is likely, make allowance for shrinkage, swelling and differential movement.

Recycled timber

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

Classification: Visually graded.

Durability

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

Natural durability class of heartwood: To AS 5604.

Preservative treatment: To the AS 1604 series.

Minimum requirement: To the **Natural and treated timber durability table**.

Natural and treated timber durability table

Exposure	Natural timber	Treated timber	Remarks
	Required durability class to AS 5604	**Required hazard class to the AS 1604 series**	
Inside, above ground. Completely protected from	Class 4	H1	Treated timber resistant to lyctids. Untreated timber

Exposure	Natural timber	Treated timber	Remarks
the weather. Well ventilated			must be protected from termites
Inside, above ground. Protected from wetting with nil leaching. Well ventilated	Class 3	H2	Treated timber resistant to borers and termites. Untreated timber must be protected with a finish
Above ground, exposed to weather. Periodic moderate wetting and leaching	Class 2	H3	Treated timber resistant to borers, termites and moderate decay. Applicable to weatherboards, fascias, pergolas (above ground), window joinery, framing and decking
In-ground	Class 1	H4 (Severe wetting and leaching)	Treated timber resistant to borers, termites and severe decay. Applicable to fence posts, greenhouses, pergolas (in-ground) and landscaping timbers
		H5 (Extreme wetting and leaching and/or critical uses)	Applicable to retaining walls, piling, house stumps, building poles, cooling tower fill

2.3 STEEL

Durability

General: Provide steel products protected from corrosion to suit the conditions of use.

Internal engineer designed steel members: Remove mill scale, rust, moisture and oil. Coat with a zinc phosphate primer to the manufacturer's instructions.

Built-in products below damp-proof course: Stainless steel 316 or engineered polymer.

Corrosion resistance

General: Conform to the atmospheric corrosivity category as defined in AS 4312, the AS/NZS 2312 series and the **Building performance schedule**.

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

Preparation and pre-treatment
Standard: To the AS 1627 series.

2.4 PROTECTIVE COATINGS

General
Environment: To AS 2312.1 clause 2.3.

Coating designation: To AS 2312.1 Table 6.3.

CCA (copper chrome arsenic) treated timber
Greasing: Before placing bolts or other metal components in contact with CCA-treated timber, paint contact surfaces or coat in grease or a bituminous coating.

Unseasoned timber
General: Do not fix in contact with steel framing without fully painting the contact surfaces of timber and steel.

2.5 FASTENERS

Self-drilling screws
Standard: To AS 3566.1.

3 EXECUTION

3.1 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
Sufficiency: Use proprietary fasteners capable of transmitting the loads imposed, and sufficient for the rigidity of the assembly.

3.2 COMPLETION

General
Removal of temporary work, services and plant: Remove temporary work services and construction plant within 10 working days after occupation of the works.

Final cleaning: Remove rubbish and surplus material from the site and clean the works throughout including interior and exterior surfaces exposed to view. Vacuum clean carpeted and soft surfaces. Clean debris from the site, roofs, gutters, downpipes and drainage systems.

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

Warranties: Register with manufacturers, as necessary, and provide copies of manufacturers' warranties.

Instruction manuals: Provide the manufacturers' instruction manuals.

Operation: Make sure moving parts operate safely and smoothly.

Surveyor's certificate: Provide a certificate which confirms that the work, including boundary fences, has been correctly located.

Services layout: Provide a plan which shows the location of underground services.

Authorities' approvals: Provide evidence of approval of the local authority or principal accredited certifier and statutory authorities whose requirements apply to the work.

Keys: Provide two keys for each set of locks keyed alike and two keys for each lock keyed to differ.

0201 DEMOLITION

1 GENERAL

1.1 STANDARDS

Demolition
Requirement: Carry out demolition, as documented
Standard: To AS 2601.

1.2 SUBMISSIONS

Records
Before starting demolition, submit evidence of the following:
- A demolition permit obtained from the appropriate authority.
- If asbestos is present, a copy of the relevant demolition contractor's licence to demolish and remove asbestos
- A copy of the Dilapidation record of existing and adjacent properties taken prior to any works commencing
- Submit to each owner of each adjacent property, a copy of the part of the record relating to that property and obtain their written agreement to the contents.
- Rectification work: If rectification works are required as a consequence of carrying out the Works, submit written acceptance of rectification works from the owner of each adjoining property affected.

2 PRODUCTS

2.1 DEMOLISHED MATERIALS

General
Removal: Except for items to be recovered for re-use in the works, or delivery to the owner and materials to be recycled in the works, take possession of demolished materials and remove them from the site. Do not burn or bury demolished materials on the site. Prevent spillage of demolished materials in transit.
Recycling: If possible, dismantle building components for off-site recycling.

3 EXECUTION

3.1 GENERAL

Before demolition or stripping work, prepare the work plan to AS 2601 Section 2

3.2 PROTECTION

Weather protection
General: If walls or roofs are opened for alterations and additions, or the surfaces of adjoining buildings are exposed, provide temporary covers to prevent water penetration. Provide covers to protect existing plant equipment and materials intended for re-use.

Fixed items
Individual protection: Protect items in their existing position, and as documented.

3.3 DEMOLITION

Notice of completion
General: Give at least 5 working days' notice of completion of demolition so that 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 out of demolition work. Obtain written acceptance from the owner of each adjoining property of the completeness and standard of the rectification work.

4 SELECTIONS

4.1 SCHEDULES

DEMOLITION SCHEDULE

The following items shall be Recovered and reused or recycled into the works or Recovered and handed over to the Client and delivered to an agreed location as nominated below or on the drawings. Also refer to the demolition drawings (all disciplines) for extent of any other item to be recovered from the demolition.

Location	**Item**	**Reused** into the Works or **Recovered** and handed over to the Client/ Proprietor	**Location** to be reused or delivered to
Big Shed	Existing Double Concrete Sink	Recovered & handed over to client	
Big Shed	Existing Timber Wall Shelving	Recovered & handed over to client	

0221 SITE PREPARATION

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide site preparation, as documented.

Designated areas for protection: Refer to drawings

Outline of the works: Refer to drawings

Incidental works

Generally: Undertake the following:

- Reinstatement: Reinstate undeveloped ground surfaces to the condition existing at the commencement of the contract.
- Minor trimming: As required to complete the works, 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 following definitions apply:

- Authorities: Any authority or agency covering statutory requirements relating to the project, including clearances for work in that particular area.
- Clearances: A formal certificate, approval or condition issued by an authority to allow work to be carried out in a particular area.
- Network utility operator: The entity undertaking the piped distribution of drinking water or natural gas for supply or is the operator of a sewerage system or external stormwater drainage system.

1.4 SUBMISSIONS

Execution details

Requirement: If requested by the Architect allow to submit details of methods and equipment proposed for the following:

- Clearing and grubbing.
- Tree removal and transplanting.

1.5 INSPECTION

Notice

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

- Enclosures around trees to be retained.
- Trees to be removed.

2 EXECUTION

2.1 COMMUNITY LIAISON

Notification

General: Notify residents about construction activities which 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:

- The nature of the work.
- The reason for it being undertaken.
- 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 commencing earthworks, locate and mark existing underground services in the areas which will be affected by the earthworks operations including clearing, excavating and trenching.

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

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

Existing service lines: If required, divert services detected during excavation to new routes, clear of the building, and reconnect to the network utility operator's requirements.

2.3 SITE CLEARING

Extent

Requirement: Clear only areas to be occupied by works such as structures, paving, excavation, regrading and landscaping or other areas designated to be cleared.

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

Clearing and grubbing

Clearing: Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees, timber, stumps, boulders and rubble.

Grubbing: Grub out stumps and roots over 75 mm diameter to a minimum depth of 500 mm below subgrade under buildings, embankments or paving, or 300 mm below finished surface in unpaved areas. Backfill holes remaining after grubbing with sand material to prevent ponding of water. Compact the material to the relative density of the existing adjacent ground material.

Redundant/decommissioned works: Remove works, including slabs, foundations, pavings, drains and access chambers covers found on the surface.

Batters

Temporary protection: Where change in level between crest and toe is more than 1.5 m, protect from erosion with geofabric, a hessian and tar or heavy duty black polythene sheet waterproof cover. Seal joints and securely fix down at crest and toe.

Surplus material

Topsoil and excavated material: Continually 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 engineer's details.

Waterways and drains

Waterways: Temporarily divert, as necessary, ditches, field drains and other waterways affected by excavation and reinstate on completion.

Stormwater drains: Divert drains detected during excavation to new routes, clear of the building, and reconnect to the network utility operator's requirements.

2.5 EXISTING WORKS TO BE RETAINED

Marking

Requirement: Mark out works with 1 m high 50 x 50 mm timber stakes with yellow plastic tapes attached to prevent accidental damage.

2.6 COMPLETION

Temporary works

Remove at completion:

Clean up

Progressive cleaning: Keep the work included in the contract clean and tidy as it proceeds and regularly remove from the site waste and surplus material arising from execution of the work, including any work performed during the defects liability period or the plant establishment period.

Removal of plant: Within 10 working days of the date of practical completion, remove temporary works, construction plant, buildings, workshops and equipment which does not form part of the works, except what is required for work during the defects liability period or the plant establishment period. Remove these on completion.

Waste disposal: To Local Authority requirements.

0223 SERVICE TRENCHING

1 PRODUCTS

1.1 FILL MATERIALS

General

Backfill material: To **FILL MATERIALS** in *0222 Earthwork*, free from stones larger than 100 mm maximum dimension and as follows:

- Next to services: Do not place any particles greater in size than 25 mm within 150 mm of services.
- Under paved areas and within 4 m of structures: Coarse sand, controlled low strength material or fine crushed rock.
- In reactive clay: In sites classified M, M-D, H1, H1-D, H2, H2-D, E or E-D to AS 2870, re-use excavated site material at a moisture content within ± 1% of that of the adjoining in situ clay.

2 EXECUTION

2.1 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.

2.2 EXCAVATING

Excavation

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.

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.

2.3 TRENCH BACKFILL

General

Place fill: Refer to engineer’s details.

Timing: Backfill service trenches as soon as possible after laying and bedding the service, if possible on the same working day.

Layers: Compact all material in layers not exceeding 150 mm compacted thickness. Compact each layer to the relative compaction specified before the next layer is commenced.

2.4 SURFACE RESTORATION

General

Reinstatement: Reinstate existing surfaces removed or disturbed by trench excavation to match existing and adjacent work.

0310 CONCRETE

1 REFER TO FORTH INSITU CONCRETE SPECIFICATION

0331 BRICK AND BLOCK CONSTRUCTION

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide brick and block construction, as documented.

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:
- *0171 General requirements*.

1.3 STANDARDS

General
Materials and construction: To AS 3700.

1.4 TOLERANCES

General
Requirement: To AS 3700 Table 12.1.

2 PRODUCTS

2.1 DURABILITY

General
Exposure locations: To AS 3700 clause 5.4.

2.2 MATERIALS

Brick and block units
Selections: As documented.
Standard: To AS/NZS 4455.1 and AS/NZS 4455.3.

Grout
Standard: To AS 3700 clause 11.7.
Minimum characteristic compressive strength: 12 MPa.

3 EXECUTION

3.1 GENERAL

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

Protection
Masonry materials and components: Protect from ground moisture and contamination.
During construction: Cover the top surface of brickwork and blockwork to prevent the entry of rainwater and contaminants.

Bond
Type: Stretcher bond.

Mortar joints
General: Set out masonry with joints of uniform width and minimum cutting of masonry units.
Solid and cored units: Lay on a full bed of mortar. Fill perpends solid. Cut mortar flush.
Face-shell bedded hollow units: Fill perpends solid. Cut mortar flush.

Joint thickness: 10 mm.

Finish: Conform to the following:

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

Rods

Set-out: Construct masonry to the following rods:

- 75 mm high units: 7 courses to 600 mm.
- 90 mm high units: 6 courses to 600 mm.
- 190 mm high units: 3 courses to 600 mm.

Protection

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

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

3.2 FACEWORK

Cleaning

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

Acid solution: Do not use.

Colour mixing

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

Double face walls

Selection: Select face units for uniform width and double-face qualities.

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

Perpends

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

3.3 WALL TIES

Location

General: Space wall ties in conformance with AS 3700 clause 4.10 and at the following locations:

- Not more than 600 mm in each direction.
- Adjacent to vertical lateral supports.
- Adjacent to control joints.
- Around openings.

Installation

Fixing of masonry veneer ties:

- To timber frames: Screw fix to outer face of timber frames with fasteners to AS 3566.1.
- To concrete: Masonry anchors.
- To steel frames: Screw fix to outer face of steel studs with fasteners to AS 3566.1.

4 SELECTIONS

4.1 SCHEDULES

BRICKWORK AND BLOCKWORK SCHEDULE

Location	Manufacturer	Selection and Size	Mortar colour and joints
Kitchen	Reclaimed red clay Bricks	230 x 110 x 76	Standard grey

0341 STRUCTURAL STEELWORK

1 REFER TO FORTH STEELWORK SPECIFICATION

0342 LIGHT STEEL FRAMING

1 GENERAL

1.1 STANDARDS

General

Design, materials and protection: To AS/NZS 4600.

Residential and low-rise steel framing: To NASH-1 (National Association of Steel Housing) and NASH-2 Standard.

1.2 TOLERANCES

General

Manufacturing, assembly and installation tolerances: To NASH-1 Appendix D and NASH-2 Appendix A.

2 PRODUCTS

2.1 GENERAL

Storage and handling

Requirement: Transport all components to site and store if required in a manner so as not to damage or distort the components.

2.2 COMPONENTS

Cold-formed steel framing

Cold-formed sections from metallic-coated steel: To AS 1397.

Corrosion protection: To NASH-2 Section 8.

Framing members

Cold-formed steel framing for proprietary systems: To NASH-1 or NASH-2.

3 EXECUTION

3.1 GENERAL

Frame fabrication

Length: Cut members accurately to length so that they fit firmly against abutting members.

Service holes: If not pre-punched, form holes by drilling or punching, conforming to the requirements of NASH-2.

Swarf: Immediately remove swarf and other debris from cold-formed steel framing.

Fastening

Prefabricated framing: Fasten framing elements using fasteners, as documented, to the fabricator's requirements.

Framing built in-situ: Use fasteners, as documented, from the following types:

- Bolting.
- Self-drilling, self-tapping screws.
- Blind rivets.
- Proprietary clinching system.
- Structural adhesives.
- Welding. On-site welded connections are not permitted.

Compatibility: Compatible with steel frame to prevent galvanic corrosion of dissimilar metals.

Prefabricated frames

General: Protect frames from damage or distortion during erection.

Earthing
Requirement: To AS/NZS 3000. Provide temporary earthing during erection until the permanent earthing is installed.

Protection
General: Restore coatings which have been damaged by welding or other causes. 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 cold-formed steel framing.

Site cut holes: Provide plastic bushes or grommets to site cut holes.

3.2 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 to 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
Requirement: Provide vermin barriers as follows:

- Brick veneer barrier: Close nail steel galvanized wire mesh, with a maximum aperture of 10 mm, to the underside of the bottom plate of external stud walls, extending across the cavity for building into brickwork.

Prefabricated walling
Assembly: Factory assemble wall frames.

Bracing: Provide details of bracing.

Certification: Obtain certification from a professional engineer for the erected frames.

3.3 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 frame members at the following locations:

- Hanging light fittings.
- Any other hanging services or fixtures and fittings.

Battens
Requirement: Supply and fix battens suitable for span, spacing and proposed roofing material.

Anti-ponding boards
Standard: To AS 4200.2.

3.4 ROOF TRIM

Fascia, and barge boards
Requirement: Fix fascia, and barge boards in conformance with the manufacturer’s recommendations.

3.5 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.

0382 LIGHT TIMBER FRAMING

1 GENERAL

1.1 STANDARDS

General

Framing: To AS 1684.2, AS 1684.3 or AS 1684.4, as appropriate.

Design: To AS 1720.3.

Nailplated roof trusses: To AS 1720.5.

2 EXECUTION

2.1 GENERAL

Prefabricated frames

General: Protect frames from damage or distortion during erection. Provide temporary protection for members until permanent covering is in place.

2.2 ROOF FRAMING

Fixing plates

General: Provide 45 mm minimum thick timber fixing plates to transfer the design loads where timber joists, rafters or purlins bear on or into steel members. Bolt to the steel member at maximum 500 mm centres and a maximum 100 mm from the end of the fixing plate.

Beam framing

Ridge straps: Butt ends of rafters together at ridge, and strap each pair together with 900 mm long steel strap passing over the ridge, triple nail 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 AS/NZS 3500.4 clause 5.5.1.

2.3 COMPLETION

Cleaning

General: On completion of framing remove debris from any gaps between members and make sure void between bottom chord of trusses and top of any non-supporting internal walls is clear.

3 SELECTIONS

3.1 SCHEDULES

TIMBER SCHEDULE

Location	Manufacturer	Selection	Remarks
Big Shed store rafters		LVL H2 treated 150 x 45	
Big Shed store purlins		SupaPine treated 42 x 35	

0423 ROOFING – PROFILED SHEET METAL

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide a profiled sheet metal roofing system and associated work, as documented.

Ambient climatic conditions
Design rainfall intensity to AS/NZS 3500.3:

Location exposure severity
Exposure severity category: Severe Marine

Roof access
Type: Scaffold and Roof access system

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:
- *0171 General requirements*.

2 PRODUCTS

2.1 SHEET METAL ROOFING

Standards
Design, installation and materials: To AS 1562.1.

Stainless steel: To ASTM A240/A240M.

Roofing product
As scheduled below

2.2 SAFE ROOF ACCESS SYSTEM

Description
General: Allow for design, supply and installation of a proprietary safe roof access system including framing, fixing, trim, seals, accessories and fixtures

Supply and install a safe roof access system and fall arrest equipment in accordance with OH&S legislation.

Equipment to be provided includes:

a) **During Construction:** Anchor points, static lines, harness gear, eaves platforms and fences and safety signs.
b) **Permanent Installation:** Safe access points and fixtures, Anchor Points and static lines as required

Ensure that every person working above ceiling or eaves level is fully trained in use of the equipment.

3 EXECUTION

3.1 INSTALLATION

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

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

Thermal movement
Requirement: Allow for thermal movement in the roof installation and the structure, including movement in joints and fastenings.

Metal separation
Requirement: Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by one of the following methods:

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

Tolerances
Requirement: To AS 1562.1 clause 4.2.

3.2 SHEET METAL ROOFING

Roof sheet installation
Set-out point: Setout to guard against water ingress from prevailing weather conditions

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

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

Expansion joints: As required / recommended by roof sheet manufacturer

3.3 ROOF PLUMBING

Jointing sheet metal rainwater goods
Butt joints: Make joints over a backing strip of the same material.

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

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

Jointing system: As required / recommended by roof sheet manufacturer

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

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

- Clamping ring.
- Proprietary flexible clamping shoe with attached metal surround flashing.

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

Downpipes
General: Prefabricate downpipes to the required section and shape where possible. Connect heads to gutter outlets and, if applicable, connect feet to rainwater drains.

Downpipe support: Provide supports and fixings for downpipes.

3.4 COMPLETION

Cleaning
Requirement: Excess debris, metal swarf, solder, sealants and unused materials.

Exposed metal surfaces: Clean surfaces of substances that interfere with uniform weathering or oxidisation.

Damaged materials: materials that have been damaged or deteriorated.

Roof plumbing: Clean out spoutings, gutters and rainwater pipes after completion of roof installation.

Warranties
Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and installer.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: 20 years against leakage.
- 20 years for materials and systems

4 SELECTIONS

4.1 RAINFALL DESIGN CRITERIA

Eaves Gutters 150 mm/h

4.2 SCHEDULE OF ROOFING MATERIALS

NOTE: Where a specific Manufacturer or Supplier is nominated below the Contractor may propose to the Superintendent for approval a similar product that is equal and equivalent in aesthetics, performance, function and quality and with an equal warranty.

ROOFING SCHEDULE

Location	Code	Item	Material and product	Finish	Colour	Remarks
New West & East Awning Roof	RFS-2	Roof sheeting	Spandek 0.48 BMT	Zincalume	Zincalume	Laid to minimum pitches as shown on the drawings
New West & East Awning Roof		Roofing screws	AS 3566 Class 4 Screws	Galvanised		Any other fixings to be of equal and equivalent grade and finish
New West & East Awning Roof, and Existing roof Big Shed		Lysaght Quad Square Bead Gutter	Zincalume folded and welded to form shapes and sizes as shown on the drawings Min falls 1:50 Supported on: Propriatory zinclume gutter support straps adjusted to create falls	Zincalume	Zincalume	
New West & East Awning Roof		flashings	0.55 BMT	Zincalume	Zincalume	
New West & East Awning Roof and Existing roof Big Shed		Rain water down pipes	Generally all RWPs to be: 0.55 BMT	Zincalume	Zincalume	RWP supports at no more than 1m centres
Store		Roof Sheeting	Reclaimed Corrugated		Zincalume	

0453 DOORS AND ACCESS PANELS

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide doors, frames, doorsets, security screen doors and fire-resisting doorsets, as documented.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.
- *0455 Door hardware*.

1.3 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

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.

Base metal thickness:

- General: Minimum 1.1 mm.
- Security doorsets: Minimum 1.6 mm.

Metallic-coating class to AS 1397 exterior: Z450

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.

2.2 DOORS

General

Doors: Proprietary products manufactured for interior or exterior applications and for the finish required.

Joinery doors

General: Provide joinery doors, as documented.

Construction

Adhesives:

- External: To AS/NZS 2271.

Door thickness:

- General: 40 mm.

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.

Edge strip location: ALL FOUR SIDES

Double doors
Square edged doors: Bevel 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: Maximum 3 mm.

Twist: The difference between perpendicular measurements taken from diagonal corners: Maximum 3 mm.

Panel door nominal size (mm):

- Height: ± 2.
- Width: + 2, - 0.

2.3 ANCILLARY MATERIALS

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.

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.

Weather bars
General: Provide a weather bar under hinged external doors, locate under the centres of closed doors.

Type: As detailed in the Door Hardware Schedule

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.

Frame fixing
Brackets: Metallic-coated steel:

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

Joints
General: Make accurately fitted joints where fasteners, pins, screws, adhesives and pressure indentations are not visible on exposed surfaces.

Steel frames
Building into masonry: Attach galvanized steel rods to jambs, build in and grout up.

Fixing to masonry openings: Build in hairpin anchors and install locking bars, or use proprietary expansion anchors and screw twice through jambs at each fixing.

Fixing to stud frame openings: Attach galvanized steel brackets to jambs and screw twice to studs at each fixing.

Finishing
Trim: Provide mouldings, architraves, reveal linings, and other internal trim using materials and finishes matching the door frames to make neat and clean junctions between the frame and the 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: Make sure 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.

4 SELECTIONS

4.1 DOOR TYPES SCHEDULE

Item	Description		Manufacturer
Door Frames			
Door frames: Steel	Material: Note:	Pressed steel 1.1mm thick single (or double) rebate fully welded frames with floor spreader. Provide 8 or 10, 3mm wire ties per frame for building into walls and two black stops on closing side. Fully grout back of frames with cement mortar. Supply steel frames with shop applied rust inhibitive paint.	
All Doors			
Doors solid timber	Thickness: Face:	40mm Solid timber framed and braced hardboard,	Humes, Corinthian or similar approved equivalent

0455 DOOR HARDWARE

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide door hardware, as documented.

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:

- *0171 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.

Warranties
Requirement: Submit the following:

- Manufacturer’s warranties for all hardware items

Automatic door operators: Submit a warranty (or interlocking warranties) from the supplier and installer for the system and its installation, for the following period from the date of practical completion.

Minimum period: 5 Years

Form of warranty: Written

2 PRODUCTS

2.1 GENERAL

Supply
Delivery: Deliver door hardware items, ready for installation, in individual complete sets for each door, as follows:

2.2 LOCKS AND LATCHES

Standard
General: To AS 4145.2.

Padlocks
Standard: To AS 4145.4.

Lock and latch classification
Rating systems: To AS 4145.1 Section 3.

Performance requirements: To AS 4145.2 Section 3.

2.3 HINGES

Butt hinge materials
Refer to Door Hardware Schedule for selections

Solid timber doors
Number of hinges: Determine the number of hinges required based on the nominated door leaf size and weight only. For other door leaf sizes or for doors with applied finishes, use the weight of the door to determine the number of hinges required. For a door leaf over 80 kg, use pivot hinges.

Size of hinges: Determine the size of the hinge based on the door leaf thickness:

- 35 to 43 mm thick door: 100 x 75 mm butt hinges with a minimum thickness of 2.5 mm.
- 44 to 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: Supply fixed pins to hinges of doors opening out or designated as a security doors. For all other doors, provide loose pins.

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.

2.4 DOOR HANGING SYSTEMS

General

Requirement: Provide sliding door tracks as documented in the **Door hardware selection schedule**.

2.5 ANCILLARIES

Bolts

General: Provide bolts including barrel bolts, flush bolts and tower bolts with keepers, including lock plates, staples, ferrules or floor sockets.

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.

Rebated doors

General: For mortice locks or latches to rebated doors, provide purpose-made rebated pattern items.

Strike plates

General: Use strike plates provided with the locks or latches. Do not provide universal strike plates.

2.6 KEYING

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 the manufacturer or supplier to deliver direct to the principal.

Group keying

Keying system: Provide a group keying system as documented in the **Key codes schedule**.

Existing system: Obtain the details of existing group or master key systems to which a new system is required to be an extension.

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

Keying control security system: If cylinder or pin-tumbler locks accept a group key (e.g. master key, maison key) provide to those locks a proprietary keying control security system.

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.

3 EXECUTION

3.1 INSTALLATION

General

Handing: Before supply, verify on site, the correct handing of hardware items.

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.

Mounting height

Locks and latches: Centreline of the door knob or lever spindle above finished floor: 1000mm

Locks

Cylinders: Fix vertically and with consistent key alignment.

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.

3.2 COMPLETION

Adjustment

General: Leave the hardware properly adjusted with working parts in working order, and clean, undamaged, properly adjusted, and lubricated where appropriate.

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.

Product warranties

Warranty: Cover materials and workmanship in the form of interlocking warranties from the manufacturer or distributor and the installer.

4 SELECTIONS

4.1 REFER TO DOOR HARDWARE SCHEDULE APPENDIX TO THIS SPECIFICATION

0511 LINING

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide internal lining systems, as documented.

Performance
Requirement: Provide lining system with a surface that is:

- Resistant to impacts expected in use.
- Resistant to moisture encountered under expected environmental conditions.
- Free of irregularities.
- A suitable substrate for the nominated final finish.

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 4491 and the following apply:

- Fibre cement sheet linings: Treated cellulose fibre in a matrix of cement and sand autoclaved sheet, sealed on one side.

1.4 TOLERANCES

Permitted deviations
Other lining: 4 mm from a 1.8 m straightedge.

Substrates
Requirement: Plumb, level, in true alignment and to the lining manufacturer’s recommendations.

Steel framing: To AS/NZS 2589 clause 4.2.

1.5 SUBMISSIONS

Warranties
Lining materials: Submit the manufacturer's published product warranties.

2 PRODUCTS

2.1 GENERAL

Marking
Identification: Marked to show the following:

- Manufacturer’s identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

2.2 FIBRE CEMENT

General
Standard: To AS/NZS 2908.2.

Wall and ceiling linings: Type B category 2.

Minimum thickness: 4.5 mm.

2.3 ADHESIVES, SEALANTS AND FASTENERS

Adhesives

For wallboards: Gunnable synthetic rubber/resin based mastic contact adhesive formulated for bonding flooring and wallboards to a variety of substrates.

Fasteners

Steel nails: Hot-dip galvanized.

3 EXECUTION

3.1 CONSTRUCTION GENERALLY

Conditions

Commencement: Do not commence lining work until the building or installation area is enclosed and weathertight, and all wet trades have been completed.

Substrates or framing

General: Before fixing linings, check and adjust the alignment of substrates or framing, if necessary.

Battens

General: Fix at each crossing with structural framing members, to solid walls or ceiling support. Provide wall plugs in solid substrates.

Accessories and trim

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

Adhesives

General: Provide adhesive types appropriate for the purpose, and apply them so they transmit the loads imposed without causing discolouration of the finished surfaces.

3.2 FIBRE CEMENT LINING

Installation

Joints and layout: 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.

Fixing

Steel framed construction: Screw only or combine with adhesive.

Joints

Joint width:

- Butt joints: 1 to 2 mm.

Joint backing for expressed joints: Black self-adhesive polyurethane 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.

3.3 TRIM AND ACCESSORIES

General

Requirement: 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.

3.4 COMPLETION

General

Damaged or marked lining and components: Replace.

Exposed surfaces: Touch up shop applied finishes and restore damaged or marked areas.

Timber panels: If appearance is not uniform, replace panels.

Cleaning: Clean completed surfaces to remove irregularities and leave panels smooth and clean, to the manufacturer's recommendations. If required, sand with fine paper to remove irregularities and refinish panel surface.

- Debris and unused material: Remove from site.

Warranties

Requirement: At practical completion, submit warranties against defective materials and installation.

4 SELECTIONS

4.1 SHEET LINING

Note: where specific product names are listed below alternatives may be proposed for approval by the Superintendent provided they are equal in performance, quality, function, and environmental impact

SHEET LINING SCHEDULE

Item	Thickness/Type	Location	Support system	Remarks
James Hardie, Hardie Plank weatherboard	smooth 230mm	Store outer wall front	Steel stud framing	
James Hardie, Villaboard	9mm thick with flushed joints	Store inner walls	Steel stud framing	

0551 JOINERY

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide joinery, as documented.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.

1.3 TOLERANCES

General

Requirement: Fabricate and install joinery items to substrates undamaged, plumb, level, straight and free of distortion**.**

Tolerances table

Property	Tolerance
Plumb and level	1:800
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	0
Joints in finished surfaces	0

1.4 SUBMISSIONS

Samples

General: Submit samples as follows:

- Drawer front: One sample, complete with hardware.

Shop drawings

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

- Overall dimensions.
- Materials, thicknesses and finishes of elements including doors, divisions, shelves and benches.
- Type of construction including mitre joints and junctions of members.
- Hardware type and location.
- Temporary bracing, if required.
- Procedures for shop and site assembly and fixing.
- Locations of benchtop joints.
- Stone benchtop layout including joint arrangement and penetrations.
- Locations of sanitary fixtures, stoves, ovens, sinks, and other items to be installed in the units.
- Relationship of fixture to adjacent building elements.
- Details of fabrication involving other trades or components.
- Proposals for the break-up of large items as required for delivery to the site.
- Proposed method of joining the modules of large items.

Timing: Before fabrication.

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

1.5 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.
- Completion of installation.

2 PRODUCTS

2.1 DELIVERY AND STORAGE

General
Requirement: 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 time to a minimum by delivering items only when required for installation.

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.

Concealed surfaces: Prime surfaces concealed by substrates.

Deficiencies: Examine joinery units for completeness and remedy deficiencies.

Substrate: Damp clean and vacuum substrate surfaces that will be permanently concealed.

Acclimatisation
General: Acclimatise the joinery items by stacking in the in-service conditions with air circulation to all surfaces after the following are complete:
- Air conditioning operational.
- Lighting operational.
- Site drainage and stormwater works are complete.
- Space fully enclosed and secure.
- Wet work complete and dry.

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

Fasteners
Visibility: Do not provide visible fasteners except in the following locations:
- Inside cupboards and drawer units.
- Inside open units, in which case provide proprietary caps to conceal fixings.

Visible fasteners: Where fasteners 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 maximum.
- Wall mounted units: To each nogging and/or stud stiffener.

Fasteners: Screws with washers into timber or steel framing, or masonry anchors.

Adhesives
General: Provide adhesives to transmit the loads imposed and for 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.

Hygiene requirements: To all food handling areas and voids at the backs of units in all areas, seal all carcass and junctions wall/floor, and cable and pipe entries with silicone beads for vermin proofing. Apply water resistant sealants around all plumbing fixtures and make sure sealants are fit for purpose.

3.2 COMPLETION

Protection

Timber treads: Provide full timber or plywood casing.

Cleaning

Temporary coatings: On or before completion of the works, or before joining up to other surfaces, remove all traces of temporary protective coatings.

Requirement: Remove all dust, marks and rubbish from all surfaces and internal spaces. Clean and polish all self-finished surfaces such as anodised and powder coated metals, sanitary ware, glass, tiles and laminates.

4 SELECTIONS

4.1 JOINERY AND ANCILLIARY FIXTURES

JOINERY SCHEDULE

Item	Locations	Selection	Remarks
Shelves	Back Wall Kitchen	Reclaimed Timber	Purpose made brackets as per details

4.2 CABINET WORK SCHEDULE

Refer to drawings for locations of materials and Laminate reference codes with Internal drawings for locations and extent of finishes

Cabinetworks schedule

Room	Item	Surface	Material	Hardware	Notes
Servery	Back Wall Counter	Bench top	S/Steel		
Servery	Back Wall Counter	Doors	Reclaimed Timber	Black pull handles	Lockable
Servery	Back Wall Counter	Drawers	Reclaimed Timber	Black pull handles	Lockable
Servery	Back Wall Counter	Internal Shelves	Reclaimed Timber		
Servery	Servery Island	Benchtop	Cast in Situ Concrete		Polished finish
Servery	Servery Island	Doors	Reclaimed Timber	Black pull handles	Lockable
Servery	Servery Island	Internal Shelves	Reclaimed Timber		

0552 METALWORK - FABRICATED

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide metal fixtures, as documented.

Performance

Requirements:

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

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.

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

Metals

Performance: Provide metals capable of transmitting the loads imposed and sufficient for 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.

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.

Tolerances: ± 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.

3.2 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.

4 SELECTIONS

4.1 FABRIACTED METALWORK

METALWORK SCHEDULE

Item	Selection & Description	Location	Remarks
Roof access	Ladder Secure Point	West Awning	
Lighting feature	Purpose mage suspended light shrowd suspended independently at light point	Shed	

0553 STAINLESS STEEL BENCHING AND APPLIANCES

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide stainless steel fixtures, as documented.

Supply, install and commission Appliances as scheduled

Performance

Requirements:

- Free of surface defects or distortions.
- Installed to conform to Heath authorities having jurisdiction over the installation.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *0171 General requirements*.

1.3 SUBMISSIONS

Shop drawings

General: Submit shop drawings showing the following:

- Bench/bench junctions.
- Welded joints.
- Material, grade and finish.
- Standard drawings for proprietary components.
- Proposals for the break-up of large items as required for delivery to the site.
- Proposed method of joining the modules of large items.
- Installation details required by Health Authorities.

Final Selection of Appliances

Prior to ordering appliances confirm final selection with Superintendent and Principal

Warranties

Requirement: Submit the manufacturer’s and installer’s warranty of the workmanship and application.

1.4 INSPECTION

Notice

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

- Fabrication complete, before delivery.
- Installation complete.

2 PRODUCTS

2.1 MATERIALS

Stainless steel

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

- Type: 316.

2.2 COMPONENTS

Fasteners

Material: Stainless steel.

Dimensional system: Metric.

Sealants
Type: Neutral cure one-part silicone.
Performance:
- Flexible.
- Resistant to physical and chemical damage characteristic of installed environment.
- Resistant to growth of mould, bacteria and fungi.
- Colourfast.

Curing period: Less than 4 days to a depth of 10 mm.
Peel strength (minimum): 100 kPa.
Colour: To match adjacent materials

Adhesive
Type: Spray contact adhesive.

3 EXECUTION

3.1 FABRICATION GENERALLY

Stainless steel welding
Process: Gas tungsten arc welding.
Weld type: Butt.
External weld category: Class B to AS/NZS 1554.6 Appendix B.
Surface finish: Grade I, 120 grit.
Welding materials: Compatible with metal being welded.
Weld quality: Free from imperfections such as cracks and pits. Grind and polish to give required surface finish. Continuous exposed welds.
Joints: Strength at least that of parent metal. Free from crevices and folds.
Joint position: At corners and edges as far as possible. Minimise joints in flat panels.

Protection
General: Provide temporary self-adhesive plastic film to stainless steel surfaces.

3.2 BENCHTOP FABRICATION

Benchtops
Material: Stainless steel sheet.
Thickness: 2 mm.
Overall bench width: Refer schedules below and drawings
Bench height: To top of dry bench and to top of perimeter bead to wet bench.
Bench lengths: Maximum, to minimise number of bench/bench junctions.
Exposed corners: Radius exposed corners at least 5 mm, including back vertical corners of upstands.
Internal back vertical corners: Fuse only from behind.
Wet bench perimeter: Except at wall flashing, provide a raised bead, with a fascia.
Dry bench perimeter: Except at wall flashing, provide a fascia.

Wall splashback
Type: Integral.
Height above bench: Refer details on drawings
Ends: Return.
Return to non-tiled wall: Refer details on drawings
Return to tiled wall: Refer details on drawings

Fixing to support frame
Type: Spot weld threaded stainless steel M5 studs to underside of bench top, centred over framing members, and 2 studs per front-to-back framing member. Make sure stud fixing does not indent the bench top. Provide star washers and nuts.

Benchtop support frame

Support: Provide sufficient support so that no load is placed on the waste pipe or water connections.

- Design deflection (maximum): 3 mm.

Members: 31.8 x 31.8 x 1.6 mm stainless steel tube. Seal ends.

Extent: Perimeter and at sides of bowls, with additional members spaced as follows:

- 1.6 mm sheet: 350 mm maximum centres.
- 2 mm sheet: 500 mm maximum centres.

Maximum unsupported area: 0.3 m^2.

Connections: Welded.

Fixing to benchtop: Pre-drill for studs.

3.3 INSTALLATION GENERALLY

Welding

General: Do not site weld.

Sealing

Gaps < 5 mm wide: Apply sealant at the following locations:

- Butt joints between benches.
- Between benches, including flashings, and walls.
- Spaces and gaps under benches.

Gaps ≥ 5 mm wide: Close with stainless steel infill panels.

3.4 COMPLETION

Protection

General: Temporary self-adhesive plastic film: Remove from stainless steel surfaces.

4 SCHEDULES

4.1 APPLICANCE AND STAINLESS STEEL BENCH SCHEDULE

Note: where specific product names are listed below alternatives may be proposed for approval by the Superintendent provided they are equal in performance, quality, function, and warranty

S/STEEL BENCHES AND APPLICANCE SCHEDULE

Item	Location	Qty	Product name and finish	Product Code
Back Counter & splashback	Servery Counter and splashback		Purpose made	

0573 FIRE EXTINGUISHERS AND BLANKETS

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide fire extinguishers and fire blankets, as documented.

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:
- *0171 General requirements*.

1.3 AUTHORISED PRODUCTS

General
Requirement: Provide equipment listed in the ActivFire Register of Fire Protection Equipment.

2 PRODUCTS

2.1 EXTINGUISHERS

Standards
General: Provide portable fire extinguishers and location signs as follows:
- General requirements: AS/NZS 1841.1.
- Water: AS/NZS 1841.2.
- Wet chemical: AS/NZS 1841.3.
- Foam: AS/NZS 1841.4.
- Powder: AS/NZS 1841.5.
- Carbon dioxide: AS/NZS 1841.6.
- Non-rechargeable: To AS/NZS 1841.8.

Selection and location: To AS 2444.

Certification: Required.

Certification provider: An organisation accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).

2.2 BLANKETS

Fire blankets
General: To AS/NZS 3504.

Certification: Required.

Certification provider: An organisation accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).

Selection and location: To AS 2444.

3 EXECUTION

3.1 COMPLETION

Maintenance
Fire extinguishers: To AS 1851.

Fire blankets: To AS 1851.

3.2 ATTACHMENT

Provide horizontal noggings between studs in framed walls to carry mounting-bracket fixings

Note - Fixing into plasterboard layer alone is not acceptable regardless of load rating of fixing

4 SCHEDULES

FIRE EXTINGUISHERS SCHEDULE

Code	Size and type	Location	Mounting height	Remarks
FE1	2.5kg DCP	Store & servery	750mm AFL	

FIRE BLANKET SCHEDULE

Code	Size and type	Location	Mounting height	Remarks
FB1	1.8m x 1.8m	Servery	1200 AFL	

0631 CERAMIC TILING

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide tiling systems to walls, floors and other substrates as documented.

Performance

Requirements:

- 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.
- 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:

- *0171 General requirements*.

1.3 STANDARDS

Tiling

General: Conform to the documented recommendations of those parts of AS 3958.1 which are referenced in this work section.

Slip resistance

Classification: To AS 4586.

1.4 INTERPRETATION

Definitions

General: For the purposes of this work section the following definitions apply:

- Adhesives - cementitious (C): Adhesive in which the binders are hydraulic, e.g. Portland cement, with aggregates and organic additives.
- Tiles: Thin slab made from clay and/or other inorganic raw materials used generally as coverings for floors and walls and adhered to continuous supporting substrates.

1.5 TOLERANCES

Completed tiling

Standard: To AS 3958.1 clause 5.4.6.

1.6 SUBMISSIONS

Execution details

Grouting: Submit proposals for grouting methods and materials.

Margins: If it appears that variations in joint widths or overall dimensions will avoid cut tiles, submit a proposal.

Products and materials

Product conformity: Submit current assessments of conformity as follows:

- Marking and classification of tiles with regard to water absorption and shaping to AS ISO 13006.
- Marking and classification of tile adhesive to AS ISO 13007.1.
- Weighted normalised impact sound pressure level to AS ISO 717.2 as measured for the acoustic underlay as part of the entire tiling system.

Samples

General: Submit labelled samples of tiles, including fittings, accessories, grout and sealants, illustrating the range of variation in colour and finish.

Sample panels: Prepare a sample panel of each type of tiling system as follows:
- Size: > 1 m^2.
- Include samples of junction details and trim.
- Preserve the panel until related work is complete.

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

2 PRODUCTS

2.1 GENERAL

2.2 TILES AND ACCESSORIES

Tiles
Standard: To AS ISO 13006.

Tactile ground surface indicators: To AS/NZS 1428.4.1.

Coves, nosings and skirtings: Provide matching stop-end and internal and external angle tiles moulded for that purpose.

Exposed edges: 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.

Accessories
General: Provide tile accessories which match the composition, colour and finish of the surrounding tiles.

2.3 ADHESIVES

General
Standard: To AS ISO 13007.1.

Type
General: Provide adhesives compatible with the materials and surfaces to be adhered, and as documented in the **Wall tiling schedule** and to the **Floor tiling schedule.**

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 GROUT

Type
Cement based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.

Terracotta tiles: Use proprietary polymer modified grout.

General purpose cement based grout: Mix with fine sand. Provide minimum water consistent with workability.

Mix proportions (cement: sand), by volume:
- For joints < 3 mm: 1:2.
- For joints ≥ 3 mm: 1:3.

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.

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:

- Toppings on slabs and rendering on brick or blockwork: A further 21 days.

3.2 PREPARATION

Standard
Preparation: To AS 3958.1 Section 4.

Ambient temperature
General: If the ambient temperature is less than 5°C or greater than 35°C, do not lay tiles.

Substrates without wet area membranes
General: Conform to the following:

- Clean off 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:
  . Remove excessive projections.
  . Fill voids and hollows greater than 10 mm with abrupt edges with a cement:sand mix not stronger than the substrate or weaker than the bedding.
  . Fill depressions less than 10 mm with a latex modified cementitious product and eliminate feathering 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.

Dense concrete: If not sufficiently rough to provide a mechanical key, roughen by scabbling or the like to remove 3 mm of the surface and expose the aggregate; then apply a bonding treatment.

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.

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.

Joint alignment: Set out tiling with joints accurately aligned in both directions and wall tiling joints level and plumb.

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.

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.

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, tested with a 3 m straightedge. Cover the entire tile back with adhesive when the tile is bedded.

Thickness: 1.5 to 3 mm.

3.6 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 tiled surface with grout film remover and a clean cloth.

Epoxy grouted joints: Make sure tile edge surfaces are free of extraneous matter such as cement films or wax, before grouting.

3.7 COMPLETION

Spare tiles
General: Supply spare matching tiles and accessories of each type for future replacement purposes. Store the spare materials on site.

Quantity: At least 2% of the quantity installed.

Cleaning
General: Clean tiled surfaces using an appropriate tile cleaning agent, and polish.

4 SELECTIONS

4.1 SCHEDULES

TILING SCHEDULE
Refer to drawings for locations of materials, cross reference codes with Internal drawings for locations and extent of finishes.
The nominated Supplier(s) listed below are a suggestion only. Contractor may purchase from other suppliers provided the product is equal in every way and approved by the Superintendent.

Tile selections

LA Code	Manufacturer / Supplier	Selection & Colour	Size mm	Grout
WTL-03	Supplier- Armanti	Etsy Black Finish: Matte 30029280 (Ceramic pressed edge)	200 200 Tile	Sanitised Grout: Driftwood #74

Tile Manufacturers / Suppliers Contact details

Company	Website	Address	Email	Telephone
Armanti	Armanti.com.au	97 Albert Rd, Bunbury WA 6230	Gabby@armanti.com.au	(08) 9791 3500

Tiling schedule

Room	Surface	Tile Code	Remarks
Servery	Brick Wall behind cooker	WTL-03	Finish all exposed edges of tiles with trim brushed aluminium Bratt Trim

0671 PAINTING

1 GENERAL

1.1 RESPONSIBILITIES

General
Requirement: Provide coating systems to substrates, as documented.

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

1.2 CROSS REFERENCES

General
Requirement: Conform to the following:
- *0171 General requirements*.

1.3 STANDARDS

Painting
General: To the recommendations of those parts of AS/NZS 2311 referenced in this work section.

1.4 SUBMISSIONS

Warranties
General: Submit the coating manufacturer's warranties

2 PRODUCTS

2.1 GENERAL

Storage and handling
General: Store materials not in use in tightly covered containers in well-ventilated areas with temperatures maintained at the manufacturer's recommendations.

2.2 PAINTING MATERIALS

Standards
Paint types: To AS/NZS 2311 Table 4.2 and the following:
- Metal primer for steel, lead and chromate free: To AS 3730.21 and AS/NZS 3750.19.
- Metal primer, latex: To AS 3730.15.
- Metal primer for metallic-coated surfaces, solvent-borne: To AS 3730.21.
- Zinc-rich organic binder/primer for steel: To AS/NZS 3750.9.

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 topcoats.

Putty and fillers
Material: To the recommendations of the paint system manufacturer, 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: To the *Poisons Standard (including SUSMP 11)* Part 2 Section 7.

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 the 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 from dust contamination. Use drop sheets and masking agents to protect surfaces, including finished surfaces and adjacent finishes, during painting.

Fixtures and furniture: Remove door furniture, switch plates, light fittings and other fixtures before painting, and conform to the following:

- Labelling and storage: Attach labels or mark fixtures using a non-permanent method, identifying location and refixing instructions, if required. Store and protect against damage.

Difficult to remove fixtures: Where removal is impractical or difficult, apply surface protection before substrate preparation and painting.

Substrate preparation – generally
General: Prepare substrates to receive the painting systems to the paint manufacturer's recommendations.

Cleaning: Clean down the substrate surface. Do not cause damage to the substrate or 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.

Unpainted surfaces
Standard: To AS/NZS 2311 Section 3.

Cleaning external surfaces
Sound external surfaces other than timber: Remove dirt, grease, loose and foreign matter, efflorescence and mould by water blasting or steam cleaning without damaging the surface. Remove remaining loose material with appropriate hand tools. Use sanding blocks to preserve the arrises of masonry and stone details.

Efflorescence: Eliminate the source of salt and water before cleaning. Allow surface to dry for 15 to 30 days before repainting.

New masonry: Allow 30 days for the masonry to cure and pH level to stabilise before painting.

3.2 PAINTING

Light levels
General: ≥ 400 lux.

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

Paint application
Standard: To AS/NZS 2311 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.

Painting conditions
General: Unless the paint is recommended for such conditions, do not paint under the following conditions:

- Dusty conditions.
- Relative humidity: > 85%.
- Surface temperature: < 10°C or > 35°C.

Priming before fixing
General: Apply one coat of wood primer, and 2 coats to end grain, to the back of the following before fixing in position:

- Timber door and window frames.
- Bottoms of external doors.
- Associated trims and glazing beads.

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

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

Paint with known health hazards: Provide personal protection, masking, ventilating and screening facilities to AS/NZS 4114.1 and AS/NZS 4114.2.

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.

Maintenance painting: To AS/NZS 2311 Section 8.

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

Services
General: Paint all new services and equipment, including those in plant rooms, if not embedded, except chromium, anodised aluminium, GRP, PVC-U, stainless steel, non-metallic flexible materials and normally lubricated machined surfaces.

Proprietary items: Repaint only if damaged.

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.

3.3 COMPLETION

General
Protection and masking: Remove masking and protection coverings before paint has dried.

Cleaning: On completion of painting, remove splatters by washing, scraping or other methods which do not scratch or damage adjacent finished surfaces.

Reinstatement: Repair, replace or refinish any damage, including works of other trades. Touch up new damaged decorative paintwork or misses only with the paint batch used in the original application.

Removed fixtures: Refix undamaged fixture in the original location, make sure they are properly fitted and in proper working order.

Disposal of paint and waste materials.
Requirement: Conform to requirements of the local government authority.

4 SELECTIONS

4.1 PAINTING SYSTEMS

General
Number of coats: Except where one or two coat systems are documented, each paint system consists of at least 3 coats.

Final coat selection: To the **INTERIOR PAINTING SCHEDULE** and the **EXTERIOR PAINTING SCHEDULE**.

Low VOC emitting paints
General: Provide the VOC limits as documented in the **Interior painting schedule** and the **Exterior painting schedule**.

New unpainted interior surfaces
Standard: To AS/NZS 2311 Table 5.1.

New unpainted exterior surfaces
Standard: To AS/NZS 2311 Table 5.2.

Previously painted surfaces
Standard: To AS/NZS 2311 Tables 8.2 and 8.3.

Specialised painting systems
Standard: To AS/NZS 2311 clause 5.2. Provide the following final coats:

- High build textured or membrane finishes for concrete and masonry: B38 using products conforming to the AS 4548 series.
- Two-pack gloss pigmented polyurethane: B44.
- Two-pack epoxy: B29.
- Two-pack water based epoxy: B29A.

Typical paint system specifications The following systems are based upon Dulux products and specifications. Contractors may utilises equal approved systems from other manufacturer's provided they are equivalent in every aspect with regards to quality, coverage, durability and warranty. All paint systems throughout the project shall be from one paint manufacturer only and shall consist of only that one manufacturer's products.		
EXTERIOR		
(A)	Exposed steel work	**<u>Galvanised Steelwork</u>** Prepare as per Protective Treatment under Structural Steel Specification Section then finish as follows: **Dulux specification code AUSI3359** **Coating System Summary -** **Primer:** AUDI1116: Dulux Duremax GPE Zinc Phosphate Two Pack Epoxy **Intermediate:** AUDI1115: Dulux Duremax GPE - Pc255 Two Pack Epoxy **Top Coat:** AUDI1156: Dulux Weathermax HBR Two Pack Gloss **<u>Non galvanised steelwork</u>** Prepare as per Protective Treatment under Structural Steel Specification Section then finish as follows: **Architectural Coating System Summary –** **General EXPOSED steel: Two Coats (Min** 75 microns) Dulux Weathermax HBR **NOTE: ALL ARCHITECTURAL TOP COATS SHALL BE APPLIED OFF SITE IN CONTROLLED ENVIRONMENT. CARE SHALL BE TAKEN IN TRANSPOTATION TO GUARD AGAINST DAMAGE TO TOP COATS.**

		NOTE: Where possible, steel work shall be shop painted prior to delivery to site and touched up on site. *Abovementioned Dulux specifications are abbreviated.* *For complete Dulux specifications, contact Dulux Australia and quote the Dulux Specification Code..*
(B)	Zincalume metal	**Dulux specification code AU_ AU_SD10871** **Coating System Summary** **Prep Coat:** AUDD1169: Dulux Professional Total Prep **2nd Coat:** AUDD1282: Dulux Aquanamel Gloss **3rd Coat:** AUDD1282: Dulux Aquanamel Gloss
(C)	Fibre Cement Sheet (FC & CFC)	**Dulux specification code AU_SD10183** **Coating System Summary** **Prep Coat:** AUDA0441: Dulux AcraTex Acraprime Water Based **2nd Coat:** AUDD0053: Dulux Weathershield Low Sheen **3rd Coat:** AUDD0053: Dulux Weathershield Low Sheen
(D)	Exposed Steelwork	**Non galvanised interior steelwork** Prepare as per Protective Treatment under Structural Steel Specification Section then finish as follows: **Dulux specification code AU_SD07570** **Coating System Summary -** **1st Coat:** AUDI1136: Dulux Luxaprime Zinc Phosphate **Primer** **2nd Coat:** AUDD1282: Dulux Aquanamel Gloss **3rd Coat:** AUDD1282: Dulux Aquanamel Gloss
(E)	Plasterboard Walls	**Dulux specification code AUSA4500** **Coating System Summary** **Primer:** AUDD0155: Dulux Professional Acrylic Sealer Undercoat **2nd Coat:** AU_DD02070: Dulux Wash&Wear Low Sheen **3rd Coat:** AU_DD02070: Dulux Wash&Wear Low Sheen
(F)	Doors	Lightly sand surface **Dulux specification code AUSD3200** **Coating System Summary** **1st Coat:** AUDD1169: Dulux Professional Total Prep **2nd Coat:** AUDD1282: Dulux Aquanamel Gloss **3rd Coat:** AUDD1282: Dulux Aquanamel Gloss
(G)	Steel door frames	Degrease & lightly sand surface **Non galvanised interior steelwork** Prepare as per Protective Treatment under Structural Steel Specification Section then finish as follows: **Dulux specification code AU_SD07570** **Coating System Summary -** **1st Coat:** AUDI1136: Dulux Luxaprime Zinc Phosphate **Primer**

		2nd Coat: AUDD1282: Dulux Aquanamel Gloss **3rd Coat:** AUDD1282: Dulux Aquanamel Gloss

4.2 PAINTING SCHEDULES

Paint selections

LA Code	Manufacturer / Supplier	Selection	Colour	Finish
PNT-01	Taubmans	Ultimate Enamel	White Illusion	Semi Gloss
PNT-05	Taubmans	Exterior – All Weather	Smoke Haze	Low Sheen
PNT-02	Taubmans	Exterior – All Weather	Woodland Grey	Low Sheen

Internal Painting schedule

Room	**Walls**	**Ceiling**	**Doors**	**Door frames**
Store	PNT-05 Inner and outer walls	N/A	PNT-01	PNT-01

External Painting schedule

Location	**Elements**	**Paint Code**	**Remarks**
East & West Awnings	Rafters, Purlins and Columns	PNT-02	