SPECIFICATION

PROPOSED
HUDSON BUILDING,
VICTORY LUTHERAN COLLAGE.
JOB No. 7608

ROB PICKETT DESIGN

BUILDING DESIGN & MANAGEMENT SERVICE

ALBURY/WODONGA

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Incredible Ideas Pty Ltd (A.B.N. 72 003 725 246) Trading as Rob Pickett Design

1. GENERAL CONDITIONS OF CONTRACT

1.1 SCOPE OF WORK

These specifications cover work necessary for the construction of the proposed works:

Project: **PROPOSED 'THE HUDSON CENTRE' BUILDING.**

Address: **28 DRAGE ROAD, WODONGA. VICTORIA. 3690.**

Proprietor: **VICTORY LUTHERAN COLLAGE.**

The specifications shall be taken as being generally applicable to the design as indicated on the accompanying Working Drawings and forming part of the Contract.

Documents

The contract documents shall comprise following; refer to Drawings Schedule for a comprehensive list:

Working Drawings as scheduled

The Agreement and Conditions of Contract "AS 4000 – 1997 General Conditions of Contract, & Part A, Annexure".

1.2 DEFINITIONS

Where the word **Owner/s** is mentioned throughout these specifications, it shall also mean **Proprietor/s.**

Where the word **Builder** is mentioned throughout these specifications, it shall also mean **Building Contractor.**

Where the word **Council** is mentioned, it shall mean the **Certifying Authority.**

Where the word **Superintendent** is mentioned, it shall mean **Rob Pickett Design** designated representative.

1.3 APPROVALS, SERVICES, FEES AND GOODS & SERVICES TAX

A. Application for a Construction Certificate shall be obtained by the Proprietor, including associated fees.

B. A **Planning permit** has been received by the Authority for this project.

C. The Building Contractor is to allow for mandatory building inspections and any additional regulatory inspections and or fees required for the satisfactory compliance with the Building Code of Australia (NCC) and the Occupancy Certificate.

D. Building Contractor be responsible for the connection of services, water, sewerage, drainage, electricity and gas etc. Apply for such permits, pay for fees and charges levied by relevant bodies for such connections. Issue necessary notices to such bodies. Obtain and pay for scaffolding permits.

E. Pay fees, where applicable, relating to "Workplace health and Safety" Acts and other state or local government acts.

F. Include for GST on all items, including Prime Cost & Provisional Items, unless otherwise directed by these specifications.

1.4 INFORMATION TO SUBCONTRACTORS, SUPPLIERS AND INSTALLERS

Advise Sub-contractors and suppliers and installers of material of the requirements of this Section of the specification.

1.5 INTERPRETATION OF DRAWINGS

Check dimensions on site before proceeding with the work of the Contract.

Notify Superintendent of omission or conflict in Drawings and their relation to Specifications.

1.6 COMMENCEMENT OF WORK

Notwithstanding that possession of the site has been given to the Builder, the Builder shall not be permitted to commence work on the site until he has provided:

A. Security required by the Conditions of Contract, as stated in the Annexure to the Conditions of Contract.

B. Insurances: refer Clause 1.55 below.

C. Submit to the Superintendent's representative for approval, an Environmental; and an Occupational Health & Safety plan plus supporting documentation.

D. Project Construction Schedule, Trade Rates and a Progress Claim schedule.

1.7 CONSTRUCTION PROGRESS BAR GRAPH

Within fourteen (14) calendar days after the date of Letter of Acceptance of tender, submit to Superintendent a detailed chart of the plan of progress, in Bar Graph form. For each item of work provide a graph showing planned progress with planned monthly quantities and with space or other provision for entering actual progress.

Submit bar-graph at monthly intervals showing actual progress.

1.8 COMPLIANCE WITH ORDINANCES, ETC.

Whenever work or type of plant or machinery, etc. is required either by the Specification or by the relevant Statutory Authority, provide full details of such work, plant, etc. to the relevant Statutory Authority and make such applications, etc. as may be required within two weeks of receipt of Letter of Acceptance.

In such cases, approval given by Superintendent to data submitted by the Builder will not necessarily imply that such data meet the requirements of the relevant Statutory Authority.

1.9 SITE CONTROL

A. Be responsible for activities on the site including providing access for authorised persons and restricting access by unauthorised persons. Take necessary precautions to secure the assets of the Proprietor.

B. Except as otherwise provided in the contract, delivery of materials for the works, space for storage of same and for building sheds, office and workshops will be allowed only as directed by the Builder.

C. Do not store waste building materials and flammable liquids in the building.

D. Take proper precautions to keep poisons and other injurious substances in places secured against access by unauthorised persons.

E. Management of site access under existing Cola structure. Allow for site access closure twice a day as indicated on sheet A03 for student access to the canteen during their recess and lunchtime breaks.

1.10 PRIME COST AND PROVISIONAL ALLOWANCES

The Prime Cost Amounts included in this contract shall be those listed and shall be normal trade prices in the Local Region, including Sales Tax where applicable. The Builder shall take delivery of PC Items, allow for cartage to the site, fixing and profit on all items and shall be responsible for any damage or loss up to the time of handing over the completed works.

Include for Attendance, Overheads and Profit on all items.

1.11 INDEMNITY OF PROPRIETOR

A. Indemnify, and keep indemnified the Proprietor against claim, demand, action, suit or proceeding that may be brought or made against the Proprietor by any other person who has entered into a Contract with the Proprietor to execute work associated with the Project.

B. Submit evidence of such insurance in respect of loss, damage or expense incurred by that other person by reason of an act, default or neglect of the Builder in the performance of his obligations under the contract or arising out of or as a consequence of delay by the Builder in executing or failing to complete work under the Contract and also from costs and expenses that may be incurred by that other person in connection with such claim, demand, action, suit or proceeding.

C. Do not proceed with work under the Contract until evidence of Indemnities and Insurances required herein, is submitted in writing to Superintendent.

1.12 ADJACENT PREMISES

Ensure that the work is carried out without damage to and with a minimum of nuisance or annoyance to the occupants of adjacent premises.

Provide a thorough photographic record of surfaces of existing buildings adjacent to the site.

1.13 ADJOINING OWNERS

Contractors shall obtain the permission of the adjoining owners before making any trespass on to their property for any purpose whatsoever and shall exercise every caution when performing any portion of the Works which may directly or indirectly affect the property adjoining owners.

No variation to the contract sum or time shall be granted on the grounds of injunctions against Contractor or Proprietor restricting the Contractors working hours or the type of equipment which may be used, unless, in the opinion of Superintendent, all reasonable precautions and actions have been taken to avoid the injunction.

1.14 GENERAL ATTENDANCE ON SUB-CONTRACTORS

General attendance shall include taking delivery, assisting to unload, storing and protecting Sub-Contractor's materials and for allowing Sub-Contractors ample working space, free use of water, electricity (unless otherwise described), scaffolding, hoists and ordinary plant, etc., and messing and sanitary accommodation and for cutting away, building in and protecting finished work and making good.

1.15 PRECAUTIONS IN CARRYING OUT WORK UNDER THE CONTRACT

Unless otherwise specified in the Contract, observe, in the absence of statutory requirement to the contrary, the relevant current Australian Standard published by Standards Australia relating to storage, transport, use of materials, explosives, fire precautions in arc or flame cutting flame heating and arc or gas welding operations, plant and equipment, work processes and safety precautions.

1.16 DAMAGED SERVICES

Where existing services at or adjacent to the site are in non-optimum condition, arrange for an inspection by Superintendent and the Officer-in-charge of the area responsible for such service. At such meeting, record the condition and follow instructions when issued in writing by Superintendent.

1.17 WARRANTY BONDS

Provide written warranties as here in after specified.

1.18 SOLID, LIQUID AND GASEOUS CONTAMINANTS

A. Be responsible for the proper disposal of solids, liquid and gaseous contaminants.

B. Discharge gaseous contaminants in such a manner that they will be sufficiently diluted with fresh air that the toxicity will be reduced to an acceptable level.

C. Subject to statutory and local requirements, liquid contaminant may be diluted with water to a level of quality acceptable in the sewer system or contained in approved vessels for disposal at sites approved by the relevant Authority.

D. Dispose of solid contaminants by removal from the site to locations approved by the relevant Authority.

1.19 DISPOSAL OF REFUSE

Refuse from construction operation (including food scraps and the like) shall be removed from the site at frequent intervals, not exceeding one week.

1.20 SHOP DRAWINGS

Shop Drawings mean complete Drawings showing details of fabrication, assembly, installation, fixing and waterproofing methods of specific items or components, and shall include necessary explanatory notes and specifications.

When preparing Shop Drawings, do the following:

A. Include provision in construction program for the production and distribution of Shop Drawings.

B. Refer discrepancies discovered in the Contract Documents to Superintendent for direction.

C. Verify relevant dimensions. Dimension Drawings so that the items or components fit accurately into the required positions.

D. Ensure that Shop Drawings conform with the requirements of the Contract.

E. Drawings shall be of consistent standard size and presentation.

F. Submit 4 initial copies, one of each of the following: Specialist Subcontractor, Builder, Superintendent, relevant Consultant. Subcontractor submits 4 and gets 1 back. Builder submits 4 and gets 2 back. All parties retain one copy. If amendments are required, one copy will be marked and returned to the Builder for amendments to the original Shop Drawings. (This process may be repeated until Superintendent considers that the Shop Drawings are satisfactory.) Do not fax shop drawings as they are often illegible on receipt.

G. When the Shop Drawings are satisfactory, one copy will be stamped by Superintendent. Supply two additional copies of the satisfactory Shop Drawings to Superintendent. Provide also as required for the Builder's site office, manufacturers or Sub-Contractors.

H. Acceptance of Shop Drawings shall imply only that the Builder's interpretations of the relevant requirements of the Contract are generally correct, but shall in no way relieve the Builder of his obligations under the Contract to construct and complete the Works correctly and accurately.

I. Do not order, manufacture, assemble or supply any item or component needed according to requirements of Shop Drawings until Superintendent returns the applicable stamped Drawings.

1.21 PATENT RIGHTS

Ensure that no patent is infringed and that unless otherwise specified, amounts payable and conditions imposed in respect of the manufacture, use or exercise of patented invention are paid and complied with and shall indemnify the Proprietor against claims, damages, costs, charges and expenses in way whatsoever arising out of the manufacture, use or exercise by the Builder of patented invention.

1.22 SITE TELEPHONE

Provide either a mobile telephone or a telephone site service and pay costs of installation, rental, calls and removal.

1.23 LIGHT AND POWER

Temporary electric light and power supply during construction shall be provided via existing services.

1.24 WATER

The Builder is permitted to tap & use the supply service during construction.

1.25 INTERFERENCE WITH EXISTING SERVICES

Notify Superintendent no later than 24 hours prior to connection, disconnection, damage or interference with existing services. At all times maintain existing services for the seamless operation of the existing Hostel services.
Repair, to the satisfaction of Superintendent, damage that occurs to services during currency of the contract.

1.26 MATERIAL/COLOUR SELECTIONS

Superintendent will prepare a master Colour Schedule indicating the required colour, finish, pattern, material, texture and other pertinent information in connection with interior and exterior finishes.

1.27 SITE AMENITIES AND MEETINGS

A. Provide statutory and necessary amenities and sanitary facilities for site workers where such are not already available in suitable locations. Maintain in working condition and clean daily. Comply with statutory and or Union requirements where applicable.

B. Provide accommodation on the site of sufficient size to hold regular site meetings of Building Foreman, Superintendent and Consultants (assume total of ten people), with table and chairs, lighting and heating.

C. Superintendent shall arrange for Site meetings to occur at regular intervals throughout the contract period. Accurate records of each meeting will be produced by Superintendent, and issued to each attendee within three working days of each meeting.

1.28 AUTHORITY APPROVALS AND CERTIFICATES

Prior to the issue of Practical Completion Notice for the whole or sections of the work, lodge with Superintendent relevant certificates issued by Local Authorities.
Produce to Superintendent a certificate of clearance of reinstatement of damage to footpaths and road, etc. from the appropriate Road Authority or City Engineer before issue of Practical Completion Notice.

1.29 CARE OF THE WORKS

A. Delivery, Handling and Storage: Deliver, handle and store products in accordance with manufacturer's recommendations and by methods and means that will prevent damage, deterioration, and loss including

theft. Control delivery schedules to minimise long-term storage of products at site and over-crowding of construction spaces. In particular, co-ordinate delivery and/or installation to ensure minimum holding or storage times for products recognised to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.

B. Limiting Exposure of Work: To the extent possible, through control and protection methods, supervise performance of work in a manner which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, or damaging exposures during construction period.

C. Cleaning and Protection of Finished Work: General: during handling and installation of work as project proceeds, clean site and protect work in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where required to ensure freedom from damage or deterioration at a time of Practical Completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary throughout remainder of construction period. Adjust and lubricate operable components to ensure equipment operates as intended.

1.30 BUILDER'S QUALITY CONTROL

A. Inspect each item of materials or equipment immediately prior to installation and reject damaged or defective items.

B. Provide attachment and connection devices and methods for securing materials properly as they are installed, true to line and level, and within recognised industry tolerances unless otherwise indicated. Allow for expansion and building movements. Provide uniform joint widths in exposed Work, organised for best possible visual effect. Refer questionable visual effect choices to Superintendent.

C. Re-check measurements and dimensions of the Work as an integral step before starting each installation.

D. Install work during conditions of temperature, humidity, exposure and weather which will ensure the best possible results for each part of the work, or component or treatment as necessary to prevent damage and deterioration.

1.31 MATERIALS

Unless otherwise specified, materials used throughout these works shall be new, of good quality and subject to the approval of Superintendent and other Governing Authorities and be in general conformity with the most recent Specifications and Codes of Practice laid down by the Standards Association of Australia, where such exist or any amendments thereto.

1.32 CLEAN SITE AND ACCESS ROADS

Be responsible for maintaining clean roads and access.

All roads, pavements, bitumen surfaces and adjoining property damaged by the Builder during the execution of this contract shall be made good by the Builder, at his expense to the satisfaction of the person/s and/or authorities concerned. Remove and clean away mud, building debris from footpaths, gutters, drains, walls etc. when such occurs.

1.33 GENERAL PRODUCT COMPLIANCE

A. Provide products which comply with requirements, and which are undamaged and unused at time of installation, and which are complete with accessories, trim, finish, features required by regulation, and other devices and details needed for a complete installation and for intended use and effect.

B. *Standard Products*: where available, provide standard products of types which have been produced and used previously and successfully on other Projects and in similar applications.

C. *Continued Availability*: where additional amounts of a product, by its application, are likely to be needed by Proprietor at a later date for maintenance and repair or replacement work, provide a standard, domestically produced product which is likely to be available to Proprietor at such later date.

D. *Manufacturer's recommendations*: where installations include manufactured products, comply with manufacturer's current and applicable recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

E. *Manufacturer's Data Sheets*: where this Specification requires, obtain two copies of the current data sheets issued by the manufacturer of specified component. Retain one copy for use on site and submit the other to Superintendent as a record of instructions followed on the site.

1.34 QUALITY ASSURANCE

Provide, implement and maintain a quality assurance system to AS/NZS ISO 9001. This system includes at a minimum the following elements:

A. Submission at time of tender of a copy of the firm's general quality management system including quality manual, technical procedures, sample forms used in the quality management system and quality checklists if used. If the firm has had a third party certification audit prepared by a registered lead assessor within the last two years, a copy of such audit will be accepted in lieu of the required submission.

B. Submission within 30 days of award of contract, a project-specific quality plan.

1.35 FINAL CLEANING

Final Cleaning: provide final cleaning of the work of this Specification, 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.

A. Remove labels that are not required as permanent labels.

B. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances that are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent materials.

C. Clean exposed exterior and interior hard surfaces finished, to a dirt free condition, free of dust, stains, fingermarks, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces.

D. Wipe clean surface of mechanical and electrical equipment, including lift and similar equipment; remove excess lubrication and other substances.

E. Remove debris and surface dust from limited access spaces.

F. Clean concrete floors broom clean.

G. Vacuum clean carpet and similar soft surfaces.

H. Clean plumbing fixtures to a sanitary and polished condition, free of stains including those resulting from water exposure.

I. Clean light fixtures and lamps so as to function with full efficiency.

J. If permanent lighting fixtures have been used for construction purposes, replace globes with new.

K. 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.

L. Label keys for locks accurately and provide in duplicate to Superintendent at the completion of the Project.

1.36 PLANS AND SPECIFICATIONS

The intent of the contract and these plans and specifications is to provide for the work set out and described herein to be completed. Any work indicated on the plans but not described in the specification or vice-versa, any item not shown in either plan or specification but is reasonably or properly to be inferred as part of construction and/or finish, shall be deemed to be included in the specifications. **Should there be a discrepancy between any of the Plans and Specifications within the tender or contract documentation, the contractor shall be deemed to cover the alternative, which involves the greater cost.**

1.37 PLANT AND LABOUR

The Builder shall supply materials, scaffolding, tools and plant and do works in all trades necessary to carry out the true intent of the working drawings and specifications, to a satisfactory completion of the Contract in all respects.

1.38 RECORD OF SERVICES

Obtain from Superintendent, two additional copies of the Drawings and mark thereon the exact position and route of underground piping as actually laid, by dimensions from boundaries, buildings and other fixed points.
The position of valves, branches, inspection openings and the like, shall be dimensioned and checked by the Builder before the work is covered up. Record on the Drawings the invert levels of drains and other relevant piped services. Variations in position of size of the pipes, valves and the like within the building, shall also be marked on these sets of Drawings and checked by the Builder.
The dimensioned Drawings shall be returned to Superintendent on completion to enable an exact record of the whole installation to be made for use in future maintenance.

1.39 PUBLIC HOLIDAYS AND AWARDS

Allow in the Tender for all Public and Trade holidays which may occur during the Contract Period including the Provisional Period for Delay and any extension thereto. Observe all Awards and Industrial Agreements having application to all the works.

1.40 DOCUMENTS FOR INSPECTION

A copy of the Working Drawings and Specifications supplied in connection with the contract shall be available on-site for inspection at all times.

1.41 STANDARDS

Materials:- Unless otherwise specified materials shall be new and of the best quality of the respective kinds specified and all subject to Superintendent's approval. Remove condemned materials from site at once. Treat materials damaged on site as condemned. Use proprietary materials and products strictly in accordance with maker's instructions and deliver to the site in their original unbroken containers. Supply evidence if required of the quality of materials.
Workmanship:- Shall be up to first class standards and to the approval of Superintendent who shall decide how far trade customs shall prevail.
Standards:- SAA Specifications and Codes shall apply to materials and workmanship where not in conflict with the provisions of this Specification.
Apply the latest version of Australian Standards, even if these specification indicate an older version.

1.42 SITE INSPECTION

The approximate levels are indicated on the Working Drawings but Tenderers must visit the site, check the levels and make allowances for any discrepancy, and in addition check all services and the conditions existing on the site and in any subsequent excavation or erection. This is to be done before submitting tender.

1.43 SUPERVISION

The Builder shall be responsible for the overseeing of all tradesmen and materials. Maintain a Site Foreman or other person responsible for such day to day organisation.
Superintendent shall administer the Contract & inspect the work from time to time to ensure that it is being undertaken as required by the intent of these documents.

1.44 SECURITY

The Builder shall be responsible for providing proper and adequate safeguards against theft and vandalism for the works and for fixed and non-fixed materials on the site during both working and non-working hours and shall take all precautions and full responsibility to ensure that security of the existing building is not compromised in any way and shall be responsible for the complete replacement of any materials of work which are stolen or damaged prior to Practical Completion.

1.45 EROSION & SEDIMENT CONTROL

Contractor shall be mindful of sediment and erosion of the building site.
Make allowances to restrict erosion by the implementation of a sediment control programme, not limited to

Straw bail covers to pits.

Low level woven mesh barriers.

“Shake down” gravel covered areas.

Designated soil and waste storage areas suitable protected from water or wind blown erosion.

1.46 DIMENSIONS

Dimensions figured on the drawings shall be given preference to scaled dimensions. Internal dimensions shall be taken between plates. External dimensions shall be taken over brickwork. Ceiling heights shall be taken between finished floor level and underside of finished ceiling.
The Builder shall verify all measurements and levels on the site before ordering materials, commencing site works or any fabrication. Commencement of work or the ordering of materials shall mean the acceptance of measurements as presented.

1.47 SUPERINTENDENT'S INSPECTION

Superintendent is to have access to works at all times and is entitled to have any part of the work opened up or cut away for inspection. If work is defective, cost of opening up to be paid by the Builder, if not defective, cost to be paid by the Proprietor.

1.48 ACCESS

Maintain access for Superintendent or his appointee to the site at all times for the purpose of inspecting works. Superintendent's decision on the acceptance or rejection of any portion of the works shall be binding on the builder and any nominated sub-contractors and suppliers.

1.49 SITE ALLOWANCES

The Builder shall be deemed to have made all necessary allowances in regard to complying with the statutory and industrial agreements relevant to the Building Industry.

This includes Site Allowances, special Site Agreements, Award conditions and the like.

No extension of time or additional monies will be allowed for non-compliance with this clause.

1.50 LIQUIDATED DAMAGES

Should the Contractor fail to complete the work within the contract time, (including authorised extensions of time, if any) he shall pay or allow to the Owner a sum calculated at the rate mentioned in the schedule over the period during which the works remain incomplete.

Should the Contractor consider he is entitled to extra time to complete he must at the time of the occurrence causing any delay immediately notify Superintendent, in writing, giving details of the delay. Superintendent will then promptly notify the Contractor of this decision on this matter. This procedure must be followed whenever the Contractor considers that any occurrence hinders his work program.

1.51 INCLEMENT WEATHER

Keep accurate records of time lost through inclement weather and inform Superintendent on the same day when such lost time occurs.

1.52 INSTRUCTIONS

Accept instructions relative to this Contract only from Superintendent. Instructions issued by others shall have no validity and the consequences of accepting any such unauthorised instructions shall be borne by the builder.

1.53 CONTRACTOR'S RESPONSIBILITY

Contractors shall be entirely responsible for ensuring that all operations and methods of construction, materials and workmanship are safe, sufficient and in accord with the contract documents. No inspection by Superintendent and no instruction given or certificate issued by Superintendent shall be deemed to imply that Superintendent has assumed or taken over any part of the Contractors responsibility as defined above.

Contractors shall be solely responsible for the execution and completion of the contract including all sub-contracted work which he shall co-ordinate so that the Works proceed without delay.

1.54 PROGRESS PAYMENTS

A. Progress claims shall be made for work completed in each calendar month. With each claim for progress payment, the Builder shall submit a schedule of all trades showing the full amount allocated to each trade section, each approved variation to date, **the percentage of completed work and materials installed in each trade section** and in each variation; the portion of the claim for progress payment relating to each trade section and variation. Where progress payments include payment for work by nominated sub-contractors, such sub-contractors shall be paid by the Builder within seven days of payment being made to the Builder (subject to retention's where applicable).

B. A Statutory Declaration signed by the Builder confirming that:

"There are no outstanding payments due to sub-contractors or suppliers for work completed or materials supplied, previously claimed and subsequently paid, under a previous Progress Payment".

1.55 INSURANCE OF THE WORKS

The Builder in the joint names of himself and the Proprietor (both of whom are referred to in this sub-clause as "the insured") for their respective rights and interests shall have or effect insurance upon such terms and conditions as shall be agreed by the Proprietor and the Builder under a Contractor's all Risks Insurance Policy or Policies which shall cover the whole of the Works including any associated temporary works and including material incorporated or to be incorporated therein the property of the insured or for which they are responsible and whilst on or adjacent to the site of the Works in respect of loss destruction or damage of or to the property insured for not less than the full amount of the Contract Sum plus an amount of not less than that stated in the First Schedule to provide for additional costs of demolition and or removal of debris plus the percentage stated in the said Schedule to cover the fees of the Consultants plus the value stated in the said Schedule of any materials or things to be supplied by the Proprietor for the purpose of the Works plus the percentage (if any) stated in the First Schedule of the total of the foregoing items to provide for escalation costs incurred during the period of this Contract.

1.56 RECTIFICATION OF DEFECTS

Defects reported during the "defects liability period" shall be rectified progressively and not allowed to accumulate. Defects which affect safety or health or which seriously interfere with the essential functions of the building shall be rectified immediately they are reported, other defects within a reasonable period thereafter.

1.57 PROPRIETARY ITEMS

When trade or proprietary names, brands, catalogue or reference numbers are specified in the tender documents, they are intended to set a minimum standard and preference for any particular material or equipment is not intended. The successful Tenderer may **offer** (for consideration) material or equipment of similar characteristics of type, quality, appearance, finish, method of construction and performance. Any change from nominated or specified trade or proprietary names, brands, catalogue or reference numbers must be submitted by builder to the superintendent for review and shall only proceed once confirmation is provided to builder by the superintendent.

1.58 PRACTICAL COMPLETION

Practical Completion shall mean "reasonably fit for use and/or occupation as Certified by Superintendent", in addition to operations stated elsewhere, the following operations have been satisfactorily completed:-

The building is made watertight and weatherproof and the external walls are complete.

The requirements of the local and other authorities have been complied with.

The electric light and power installation is complete and other services in working order.

All finishing's including painting are complete and all surfaces cleaned and/or polished where applicable.

The Builder's items of plant have been removed from the Works.

Hand over all instructions for operation of equipment and components and all guarantees and maintenance schedules.

The air conditioning and ventilation systems are working and are balanced.

Provide for all regulative Certificates from the Local Authorities and Tradesman.

Receipt by the Superintendent of a CERTIFICATE OF OCCUPANCY by the Certifying Authority.

1.59 SITE MEETINGS

Site meetings shall be held fortnightly onsite from commencement of building site establishment. The Contractor will carry out minutes from each meeting and will distribute out after, then review at the following meeting.

2. SCHEDULES

2.1 PROVISIONAL SCHEDULES

A. PROVISIONAL SUMS

Definition: Provisional Sum

An amount of money included in the contract documents to cover works proposed as part of the contract for which full information cannot be made available prior to the calling of tenders and letting of a contract.

A provisional sum includes labour, materials, and all costs and margins.

Allow the following Provisional Sums: **Items excluding GST**.

Item	$ Allowance

B. PRIME COST SUMS

Definition: Prime Cost Sum

An amount included in the contract documents to cover the purchase by the contractor of a specified item, such as a particular fixture or fitting, but excluding any associated labour, and all costs and margins.

Allow the following Prime Cost Sums: **Items excluding GST**.

Description	$ Allowance	$ Rate

C. CONTINGENCY

Definition: Contingency Sum

A sum of money included in the contract documents to cover the cost of unforseen items. It can be expended in full or in part as required by the superintendent during the progress of the works under the contract.

Allow the following sum for Contingencies: - **Item excluding GST**	$ 100,000.00

2.2 PROVISIONAL AMOUNTS

The Provisional amounts included in this Contract shall be those listed in the Project Specifications, 2 PROVISIONAL SCHEDULES, and shall be normal trade prices in the local region, excluding GST where applicable. In the normal trade prices mentioned, the normal trade discounts shall be allowed in favour of the Owner. Any other discounts allowed for bulk purchasing, prompt payment or other reasons shall be allowed in favour of the Builder.

The Builder shall take delivery of Provisional Items, allow for cartage fixing and/or installation of all items and shall be responsible for any damage or loss up to the time of handing over the completed works, unless otherwise stated in the Conditions of Contract.

Include for Attendance, Overheads and Profit on all items.

Any variations shall be adjusted on the completion of the Contract, see 2.6 Contract Information.

2.3 ATTENDANCE

Builder is to allow for attendance of the nominated sub-contractors (for Prime Cost and Provisional Allowances), including free use of facilities and temporary power.

2.4 SCHEDULE OF DRAWINGS

THE FOLLOWING DRAWINGS FORM PART OF THE CONTRACT

BUILDING DESIGN DRAWINGS

Sheet	Drawing No.	Description	Sheet Size
RPD-7608	A01 to A29	Site Plan, Floor Plans, Elevations, Sections & Details.	A1

STRUCTURAL

Sheet	Drawing No.	Description	Sheet Size
SJE-900084	S01 to S10	General Notes, Floor plans & Details.	A1

HYDRAULICS

Sheet	Drawing No.	Description	Sheet Size
BSG-1069	H000,010,100,101, 150,250,251,300, 500	Notes, Schedules and Floor Plans.	A1

ELECTRICAL

Sheet	Drawing No.	Description	Sheet Size
BSG-1069	E000,001,100,200, 300	Site Plan, Wiring Notes, Telephone & Schedules.	A1

MECHANICAL

Sheet	Drawing No.	Description	Sheet Size
BSG-1069	M000,100,101,102, 300,600	Floor Plans, Schedules, Legend & Notes.	A1

2.5 WARRANTY REQUIREMENTS

A. The Builder or other approved Warrantors shall provide written warranties where so specified elsewhere in this specification.

B. Each warranty shall be in approved form and shall specifically include the provisions required in writing.

C. Warranty periods shall commence from the date of the Notice of Practical Completion.

ITEM NAME	NO. OF YEARS
WATER DISTRIBUTION	5 YEARS
HYDRANTS & HOSE REEL	5 YEARS
SANITARY SEWERAGE	5 YEARS
STORM DRAINAGE	5 YEARS
PLUMBING FIXTURES	5 YEARS
DOORS & DOOR FRAMES	5 YEARS
WINDOWS & GLAZING	7 YEARS
GLASS AND GLAZING	7 YEARS
CONCRETE STATEMENT SPEC STRENGTH IN 28 DAYS.	
FIBRE CEMENT PRODUCTS	5 YEARS
FIREPROOFING	5 YEARS
METAL ROOFING & SIDING	10 YEARS
PLASTERBOARD	5 YEARS

RESILIENT FLOORING	5 YEARS
CARPET	7 YEARS
AIR-CONDITIONING	5 YEARS
ELECTRICAL INSTALLATIONS	MANUFACTURERS
LOW VOLTAGE LIGHTING	MANUFACTURERS
CONCRETE INTEGRITY, STRUCTURE & FINISH	15 YEARS
PAINTING	7 YEARS

2.6 CONTRACT INFORMATION

Type of Contract:	"Lump Sum" AS 4000 - 1997.
Date of Possession of Site:	Within 14 days of Contract Date.
Public Liability Insurance:	$20,000,000.00
Workers Compensation Insurance	Unlimited.
Date of Practical Completion	As noted in Contract document.
Defects Liability Period	52 weeks.
Liquidated & Ascertained Damages	$ 300.00 per day.
Retention Percentage	Two Bank Guarantees, each equal to 2.5% of Contract sum (one released at Practical Completion) (one released at completion of Defects Liability Period)
Maintenance Retention	2.5% held through maintenance period
Cost of Demolition after damage	10.0% of Contract sum
Working Days	Monday to Friday
Applicable Law	Victoria
Basic Rate for Overhead & Profit on all variations.	Add 12.5% for contract additions Deduct 8% for contract deductions

3. DEMOLITION

PART I GENERAL

3.1 GENERAL

A. Scope:

The work of this section includes but is not limited to the following items :

HOARDING: --Including overhead protection for pedestrians.

SERVICES: --Allow to seal off all existing services to the site.

DEMOLITION: --Complete demolition and removal of all building materials, including floor slabs and footings.

DISPOSAL: --Disposal of demolished materials, to Council's satisfaction.

FEES: --All associated industry standard fees associated with demolition work.

INSURANCES: --Provide proof of Public Liability, Workers Compensation insurance policies

TRADE UNION: --Comply with trade union requirements associated with this field of works.

CLEAN UP: --Cleaning the site thoroughly on completion.

B. Examine documents:

Examine parts of the drawings and this specification for requirements which affect the work of this section. In particular, take note of related work.

C. Co-ordination:

Co-ordinate with other trades affecting or affected by work of this section, co-operating as necessary to ensure steady and satisfactory progress of the work.

3.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Disconnection of existing services by appropriate other trades.

Site Preparation – Excavation

Water Distribution

Sanitary Sewerage

Storm Drainage

3.3 QUALITY ASSURANCE

Provide data indicating a minimum of three years of experience in such work as required by this specification.

Supply names of contacts, with telephone numbers, who can verify performance quality.

Confirm registration for Asbestos Removal.

3.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS 2436 2010 Guide to noise and vibration control on construction, demolition and maintenance sites.

AS 2601 2001 Demolition of structures.

AS 4687 2007 Temporary fencing and hoardings.

Comply also with the requirements of applicable building regulations, statutory authority having jurisdiction, local council.

3.5 PUBLIC AND PROPERTY PROTECTION

Provide measures required by municipal and state ordinances, laws, and regulations for the protection of surrounding property, footpaths, streets, kerbs, the public, occupants and workmen during demolition operations. Comply with the above ordinances, laws etc. in carrying out measures including barricades, fences, warning lights, signs, rubbish chutes, etc..

Exercise due care in executing this work.

Make good to original condition, damage to structures to be retained and to adjacent facilities that results from demolition operations. Perform restoration work without expense to the Proprietor.

3.6 FEES

Pay fees due to authority requiring same in connection with the work of this section (additional to Building Permit).

Provide notices to any Statutory Authority which needs data relating to Asbestos Removal.

3.7 SERVICES

Before demolishing and removing parts of building having electrical wiring, gas and water pipes, conduit or similar items embedded in them, notify the Rob Pickett Design/Structural Engineer, authorities having jurisdiction, and make sure that these items are out of service so that they can be removed without danger.

PART II MATERIALS

3.8 DEMOLISHED MATERIALS

Material required to be demolished becomes the property of the Contractor. Remove from the site.

3.9 EQUIPMENT

A. Supply equipment required to perform the work of sufficient capacity to meet the time schedule.

B. Provide disposal containers for disposal required.

C. No containers may be located on public streets or pavements without obtaining required municipal permits for same. Co-operate with Sub-Contractors doing work in or near container locations to prevent disruption of their work.

PART III EXECUTION

3.10 EXAMINE THE SITE CONDITIONS

Start of work means total acceptance of conditions.

3.11 EXISTING REINFORCED CONCRETE

Neatly cut back or trim to new alignment with a clean true face on material to be retained. Cut with diamond saw where necessary.

3.12 EXPOSED EXCAVATIONS

Grub out all existing footings and tree roots and leave excavations open after removal of work below ground level until completion of inspection by Rob Pickett Design/Structural Engineer, prior to back-fill and consolidation.

3.13 METHODS AND OPERATIONS

A. Demolish and remove completely parts of structure listed and/or drawn for demolition. The methods of cutting and removal of floors, walls, and other items to be removed are to be approved by authorities having jurisdiction.

B. Furnish flame-cutting required to dismantle sections of equipment too large to be otherwise removed. Flame-cutting is to be performed only by experienced and qualified mechanics. Protect combustible surfaces during flame cutting. Maintain fire extinguishers, required by the Fire Authority, at hand.

C. Do not drop or throw material more than 5 metres. Lower by means of hoists or rubbish chutes. Wet down thoroughly during demolition to prevent nuisance of dirt and dust. Equip trucks used in hauling debris with tarpaulins to cover the loads. Do not load so excessively as to spill debris on streets.

D. Except as placed in approved disposal containers, do not allow combustible material and rubbish to accumulate on the site. Remove daily, or as directed. Burn no debris on site.

F. Upon completion of wrecking, demolition and the removal of rubbish and debris, remove equipment.

3.14 ASBESTOS REMOVAL

A. It is noted that no known Asbestos is present to the proposed building area.

B. Advise the Contract Administrator in advance of proposed methods if any asbestos is found.

C. Comply with the requirements of CODE OF PRACTICE (ASBESTOS) and with the instructions of the Building Contractor.

D. Provide all the necessary labels and warning signs in accordance statutory requirements.

E. Dispose of and store all waste materials in strict adherence with approved practices.

3.15 REINSTATEMENT

Restore to original condition, without expense to the Proprietor, any damaged parts of the remaining construction resulting from failure to provide adequate protection. Refer also Clause 3.5.

3.16 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Rob Pickett Design/Structural Engineer.

Leave the site in an entirely clean condition, ready for the work of other trades.

3.17 HORDING TO EXISTING LIBRARY NORTHERN WALL OPENINGS

Builder is to allow for hording to the ground floor wall opening and highlight windows adjacent to the proposed building works throughout the build. These are to be installed at site establishment stage.

3.18 WORK TO OR WITHIN LIBRARY

The builder is to provide 2 week days notice when any works are to occur within or to the existing library.

4. SITE WORKS AND EXCAVATION

PART I GENERAL

4.1 SCOPE

The work of this Section comprises but is not limited to excavation, disposal of surplus excavated material both on and off the site, supply of compaction and filling material and the preparation necessary to bring the areas to correct shape and level prior to building construction, and as follows:

Removal from site of debris.

Floor slab excavation

Floor slab filling and compaction

Termite treatment

Supply and installation of waterproofing membrane.

Make good site area

4.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Concreter

Plumber

Drainer

Bricklayer

Civil Contractor

4.3 QUALITY ASSURANCE

Provide data indicating that the tradesmen engaged for this project have a minimum of three years' experience in such work required by this Specification.

4.4 REFERENCES

A. Comply with applicable portions of the following Australian Standards:

AS 3660	Termite management
AS 3798 1996	Guidelines on earthworks for commercial and residential developments
AS/NZS 4200	Pliable building membranes and underlays.

Comply with particular specifications in Building Regulations and/or Local Council publications.

4.5 APPROVAL FOR VARIATIONS

Before starting excavation work which may involve a variation (whether addition or deduction) because of the nature of the material to be excavated, obtain a determination as to the nature from Superintendent. The variation is derived from the determination. If no prior determination has been obtained, the variation, if any, is to be made only at Superintendent's discretion.

4.6 EXCESS EXCAVATION

Excessive excavation and consequent backfilling and compacting may not be claimed as a reason for extra payment.

4.7 SITE INVESTIGATION

A site investigation was made and a copy of the report is included in the Contract Documents. The site investigation information given in the report, or shown on the Drawings, or both, is information on the nature of the ground at each tested part. It is not a complete description of conditions existing below the surface. The accuracy of the information is not guaranteed and will not be a basis for cost variation.

4.8 PROVISIONAL DEPTHS

The footing depths shown on the Drawings are provisional.
Approval of the relevant Building Surveyor and Superintendent is required for actual depths on the site.
If there have been variations to the Contract levels or dimensions of excavations, do not commence back-filling or place permanent work in excavations until Superintendent has made measurements and approved them.

4.9 SITE MANAGEMENT

Give Superintendent at least one working day's notice that the following are ready for inspection**:**
-rock encountered in the excavations
-excavation completed to Contract levels
-filling completed to Contract levels
-completed placement of waterproof membrane.

4.10 TERMITE TREATMENT

Provide certificate in accordance with AS 3660.1 stating method of application and certificate of completion.

PART II MATERIALS

4.11 FILL

Site pad has been completed by Victory Lutheran College with Level 1 test report carried out by Albury Wodonga Geotechnical.

4.12 TERMITE CONTROL

Supply approved mechanical termite shields or natural ethical substances in accordance with supplier's recommendations.
Refer to Section 5 Termite Control.

4.13 WATER-PROOF MEMBRANE

Approved flexible polymeric films 0.2mm thick. Deliver underlays to the site in suitable protective packaging, bearing the name of the manufacturer. Handle and store the underlay so that it is not punctured, torn or otherwise damaged. Comply with AS/NZS 4200

4.14 EROSION & SEDIMENT CONTROL

Contractor shall be mindful of sediment and erosion of the building site.

Make allowances to restrict erosion by the implementation of a sediment control programme, not limited to

Straw bail covers to pits.

Low level woven mesh barriers.

"Shake down" gravel covered areas.

Designated soil and waste storage areas suitable protected from water or wind blown erosion.

PART III EXECUTION

4.15 EXAMINE ALL CONDITIONS

Identify the correct site. Obtain written verification from the Superintendent of the correct site. Ensure that survey pegs or markers are in place or visible. Obtain a current copy of site survey.

Start of work means total acceptance of conditions.

4.16 EXCAVATIONS GENERALLY

A. Suspend ground works during inclement weather which would result in unsatisfactory work.

B. Excavate accurately to shape and profile and keep free from loose earth and stones.

C. Excavate generally as required or as shown on the drawings:

D. Trim the sub-grade surface evenly to the profiles shown on the drawings.

E. Make allowance for settlement and compaction.

F. Allow for falls in slabs on grade to streets, lanes and outlets.

G. Prepare for underground services, referred to in other Sections of the Specification.

H. Prepare for strip footings, footing beams, pad footings, ducts and pits, to depths shown.

I. Carry out additional excavation where necessary to permit full use of suitable mechanical equipment (eg. Rippers) and back-fill with appropriate material as specified in this Section.

J. Where excavation exceeds the required depth, fill back to correct depth with material as follows:

- below slabs on ground: Hardcore.
- below footings, beams and other structural elements: Concrete of strength equal to the structural element, minimum 15Mpa.

4.17 TERMITE TREATMENT

Apply termite treatment specified in Clause 4.10 in accordance with the current written instructions issued by the manufacturer.

4.18 BAD GROUND

Should unsuitable material be encountered at the prescribed depths of excavation, or soft, wet and unstable areas develop during excavation, obtain instructions from Structural Engineer before carrying out additional excavations. Back-fill and compact to the correct levels as directed.

4.19 DE-WATERING

Maintain excavations, levelled and filled areas free of water by temporary catch drains, sumps, pumping, bailing or whichever means are suitable and effective.

Immediately before placing concrete or masonry on ground remove free water and foreign matter.

Prevent water flow over freshly laid work.

4.20 SHORING

Provide shoring, planking and strutting necessary to retain the sides of the excavations and to ensure safe working. Provide safety covers over holes. Provide necessary needling, shoring and strutting to adjacent buildings.

If in the opinion of the Engineer support provided is insufficient he may order the provision of additional support.

No instruction relieves the Builder of sole responsibility for the sufficient support of the excavation.

Guard against the formation of voids outside sheeting or sheet piling if used and should voids form, fill and consolidate them to approval.

4.21 WATERPROOF MEMBRANE

Lay 0.2 mm visqueen waterproof membrane to entire floor slab area, on approved sand blinding. Where necessary, cut sheets to maximum practical width, to suit the layout, and arrange laps to face away from the direction of the pour.

Provide laps as recommended by the manufacturer, but not less than 200mm. Seal laps with pressure adhesives or tapes as recommended by the manufacturer of the underlay and ensure that the adhered surface of the underlay is dry and clean.

Take the underlay up walls to level of top of future concrete slab or as otherwise instructed. Seal service pipes and similar elements when they penetrate the underlay. Allow ample slack to avoid pulling at tape junctions.

Cover vertical or inclined surfaces in an unbroken sheet where possible. Otherwise arrange laps vertically to avoid pulling at joints. Fix at the top with tape or other recommended fixing.

Inspect membrane after laying and before concrete is poured. Patch and seal punctures.

Refer to Section 12 for Waterproofing & Tanking.

4.22 CLEAN UP

On completion of work specified above, back fill all trenches with excavated materials, remove surplus materials from to the site, level off surplus excavated material and clear away all rubbish on the site as directed by Superintendent.

Leave site relatively level, without furrows.

4.23 BUILDING SITE COMPLETION

On completion of project, all surrounding grassed areas affected by building works are to be cleaned down, evened out and provided with a fresh 30mm layer of topsoil evenly spread. Victory Lutheran College will provide own grass seed and spread once builders have vacated the site.

5. TERMITE CONTROL

PART I GENERAL

5.1 SCOPE

The work of this trade section includes but is not limited to the control and/or management of termites on building sites for both new and existing buildings.

5.2 RELATED WORK.

Co-ordinate and co-operate with each trade involved in the construction of the building, and in particular:
Site Preparation

5.3 QUALITY ASSURANCE

Where specialist sub-contractors are engaged, provide formal documentary evidence of experience and skills which meet the requirements of the Australian Standards.

5.4 REFERENCES

Comply with applicable portions of the following Australian Standards which are requirements of the Building Code of Australia:
AS 3660 Termite management.
AS 4349 Inspection of buildings.
Comply with requirements of statutory and local authorities having jurisdiction.

5.5 SUBMISSIONS

Obtain a written statement, from each proposed sub-contractor tendering for the work, that the work to be performed will comply with the relevant Australian Standard.

5.6 WARRANTY

Provide a written warranty from the sub-contractor stating the period of years of protection from termite damage. Provide also a written statement that the work performed complies 100% with the requirements of AS 3660.

PART II MATERIALS

5.7 ACCEPTABLE MANUFACTURERS

Contact the Australian Environmental Pest Managers Association via www.aepma.com.au.
Obtain a list of approved members who may quote for the work required.

5.8 MATERIALS

The materials to be used are determined by the method chosen and adopted.
Require the sub-contractor to supply a list of materials to be used.

5.9 EQUIPMENT

Provide equipment needed to effect a treatment which complies with the Australian Standards.

PART III EXECUTION

5.10 EXAMINATION

Visit site and inspect conditions, comparing conditions to the drawings before delivery of materials to site. Rectify any discrepancy or unsuitability of substrata.

Start of work means total acceptance of conditions.

5.11 CO-ORDINATION

Arrange for co-operation of other trades to ensure effective pest control. Take care of materials. Prevent damage before and during installation.

5.12 PREPARATION

Co-ordinate with and ensure preparatory work by other trades is done prior to commencement of work and arrange for provision and fixing grounds.

5.13 INSTALLATION

Comply with appropriate Australian Standard.

Take care of and protect surrounding work, including other finishes, equipment and components, during installation. Provide protective covering where necessary.

5.14 INSTALLATION PARTICULARS

Comply in all respects with manufacturer's recommendations contained in technical bulletins. Call for technical advice where necessary. Refer clause 5.5.

5.15 PROTECTION

Protect finished work.

5.16 CLEANING

Clean the site where work of this trade is performed.

Remove surplus material.

5.17 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Superintendent.

6. PLUMBING & HYDRAULIC SERVICES

PART I GENERAL

6.1 SCOPE

The work shall include the supply, installation, testing, commissioning and maintenance of all hydraulic services shown on the contract drawings and specified herein including the provision of all manufactured items, materials, labour, cartage, tools, plant, appliances and fixings necessary for the installation together with all union and incidental works.

Refer to HYDRAULIC SERVICES Working Drawings and Specifications:-

The work shall include but not limited to the following.

6.2 WORK BY BUILDER

The following work will be carried out by the Builder or by separate contract, controlled by the Builder.

a) PC items as scheduled.

b) Access openings in walls, ceilings and at other positions required for adjustment, inspection, maintenance and cleaning of hydraulic services.

c) Provision of false ceilings, bulkheads, manholes and enclosures for the housing of services generally as shown on the drawings.

d) Roof penetration up-stands and under flashing.

e) Power supply to selected equipment as noted on drawings.

f) Core holes and fire rated sealing of core holes.

6.3 RELATED WORK

Co-ordinate and co-operate with the following trades:

Excavation

Concrete (Small Works)

Schedule of Sanitary Items

Finishing Trades

Roof Plumbing

6.4 PLUMBING & HYDRAULIC SERVICES

Refer to the **HYDRAULIC SERVICES DRAWINGS & SPECIFICATIONS** in conjunction with this specification.

Runs and locations of piping are shown diagrammatically on the contract drawings.

Pipework shall be set out accurately to on-site dimensions.

6.5 STORMWATER DRAINAGE

Refer to **HYDRAULIC SERVICES DRAWINGS AND SPECIFICATION** in conjunction with this specification and Working Drawings.

Runs and locations of piping are shown diagrammatically on the contract drawings.

6.6 ISOLATION

Isolate from each other by an approved method of jointing or insulation, all materials which set up galvanic or corrosive action when in contact.

6.7 PROGRESS

Coordinate the progress of this trade with all others.

Cooperate with the other Contractors to avoid difficulties in set-out.

Provide and fit sleeves for pipes through walls and floors and set sleeves for pipes in concrete floor and walls before concrete is poured.

6.8 ACCESS TO PIPES

All pipes, sewer, wastes, water and those of Mechanical and other Contractors are to be quite free of each other and easily accessible for their full length where in ducts.

Pipes shall not be fixed or concealed behind other pipes and all must be easily accessible from access openings.

The Contractor shall coordinate to ensure that access panels are located near eyes on all waste lines.

6.9 EXISTING SERVICES

The Contractor will be responsible for locating existing services on the Site and allow disconnecting, diverting and or replacing, as deemed appropriate for construction of the proposed new works.

An accurate “as constructed” drawing shall be produced by the Contractor of the altered conditions and submitted to the Superintendent.

6.10 COVER TO SERVICES

All services shall be laid with a minimum cover 600mm unless otherwise noted on drawings.

6.11 FEES

It is the responsibility of the Contractor to obtain all additional permits and pay fees, charges and Authorities plan fees in accordance with the work (this is in addition to the Building Approval Permits received by the Proprietor)..

Contribution fee’s to be paid by the Principal.

All plans are to be submitted by the Contractor to all Authorities holding jurisdiction over the installations and approval from such Authorities must be obtained before any work is commenced.

The owner’s copy of the issued sewer drainage shall be handed to Superintendent before works commences.

6.12 AS BUILT DRAWINGS

The Contractor will be held responsible for the exact location of all plumbing line amendments or variations from original layout, stop taps, cleaning and other inspection openings, these to be clearly shown on drawing kept on site, which shall be regularly updated to reflect any change.

Submit to Superintendent three (3) No. bound sets of ‘As Built’ drawings and corresponding CAD files.

6.13 OPERATING AND MAINTENANCE INSTRUCTIONS

The supply of all necessary information for the satisfactory operating and maintenance of the services shall form part of this section.

‘Instructions’ shall be supplied in approved bindings and shall be supplemented by *diagrams* and ‘Spare Parts Schedules’.

Note: Documents and drawings shall be submitted for approval prior to the issue of final copies.

All Authorities’ final ‘Certificates of Approval’ shall be submitted prior to ‘Practical Completion’.

PART II MATERIALS

6.14 ACCEPTABLE MANUFACTURERS

Ensure that items to be installed are approved for installation by Local Authorities before ordering.

6.15 MATERIALS SUMMARY

Sewer Drain Pipes:

UPVC tubing in accordance with Class SH in accordance with AS 1260 with solvent cement joints.

Cast iron in accordance with AS 1631 with mechanical joints.

.UPVC Blue Brute with cast iron mechanical joints.

Materials for drains are shown on the drawing.

Storm Water Pipe:

UPVC stormwater grade pipes with solvent joints low-density polyethylene.

Drains Under Buildings:

UPVC sewer grade pipes as approved to Conform with Local Authorities' requirements.

Pits:

Moulded high density plastic pit or cast in-situ concrete, metal grated cover, to areas as indicated. Refer Drawings.

6.16 SANITARY FITTINGS

All sanitary fittings where applicable shall be tested and stamped by the Authority.

Provide and install sanitary fittings in accordance with the attached schedule and in conformity with the details indicated on the drawings.

Provide and install sanitary fixtures, necessary to complete the installation of each system, complete with plug and washer, all necessary fixings etc. Fix all services securely and neatly into position and connect to services in accordance with the manufacturer's recommendations and instructions.

Where possible, all fixings, bolts, screws etc., shall be concealed from site and galvanised. Fixings which are exposed to view shall be chrome plated. Where fixtures are required to be supported on timber and metal stud wall framing, provide and fix backing plates drilled for bolt fixing of fixtures – securely bolt or screwed to framing.

If and where directed by RPDesign, obtain samples of all sanitary fixtures for inspection, obtain approval of such samples and ensure that continuing supply of required fixtures match the approved sample.

Taps and fittings to be in accordance with the schedule.

6.17 EQUIPMENT

Provide necessary equipment to affect a complete installation of each part of this Section, including seals, jointing materials, flanges, etc.

6.18 FABRICATION

Fabricate components in a manner approved by the Local Authority and RPDesign. Comply with requirements of relevant Australian Standards where applicable.

6.19 FIXTURES & FITTINGS

STAFF W.C.	W.C.	Cold	Forma Ccbtw Bk/In TS Scqr Seat WH (4*) KIT comprising of: Caroma Forma C/Flush Ccbtw BK Pan WH (4*) Caroma Forma C/Flush Ccbtw BK Cist WH (4*) Caroma Arc Scqr BF Toilet Seat WH
	H. Basin 2off.	H & C	American Standard Studio Vanity Basin with fixing kit, 1 taphole Mizu Drift Uni 40mm Pop UP P&W Chrome Mizu Drift bottle trap with removable base, CP
	Tapware 2off.		Posh Solus Mk3 Basin Mixer Chrome (4*)
	Shower Head		Mizu Drift Hi-Rise shower chrome
	Shower Tapware	H & C	Posh Solus MK3 shower mixer tap chrome
	Shr Seat		Laminex shower seat
Cleaner	Sink Unit	H & C	Wolfin #316 Cleaners Sink with SS grate, with mounting kit. P&W 90MM X 50MM - WIDE FLANGE P.V.C
	Tapware		Bristol/Base wall sink set with Std Swivel O/L wall Econ 175mm and Posh Bristol Wall top assy. CP.
Ambulant W.C. (AM W/C) 3 off	W.C.	Cold	top of seat must be 460 – 480 above floor. Forma Ccbtw Bk/In TS Scqr Seat WH (4*) KIT comprising of: Caroma Forma C/Flush Ccbtw BK Pan WH (4*) Caroma Forma C/Flush Ccbtw BK Cist WH (4*) Caroma Arc Scqr BF Toilet Seat WH
Accessible W/C 1	W.C	C	Wolfen 800 Ccbtw R/L T/ Sfs B/R Wh 4* Kit.
	Basin	H & C	Roca Meridian wall basin LHB, 1 taphole. Mizu Drift bottle trap with remove base, CP Mizu Drift UNI DN40 Pop up Plug & Washer
	Tapware		Posh SOLIS Mk3 basin mixer with 200 extended lever, CP
Accessible W/C 2	W.C	C	Wolfen 800 Ccbtw R/L T/ Sfs B/R Wh 4* Kit.
	Basin	H & C	Roca Meridian wall basin RHB, 1 taphole. Mizu Drift bottle trap with remove base, CP Mizu Drift UNI DN40 Pop up Plug & Washer
	Tapware		Posh SOLIS Mk3 basin mixer with 200 extended lever, CP
Student W.C.	W.C. (8 off)	Cold	Forma Ccbtw Bk/In TS Scqr Seat WH (4*) KIT comprising of: Caroma Forma C/Flush Ccbtw BK Pan WH (4*) Caroma Forma C/Flush Ccbtw BK Cist WH (4*) Caroma Arc Scqr BF Toilet Seat WH

	H. Basin (6 off)	Cold	Stoddart wash basin – compact SPPL.WB.C.L Plus BATH / BASIN WASTE 40X80 RUBBER PLUG CP Mizu Drift bottle trap with remove base, CP
	Tapware (6 off.)		Wolfen Timed Flow Basin Tap (Cold) (6*) - chrome
Booking Rm 1 (Ground Floor)	Sink		Posh Solus MK3 Single Bowel inset sink 1 taphole right hand bowl stainless steel Mizu Drift bottle trap with removable base, CP
	Tapware	H & C	Posh Solus MK2 standard sink mixer tap chrome
	Boil Water		ZIP "HydroTap" G5 Bc20 Classic Plus Chrome
	Dish washer	Hot	Fisher & Paykel Series 7 Contemporary Double DishDrawer Dishwasher - Stainless Steel - DD60D2NX9
First Aid Room	Sink		600 x 450 x 200mm deep flat rim, integral with SS bench. Mizu Drift bottle trap with removable base, CP
	Tapware	H & C	Posh Solus MK2 standard sink mixer tap chrome
First Aid Bathroom	H Basin		American Standard Studio Vanity Basin with fixing kit, 1 taphole Mizu Drift Uni 40mm Pop UP P&W Chrome Mizu Drift bottle trap with removable base, CP
	Tapware	H & C	Posh Solus Mk3 Basin Mixer Chrome (4*)
	Toilet	C	Forma Ccbtw Bk/In TS Scqr Seat WH (4*) KIT comprising of: Caroma Forma C/Flush Ccbtw BK Pan WH (4*) Caroma Forma C/Flush Ccbtw BK Cist WH (4*) Caroma Arc Scqr BF Toilet Seat WH
	Shower Head		Mizu Drift Hi-Rise shower chrome
	Shower mixer	H& C	Posh Solus MK3 shower mixer tap chrome
	Shower seat		Metlam ML991_CL accessible folding shower seat in compact laminate
Staff Break-Out (First Floor)	Sink		Posh Solus MK3 Single Bowel inset sink 1 taphole left hand bowl stainless steel Mizu Drift bottle trap with removable base, CP
	Tapware	H & C	Posh Solus MK2 standard sink mixer tap chrome
	Boil Water		ZIP "HydroTap" G5 Bc20 Classic Plus Chrome
	Dish washer	Hot	Fisher & Paykel Series 7 Contemporary Double DishDrawer Dishwasher - Stainless Steel - DD60D2NX9
Drinking Trough		Cold	Britex S.S. PWD Wall Mounted Trough TPWD-2400-WB-R

Drinking Trough Tapware		Cold	3x Wolfen 90 Degree Wall Bubbler Timed Flow Push Button Chrome - 252465 3x Wolfen timed flow bib tap 95° - 9508245 Install in configuration: bubbler, bib, bubbler, bib etc Mizu Drift bottle trap with removable base, CP
Water Filter		Cold	Allow to install only, supplied by Victory Lutheran College

PART III EXECUTION

6.20 EXAMINATION

Visit site and inspect conditions, comparing conditions to Drawings before delivery of materials to site.
Start of work means total acceptance of conditions.

6.21 WATER & GAS SHUT OFF

Any proposed water or gas shut-down's are to be coordinated with the school min. 5 week days prior. The request shall confirm the date, day, time of shut off, duration or shut off and time of service back on.

6.22 EXCAVATION

The Contractor shall excavate all pipe trenches true to line and of suitable minimum width for the pipes to be laid.
Excavations shall be made to the depth required to permit pipe laying to the grades and levels shown on the drawings and for placing of a compacted 80mm bed of 6mm minus bluestone for the full width of the trench.
Where unsuitable materials are encountered in the trench bottom, such materials shall be removed and replaced with compacted 6mm fine crushed rock to approval.
All excavation below required depth shall be filled with compacted in crushed rock to level required. Excavate materials shall be removed from site.

6.23 SECURITY IN EXCAVATION

The Contractor shall bear full responsibility for the security of all excavations carried out.
Where necessary the Contractor shall properly timber and shore it up against collapse, provide temporary bridges, barricades, warning signs and lights.

6.24 WATER IN EXCAVATION

The Contractor shall provide all pumps and appliances required to keep the excavations free of water at all times whilst open, and shall be responsible for diversion of all surface water and waterways from the excavation.

6.25 LENGTH OF EXCAVATION

No excavation shall be commenced until a substantial quantity of pipes and jointing material is on site and trenches shall only be open sufficiently in advance of pipe laying to enable the work to proceed without delay.

6.26 PROTECTION OF EXISTING STRUCTURES

All existing buildings and drainage, gas, water and other service pipes and appurtenant structures shall be supported and protected from damage during the work and in the event of damage shall be restored to RPDesign's satisfaction.

6.27 BEDDING

The pipe shall be bedded on an 80 mm compacted depth of damp 6mm minus bluestone extending the full width of the trench.

Sockets to face upstream and the barrel shall bear evenly for its full length on the bedding materials.

6.28 LAYING AND JOINTING

Lay pipes 600mm clear of walls.

The Contractor shall check all proposed and existing inverts before the pipe laying shall commence.

Pipe laying shall commence at the discharge end of the drain.

6.29 BACKFILL

Immediately on completion of the inspection and testing of drains, by the Authority and RPDesign, all pipes shall be covered to a height of at least 300mm, with 6mm minus fine crushed rock compacted by manual tamping.

The remainder of the trench shall be backfilled with 'A' grade fine crushed rock compacted in layers not more than 150mm to achieve 95% Modified Compaction Test AS 1289 at optimum moisture conditions.

6.30 COLD WATER RETICULATION

Extend the service in copper tubing as indicated on drawings and provide isolating valves and branches as shown.

Reticulate the cold water service throughout the new buildings in copper tubing to all taps, fittings, equipment, etc. as shown on HYDRAULIC SERVICES Working Drawings.

6.31 HOT WATER RETICULATION

From the hot water unit reticulate the hot water piping in copper tubing, as specified to all hot water fittings as indicated on HYDRAULIC SERVICES Working Drawings.

Hot water pipework shall be installed with 25mm thick Armaflex for Mains 'flow & return' pipework & Polylag for branches. Do not leave sections of hot water pipework without lagging.

6.32 SANITARY PLUMBING

All sewerage pipes shall be UPVC and coupled using approved UPVC solvent. Provide and lay all pipes, bends, risers, traps, up-stands, floor grates, vents, etc. as necessary to complete the works as detailed on HYDRAULIC SERVICES Working Drawings and these specifications.

6.33 GAS SERVICE

The plumber is responsible for the Gas Service from the existing gas meter or supply location.

Allow to up-grade the existing meter as shown on HYDRAULIC SERVICES Working Drawings and these specifications.

6.34 HOSE COCKS

The Contractor to allow for complete installation of all necessary risers, unions, cover plates etc., together with necessary copper, breeching pieces etc.

Refer to HYDRAULIC SERVICES Working Drawings and these specifications for location and design features.

Include for all hose cocks to be provided with Vandal Proof Brass Flat MI fitting.

6.35 STORMWATER

Supply and install stormwater lines from downpipes and pits as indicated on Hydraulic Drawings and Specification and connect to lawful points of discharge as documented.

6.36 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

Remove debris and clean areas where work has been performed by this trade, to the satisfaction of Superintendent.

Cover no pipes, joints or connections until approved and tested and passed by the relevant Authority.

6.37 CAMERA NEW PIPES

Allow to camera all new laid pipes prior to concrete pour to ensure no pipes have been damaged. Written confirmation is to be provided to the superintendent confirming all pipes are not damaged. A hydraulic plan is to be provided to confirm which laid pipes have been camera scoped.

7. CONCRETE

PART I GENERAL

7.1 SCOPE

Supply and install concrete and reinforcing steel for:

Floor Slabs

Footings & Footing Pads.

Other (Paving, Driveway slabs, Carpark edging, post bases etc.)

Including but not limited to edge trim, vibrating, float screeding and curing.

Refer to STRUCTURAL ENGINEER DRAWINGS AND SPECIFICATION and RPDESIGN DRAWINGS AND SPECIFICATION for detailed description of the works.

7.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Site Preparation

Plumber

Sewerage and Drainage

7.3 QUALITY ASSURANCE

Submit evidence of experience appropriate to the class of work required. Install under the direct supervision of a capable Foreman with a proven background in this trade.

7.4 REFERENCES

Maintain the following standards on site during construction

Refer to Structural Engineer's Plans and Specification.

Refer to SAA "HB64 1994 GUIDE TO CONCRETE CONSTRUCTION".

Refer to Cement & Concrete Association "THE HOUSING CONCRETE HANDBOOK".

7.5 PROJECT CONDITIONS

A. 1. Measurements: Before ordering material or doing work, verify measurements and be responsible for the correctness of same. Submit differences found to Superintendent in writing for consideration before proceeding with the work. No extra charge or compensation will be allowed on account of difference between actual dimensions and the dimensions indicated on the drawings.

2. Dimensions: Where shop drawings are prepared by Sub-Contractors or suppliers, and indicate field dimensions which have not been taken, take such field dimensions before submitting shop drawings. Where dimensions are given and marked "verify" or "verify in field", correct before submitting shop drawings. Where field conditions do not yet exist for taking or confirming of field dimensions, note shop drawings with "dimensions will be verified in field", before submitting.

B. Be wholly responsible for protecting the work and the materials stored on the site. Take required measures to protect the work at times against fire, storm, theft, vandalism and other losses.

7.6 DELIVERY AND HANDLING

Deliver concrete materials to the site in ready-mix trucks in accordance with AS 1379. Arrange and provide for concrete pumping equipment as needed.

7.7 WARRANTY

Forward to Superintendent a statement guaranteeing that the concrete complies with the approved mix design and that concrete has attained required strength at 28 days.

PART II MATERIALS

7.8 FORMWORK

A. Formwork Classes: Comply with AS 3610, Formwork for Concrete and as follows:

1. Class 4 Formwork for concrete surfaces to be rendered, tiled or concealed by other finishes and concrete surfaces permanently concealed in ducts, shafts and above false ceilings.
2. Class 5 Formwork for footings, concrete surfaces in the ground.

B. Formwork Materials: Approved timber, plywood or precast concrete.

7.9 REINFORCEMENT

A. General

All Reinforcement: supplied, fabricated and fixed in accordance with the drawings and this specification.

Refer discrepancies to the Engineer for decision before proceeding with the work.

Be solely responsible for the supply, fabrication and placing of reinforcing steel.

Remove reinforcement which does not comply with the requirements of this specification and replace to the satisfaction of the Engineer.

Comply with the SAA standards as follows: AS 1302, AS 1303, AS 1304 and AS 3600.

B. Surface Condition

Ensure that reinforcing is free from loose mill scale, rust, mud, oil, grease or other non-metallic coatings which would reduce the bond between the concrete and steel and is free from kinks or other defects, at the time of placing concrete.

When there is a delay between placing the reinforcement and pouring the concrete, the Engineer may require the Builder to restore the reinforcement to a condition satisfactory to receive concrete.

7.10 CONCRETE

A. Cement: Comply with AS 3972. Provide cement of one brand which has passed the standard tests not more than three months prior to use.

If not delivered as a component of ready-mixed concrete, deliver cement to the site in branded and sealed bags stacked under protective covers to prevent deterioration, so stacked that each batch delivered may be identified.

Remove from the site cement that does not comply with these standards or has been adversely affected in storage.

B. Aggregate: Maximum Size of Coarse Aggregate: comply with AS 3600 and drawings.

C. Water: Water is to comply with AS 3600

D. Admixtures: None, except with prior approval of the Engineer in writing.
If admixtures are used, comply with AS 3600

E. Ready-Mixed Concrete: Grey ready-mixed concrete except areas as specified below, supplied by an approved manufacturer and mixed and delivered in accordance with the requirements of AS 1379.

Site Mixed Concrete: Subject to prior written approval of the Engineer.

F. Concrete Strength: Comply with stated compressive strengths at 28 days as noted or scheduled on structural drawings for various locations. If not scheduled, provide 25Mpa concrete.

7.11 FABRICATION OF REINFORCEMENT

A. Fabricate, bend and weld in accordance with the standards laid down in AS 3600, the drawings, the requirements of this specification and to the satisfaction of the Engineer.
Where possible, bend steel prior to delivery, and always bend under heat.

B. Do not bend or straighten in a manner which will damage the steel.

C. Do not bend again a deformed bar of structural grade steel or cold work steel which has been bent and subsequently straightened or bent in the reverse direction within twenty (20) bar diameters of the previous bend.

D. Supply necessary support and spacer bar though not necessarily shown on the drawings, to the satisfaction of the Engineer.
Unless otherwise shown, support top reinforcement with 12mm diameter support bars at 300mm centres on bar chairs at 1000mm centres.

E. Paint ends of bars which are to be left projecting for longer than three days with a heavy coat of neat cement grout.

F. Cover concrete reinforcement as shown on the drawings to tolerances in accordance with AS 3600.

G. Tie Wire: annealed iron wire not less than No. 16 gauge, or other approved fasteners, unless shown otherwise on the drawings. With the approval of the Engineer, spot welding by the electric arc process may be used in lieu of the wire for selected locations.

H. Welding (including spot welding) of hard grade bars is not permitted.

7.12 STEEL WELDED FITMENTS IN CONCRETE

Comply with Engineer's requirements. Provide shop drawings. Comply in all respects with appropriate Australian Standards.

In addition, fabricated samples of each element may be required to be delivered to site and approved by the Engineer before proceeding to fabricate the various production runs of the elements.

7.13 BOLTS, WATERSTOPS, ETC.

Submit selected items to Engineer for approval before ordering.

7.14 WATERPROOF MEMBRANE.

The supply and installation of the polymeric membrane is described in trade Section 4 - SITE WORKS & EXCAVATION, clauses 4.13 and 4.22.

PART III EXECUTION

7.15 CONFLICTION

Where a conflict in direction is encountered between this Specification and Structural Engineer's Plans & Specifications, the Structural Engineer's direction shall hold precedence.

7.16 INSPECTIONS

Examine ground condition upon which form props are placed. Be responsible for prop placement.

A. The concrete works will be particularly inspected by the Engineer at the stages as follows:
   1. After erection of formwork and before placing reinforcement.
   2. After cores and embedments have been placed in the formwork.
   3. Immediately before each pour of concrete is commenced.

B. Be responsible for the formwork and the quality of the stripped concrete.

C. Keep records of each pour of concrete showing the following:
   1. Details and types of reinforcing steel.
   2. Date of pouring concrete.
   3. Area of structure where concrete placed.
   4. Area of structure where tests taken.
   5. Test results when available.

   Make these records available for inspection by the Engineer.

D. Start of work means total acceptance of conditions.

7.17 FORMWORK GENERALLY

A. Conform to the shape, lines, grades and dimensions of concrete as required by the drawing and construct of approved precast concrete, timber or metal, in which bolts and screws in contact with concrete are countersunk. Provide sufficient strength to the structure to carry the concrete without deflection.
   Tolerances of the concrete when stripped: in accordance with the appropriate Clause of AS 3610.

B. Be responsible for complete installation of formwork and for the condition of concrete after stripping.

7.18 PLACING OF CONCRETE

Place concrete in compliance with AS 3600

7.19 CONSTRUCTION JOINTS

Periods of stoppage in concrete of ¾ hour or more are deemed to be construction joints.
When the location and type of construction joints are not shown on the drawings, submit proposed location and detail of construction joints to the Engineer for his approval prior to the start of formwork placement.
Site Engineer will direct treatment before depositing the new concrete against a construction joint (cost of Site Engineer, should this occur, will be borne by the Builder).

7.20 BONDING FRESH AND HARDENED CONCRETE

Before depositing new concrete on or against concrete which has set, re-tighten forms, roughen the set concrete surface, clean off foreign matter and laitance and thoroughly wet to Engineer's approval. Remove excess water, cover the cleaned and wetted surfaces with a coating of 1:2 cement/mortar. Place the new concrete against this before the mortar

has attained its initial set. Prior to placing concrete, submit a sample of concrete showing the degree of roughened and laitance removal proposed. The following procedures for preparation of construction joint faces are approved:

Vertical Joints – Paint face of form with an approved retarder. Strip form the following day and remove retarded concrete with air-water jet to bare exposed aggregate face.

Horizontal Joints – Spread 6mm bluestone chips on surface of freshly screeded concrete and blow off excess the following day with air-water jet.

Comply with instructions on Engineer's drawings.

7.21 BUILDING IN

A. Conduits and Piping: Place conduits and piping in concrete floors above the bottom steel and below the top steel. Do not dislodge reinforcement.

Where conduits and piping cross control joints, make provision for clip joints or some other means of absorbing movement without fracturing.

B. Built-In Bolts, etc.: Accurately build in bolts, lugs and other fittings, provide holes and pockets as shown on the drawings. Prevent movement of these items during concrete pour.

Clear screwed or machined portions of fittings of mortar and grease.

Temporarily fill voids in sleeves, inserts and anchor slots and readily removable materials to prevent the entry of concrete into the voids.

C. Waterstop: Cast in waterstop as shown on the drawings, located in vertical wall joints or floor joints by the use of split shuttering or other means.

Use waterstop in the maximum possible lengths, mitre at corners and shop weld and seal at joints. Make joints other than at changes of direction, in location approved by the Engineer.

Adequately secure and support in the correct position during placing concrete.

D. Grouting: Attention is directed to the STRUCTURAL STEELWORK section of this specification.

7.22 PREPARATION FOR PLACING OF CONCRETE

A. Immediately before placing concrete in excavation, ensure that the excavation is free from water and fallen materials and that the sides of excavations are such that no material will fall into freshly placed concrete.

B. Ensure that formwork ready for the placing of concrete is complete, with surfaces smooth and clean, immediately before placing, remove excess water, mud and debris and secure reinforcement in place, remove surplus end of tie-twine, surplus nails and other extraneous metal objects in contact with the forms, make sure that expansion joint material, anchors, and other embedded items are in position.

Give the Engineer one working day's notice of the intention to pour so that approval may be given in time.

7.23 ACCESS AND INSPECTION OPENINGS

Provide temporary openings at the base of the column and wall forms and at other points where necessary to facilitate cleaning and inspection. Intermediate openings for placing may be required by the Engineer.

7.24 TRANSPORTING OF CONCRETE

Convey concrete from the mixer to the place of final position without delay and by means that will prevent segregation and loss of materials.

Where necessary, transport concrete on substantial gangways or barrow runs supported on stools clear of reinforcement.

Remove hardened concrete and foreign materials from the inner surfaces of the conveying equipment.

7.25 FLOOR FINISHES

Internal finish floor slabs monolithically with steel trowel, to receive carpet or sheet vinyl covering.

External finishes to match existing concrete paths around other buildings & provide a 'non-slip' finish.

7.26 CONCRETE TESTING

A. Generally: Perform concrete tests in accordance with AS 1012 or subsequent amendment.
Allow for the cost of making test specimens and for the supply of testing equipment and suitable personnel to carry out tests.

B. Materials Testing: Submit in writing, test certificates from an independent Laboratory registered with the NATA as evidence that materials used comply with the requirements specified. Allow the costs of such tests as required.

C. Slump Tests: Provide slump tests reports on the first batch of concrete to be placed and at least once for every 20 cubic metres of concrete placed thereafter on that day.
If, in the opinion of the Engineer, other batch of concrete appears to have an incorrect slump, conduct slump tests as directed by the Engineer.
Slump tests are to be conducted by, and at the expense of the Builder. Concrete will be considered as complying with the specified slump tests when it complies with AS 3600

D. Compression Tests: The methods and frequency of sampling and the identification and testing of cylinders are to be in accordance with project control testing AS 3600

E. Acceptance and Rejection of Concrete: Acceptance and rejection of compressive strength of concrete by the Engineer will be in accordance with AS 3600

7.27 COMPACTION OF CONCRETE

A. Compact Concrete by mechanical vibration to the maximum practicable density, free of air or stone pockets. Concrete not vibrated will be rejected.

B. Have on site sufficient vibrators of an approved pattern and keep one spare vibrator to every two active vibrators.

C. To avoid segregation, place concrete in position and then vibrate. "Travelling" concrete by use of vibrators is likely to produce segregation and is not permitted.
Operate immersion type vibrators in a near-vertical position and insert and withdraw them slowly.
Allow them to penetrate and revibrate the concrete in the upper portion of the underlying layer.

D. Do not leave vibrators, when in action, lying unattended on formwork, reinforcing or in concrete. Keep vibrator heads clean and free of mud or other deleterious matter when inserted into the concrete.

E. Vibrate concrete in layers not exceeding 450mm in thickness and avoid contact of the vibrating head with surfaces of the forms.

7.28 CURING AND PROTECTING CONCRETE

A. Protect freshly cast concrete from premature drying and excessively hot or cold temperatures. Erect windbreaks to shield the concrete surface during and after placing. Maintain the concrete at a reasonably constant temperature with minimum moisture loss for the curing period, refer AS 3600.
Take responsibility for the curing and protection of the concrete.

B. Cure as soon as the surface of the concrete has hardened sufficiently to prevent damage but in no case later than two hours after the finishing operation has been completed.

Cure by the following means:

1. The use of waterproof paper, or
2. The use of an approved polyethylene building film.
3. The use of other approved moisture retaining covering.

If a method other than polyethylene film is adopted, secure the covering material against the concrete for the full length of edges and laps and at frequent intervals between so that no air circulation at the concrete surfaces occurs.

C. Period of Curing: continue final curing for seven days for normal Portland cement concrete.

For high early strength concrete, continue the final curing for three days

Prevent rapid drying out at the end of the curing period.

Keep wet steel forms heated by the sun and wood forms in contact with the concrete during the final curing period.

D. Temperature: When the mean temperature of the air during curing is less than 5 deg. C, maintain the temperature of the concrete between 10 deg. C and 20 deg. C for the required curing period.

When the mean temperature of the air is in excess of 30 deg. C during curing and moist curing is not employed, cover the surface with an approved heat reflecting plastic membrane. Apply this treatment for the whole of the curing period.

E. Curing Off-Form Concrete: Take special care with curing off-form concrete to avoid differences in colour. Prevent rapid or localised drying-out during the first seven days after pouring. Maintain the form face in contact with the concrete up to the moment of striking.

Ponding is preferable for horizontal surfaces. Use heavyweight covers, well secured and in continuous contact.

7.29 STRIPPING OF FORMWORK

Strip formwork in accordance with the recommendations of AS 3610, Table: “Recommended Minimum Stripping Times”. If construction loads greater than the live load shown on the drawings are placed on the structure, fix emergency shoring and tomming to the satisfaction of the Engineer.

7.30 CLEANING

Remove debris and form work from each area after stripping concrete as work sections are completed.

Leave each area clean to the satisfaction of the Superintendent/Engineer.

7.31 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Superintendent.

8. BRICKWORK

PART I GENERAL

8.1 SCOPE

General : Supply and build the brickwork shown on the Drawings or needed to complete the brickwork, including but not limited to the following :

A. Labour and materials.

B. Building in of miscellaneous items provided by others.

C. Staging and scaffolding.

D. Cleaning.

8.2 RELATED WORK

Co-operate and co-ordinate with the following trades:

Concrete

Doors and Door Frames

Metal Windows

Structural Steel

8.3 QUALITY ASSURANCE

Approved Samples: At the start of brick laying, arrange with RPDesign to designate a beginning section of each type of face brickwork not less than 6 courses high x 1200 long as the Control Sample. When approved by RPDesign, the Section/s become the control standard/s for brickwork and remain part of work.

8.4 REFERENCES

Comply with applicable portions of current editions of the following Australian Standards:

AS/NZS 1170	Structural design actions.
AS 1316 2003 *(R2016)*	Masonry cement.
AS/NZS 1576	Scaffolding.1576.1 2019 General requirements. *There are 5 other parts 1995 – 2016.*
AS/NZS 2904 1995	Damp proof courses and flashings. *2 Amdts, 1998, 2013.*
AS/NZS 2699	Built-in components for masonry construction. *There are 3 parts, 2000 – 2002.*
AS 3700 2018	Masonry structures.
AS 4773	Masonry in small buildings.

Comply throughout with the current edition of the NCC.

8.5 SUBMISSIONS

A. Submissions required prior to ordering :

Product Data : Showing the following information where appropriate :

Manufacturer's name and product details including a designation of proposed types and sizes.

B. Submissions required prior to delivery :

Four of each type of face brick to represent the range of colours, textures and surface, arris and shape irregularities.

8.6 DELIVERY, HANDLING AND STORAGE

Co-ordination: Reach agreement with RPDesign about site provision for storage of sand, cement and other materials and for mixing of mortar.

Deliver, handle and store products in accordance with manufacturer's recommendations and prevent damage, deterioration or loss.

PART II MATERIALS

8.7 BRICKS

Face Bricks generally shall be extruded standard clay bricks nominally 230 x 110 x 76 mm wire-cut blend hard and true to size.

PGH – Urban Essence "STORM" face bricks. Refer to Superintendent to confirm selection prior to ordering.

Common Bricks generally shall be extruded standard clay bricks "fair & even faced" nominally 230 x 110 x 76mm wire-cut blend, suitable for rendering.

8.8 MORTAR

Accurately proportion and use within one hour of first wetting, no tempering shall be permitted.

Comply with AS 3700 as follows :

1.	**Mortar mixes:**	Classification M3	1 cement, 1 lime and 6 sand.
2.	**Colour:**	Face work:	Off-white with Brighton Lite cement.
3.	**Jointing:**	Face work:	Half round tool.

8.9 WEEP HOLES

Allow weephole/ventilation to Brick-Veneer external walls at 1200mm spacings to the building perimeter.

Ensure weep holes are clear and unobstructed.

Fit plastic vermin-proofing to each weep hole in colour to match brickwork.

8.10 WINDOW SILLS

Windows generally:

Provide for 'brick-on-edge' window sills, with bricks projecting 20mm and graded at 1:8.

8.11 EXPANSION JOINTS

Provide for brickwork expansion joints to locations and details as shown on the Working Drawings.

Complete expansion joints with caulking in colour to match mortar joints.

8.12 MISCELLANEOUS MATERIALS

Comply with AS 3700 as follows :

A. Wall Ties and Accessories : Clause 4.10 and 10.5.

B. Lintels and Other Steel in Brickwork : Clause 2.9

Extend lintels 230mm minimum past each jamb of openings.

C. Control joints: Construct joints 10mm wide, from footing to top course.

D. Caulking : Elastomeric sealing compound, coloured to match mortar; for general caulking including movement control joints :

E. Damp-proof Courses : Embossed Black Polythene; comply with AS 2904

F. Flashings : Build into brickwork wherever necessary for weatherproofing, including over exposed openings, lintels, beams and roofs abutting brickwork and under sills and soffits.
Make flashing minimum of 450 mm longer than opening.

8.13 STEEL LINTELS

A. Where brickwork is to be supported over openings and no special lintels are detailed, build in mild steel lintels, in accordance with the Building Code of Australia.

B. Set angles with the longest dimension vertical.

C. Hot dip galvanise steel lintels in exterior openings is optional, mild steel members are to be pre-primed.

D. All exposed lintels are to be painted; two finishing coats.

E. Over all openings in brick walling, angles or bars shall be provided having at least 150mm bearing at each end.

F. Angles to be placed with longer side vertically. Brick loads only apply to table below (no roof loads).
Up to 900mm opening:- - - - 85x8mm (5kg/m)
up to 1800mm opening:- - - - 100x100x6mm (9kg/m)
up to 2400mm opening:- - - - 150x150x6mm (12kg/m)

G All exposed angles shall be painted.

PART III EXECUTION

8.14 MORTAR LIFE

Re-tempering to replace water lost by evaporation is encouraged until initial set begins. Reject mortar which has begun its initial set and do not re-temper.

8.15 MORTAR MIXING

Measure materials to ensure that the specified mix proportions are maintained (AS 3700, Section 11).
Mix in a suitable mixing machine until a uniform blending of the components is achieved.
Add water to create a mix that is as wet as can be conveniently used by the bricklayer.
Except for the previously specified methyl cellulose water thickener, use no chemical to affect the plastic or other properties of mortar or as a substitute for lime without the Superintendent's permission.

8.16 PREPARATION

Review the project with other trades in relation to ducts, piping, conduits, thimbles, sleeves, etc. or other item penetrating or to be built into brickwork and co-ordinate their installation.
Obtain built-in items from their suppliers prior to starting brickwork.
Clean the surface of concrete before laying bricks thereon.
Set up pressed metal door frames plumb and level and brace as required. Maintain bracing until walls are at least 1000 high and frame grouting has set.

8.17 LAYING

General : Comply with applicable provisions of AS 3700, Section 11. Set out brickwork so as to reduce cutting to a minimum and, in facework, to avoid irregular or broken bond.

Make cuts in facework with a masonry saw.

Carefully position openings for other trades to eliminate cutting.

Build in accordance with the dimensions, thicknesses and heights shown on Drawings, plumb, level and in the designated position within the tolerances of AS 3700, Clause 8.8.

Allow no part to rise more than 1000mm above adjacent unfinished work. Rake back advanced work, build brickwork in bond and avoid toothing wherever possible.

Provide weepholes 1200 mm apart over damp proof course and flashings where these span across cavities.

Re-lay, in fresh mortar, bricks accidentally moved after initial laying.

Keep mortar stains to a minimum and protect horizontal ledges, finished sills and the like from mortar droppings as work proceeds.

Before mortar sets hard, remove excess mortar. Scrub brickwork within 24 hours of laying using a bristle brush plus detergent if necessary.

Protect new and incomplete brickwork with coverings, temporary bracing or the like – AS 3700.

8.18 BONDING AND LAYING

Build work in stretcher bond.

Horizontal and vertical joints having full mortar coverage and to be accurately 10mm wide

Space wall ties in accordance with AS 3700, Section 11.

Keep cavities clean and free from mortar droppings.

Set out storey rod so as courses do not deviate in line or level.

All work shall be plumb, straight and true to angles.

Set out walls, piers and jambs according to dimensions or working drawing to work bricks where possible.

8.19 INCIDENTAL WORK

Chases: Refer to AS 3700, Section 11 and, as far as possible, provide for chases to be made as the work rises. No horizontal chase may exceed 1200mm in length and no vertical chase may be closer than 600mm to an element providing lateral support. No chase may be more than 1/3 of the thickness of the wall.

Perform miscellaneous incidental brickwork as required throughout and for other trades. Make good after other trades.

8.20 CLEANING OF FACEWORK

Take care to keep walls clean constantly. Should further cleaning be necessary, use hydrochloric acid not stronger than 5%, treating only a small area at one time. Wet the wall prior to applying the acid, work from the top down and thoroughly wash off after brushing. Do not leave acid solution on wall at stoppage of work.

8.21 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by RPDesign.

On completion clean up mortar droppings, debris, etc., remove scaffolding, make good put-log holes and blemishes and leave work in a first class condition.

Protect facework surfaces where necessary to avoid damage during other building operations

9. BLOCKWORK

PART I GENERAL

9.1 SCOPE

General : Supply and build the blockwork shown on the Drawings or needed to complete the blockwork including, but not limited to the following :

Labour and materials.

Building in of miscellaneous items provided by others.

Staging and scaffolding.

Cleaning.

9.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Concrete

Structural Steel

Doors and Door Frames

Fire Rated Doors and Door Frames

9.3 QUALITY ASSURANCE

Provide manufacturer's certification that blocks supplied are of the specified type and strength and were manufactured in accordance with current Australian Standard

Approved Samples: At the start of blocklaying, arrange with the Superintendent to designate a beginning section of each type of facework not less than 6 courses high x 1200 long as the Control Sample/s.

When approved by the Superintendent, the Sample/s will become the control standard/s for blockwork and remain part of work.

9.4 REFERENCES

Comply with applicable portions of current editions of the following Australian Standards:

AS/NZS 1170	Structural design actions.
AS/NZS 1576	Scaffolding. 1576.1 2019 General requirements. *There are 5 other parts 1995 – 2016.*
AS 1657 2018	Fixed platforms, walkways, stairways and ladders - Design, construction and installation.
AS 1672.1 1997 *(R2016)*	Limes and limestones – Limes for building.
AS/NZS 2699	Built-in components for masonry construction. *There are 3 parts, 2000 – 2002.*
AS 2701 2001 *(R2015)*	Methods of sampling and testing mortar for masonry constructions
AS/NZS 2904 1995	Damp proof courses and flashings.*2 Amdts, 1998, 2013.*
AS 3700 2018	Masonry structures.
AS 3959 2018	Construction of buildings in bushfire-prone areas.
AS 3972 2010	General purpose and blended cements.
AS 4773	Masonry in small buildings.

Comply throughout with the current edition of the NCC.

9.5 DELIVERY, HANDLING AND STORAGE

Co-ordination : Reach agreement with the Superintendent about site provisions for storage of sand, cement and other materials and for the mixing of mortar.

Deliver, handle and store products in accordance with manufacturer's recommendations and prevent damage, deterioration or loss.

PART II MATERIALS

9.6 BLOCKS

Machine made precast concrete units with sharp arrises, free from distortion, cracks and other defects, uniform in colour and texture.

Supply hollow blocks except where otherwise specified or required.

Supply solid blocks where core holes would otherwise be visible or where required for fire rating or other purposes.

Match colour and texture of solid and hollow blocks in facework.

Supply matching half-blocks, half-height blocks, closers and lintel and bond beam blocks as required.

A.	Strength Grade :	12		
B.	Colour :	"Adbri Masonry" OATMEAL – Smooth Stone (to match existing).		
C.	Sizes and types :	EXTERNALLY	Smooth Face	20.101 - 390x140x 190 – for cavity walls.
			Include for	10.31 Smooth Solid, 190x140x190, - sill/header course, tilted 10mm.
D.		CONCEALED	Smooth Face	15.42 - 390x140x190 – Grey Blocks – core filled.

9.7 MORTAR

Accurately proportion and use within one hour of first wetting, no tempering shall be permitted.

Comply with AS 3700 as follows:

Split Face Designer Range:

1.	**Mortar mixes:**	Classification M3	1 cement	Designer additive	5 sand
2.	**Colour:**	Face work:	"Brighton Lite" cement: -	Face Blocks	
3.	**Jointing:**	Face work:	"Ironed".		

Grey Block Range:

1.	**Mortar mixes:**	Classification M3	1 cement	1 Lime	6 sand
2.	**Colour:**	Common work:	all purpose cement:		
3.	**Jointing:**	Common work:	"cut flush".		
4.	**Core Fill:**	Grout to comply with AS3700 Clause 11.7			

9.8 MISCELLANEOUS MATERIALS

Comply with AS 3700 as follows :

A.	Wall ties and accessories :	Brunswick Sales Masonry Ties generally. AS 3700 Clauses 4.10 & 10.5

B.	Reinforcement :	Refer to Structural Engineer's specifications.
C.	Lintels and other steel in blockwork :	Refer to Structural Engineer's specifications.
D.	Caulking :	Elastomeric sealing compound coloured to match mortar; for general caulking including movement control joints: Colour to match mortar. Refer AS 3700.
E.	Head restraint :	Refer to Structural Engineer's specifications.
F.	Damp-proof Courses :	Embossed black polythene positioned at floor level placed one course below bottom of concrete floor slab. It shall be continuous for the perimeter of the building and on all piers. Comply with AS 3700
G.	Flashings :	Embossed black polythene positioned over openings and to window reveals. Comply with AS 3700..
H.	Expansion joint material :	Caulking as above.
G	Vents:	Provide cavity ventilation with 390x100mm galvanised iron wall vents 2.0 metres apart to base wall.

9.9 STEEL LINTELS

A. Where blockwork is to be supported over openings and no special lintels are detailed, build in mild steel lintels, in accordance with the Building Code of Australia.

B. Set angles with the first dimension vertical.

C. Hot dip galvanise steel lintels in exterior openings.

D. Fix angles to concrete columns or beams with the bearing leg cut and bent to the height of the vertical leg and bolted to concrete with 2 no. 16mm masonry anchors.

PART III EXECUTION

9.10 MORTAR MIXING

Measure materials to ensure that the specified mix proportions are maintained AS 3700.

Mix in a suitable mixing machine until a uniform blending of the components is achieved.

Add water to create a mix that is as wet as can be conveniently used by the blocklayer.

Except for the previously specified methyl cellulose water thickener, use no chemical to affect the plastic or other properties of mortar or as a substitute for lime without the Superintendent's permission.

9.11 MORTAR LIFE

Re-tempering to replace water lost by evaporation is encouraged until initial set begins. Reject mortar which has begun its initial set and do not re-temper.

9.12 PREPARATION

Review the project with other trades in relation to ducts, piping, conduits, thimbles, sleeves, etc. or other item penetrating or to be built into blockwork and co-ordinate their installation.

Obtain built-in items from their suppliers prior to starting blockwork.

Clean the surface of concrete before laying blocks thereon.

Set up pressed metal door frames plumb and level and brace as required. Maintain bracing until walls are at least 1000 high and frame grouting has set.

9.13 LAYING

General : Comply with applicable provisions of AS 3700. Set out blockwork so as to reduce cutting to a minimum and, in facework, to avoid irregular or broken bond.

Make cuts in facework with a masonry saw.

Carefully position openings for other trades to eliminate cutting.

Build in accordance with the dimensions, thicknesses and heights shown on drawings, plumb, level and in the designated position within the tolerances of AS 3700.

Allow no part to rise more than 1000mm above adjacent unfinished work. Rake back advanced work, build blockwork in bond and avoid toothing wherever possible.

Build in as necessary reinforcements, arch bars, lintels, frames, straps, bolts, lugs, wall ties, metalwork, damp-proof courses and flashings, etc.

Re-lay, in fresh mortar, blocks moved after initial laying.

Keep mortar stains to a minimum and protect horizontal ledges, finished sills and the like from mortar droppings as work proceeds.

Before mortar sets hard remove excess mortar. Scrub blockwork within 24 hours of laying using a bristle brush plus detergent if necessary.

Protect new and incomplete blockwork with coverings, temporary bracing or the like - AS 3700.

9.14 JOINTING AND FINISHING

Joint thickness : 10mm within the tolerances given in AS 3700:

Joint finish Blockwork for concealed work : cut-off flush.

Face blockwork: Ironed joints.

9.15 BOND BEAMS

Provide bond beams to block walls where described by Structural Engineer's specification.

Where possible, form bond beams continuous with lintels. Reinforce with mild steel rods bent as required to follow wall pattern. Lap a minimum of 400mm at joints and corners and tie with 18 swg wire.

Provide clear space between rods and block shell and fill block with concrete as specified, compacted into the block and finished flush at top. Where block cavity leaves insufficient space for concrete infilling, grout with 1:2.5 cement: sand mortar.

9.16 DOOR FRAMES

Build in door frames as the work proceeds.

Generally allow for lugs at 400 to 450mm centres except FU door frames which have lugs to sizes and centres required by the fire test report pertaining to the particular type of door. Grout solid cavities behind frames.

9.17 BONDING AND TYING

Build work in stretcher bond.

Space wall ties in accordance with AS 3700.

Keep cavities clean and free from mortar droppings.

Fix to concrete or steel columns and at junction with concrete walls with frame ties built at least 250mm into block joint and fix to the structure as close as possible to the course line.

9.18 INCIDENTAL WORK

Chases : Refer to AS 3700, and, as far as possible, provide for chases to be made as the work rises. No horizontal chase may exceed 1200mm in length and no vertical chase may be closer than 600mm to an element providing lateral support. No chase may be more than 1/3 of the thickness of the wall.

Perform miscellaneous incidental blockwork as required throughout and for other trades. Make good after other trades.

9.19 CLEANING OF FACEWORK

Take care to keep walls clean constantly. Should further cleaning be necessary, use hydrochloric acid not stronger than 5%, treating only a small area at one time. Wet the wall prior to applying the acid, work from the top down and thoroughly wash off after brushing. Do not leave acid solution on wall at stoppage of work.

9.20 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Superintendent.

On completion clean up mortar droppings, debris, etc., remove scaffolding, make good put-log holes and blemishes and leave work in a first class condition.

Protect facework surfaces where necessary to avoid damage during other building operations.

10. STRUCTURAL STEEL

PART I GENERAL

10.1 SCOPE

Supply, fabricate and install a complete structural steel system including but not limited to:

Steelwork shown on **RPDESIGN DRAWINGS and or STRUCTURAL ENGINEER'S DRAWINGS** specified herein, or as described in his instructions issued during the currency of the work. It includes surface treatment, storage, delivery to the site, steel to steel connections and their fastenings, steel to concrete and their fastenings, miscellaneous attachments, and anchor bolts.

Erection of the steelwork shown on Architectural/Structural Engineer's Drawings and includes off-loading, erection, field welding, making steel to steel connections, connection to anchor bolts, permanent grouting and repairs to surface treatment.

10.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Carpenter

Concretor

Bricklayer

10.3 QUALITY ASSURANCE

Do work in accordance with the Drawings and Specifications which form part of this contract, and further details and/or instructions issued by Superintendent/Engineer during the currency of the works.

Submit evidence of experience appropriate to the class of work required. Install under the direct supervision of a capable Foreman, experienced in the class of work under construction.

10.4 REFERENCES

Conform to the latest edition, including amendments, of the following Australian Standards (except where varied by this Specification or the Contract Drawings):

AS/NZS 1554	Structural steel welding.
AS 1627	Metal finishing - Preparation and pre-treatment of surfaces. *There are 7 parts, 1997 – 2005.*
AS/NZS 3678 2011	Structural steel - Hot rolled plates, floorplates and slabs.
AS/NZS 3679 2010	Structural steel.
AS/NZS 3750	Paints for steel structures. *There are 24 parts, 1994 – 2009.*
AS 4100 1998	Steel structures *Plus 1 Supplement, 1999.*
AS/NZS 4600 2005	Cold-formed steel structures. *Plus 1 Amdt, 2010.*
AS/NZS 4673 2001	Cold-formed stainless steel structures.
AS/NZS 4680 2006	Hot dip galvanised (zinc) coatings on fabricated ferrous articles.
HB 48 1999	Steel structures design handbook.

10.5 DELIVERY, HANDLING AND STORAGE

Handle and store materials by methods and appliances that will not over-stress or deform the members. Separate materials on site from surface of ground.

Members bent or buckled from handling or storing will be liable to rejection.

Supply bolts, nuts and washers in grit-free containers and stored in water-tight premises. Reject burred, damaged, corroded or otherwise unserviceable bolts.

PART II MATERIALS

10.6 MATERIALS

General:

Supply materials required to complete the works under this Section in accordance with the Contract Documents and within the tolerances specified. Materials which do not comply will be rejected.

Steel Supply:

Unless otherwise shown on the Drawings, comply with AS/NZS 3678 and AS/NZS 3679. Do not use other types and grades of steel without written approval.

10.7 SHOP DRAWINGS

Refer to General Conditions, Clause 1.20. Provide a complete set of Shop Drawings for required components.

10.8 FABRICATION

Fabricate finish in accordance with AS 4100.

10.9 CONNECTIONS

General

Supply end cleats, brackets and other connections, not specifically detailed on the Drawings, to suit the location and forces shown thereon with gauge and edge distances in accordance with AS 4100.

Bolting General

Supply bolts in bearing of such lengths that no threaded portion crosses the interface of the parts joined. Place at least one washer under the bolt head or nut, whichever is to be rotated. Provide taper washers where the part under the bolt head or nut is not perpendicular to the centre-line of the bolt.

Welding

Do manual welding in accordance with AS 1554

Do semi-automatic welding in accordance with AS 1554.

Miscellaneous Attachments

Allow for the drilling, cleating and other fitments indicated on the Contract Drawings or shown on other relevant Drawings and required by other trades.

Be entirely responsible for supply of necessary information to the Steel Fabricator.

10.10 HOT DIP GALVANISING

Where scheduled or specified galvanised steel after chemical descaling in accordance with AS 1627 and AS/NZS 4680, so that rust, mill scale, oil grease and other foreign matter is removed leaving a clean surface of metal.

Then immerse steel in a bath of molten zinc so that when withdrawn, the zinc coating solidifies to a dry film thickness in compliance with AS/NZS 4680.
Reinstate transport and erection abrasions, site welds, etc., by thoroughly wire brushing affected areas to achieve a clean sound substrate and patch coating with a zinc-rich paint with a film thickness of 100 microns.

10.11 SURFACE TREATMENT OF STEEL

Clean steelwork free from loose rust, loose mill scale, dirt, oil and grease or by sand-blasting – Class 2.5. Apply a coat of inorganic zinc silicate, 100 microns thick. Refer AS 1627.4

10.12 INSPECTION BEFORE DELIVERY

Material and work is subject to inspection before painting and delivery. Provide the necessary access and facilities.
Where steel has been inspected at the shop before being delivered to the site, such inspection does not relieve the Contractor of his responsibility to carry out the work in accordance with the Drawings and this Specification.

10.13 EXPOSED STEEL TEXT

Any exposed steel in the project is to have the visible stamped text on the steel member in the correct orientation to be legible. (correct way up)

PART III EXECUTION

10.14 CONFLICTION

Where a conflict in direction is encountered between this Specification and Structural Engineer's Plans & Specifications, the Structural Engineer's direction shall hold precedence.

10.15 EXAMINATION

Inspect site conditions both before fabrication and delivery of steel.
Ensure that on delivery, materials can be directly installed.
Report discrepancies immediately they are found and instruction obtained before continuing with the affected portion of the work.
Start of work means total acceptance of conditions.

10.16 ERECTION

Adopt an erection procedure such that members can be placed and fixed in position without distortion.
Make safe, during erection, against wind and erection stresses and loading conditions, including those due to erection equipment.
Allow for the cost of temporary erection bracing required and of the Engineer's requirements in connection with such bracing. Comply with the requirements of AS 4100.

10.17 ADJUSTMENTS

Following erection, adjust the installation as required by Engineer.
Touch up abraded or missing paint areas. Refer next clause.

10.1 INSPECTION ON SITE

Advise Engineer and/or Superintendent when erected steel is ready for inspection.

10.2 GROUTING OF BASEPLATES

Set plates to precise level at centre of footing for future baseplate placement.

Set plate in high strength mortar.

After placement of column base plates, grout fill the void completely.

Trim the grout on completion.

10.3 CLEANING

Clean the installed steelwork and touch up with zinc rich primer paint of matching colour.

Ensure that the touch up paint is compatible with the factory applied material.

10.4 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

11. METALWORK

PART I GENERAL

11.1 SCOPE

Supply, engineer and install required general and Architectural metalwork items including but not limited to:

Refer to Materials Schedule

Steel door frames

Window frames

Fencing & Gates

11.2 RELATED WORK

Co-ordinate and co-operate with the following Trade Sections:

Carpenter

Metal Windows & Glazier

Painter

Tiler

11.3 QUALITY ASSURANCE

Work of this Section will be performed by experienced craftsmen familiar with the quality required in this class of work.

Comply throughout with manufacturer's instructions.

11.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 1554	Structural steel welding. *There are 7 parts, 1994 – 2011.*
AS 1627	Metal finishing - Preparation and pre-treatment of surfaces.
AS/NZS 1734 1997	Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.
AS/NZS 1866 1997	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes.
AS 4100 1998	Steel structures. *Plus 1 Supplement 1999.*
AS/NZS 4673 2001	Cold-formed stainless steel structures.
AS/NZS 4680 2006	Hot-dip galvanised (zinc) coatings on fabricated ferrous articles.

Comply with requirements of statutory and local authorities.

11.5 SHOP DRAWINGS

Refer to General Conditions, Clause 1.20. Provide a complete set of Shop Drawings for required components.

A. Contract drawings and details provided are indicative as to general and minimum requirements, and do not show conditions.

Develop details not shown and in conformity with the indicative details shown.

B. Take and confirm dimensions on site, before preparing Shop Drawings where possible.

C. Submit detailed Shop Drawings for fabrication and installation of major metalwork.

11.6 ROOF ACCESS LADDER HITCH, WALKWAY AND ANCHOR POINTS

Refer to Anchor Safe Quote: 39897 and allow for this price and works within your scope of work.

11.7 STEEL FRAMED STAIRWAY

Construct the Steel framed external stairway (Stair 2) to the details indicated on the Structural Steel drawings and the architectural drawings

11.8 INTERNAL STAIR 1 - HANDRAIL

Miami Stainless AISI 316 stainless steel Handrail Bracket wall to round handrail – satin finish P1020R-50SF, installed to manufacture specifications.

50.8mm x 1.6mm ProRail handrail tube in satin finish with

- 180° elbow end top and bottom of stairs
- 1.6mm statin finish ProRail handrail joiners
- 1.6mm satin finish ProRail end fittings to each rail start & finish

11.9 EXTERNAL STAIR 2 – BALUSTRADE

Supply and install the proprietary Moddex CB30 barrier system top mount to substrate according to Moddex specifications, or by a Moddex accredited installer.

Balustrade to both sides of stairs and first floor landing.

11.10 PERFORATED SCREENS

Supply and install Locker Group 3mm Galvabond perforated (10mmØ & 16mmØ) verandah screen panels, fully welded to 50x50x2.0mm galvanized steel frame, welded to verandah steel posts. Refer to plans for screen design.

Locker Group previous project reference DRG No. AQ266640.1

11.11 WELDING STEEL

General: details of joints, the techniques of welding employed, the appearance and quality of welds made and the methods used to correct defective work; conform to requirements of AS/NZS 1554.

Welds exposed to view: grind smooth to Superintendent's approval.

Concealed welds: grind smooth before galvanising.

Tack or skip welding: at regular intervals, very neat. Not permitted if material is to be hot dip galvanised.

Remove weld spatter.

Certification: only welders who have previously been qualified by tests may weld.

Stainless steel welding: refer AS/NZS 1554.

11.12 CONNECTION DESIGN

General: design fabricated items so that possible work is done before delivery. Fully protect for shipment. Take possible care to prevent damage.

A. Welding external items: conform to the recommendations of AS/NZS 1554.

B. Flanges: concealed where possible. Sleeve connecting railings inside railing sections and secure with flush or set screws.

C. Fasteners on the top of railing sections will not be permitted.

D. Weld shop connections for steel fabrications, and bolt field connections.

E. Provide smooth finishes to exposed surfaces with sharp well-defined lines and arrises.

F. Provide ample strength and stiffness by using appropriate metal thickness of assembly and supports.

G. Provide holes and connections as required to accommodate the work of other trades and for site assembly of metalwork. Drill or punch and ream in the shop.

11.13 MISCELLANEOUS

Fasteners: provide required bolts, screws, inserts, fasteners, templates and other accessories required for a complete installation.

Co-ordinate with other trades as to the proper fastening systems suitable for the substrates to which the item is to be secured. Refer to Superintendent if in doubt.

Fasten galvanised items with galvanised fasteners.

11.14 DISSIMILAR METALS

In moist environments, eg swimming pools of either fresh water or sea water etc, prevent totally contact between dissimilar metals (any metals).

This instruction takes priority over any drawing, detail or instruction and will prevent cathodic reaction between the metals.

Refer this instruction to the structural engineer.

PART III EXECUTION

11.15 EXAMINATION

Inspect site conditions before fabrication, where possible, and before delivery of materials. Ensure conditions are satisfactory for installation. Arrange for rectification required.

Start of work means total acceptance of relevant conditions.

11.16 FIELD QUALITY CONTROL

Where considered necessary by Superintendent, arrange for the manufacturer of products to instruct installers regarding correct installation.

11.17 PREPARATION

A. Field measurements: Do not delay job progress. Allow for adjustments and fitting of the work in the field where taking of measurements might cause delay.

B. Co-ordination with work of others: Furnish to each relevant trade foreman anchorages and setting Drawings, diagrams, templates & instructions for installation of items having integral anchors which are to be embedded in concrete or masonry construction. Co-ordinate delivery of such items to the site.

11.18 INSPECTION AND REINSTATEMENT

A. Check fabrications as they are unloaded at the project site for evidence of physical damage.

Treat damaged fabrications as follows:

1. Damage through galvanising: Perform immediate inorganic zinc silicate paint or cold-galvanising repair. Do not install until reinstated.
2. Architectural metalwork: Returned to shop for repair or replacement.

B. Verify anchors, bolts and other required anchorage items for proper size and accurate location.

11.19 INSTALLATION

A. Anchorage: Except for anchorages furnished herein but placed by other trades, set and secure necessary anchorages, including concrete and masonry inserts, bolts, wood screws and other connectors as needed. Perform cutting, drilling and fitting as needed, locating anchorages and holes to ensure proper positioning of completed work.

B. Fit: During installation and assembly, form tight joints with exposed connections accurately fitted, and reveals uniform. Finish work accurately, plumb, level, square and true in reference to adjacent construction. Make tolerances conform to Australian Standards.

C. Finish: Do not cut or abrade shop finishes which cannot be completely restored in the field.

11.20 PROTECTION

Cover Work: Immediately following installation, wrap or cover architectural metalwork to avoid wear and tear of finish during subsequent construction.

11.21 CLEANING

Clean materials installed to the satisfaction of Superintendent.

Remove temporary protective coatings.

12. FIRE EXTINGUISHERS

PART I GENERAL

12.1 SCOPE

Supply and install extinguishers were indicated in accordance with the statutory authority having jurisdiction.
Refer to **HYDRAULIC DESIGN AND SPECIFICATIONS** for type and locations.

12.2 QUALITY ASSURANCE

Perform work of this trade section with experienced tradesmen familiar with the quality of work required and licensed by the manufacturers of the extinguishers. Comply throughout with written instructions.

12.3 REFERENCES

Comply with applicable portion of the following Australian Standards:

AS 1603	Automatic fire detection and alarm systems.
AS 1670	Fire detection, warning, control and intercom systems, system design, installation and commissioning. *There are 4 parts, 1997 – 2004, plus 1 Amdt, 2005.*
AS/NZS 1841 2007	Portable fire extinguishers. *There are 8 parts, one for each type.*
AS/NZS 4353 1995	Portable fire extinguishers - Aerosol type.

Comply with requirements of statutory authority having jurisdiction.

PART II MATERIALS

12.4 MANUFACTURERS

Manufacturers of materials approved in writing by the statutory authority may supply equipment.

12.5 MATERIALS

Refer to **HYDRAULIC DESIGN AND SPECIFICATIONS**

PART III EXECUTION

12.6 EXAMINATION

Inspect site conditions before fabrication, where possible, and before delivery of materials. Ensure conditions are satisfactory for installation. Arrange for rectification if required.
Start of work means total acceptance of relevant conditions.

12.7 INSPECTION ON ARRIVAL AT SITE

Inspect materials on arrival, comparing each item to the schedule provided. Ensure that no material is damaged. Return to the manufacturer damaged items and obtain a replacement.

12.8 INSTALLATION

Anchorage: except for anchorages furnished herein but placed by other trades, set and secure necessary anchorages, including concrete and masonry inserts, bolts, wood screws and other connectors as needed. Perform cutting, drilling and fitting as needed, locating anchorages and holes to ensure proper positioning of completed work.

12.9 CLEANING

Clean materials installed to the satisfaction of the superintendent.

Remove temporary protective coatings.

12.10 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the superintendent.

13. CARPENTRY

PART I GENERAL

13.1 SCOPE

The work required under this section includes the supply, framing and fixing of structural members, stud walls and associated works as drawn and specified.

Include nailers, blocking, furring, grounds, hardware, framing, shoring, bracing, scaffolding and barriers required by the Drawings and construction.

13.2 RELATED WORK

Co-operative and co-ordinate with all other trades.

13.3 QUALITY ASSURANCE

Include in each prototype elements required by this Specification, and finish in every respect. When approved by Superintendent, such samples remain part of the work and become the standard for the remaining work.

13.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS 1684	Residential timber-framed construction.
1684.2 2010	Non-cyclonic areas.
AS 1720	Timber structures.
AS/NZS 1859	Reconstituted wood-based panels - Specifications
AS 3959 2009	Construction of buildings in bushfire-prone areas. *Plus 3 Amdts, 2009 - 2011.*
AS 4055 2006	Wind loads for housing. *Plus 1 Amdt, 2008.*
AS/NZS 4364 2010	Timber – Bond performance of structural adhesives.
HB 44 1993	Guide to AS 1684 1992, The National Timber Framing Code.

13.5 DELIVERY, STORAGE AND HANDLING

Deliver, handle and store products so that damage, deterioration and loss will be prevented. Control delivery schedules to minimise long-term storage at site.

Store timber on site indoors, or above ground and cover with secure impervious material.

PART II MATERIALS

13.6 TIMBER WALL FRAMES

Timber shall be Kiln Dried Radiata Pine Stress MGP 10, studs spaced at 450c/c.

Allow for **"T2"** (or equal) **termite resistant treated structural pine.**

Bottom Plate	90 x 45	
Top Plates	2 x 90 x 45mm	- to all load bearing walls
Studs	90 x 45	- Staggered double studs where detailed.
Nogging	85 x 35	- Allow for two rows.
Bracing	Metal angle and or solid ply as detailed in the bracing section of AS 1684.	

Lintels	Concealed lintels shall be galvanised iron (or as otherwise detailed).
Wall wrap, sarking	Provide to all external walls, fire retardant double sided reflective aluminium foil laminated membrane, install to manufacturers instructions, equal to CSR Bradford Thermofoil Building Grade 732, anti glare wall wrap.

13.7 SKIRTINGS

Provide 92 x 18mm pine primed single bevel skirtings to all wall floor abutments. (except tiled floor areas)
Double nail to wall studs and plates.

13.8 ARCHITRAVES

Generally "EzyReveal" as detailed on drawings and hereinafter specified in Section 19, Plasterboard Linings.

13.9 JAMB AND HEAD LININGS

Allow for aluminium door jambs throughout.
Allow for plyboard reveals (Stained finish) to openings in Ply walls.

13.10 GENERAL ITEMS

Allow supply and installation of the following signage and bathroom accessory items:

Item	Manufacturer	Stainless Steel (or vinyl equivalent) with Black In-Fill	Door Numbers
Disabled Signage	Metlam Australia P/L	4 off:- "MLS 16997_SS" Ground floor exit sign 1 off – "MLS16996" first floor exit sign 1 off:- "MLS16213_SS" unisex staff toilets 1 off:- "MLS 16092_SS" CLEANER 1 off.- "MLS16222_SS" Unisex accessible w/c LH 1 off. – "MLS16223_SS" Unisex accessible w/c RH 3 off:- "MLS 16304_SS" Unisex Ambulant Toilet 1 off: - "MLS16246_SS" male ambulant toilet 1 off. – "MLS16266_SS" female ambulant toilet 1 off:- "MLS 16214_SS" Staff unisex Toilet. 1 off. – "MLS16294_SS" unisex shower 1 off:- "MLS16055 _SS" first aid room 4 off:- "MLS 16263_SS" GIRLS toilet 4 off:- "MLS 16243_SS" BOYS toilet 2off: - "MLS16451_SS" accessible lift	1,2,7 & 20 101 23 22 24 14 25 13 15 27 26 42 16,17,18 & 19 9,10,11 & 12 Lift top and bottom doors
Ambulant Toilet Grab Rail	Metlam Australia P/L	3 off:- "MLR 112" 32mm ø concealed fix, SSS (RH & LH)	
Accessible w/c 1	Metlam Australia P/L	30° Flush Mount Side Wall 840x700mm RH in Satin Stainless Steel MLR102X_SS 300mm Straight Grab Rail in Satin Stainless Steel MLR327_SS	
Accessible w/c 2	Metlam Australia P/L	30° Flush Mount Side Wall 840x700mm LH in Satin Stainless Steel MLR101X_SS 300mm Straight Grab Rail in Satin Stainless Steel MLR327_SS	
Toilet roll holder	Metlam Australia P/L	To accessible w/c's and ambulant w/c's ML 513_TRH_ALUM	

Robe Hook	Metlam Australia P/L	14 off:- "ML 204 Hook" satin chrome,
Paper Towel Dispenser	Bradley Australia	8 off:- Bradley Contemporary 255 paper towel dispenser slim – Stainless Steel
Shower Seat		1 off:- "ML 993 CL" Folding Shower Seat to first aid bathroom
Toilet Roll dispenser		Supplied by Victory Lutheran College, installed by builder
Soap dispenser		Supplied by Victory Lutheran College, installed by builder

13.11 FIRST AID ROOM & STAFF SHOWER CURTAINS AND TRACKS

Supply and install Metlam or approved equal, Bedside Curtain Tracks and Weighted Curtains.

First Aid:

Allow for Metlam SCT_2000mm Micro shower curtain track straight 2000mm – Anodised finish.

Support the curtain tracks at 1000mm c/c from ceiling with Metlam support rods.

Fit 5 No. Weighted Curtains - 2600 long by 2000 drop (ML_SC_WBS_2620). White polyester box stripe.

Staff Shower:

Allow for Metlam SCT_1200mm Micro shower curtain track straight cut to suit room width – Anodised finish.

Support the curtain tracks at each end with SCT-SERIES-STRAIGHT wall mount brackets

Fit 1 No. Weighted Curtains - 1200 long by 2000 drop (ML_SC_WBS_2620). White polyester box stripe.

13.12 VERANDAH & EAVE SOFFIT LININGS

Refer to Section 16. Roof & Roof Plumbing.

13.13 INTERNAL WALL LININGS

Supply and install Austral Plywoods exterior hoop pine BB face 12mm architectural plywood panel wall lining to Display Area strairwell balustrade wall, and to other areas as indicated on the drawings.

Install via architectural detail with 10mm expressed jointing in strict adherence to Austral Plywoods specifications and instructions. Plywood is to be certified Fire Group 1, per BCA Specification C1.10 clause 4.

Panel size 2400x1200x12mm.

Allow for 90x35mm T2 pine battens to joints and 45x35mm T2 pine battens to intermediate joints at 600c/c to Austral Plywoods details and specifications.

Product description.

AUSTRAL BB STRUCTURAL to be used/installed as specified. Plywood to be manufactured with timber species: Araucaria (Hoop Pine). Face and back veneer grades to be BB, conforming to Australian Standards for veneer grading. Core grade to be D Multiply, conforming to Australian Standards for veneer grading.

Glue system to be used is A-Bond Phenolic (black glueline) with formaldehyde emissions rating of Super E0, tested in accordance with AS/NZS 2098.11 : 2005. Manufacturer warranty on glue bond to be 25 years.

Plywood supplied must be manufactured to Australian Standard AS/NZS 2269:2012 and be certified under the EWPAA JAS-ANZ Product Certification Scheme. Plywood must also be Green Star rated and be environmentally certified to RW/PEFC. Plywood to be certified Fire Group 3 per BCA Specification C1.10 clause 4.

Plywood to conform to Stress Grade F17 (or better), in accordance with AS/NZS 2269.1.

13.14 ROOF ANCHORAGE POINTS

REFER TO ANCHOR SAFE QUOTE: 39897

Provide a proprietary Stainless Steel anchorage point system (equal to "Safety Anchors/Safemaster") to AS/NZS 1891.4 and in accordance with WorkCover's Code of Practice for Safe Work on Roofs for the attachment of individual fall arrest devices/restraints. Anchorage points are also to be provided to prevent "pendulum affect" in corners of buildings.

Installation:

A "competent person" (AS.NZS 1891.4-1.4.1) must install all anchorage points at appropriate intervals and in the most suitable position to make safe access to all areas of the roof and sufficient distance from the roof end to prevent" pendulum effect". All metal fittings must be compatible or isolated by inert elements between dissimilar metals.

Anchorage System:

The complete height protection system including all installed anchorage points must be certified by an "engineer" that is in full compliance with WorkCover requirements and that each installed anchor complies with AS/AZS 1891.4 ultimate load rating of 21kn (minimum). Anchors must be of a design that permits a maximum of 9kn load to be placed on the roof structure (Test results may be required).

Flashing:

Where anchorage points penetrate the roof, provide proprietary flexible roof flashing especially designed to fit narrow dimeter penetrations.

13.15 PERFORATED METAL CEILING

To the elevated ceiling areas nominated on the drawings allow to supply and install 0.42mm BMT, perforated corrugated zincalume base material, finished in Colorbond "Surf Mist".

Fixed to metal frame at max. 1200mm c/c. with colour matched screws to manufacturer's instructions.

13.16 STAIR 2 LANDING TACTILE INDICATOR

Allow to install at top of external stair 2 Safety & Civil Stainless Steel Tactile Indicators Plates – 300x600mm Yellow Tactile sheets to be installed for the full width of the stairs.

Allow to install 50x50x2.0 Galv. SHS rails under landing in locations required to fix off tactile sheets.

Use stainless steel metal screw fixings in allocated locations on sheet and TSA MS-2000 Construction Adhesive.

13.17 STAIR 2 NOSING STRIP

Allow to install to stair 2 Safety & Civil Carborundum Stair Nosing – 25mm Leading Edge to each tread and leading edge of first floor landing.

PART III EXECUTION

13.18 EXAMINATION

Visit site and inspect conditions, comparing conditions to Drawings before delivery of materials to site.

Start of work means total acceptance of conditions.

13.19 INSTALLATION GENERAL

Comply with: AS 1684 SAA Timber Framing Code, and other relevant standards.

Handle and erect roof trusses in such a way as to avoid damage and permanent sets. Comply with recommendations given by the nail plate manufacturer for handling, fixing and bracing methods.

13.20 INSTALLATION PARTICULARS

Perform operations including grooving, rebating, framing, housing, beading, mitring, scribing, nailing, screwing and gluing as necessary to carry out the works. Use timber in single lengths whenever possible. If joins are necessary, make them over supports unless otherwise shown or specified.

Provide necessary templates, linings, blocks, stops, ironwork and hardware, screws, bolts, plugs and fixings generally. Trim framing where necessary for openings, including those required by other trades.

13.21 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by RPDesign.

13.22 WHITE BOARDS

Supply and install where noted on floor plan for proposed whiteboard ‘whiteboards and pinboards – slimline frame whiteboard 1800w x 1200h’ in landscape orientation with slimline pen tray.

14. WATERPROOFING

PART I GENERAL

14.1 SCOPE

This trade section identifies requirements for the supply and installation of four different types and areas of waterproofing. It covers preparatory and protective work and associated materials including but not limited to:

A. System Type A:- Wet Area membrane as in bathrooms, showers & laundry areas.

B. System Type B:- Anti-microbial & moisture proof sealer to vinyl floorcoverings.

C. System Type C:- Tanking Membrane to retaining walls and other walls with backfill.

Refer to Concrete trade sections.

14.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Concrete

Masonry

Surface finishes

Excavation & Fill

14.3 QUALITY ASSURANCE

Use experienced and trained installers licensed by the material manufacturer. Provide evidence of the licence to the Superintendent.

14.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS 1884 1985	(Obsolescent) Floor coverings – Resilient sheet and tiles – Laying and maintenance practices, Appendix A.
AS 3600 2009	Concrete structures. *Plus 1 Amdt, 2010.*
AS 3740 2010	Waterproofing of domestic wet areas.
AS 3799 1998	Liquid membrane-forming curing compounds for concrete.

14.5 MANUFACTURED PRODUCTS

Identification of a particular manufacturer's product does not exclude alternative products by others. It is a quality standard required to be met.

Submit request for alternatives to be approved to the Superintendent with full description including recommended installation procedures and procedures relating to OH and S of applicators and other site personnel.

Do not order materials until written approval of alternatives has been received.

Submit manufacturer's approval of installers where manufacturer's own licensed installers are not employed and a warranty is required.

14.6 DELIVERY, HANDLING AND STORAGE

Keep on-site storage of materials to a minimum, delivering them as required for direct installation. Be responsible for loss and damage to delivered materials, both stockpiled and in place.

Deliver materials in sealed containers showing manufacturer's name. Arrange for inspection of material by the Superintendent before using them.

14.7 WARRANTY

Requirement

Prior to completion of the waterproofing systems installation, provide each warranty.

In the appropriate form;

Executed by the Sub Contractor and the warrantor (or warrantors in the case of joint warranties); and for the required warranty period

Warranty Conditions

Sub Contractor's obligations: The provision of a warranty does not relieve the Sub Contractor of any of his contractual obligations.

Guarantee of performance: Where the warrantor is a subsidiary of another organisation, provide that organisation's guarantee of performance of the warranty.

Adjustment of warranty period: Where any part of the work is required to be repaired or made good under a warranty, the warranty period does not terminate until that part has been satisfactorily repaired or made good; and in respect of that part, recommences from the date of completion of the repair or making good.

Warranty Period

As noted beside each of the waterproofing systems described in this specification.

PART II SYSTEM DESCRIPTION

14.8 WATERPROOFING SYSTEM TYPE A ----- WET AREA MEMBRANE

Location

Refer drawings.

Typically to floor area and walls of wet areas: Including bathrooms, en-suites & laundries, and to walls areas immediately adjacent and behind a bath, sink or similar fixture.

Carry the membrane to wall/ floor junctions including under fixtures, baths, shower bases, toilets, vanities and the like and over floor waste flanges.

To a minimum height of 2100mm to entire wall area of shower recess extending 300mm beyond the horizontal extent of the designated shower wall area.

To a height and width not less than 450mm to wall areas immediately adjacent and behind a bath, sink, trough or similar fixture.

System

Type: Liquid applied, moisture curing, polyurethane liquid membrane.

Proprietary item: "Vulkem Non-Exposed Membrane" system by "Tremco Pty Ltd ",
"Wet-Seal Fibre Coat" system by "Wet-Seal Australia.
(or written approved equivalent).

Substrate

Curing: Allow concrete to cure for a minimum of 28 days prior to the application of the membrane.

Cleaning: Clean down the substrate surface to remove all curing agents, wax, grease, oil, dirt, dust and other foreign material and leave it clean, dry, dust free, smooth and free of undulations.

Voids: Patch with a non shrinking quick setting grout and allow to cure for a minimum of 7 days prior to applying the membrane.

Application

Fillet: Wherever a vertical penetration or upstand occurs install a 12mm x 12mm fillet of Vulkem 931 at the intersection of the vertical and horizontal surfaces.

Primer: This product is generally a primeless membrane on most clean substrates.
Prime porous substrate (concrete/cement) typically with Vulkem 171.
Prime non-porous materials (metals/plastics) typically with Tremco Primer No 181.

Joints and penetrations: On the same day of priming, seal joints and penetrations with Vulkem 931 sealant.

First coat: On the same day as priming, apply a coat of Tremco "Vulkem Non-Exposed Membrane" to a minimum wet film thickness of 1.0mm to floors and walls in a single operation. If delayed beyond that day re-prime in accordance with manufacturers instructions.

Detailing

Detail the membrane in accordance with the manufacturer's recommendations, as shown on the drawings and as follows:

Turn the membrane down into the puddle flange of outlets.

Turn the membrane up at and seal to all penetrations, pipes, waste outlets, etc.

Turn the membrane up for 100mm at all walls, plinths, and other upstands.

Dress the membrane over the horizontal leg of angle tile trims at doorways and turn up the vertical face of the angle to terminate level with the coved vinyl skirting.

Similarly dress the membrane up the face of door jambs to terminate at the underside of the floor tiles.

The membrane turn up is to create a complete waterproof envelope to the floor area of the space being treated.

Detail the membrane at movement joints in the substrate as detailed on the drawings.

Membrane curing: Allow 72 hrs for the membrane to cure prior to carrying out water tests or applying finishes, toppings etc.

Warranty

Provide a warranty for materials and application of the membrane for a period of ten (10) years from the date of Practical Completion, to be in a form approved by the Principal.

Alternatives

Type: Any proposed alternatives to the system specified below shall be a proprietary liquid applied or sheet membrane system which:

☐ has a current Australian Building Product and Systems Certification Scheme certificate (Australian Building Codes Board);

or

☐ has a current technical opinion issued by the Australian Building Systems Appraisal Council (CSIRO) stating that the system is suitable for use as a waterproofing system for use in wet areas, shower recess bases and associated floors and wall/floor junctions which are to be tiled.

14.9 WATERPROOFING SYSTEM TYPE B – ANTI-MICROBIAL & MOISTURE PROOF SEALER

Concrete substrate anti-microbial & moistureproof sealer: – Concrete sealer under all vinyl floor coverings.

Proprietary item:

Supply and install Oxtek Solutions X260 Medi-Vet with Antimicrobial (or written approved equivalent) penetrating internal moisture barrier system with bacterial control; installed by accredited applicator in accordance with the manufacturer's recommendations – minimum 2 coats.

14.10 WATERPROOFING SYSTEM TYPE C – TANKING MEMBRANE

Location

Refer clause 101 and Waterproofing Table and drawings.

Typically to lift pits, retaining walls and other walls with backfill: to the full area of slab and wall.

System

Torch applied, AAP modified bituminous sheet membrane.

Proprietary item: Tremproof 3000 by Tremco Pty Ltd.

Substrate

Preparation: allow concrete to cure for a minimum of 28 days prior to the application of the membrane.

Clean down the concrete surface to remove all curing agents, wax, grease, oil, dirt, dust and other foreign material and leave it clean, dry, dust free, smooth and free of undulations.

Voids: patch with a non shrinking quick setting grout and allow to cure for a minimum of 7 days prior to applying the membrane.

Application

Penetrations: wherever a vertical penetration or upstand occurs, install a 50mm x 50mm sand cement fillet at the intersection of the vertical and horizontal surfaces.

Priming: prime the entire surface that is to receive the membrane, including upstands etc, with Tremco Bituminous Primer (based on R105/15 bitumen) at the rate of 6-8 m□ per litre.

Membrane: torch apply 1 layer of Tremproof 3000 and fully heat welded to the primed surfaces.

Lap the membrane 150mm at side and end joints and fully weld joints with a heated spatula.

Cover the entire membrane with a layer of Tremco Protection Board prior to the backfill being placed.

Detailing

Detail the membrane in accordance with the manufacturer's recommendations, as shown on the drawings and as follows:

Turn the membrane down into the puddle flange of outlets.

Turn the membrane up at and dress to all penetrations, pipes, waste outlets, etc.

Turn the membrane up for a minimum of 150mm or level with the top of paving or tiles, at all walls, plinths, and other upstands. Refer to the drawings for extent as well.

Where the membrane turns up against hobs etc and where indicated on the drawings, provide a cover flashing. Capture the horizontal leg of the flashing in the bed joint of blockwork or by sealing into saw cuts or reglets in blockwork or concrete. Dress the vertical leg down over the membrane to achieve a minimum 75mm cover. Use Colorbond finish zincalume for cover flashings generally and marine grade stainless steel where the flashing is built into concrete or cement beds, toppings or pavements.

Where indicated on the drawings, provide a K pressure seal to terminate the top of the membrane.

Provide cover flashings over the turn up of membranes at all services penetrations. Form the flashing from material that is compatible with the material of the individual service and the membrane. Seal the flashing to the service and dress down over the membrane to achieve a minimum 150mm overlap.

Detail the membrane at movement joints in the substrate as detailed on the drawings.

Warranty

Provide a warranty for materials and application of the membrane for a period of 10 years from the date of Practical Completion, to be in a form acceptable to the principal.

Alternatives

Any proposed alternative to this membrane system will only be considered if it is equal to this system in every performance criteria, details of which are to be submitted with the proposal.

PART III EXECUTION

14.11 EXAMINATION

A. Inspect conditions before delivery of materials and start of work on site to ensure that everything is satisfactory. Arrange with Builder for needed rectification.

Start of work means total acceptance of conditions.

B. WATERPROOFING SCHEDULE

Location and Extent	System Type
Vinyl floor covering.	**A**

14.12 SUBSTRATES

Substrates for membranes

Apply membranes to dry, smooth, firm, continuous surfaces, clean and free from loose or foreign matter. Provide coving or fillets on internal corners. Round or arris external corners and edges.

Dryness tests for substrates:

To AS 1884 Appendix A.

Acceptance of substrate: Certify that the building structure, including the building tolerance, provision of reference lines and marks, is satisfactory for receiving the application of the waterproofing system.

Approval of installer: If the installation of the waterproofing system is not by the manufacturer, and a manufacturer's warranty is conditional on approval of the installer, then obtain the manufacturer's approval of the installer.

Make a photographic record of prepared substrates.

14.13 TESTING REPORTS

Test installations prior to application of finishes to membranes.

To each membrane in wet areas, Test 20% of area of membrane with a minimum of ten tests.

Submit a report on the preparation of areas to be treated, working progress and on completion. In each report include a photographic record.

14.14 CLEANING

Thoroughly clean work on completion, including affected adjacent surfaces.

14.15 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Superintendent.

15. INSULATION (THERMAL & ACOUSTIC)

PART I GENERAL

15.1 SCOPE

The scope of work includes but is not limited to, the supply and installation of thermal insulation.

It also includes the supply and installation of acoustic insulation.

15.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Carpentry, wall & roof framing

Metal Roofing

Plasterboard

15.3 QUALITY ASSURANCE

Installers are required to be widely experienced in relevant aspects of the work and with the requirements of Australian Standards appropriate to the work.

15.4 REFERENCES

Comply with the applicable portions of the Australian Standards.

AS 1366	Rigid cellular plastic sheets for thermal insulation.
AS/NZS 2107 2000	Acoustics - Recommended design sound levels and reverberation times for building interiors.
AS 3999 1992	Thermal insulation of dwellings - Bulk insulation - Installation requirements.
AS/NZS 4200	Pliable building membranes and underlays.
AS/NZS 4859.1 2002	Materials for the thermal insulation of buildings - General criteria and technical provisions.

Comply with the requirements of the Building Code of Australia.

15.5 SUBMISSION

Provide to Superintendent before ordering, samples, literature and technical data of each specified material.

15.6 DELIVERY, HANDLING AND STORAGE

Deliver, handle and store products so that damage, deterioration, and loss will be prevented. Control delivery schedules to minimise long-term storage at the site.

Store above ground with secure impervious material.

PART II MATERIALS

15.7 APPROVED MATERIAL SUPPLIERS

CSR Bradford. - Insulations Solutions. - Other, as approved.

15.8 MATERIALS

1: Thermal:

A. Thermal insulation (building paper type) with flame retardant reflective facing sarking.
CSR Bradford Glasswool Anticon Roofing Blanket R1.5 plus (as Roof Plumber).
Install to all roofed areas, laid over purlins and carry sarking only into gutters

B. Vapour barriers – without reflective facings – aluminium foil reinforced.
CSR Bradford "Thermofoil" Medium Duty, Antiglare, carried 50mm into gutters.
Comply with manufacturers' recommendations and AS/NZS 4200.1 Materials

C. Bulk thermal insulation – in sealed batts.
CSR Bradford Glasswool Ceiling Batts: R4.0 - Ceilings generally.
CSR Bradford Glasswool Wall Batts: R2.7 HD - Brick-Veneer walls.
CSR Bradford Glasswool Wall Batts: R2.7 HD - External lined stud walls.
Comply with manufacturer's recommendations the applicable Australian Standards.

2: Acoustic:

Acoustic insulation (attenuation type) without facings – glasswool batts.
CSR Bradford:- Acoustigard Acoustic Glasswool Batts R2.7 HD - To all internal stud walls.

PART III EXECUTION

15.9 EXAMINATION

Visit the site and inspect conditions, comparing conditions to Drawings before delivery of materials to site. Start of work means total acceptance of conditions.

15.10 PREPARATION

Prepare surfaces and or framing material and ensure that no obstructions will prevent rapid and effective installation.
Installation General.
Comply with manufacturer's current written recommendations and the relevant Australian Standards.

External Stud Walls:	R 2.7 HD	All external framed & clad walls, including walls bounding roof space
Brick-Veneer Walls.	R 2.7 HD	All brick/block-veneer walls.
Internal Stud Walls	R2.7 HD	Acoustic wall insulation to all internal Stud walls
Pitched Roof:	R 1.5 plus	Insulating Building Blanket to all roof areas.
Ceiling Space:	R 4.0	All internal ceiling areas.

15.11 CLEANING

Remove surplus material on completion and arrange for inspection(s) by manufacturers representative.

15.12 COMPLETION

Complete contracted work in accordance with the contract document and written variation orders issued by Superintendent.

16. ROOF PLUMBING & CLADDING

PART I GENERAL

16.1 SCOPE

Supply and install a complete roofing and siding (external cladding) installation as shown on the Drawings including but not limited to the following:

A. Metal deck of colorbond zincalume steel including accessories, fastening clips, apron flashings, gutters, parapet linings, copings, sumps, overflow pipes, downpipes.
B. Roof insulation, and wire mesh.
C. Roof penetrations and sealing thereof.
D. Metal Cladding and Soffit linings.
E. Parapet linings.

16.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Structural Steel
Metal windows and glazing
Doors and door frames
Carpentry
Drainage

16.3 QUALITY ASSURANCE

Tradesmen are required to be experienced in and knowledgeable about the work to be performed and the various standards to which the work is to comply. Superintendent will make random inspections during the execution of the work.

16.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 1170	Structural design actions.
AS 1273 1991	Unplasticised PVC (UPVC) downpipe and fittings for rainwater.
AS/NZS 1562	Design and installation of sheet roof and wall cladding.
AS/NZS 2179	Specifications for rainwater goods, accessories and fasteners.
AS/NZS 3500.3: 2003	Stormwater drainage. *Plus 2 Amdts, 2006 - 2010.*
AS 3566 2002	Self-drilling screws for the building and construction industries. *There are 2 parts.*
AS 3999 1992	Thermal insulation of dwellings - Bulk insulation - Installation requirements.
AS/NZS 4256	Plastic roof and wall cladding materials. *There are 5 parts, 2006.*
AS/NZS 4389 1996	Safety mesh.
HB 39 1997	Installation code for metal roof and wall cladding.
HB 114 1998	Guidelines for the design of eaves and box gutters.

16.5 DELIVERY, HANDLING AND STORAGE

Deliver to site, unload and stack in a location away from potential damage, preferably directly on to installed roof framing. Inspect on arrival and reject bent or damaged material.

16.6 WARRANTY

Provide to the Proprietor a warranty on the whole of the roof and roof plumbing including penetrations for pipes, flues, up-stands etc. performed for mechanical equipment Sub-Contractor which states that work will remain waterproof and weather-tight for the period of fifteen years from the date of Practical Completion.

PART II MATERIALS

16.7 MATERIALS

Item	Description	Finish
Roof Sheeting: Verandah	0.48mm TCT corrugated zincalume base material. Fixed to metal roof purlins at 1000mm c/c.	Refer to colour schedule
Roof Sheeting: Main Roof	Steeline LOKDEK 700 0.48mm colorbond G550 AM100 Fixed to metal roof battens at 1000mm c/c and installed to manufactures details	Refer to colour schedule
Roof Sheeting: Existing Library roof	0.48mm TCT (profile to match existing) zincalume base material. Fixed to new metal roof purlins at 1000mm c/c. - Allow all new flashings and cappings to match existing to affected roof area - Allow for new R1.5 anticon roof blanket to affected roof area	Colorbond
Wall Cladding	0.48mm TCT corrugated zincalume base material. Fixed to wall lining at max. 1200mm c/c..	Refer to colour schedule
	4mm x 1250mm wide “Vitracore G2” laminated aluminium composite panels by Fairview. Supplied and installed with metal fixing system to manufacturer’s instructions and in selected Solid & Metalic colours, as detailed. Allow 12mm expressed joints to sheets with colour matching Dow Corning, or equal, Low Modulus Sealant, to manufacturer’s instructions in selected colour. Allow for thermal expansion to “Vitracore G2” specifications.	Refer to colour schedule
External Soffit Linings	0.48mm TCT corrugated zincalume base material. Fixed to metal battens at max. 600mm c/c..	Refer to colour schedule
Internal Ceiling Lining	Perforated corrugated ceilings, refer to Carpentry Clause 13.15. Refer to reflected ceiling plan for nominated location	Refer to colour schedule
Fascia Gutters:	0.53 mm TCT zincalume base material, 200mm diam. “half round profile”.	Refer to colour schedule

Fascia:	0.53 TCT	Refer to colour schedule
Downpipes:	Zincalume base material to sizes indicated on hydraulic plans	Refer to colour schedule
Flashing:	Shall be 0.48mm BMT zincalume finished sheet steel or soft zinc as required. (colour to match roof), all to AS 2904.	Refer to colour schedule
Insulated Building roll	To all roof area allow to install CSR Anticon R1.5 plus. Including verandahs. Carry Anitcon paper 60mm into gutter without insulation attached.	

16.8 FABRICATION

Form and fabricate components in accordance with AS 1562, AS 2179 and AS 2180, and other relevant standards.
Self-drilling screws are to conform to Class 3 as described in AS 3566.

16.9 EXAMINATION

Inspect site conditions before installation. Ensure framing is entirely satisfactory.
Ensure that delivery and installation will not be impeded by on-site conditions at time of delivery.
Start of work means total acceptance of conditions.

PART III EXECUTION

16.10 EXAMINATION

Inspect site conditions before installation. Ensure framing is entirely satisfactory.
Ensure that delivery and installation will not be impeded by on-site condition at time of delivery.
Start of work means total acceptance of conditions.

16.11 TERRAIN CATEGORY

Refer to structural engineer documentation for Wind Classification and Terrain Category.

16.12 PREPARATION

Prepare framing and surfaces for installation.

16.13 FLASHING

Lap flashing at least 150mm at junctions, and over flashings neatly dressed and finished. Where necessary to follow a roof slope, step flashings in even overlapping widths. Finish top corners to a line parallel to the roof slope.
Fabricated flashings in materials which are compatible with gutter and roofing materials, and the same finish. Complete work and leave an entirely watertight installation.

16.14 PENETRATIONS

Form penetration flashings neatly with material matching roofing material. Form flanged tubular collars 0.70mm sheet zinc not less than 150mm high and 12mm wider than penetrating item, or use EPDM collars.
Where the width of a penetration is wider than a roofing trough or extends across several troughs, form a back gutter, using sheet material similar to the roofing material, well lapped under the roofing, double riveted and sealed with

silicone sealant. Close and seal ends of cut ribs. Form back gutters not less than 100mm wide with falls towards the sides of the penetration collars.

Form over-flashings of penetration collars neatly in material matching the roofing material but not less than 0.5mm thick, securely clipped and sealed to the penetrating items and dressed well down over the collars to finish at a straight line level with the tops of the ribs.

Do not use lead or copper for over-flashings.

16.15 CLEANING & COMPLETION

To prevent contamination and corrosion, keep clean metal roofing and rainwater goods at times during the progress of the works.

At the end of work each day, and immediately before each occurrence of rain, sweep the metal surfaces thoroughly to remove metal filing, swarf, off-cuts, dust, and other materials which could cause corrosion or blockages. Prevent waste materials from entering downpipes, rainwater heads, or drains.

Remove unsecured nails, rivets, screws, bolts and similar fixing devices, guttering, etc., at the end of work each day and at the completion of roofing installation.

On completion, test the entire installation in the presence of and to the satisfaction of Superintendent.

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent

17. DOORS & DOOR FURNITURE

PART I GENERAL

17.1 SCOPE

Supply and install timber doors and timber [or steel] door frames including but not limited to:

A. EXTERNAL DOORS
- Fully Glazed
- Security doors

B. INTERNAL DOORS
- Flush panel doors – solid core
- Metal frames (jambs)

17.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

- Carpentry
- Joinery
- Brickwork
- Plasterboard
- Fire / Sound rated doors and frames
- Metalwork
- Glass and Glazing
- Painting
- Electrical

17.3 QUALITY ASSURANCE

Include in each prototype elements required by this Specification, finished in every respect. When approved by Superintendent, each prototype remains part of the work and becomes the standard for the remaining work.

17.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 1859	Reconstituted wood-based panels - Specifications		
AS/NZS	2272	2006	Plywood – Marine
AS/NZS 2803	Security screen doors		
AS/NZS 2804	Installation of security screen doors		
AS 4145	Locksets.		

Comply with requirements of statutory and local authorities.

17.5 DELIVERY, HANDLING & STORAGE

Deliver specified items shortly before installation is due to occur.

Prevent damage and deterioration during transport and handling.

Store carefully at site in a secure area. Prevent twisting and warping of doors.

17.6 WARRANTY

Provide to the Proprietor a warranty covering faulty materials, and installation, warping of materials and other faults which may occur within five years of Practical Completion.

PART II MATERIALS

17.7 ACCEPTABLE MANUFACTURERS

Provide & hang all doors and fit all furniture and hardware as shown, specified and scheduled.
Doors shall conform to AS 2688 timber doors; Glazing in doors to AS 1288 where applicable.
Dimensions are nominal, doors and frames being manufactured compatible with each other allowing 3mm clearance at head, jambs and abutting door leaves, 10mm clearance at bottom for tile or carpet floor covering.
Doors shall be made from manufacturers nominated below. Each door shall be unconditionally guaranteed by the Manufacturer and Builder jointly for the date of Practical Completion and a signed copy of the guarantee addressed to Superintendent when seeking approval to the manufacturer.

17.8 DOOR FURNITURE

Ryobi & Lockwood brands are not to be substituted.		
Keying	All locks to be matched to the existing Master Keying System: Wynns Locksmiths. VLC to supply key matrix.	Keying to existing Master Key system.
Door finish	Timber Doors shall be painted to all surfaces. Aluminium doors shall be powdercoated.	Colour as scheduled.
Aluminium Doors & Frame	Where nominated, allow for Powdercoated aluminium doors and door frames in powdercoat finish. 100 x 50 powdercoat aluminium door frame with rubber seal.	All door frames to be black
Door Signage	Refer to Carpentry Clause 13.10: General Items.	
Automatic Entrance Doors	The automatic framed door operator to suit a two & four panel sliding door unit and single panel face of wall slider, is to be a 240v fully electric Dormakaba EL 301 Secure Series. Fully housed in extruded aluminium, the operator is to include a tamper proof fully enclosed electric lock capable of locking the door leaves in any position. The operator must include a monitored battery back up system with audible alarm and be able to provide up to 48 hours of lock function during a power failure. The operator is to comply with the Australian Standard AS5007	
Door Closer:	Ryobi hold open hydraulic door closer kit D355oDABCS - All door frames that have door closers installed must have adequate fixing plates to ensure fixing screws do not pull out. - All door closers must be adjusted as per the installation instructions to suit the door size and air pressure conditions.	

Door hinges: Lift off	Lockwood LW10075RLSSS hinges 100x75x2.5 right hand lift off SSS Lockwood LW10075LLSSS hinges 100x75x2.5 left hand lift off SSS
Door hinges: Aluminium doors	Lockwood AH130CAN fast fix commercial aluminium hinge can
Door hinges: timber doors	Lockwood LW10070BBFFSSA hinges 100x70 ball bearing fast fix hinge
Door Handle 1:	Lockwood lever 70 to mortice locks
Door Handle 2:	Lockwood FP1-150SS flush pull stainless steel 150x50mm
Motice lock 1	Lockwood Synergy 3572 Vestibule Lock – anti-lockout entry door lock (snib inside) Lockwood 1801 external plate Lockwood 1905 internal plate
Mortice lock 2 External toilet	Lockwood Synergy 3572 Vestibule Lock – anti-lockout privacy escape latch Lockwood 1814 exterior plan with privacy indicator emergency turn & lever Lockwood 1941 interior plate with privacy indicator disabled turnknob & lever Lockwood symmetry 7107 double cylinder deadbolt mounted above plate furniture.
Mortice lock 3	Lockwood Synergy 3572 Vestibule Lock – storeroom locking latch Lockwood 1801 external plate Lockwood 1901 internal plate
Mortice lock 4	Lockwood Synergy 3572 Vestibule Lock – Anti-lockout vestibule set (snib inside room)
Mortice lock 5 Internal toilet	Lockwood Synergy 3572 Vestibule Lock – anti-lockout privacy escape latch Lockwood 1814 exterior plan with privacy indicator emergency turn & lever Lockwood 1941 interior plate with privacy indicator disabled turnknob & lever
Mortice lock 6	Lockwood Synergy 3573 Sliding door deadbolt – sliding door deadlock (snib inside room) Lockwood 1800 exterior plate Lockwood 1900 interior plate
Flush bolt	Lockwood FB300SC – installed top and bottom of door Lockwood Mortice universal flush bolt ferrule 8402SS 1off at closed position in floor.
Door stop:	Lockwood door stop A250 SC floor mounted
Door Grille:	Refer to mechanical drawings
Door Seal 1:	Raven RP99 SI
Door Seal 2:	Raven RP74F
Door Threshold 1:	Raven RP77 or similar
Door Threshold 2:	DTA transition edge 8mm - Plain

17.9 DOOR TYPE

	EXTERNAL	Door Jambs
A	Capral 225, fully glazed powdercoated Sliding Double Door units to Dorma sliding door system, with Capral 425 Norrowline series sidelite and transom configuration. Clear single glazed.	Powdercoated Aluminium, complete with frame seal.
B	Capral 225, fully glazed, 10.38 laminate powdercoated, 200 series Hinged door. Clear single glazing.	Powdercoated Aluminium, complete with frame seal.
C	Capral 225, fully glazed 10.38 laminate, powdercoated Hinged door, with Capral 400 Narrowline series sidelite, 10.38 laminate, combination. Clear single glazed.	Powdercoated Aluminium, complete with frame seal.
D	Permacore semi-solid timber door, pre primed hardboard. 38mm Ensure all edges are primed and finished in two coats of paint.	Powdercoated Aluminium, complete with frame seal.
	INTERNAL	
E	Capral 225, fully glazed powdercoated Sliding Single Door unit to Dorma sliding door system, face of wall configuration. 10.38 laminate.	Powdercoated Aluminium, complete with frame seal.
F	Capral 225, fully glazed powdercoated Sliding Single Door unit to Dorma sliding door system, with Capral 425 Norrowline series sidelite and transom configuration. 10.38 laminate.	Powdercoated Aluminium, complete with frame seal.
G	Permacore solidcore timber door, pre primed hardboard. 38mm Ensure all edges are primed and finished in two coats of paint.	Powdercoated Aluminium, complete with frame seal.
H	Capral 225, fully glazed 10.38 laminate, powdercoated Hinged door. Clear single glazed.	Powdercoated Aluminium, complete with frame seal.
I	Capral 994, top hung fully glazed 10.38 laminate, powdercoated Cavity Sliding door, Clear single glazed.	Powdercoated Aluminium, complete with frame seal.
J	Permacore solidcore double timber door with equal double rebate , pre primed hardboard. 38mm Ensure all edges are primed and finished in two coats of paint.	Powdercoated Aluminium, complete with frame seal.
K	Capral 225, fully glazed 10.38 laminate, powdercoated Hinged door, with Capral 400 Narrowline series sidelite, 10.38 laminate, combination. Clear single glazed.	Powdercoated Aluminium, complete with frame seal.
L	Rollashield AR405 Flat Slats with 240V remote motor (Alpha Motors) WSER50 30/17 Universal with fixed wall switch	Boxing colour and slats WHITE

M	Capral 215 Sliding Door – powdercoated. Allow for Powdercoated 1030 Sliding Tack System. Face of wall sliding. 10.38 laminate.	Powdercoated Aluminium, complete with frame seal.

17.10 DOOR SCHEDULE

Provide and hang all doors and fit all furniture hardware as scheduled.

Refer to door schedule on working drawings for general guide to size and location.

Door Number	Door Type	Furniture
1 , 2 & 20	**A**	Automatic Entrance Doors Co-ordinate with Security 1 for fob access control Door Seal 2
3,4,5,6,8, and 101	**B**	Door Closer Door hinges aluminium doors Door handle 1 Mortice Lock 1 Door Stop Door Seal 1 Door Threshold 1
7	**C**	Door Closer Door hinges aluminium doors Door handle 1 Mortice Lock 1 Door Stop Door Seal 1 Door Threshold 1
9,10,11,12,16,17,18,19	**D**	Door hinges – right/left hand lift off Door handle 1 Mortice lock 2 Door stop Door grille Door Threshold 2 Door signage
13,14,15	**D**	Door hinges – timber doors Door handle 1 Mortice lock 2 Door stop Door grille Door Threshold 2 Door signage

22	**G**	Door hinges – timber doors Door handle 1 Mortice lock 3 Door stop Door grille Door threshold 2
23	**E**	Automatic Entrance Doors Co-ordinate with Security 1 for fob access control Door Seal 2
29	**F**	Automatic Entrance Doors Door Seal 2
24,25,26,	**G**	Door hinges – timber doors Door handle 1 Mortice lock 5 Door stop Door grille Door signage
27	**G**	Door hinges – lift off Door handle 1 Mortice lock 5 Door stop Door grille Door signage
37	**G**	Door hinges – timber doors Door handle 1 Mortice lock 3
43	**G**	Door hinges – timber doors Door handle 1 Mortice lock 5 Door stop Door grille Door threshold 2 Door signage
28,30,31,32,33,34,35, 38,39,102,104, 105,106,107,108,109, 110,112,113	**H**	Door hinges aluminium doors Door handle 1 Mortice lock 4 Door stop Door seal 1
103,111 & 117	**I**	Door handle 2 Mortice lock 6 Door seal 2

40, 45	**J**	Door hinges – timber doors Door handle 1 Mortice lock 3 Flush bolt to right hand door panel Door grills Door stop
36, 41, 114,115,116	**K**	Door hinges aluminium doors Door handle 1 Mortice lock 4 Door stop Door seal 1
44	**L**	
42	**M**	Door handle 2 Door seal 2

61 DOORS IN TOTAL door 2 is deleted and not scheduled.

PART III EXECUTION

17.11 EXAMINATION

Inspect site conditions. Ensure conditions are satisfactory for installation. Start of work means total acceptance of conditions.

17.12 PREPARATION

Prepare openings in walls or other structures before installation. Install fixing grounds and inserts as required to secure frames.

17.13 INSTALLATION OF DOOR FRAMES

Erect frames plumb and true. Brace as required until surrounding structure is complete. Comply with AS 2689.

17.14 INSTALLATION OF DOORS

Comply with manufacturers' instructions and AS 2689. Reject doors which do not comply with AS 2688 Appendix A. Condition doors to average humidity in area prior to hanging.

Align doors to frame for proper fit and uniform clearance at edge and machine for hardware. Seal cut surfaces after machining.

Provide clearance of 3mm at jambs and heads; 3mm at meeting stiles at pairs of door; 12mm from bottom of door to top of floor finishing or covering. At thresholds provide 6mm clearance.

17.15 INSTALLATION OF HARDWARE

Refer Schedule of door furniture and hardware. Check deliveries on arrival. Keep items locked until needed. Assume responsibility for delivered items. Fit accurately and at correct heights, protect with heavy cloth until completion of project. Label keys, and hand over to Superintendent.

Master key locks TO COMBINE WITH EXISTING SYSTEM, as instructed.

17.16 KEYS

All doors to be keyed alike back to the school master key system. VLC will provide barrel keying matrix.

17.17 CO-ORDINATION

Before finalising hardware order, review with security sub-contractor work related to reed switches, electric locks/strikes etc. Generally such items will be supplied by the security contractors and fitted to doors and frame by the builder.

17.18 ADJUSTMENT AND CLEANING

Adjust each door in its frame and ensure silent operation. Oil locks and hinges. Clean all surfaces marked during the installation of door frames, doors and hardware.

18. METAL WINDOWS & GLAZING

PART I GENERAL

18.1 SCOPE

Design, engineer, supply and install a complete glazed system of windows, doors and screens, including but not limited to:

Material Type

Finish Type

Openings

Glass Types

Glazing Methods

18.2 RELATED WORK

Co-ordinate and co-operate with the tradesmen preparing walls and frames to accept windows, including casting in of anchors.

18.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Not less than ten (10) years continuous experience in the manufacture of the product types specified.

B. Installer Qualifications: Installer is to have not less than five (5) years continuous experience in the erection of specified material.

18.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 1170	Structural design actions.
AS 1231 2000	Aluminium and aluminium alloys – Anodic oxidation coatings.
AS 1288 2006	Glass in buildings - Selection and installation.
AS/NZS 2208 1996	Safety glazing materials in buildings. *Plus 1 Amdt, 1999.*
AS 2047 1999	Windows in buildings - Selection and installation. *Plus 2 Amdts, 2001.*
AS 1428	Design for access and mobility. *There are 5 parts. 1992 – 2010.*
AS 3715 2002	Metal finishing - Thermoset powder coating for architectural applications of aluminium and aluminium alloys.
AS 4145.2 2008	Locksets and hardware for doors and windows – Mechanical locksets for doors and windows in buildings. *Plus 2 Amdts, 2009.*
HB 125 2007	The glass and glazing handbook. Comply with relevant authority's requirement for fire-rated installation.

18.5 SUBMISSIONS REQUIRED PRIOR TO FABRICATION

A. Complete system description including the following information:

Names of manufacturers of products.

Detailed information on products manufactured specifically for this project.

Detailed system description including standard details and manufacturer's literature; and large-scale details of specially fabricated products.

B. Statement that the proposed system meet(s) the regulatory requirements, thermal, aesthetic and waterproofing criteria and wind loading, construction, glazing and warranty requirements specified; noting in detail exceptions.

C. Shop Drawings: refer, clause 1.19. Provide Shop Drawings showing the following information where appropriate to the items:

1. Layout (sectional plan and elevation of complete assembly).
2. Full size section of members.
3. Methods of assembly, type and location of exposed screws.
4. Methods of glazing.
5. Methods of installation, including fixings, anchorage, caulking, flashings.
6. Provision for expansion (thermal).
7. Junctions and trim to adjoining surfaces.
8. Fittings and accessories.

D. Engineer's calculations on wind loading.

E. Sealants: submit manufacturer's product specifications, handling, installation/curing instructions, and performance tested data sheets for each elastomeric product required. Submit certificate test reports for elastomeric sealants on aged performance as specified, including hardness, stain resistance, adhesion, cohesion or tensile strength, elongation, low-temperature flexibility, compression set, modulus of elasticity, water absorption, and resistance (ageing, weight loss, deterioration) and exposure to heat, ozone and ultraviolet light.

18.6 DELIVERY, HANDLING AND STORAGE

Handle materials with care. Do not store on site. Install directly in place. Store sealants as instructed by manufacturer.

18.7 WARRANTY

Provide to the Proprietor a warranty, counter-signed by the installer, on the whole of the installation, which states that work will remain intact, waterproof and fully operational for the period of not less than nine years after date of Practical Completion.

In addition to the warranty requirements of the General Conditions of Contract, provide the following:

A. Warranty: provide glass manufacturer's written warranty, agreeing to, within specified warranty period, furnish freight paid to project site, replacement units for glass units which have defective hermetic seals (excluding that due to glass breakage), defined to include intrusion of moisture or dirt, internal condensation at temperatures above -2°C, deterioration of internal glass coatings, and other visual evidence of seal failure or performance failure; provided manufacturer's instructions for handling, installation, protection and maintenance have been adhered to during warranty period.

B. Warranty period is 10 years after date of installation and not less than 9 years after date of Practical Completion.

PART II MATERIALS

18.8 ACCEPTABLE MANUFACTURERS

The following manufacturers of window frames are acceptable:

Capral: for commercial units.

AWS Vantage Windows, Bradnams, Boral, Dowell, Stegbar: for domestic units.

Other:- as approved in writing by the Superintendent.

18.9 MATERIALS

Window Frames: Extruded aluminium components manufactured from aluminium alloy 6063, temper T5 or T6.

Match components detailed on Drawings or an alternative approved in writing by Superintendent.

Glass: Refer Clause 18.16.

Insect screens: Opening sashes to include matching powder coated aluminium framed, aluminium wire mesh insect screens.

18.10 STRUCTURAL CRITERIA

A. Adopt Terrain Category: N2.
Refer AS 1170.

B. Wind Loading: Design:

1. Glazing and frame assemblies to suit the static and dynamic wind forces as indicated on the tables in the Australian Standard 1170.
2. Structural members of glazed units of such strength that when tested at the specified design wind values they do not deflect by an amount greater than span/240 and do not cause permanent deflection.
3. Fix members so that the above loading is generated in the members without stress causing failure or movement becoming evident at any joint.

C. Movement: Permit free and noiseless movement of the components due to thermal effects, structural effect, wind pressure, effect of dead loads, without strain to glass, without buckling of components and without excessive stress to members or assemblies.

D. Contact with Other Materials: Coat metal surfaces in contact with mortar, concrete, plaster, masonry, wet-application of fire-proofing and absorbent materials with an anti-galvanic, moisture barrier material. Isolate, with inert material, dissimilar metals for the prevention of electrolytic action and corrosion.

E. Distortion: Design the glazed assembly to minimise visual distortion of reflected images.

18.11 DETAIL DESIGN PROVISIONS

A. General: Superintendent's Drawings are to be considered essentially schematic except for profiles of exposed surfaces and panel arrangement where indicated. If, in the opinion of the Builder a change of profile is required in order to meet the specification, arrange through Superintendent for a review of the condition. Design the assembly, reinforcing and anchorage to suit each specified condition in an acceptable manner complying with the requirements specified herein.

B. Tolerances: Design frames to accommodate building tolerances, and when completed, within the following tolerances:

1. Deviation from plumb, level or dimensioned angle within 3mm per 3.5m of length of member, or 6mm in total run in line.
2. Change in deviation not to exceed 3mm for 3.5m run in direction.

18.12 MIRRORS

Allow for 14off. 'living elements 600x900x5mm' flat edge mirrors, 1 per each student toilet as per plan, installed to mirror manufacturers specifications.

All other mirrors shall be 4mm clear float glass with polished edge.

Allow for size and configuration as detailed on the drawings.

18.13 FIRST AID SHOWER SCREEN

Provide 10mm toughened glass panel 1.0m wide x 1.8m high, all edged polished.

Allow for 3off. ABI Interiors Kenzie Glass to Wall shower hinge – stainless steel. Spaced at top, bottom and middle of screen.

18.14 ALUMINIUM WINDOWS & DOORS

Window Units:

Aluminium windows and door units shall be powdercoated frames, profile and colour and to sizes otherwise noted on plans equal to AWS Vantage DESIGNER SERIES "Magnum 601 Sliding series and 616 Awning Series, with locking sashes. Allow locking to school master key system. Locks to match sash finish.

CAPRAL 400 and 425 NARROWLINE SERIES (or equal) powdercoated aluminium window and door units.

All glazed window units shall come with sub-sills.

Allow for aluminium angle around all window and door units to seal off openings between units and cladding in powedercoat colour to match window & door frame.

All Glazing to be CSR VIRIDIAN as per Refer Clause 18.16.

Internal Door and Window units shall be single glazed with 10.38 Clear laminate.

Flyscreens:

Windows shall be complete key locked sliding sashes with black aluminium fly screens to all opening sashes & powdercoated aluminium cover plates to mullions, stanchions & posts. Window openings and configuration as indicated on working drawings.

Commercial Door Units:

CAPRAL 225 SERIES (or equal) powdercoated aluminium door units.

Allow for black colour silicone butt joints to door and window units with aluminium to perimeter extents.

Design configuration to match elevation details on Working Drawings.

Fully glazed door units complete with furniture as Door Schedule.

18.15 AIR LOCK DISPLAY

To display cabinet facing air lock on western side, supply and install "Cowdroy Roller Bearing 10" sliding glass door/window track systems. **Allow for "natural anodised aluminium frames"**.

Glass Roller Bearing 10 system with 10.38mm clear laminate glazing to track system as specified by Cowdroy.

Include for single sliding unit with a "CL A-604 Push Lock housing" furniture lock system, complete with CL CC-MT-01KA-001, keyed alike Series Barrels, Master keyed to Victory Lutheran College system.

Allow to supply and install 30x30x1.5mm natural finish, aluminium angle to leading bottom edges.

18.16 FINISH

Anodising:

Metal of windows, doors and shop fronts anodised to selected colour.

Pre-treat and apply anodising by applicators approved by the Superintendent.

Minimum coating thickness of 25 microns subjected to random testing after installation. Remove and replace non-conforming material.

Comply with requirements of AS 1231.

Polyester powder coat:

Polyester powdercoated, to colour approved by the Superintendent and by the manufacturer of the powder material, to metal of windows, doors and shop fronts.

Perform pre-treatment and application of powder coating by applicators approved by the Superintendent and by the manufacturer of the powder material.

Minimum coating thickness of 50 microns subjected to random testing after installation. non-conforming material will be removed and made good by the builder.

Comply with requirements of AS 3715.

18.17 GLASS

Door Units:

External Glazed Entry doors and sidelights, 6.38mm laminate;

Internal Glazed doors and sidelights & internal windows, single glazed, shall be glazed as follows:-

CSR VIRIDIAN 10.38mm clear laminate

Window Units:

Window units shall be single glazed as follows:- 1 to 11 & 15 to 28

6.38mm laminate clear

Window units shall be single glazed as follows:- 12 to 14

10.38mm laminate clear

Window units shall be single glazed as follows:- 101 to 115

6.38mm laminate comfort plus – neutral

18.18 SKYLIGHTS

Provide Velux FCM3030 Fixed Skylight (flat roof) roof windows to sizes and locations nominated on plans.

ZZZ1993030 Velux tray.

FSCC3030 solar powered blind – light grey

Laminated double glazing as per standard Velux details.

Custom made flashing to Velux requirements to be included.

18.19 SEALANTS AND ACCESSORY MATERIALS

A. Provide non-structural external weatherproofing sealants of low modulus neutral curing silicone rubber compounds by approved manufacture.

B. Generally comply with AS 1288, Part 2, Section 6 or 8. Supply spacer gaskets, glazing tapes and setting blocks compatible with sealants, which do not contribute to sealant colour change or affect the sealants adhesion to substrates when exposed to ultraviolet light.

C. Interior Sealers: Acrylic-emulsion or latex-rubber-modified acrylic emulsion sealant compound, permanently flexible, non-staining and non-bleeding; recommended by manufacturer for protected exterior exposure and general interior exposure.

18.20 DISSIMILAR METALS

In moist environments, prevent totally contact between dissimilar metals (any metals).

This instruction takes priority over any drawing, detail or instruction and will prevent cathodic reaction between the metals.

PART III EXECUTION

18.21 INSTALLATION

Comply with AS 2047 1999 Windows in buildings - Selection and installation. *Plus 2 Amdts, 2001.*.

18.22 EXAMINATION

Inspect site conditions before start of work on site, before delivery of materials. Ensure conditions are satisfactory for installation.

Perform rectification required before delivery of materials. Start of work means total acceptance of conditions.

18.23 FRAME ANCHORAGE

Fabricator is required to supply the anchorage devices to the Builder for building in by others and check that devices are located as required to suit the requirements of window frame fabrication for positive and permanent fixing, complying with, for example, AS 2048.

Insulation: Isolate dissimilar metals at interfaces with bitumen based or nylon shim materials to prevent galvanic action.

18.24 GLAZING

Secure glass in accordance with glass manufacturer's recommendations and AS 1288. Allow for thermal expansion of glass, the metal framing and spandrels.

18.25 PREPARATION FOR SEALANTS

Joint Preparation Sealants: Clean joint surfaces immediately before installation of sealant or caulking compound. Remove dirt, insecure coatings, moisture and other substances which could interfere with bond of sealant or caulking compound. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer. Roughen vitreous and glazed joint surfaces if recommended by sealant manufacturer.

Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer. Do not allow primer/sealer to spill or migrate on to adjoining surfaces.

18.26 INSTALLATION OF SEALANTS

A. Install bond breaker tape where required by manufacturer's recommendations to ensure that elastomeric sealants will perform properly.

B. Employ only proven installation techniques, which will ensure that sealants are deposited in uniform continuous ribbons without gaps or air pockets.

C. Install sealant to depths as recommended by sealant manufacturer.

D. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength internal cohesive strength and surface durability. Advise Superintendent of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of Practical Completion.

E. Remove excess caulking compound and sealant and leave surfaces neat, smooth and clean, without smears on surrounding work. Tool joints where recommended by manufacturer or where required. Remove cartons and debris from site as the work progresses.

18.27 INSECT SCREENS

Supply and install black aluminium wire insect screens to operable window sashes.

Secure window screens with proprietary clips to window frames.

Insect screen frames are to match colour and style of window unit.

18.28 PROTECTION

A. Framing System: Protect metal surfaces as necessary during erection. Finish surfaces free from mechanical imperfections such as scratches, scrapes, dents, spots, stains and streaks.

B. Glass: Protect glass from breakage immediately upon installation and until Practical Completion. Remove and replace glass and metal panels which are broken, cracked, abraded, chipped or damaged in other ways, before, during or after installation, at no additional cost to Proprietor.

C. Be responsible for breakage and damage to installation until Practical Completion.

18.29 CLEANING

A. Remove labels, excess glazing compounds, stains, spots and other foreign matter from glass, frames, hardware and other finished surfaces immediately upon installation of glazing for each light.

B. Debris: remove rubbish and debris resulting from glazing operations, each day.

18.30 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

19. PLASTERBOARD LININGS

PART I GENERAL

19.1 SCOPE

Supply and install a complete installation of plasterboard and cement sheet linings including but not limited to:

Plasterboard

Plasterglass

Lining of stud stud walls

Ceilings, drop walls, bulkheads

Suspended ceilings and bulkheads

Insulating material

Cornices.

19.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Electrical

Carpenter

Joiner

Suspended Ceilings

Masonry & stud Walls

Roof Framing

19.3 QUALITY ASSURANCE

A tradesman with wide experience and knowledge in this class of work is to undertake the work to be performed.

Sub-contractor is to have not less than 3 years of successful experience in installation of ceilings similar to requirements for this project and who is acceptable to manufacturer of each ceiling type.

19.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 2589 2007Gypsum linings - Application and finishing.

AS/NZS 2785 2000 Suspended ceilings - Design and installation.

AS 2946 1991 Suspended ceilings, ecessed luminaires and air diffusers - Interface requirements for physical compatibility.

AS 3623 1993 Domestic metal framing.

Relevant Technical Bulletins, data sheets and published instructions produced by the manufacturer.

Comply with requirements of the relevant Statuary Authorities.

19.5 SAMPLES

A. Provide one sample of each of the following elements:
Door and Window reveals and trims.

B. Suspension systems: provide sample of each component of suspension and acoustic suspension system, including both standard shapes and accessories.

19.6 DELIVERY, HANDLING AND STORAGE

Deliver manufactured materials in bundles and packages bearing the name of the manufacturer, and the brand. Handle with care. Remove damaged materials from the site. Protect stored materials from damage and damp, or materials that may cause deterioration.

19.7 WARRANTY

Provide Warranty covering the work against defective materials and workmanship for a period of five (5) years from the date of Practical Completion. The Warranty includes a statement that the whole of the work has been carried out in accordance with relevant Australian Standards and Codes and manufacturer's instructions in effect at the time of installation.

PART II MATERIALS

19.8 ACCEPTABLE MANUFACTURERS

CSR

Boral

James Hardie

LaFarge

Knauf

19.9 CEILING LININGS:

Supply materials in accordance with material supplier's recommendations for each application.

Non Fire Rated Ceilings:-

Plasterboard sheets shall be 13mm plasterboard fixed to ceiling framing system at a maximum of 600mm c/c., finished around wall junction and penetrations as manufacturer's instructions.

Fix ceiling sheets to ceiling furring channel framing system at a maximum of 600mm c/c.

Allow for expansion joints to ceilings area. Confirm location with Superintendent prior to installation.

Acoustic Plasterboard Ceilings:-

To ceiling areas nominated on the Plans, supply and install 12.5mm “USG BORAL ECHOSTOP” noise suppression ceiling panels.

USG Boral “Echostop” S8 (10x10mm Square Perforations).

Install to metal furring channels at max. 600mm c/c and to manufacturer’s instructions.

Where any ceiling penetration occurs within the Echostop panel, allow to block out perforated panel square with solid 12.5mm Boral plasterboard ceiling lining, in order to install ceiling fixture.

Acoustic Ceiling Panels:-

Gyprock perforated ceiling tiles 600x1200 white vinyl laminate finish, where indicated on drawings within suspended ceiling system. Install ceiling tiles as per manufacturers specifications.

Supply and leave 1 full box of acoustic ceiling panels onsite at completion for future replacements.

Suspended ceiling system – Flush Plasterboard areas

Rondo KEY-LOCK suspended ceiling system to manufacture specifications.

Suspended ceiling system – Tile Plasterboard areas

Rondo DUO suspended ceiling system to manufacture specifications.

Perforated corrugated colorbond ceilings, refer to Carpentry, Clause 13.14.

Cornice:-

Finish around junctions of walls and ceilings with "**Square set"** cornice trim.

Fix in accordance with the manufacturer's recommendations.

19.10 WALL LININGS:

A **Generally:-**

Internal framed walls are to be lined with 13mm plasterboard fixed to studs at maximum 600mm c/c.

Allow for expansion joints and confirm location with Superintendent prior to installation.

B **Wet Areas:**

Internal framed walls are to be lined with 13mm MR plasterboard fixed to studs at maximum 600mm c/c.

Allow for expansion joints and confirm location with Superintendent prior to installation.

C **Door and Window reveals:-**

Supply and install EZ Concepts "square set EzyReveal" over timber jambs to Doors and Windows, as detailed.

PART III EXECUTION

19.11 EXAMINATION

Acceptance: Visit site and inspect conditions, comparing conditions to Drawings before delivery of materials to site.

Rectify any discrepancy or unsuitability of substrate.

Start of work means total acceptance of conditions.

19.12 LAYOUT AND TOLERANCES

A. Check dimensions of areas and surfaces to which material is applied before installation begins.

B. Measure each area and establish layout pattern.

C. All finished work is to be within 2mm of the sizes shown on the relevant Drawings.

19.13 INSTALLATION - GENERAL

A. Comply with manufacturer's installation instructions. Anchor and fasten materials and components to comply with ratings and performance requirements, and to comply with governing local regulations. Comply with appropriate Australian Standard.

B. Take care of and protect surrounding work, including other finishes, equipment and components, during installation. Provide protective covering where necessary.

19.14 PREPARATION

A. Co-ordinate with and ensure preparatory work by other trades is done prior to commencement of work; failure to do so will involve removal of plasterboard and immediate rectification.

B. Arrange for provision of additional stud, nogging, trimmed openings, boxed studs, fixing grounds, etc., required for satisfactory execution of the work of this trade including penetrations through plasterboard for services. Co-operate in installation of frames, duct openings, etc.

C. Space Enclosure: Do not install materials until space is enclosed and weatherproof, and until wet-work in space is completed and nominally dry.

19.15 FINISHING DETAILS

General: Apply treatment at board joints (both directions), flanges of trim accessories, penetration, fasteners, heads, surface defects and elsewhere as required to prepare work for decoration. Pre-fill open joints and rounded or bevelled edges, using type of compound recommended by manufacturer.

19.16 PROTECTION

Protect finished work. Make good damage in every respect at no additional cost to the Proprietor, and without delay to job progress.

19.17 CLEANING

A. Adjust and Clean: Clean exposed surfaces including trim, edge moldings, and comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate damage.

B. Remove spattering and droppings resulting from work. Remove daily surplus materials and rubbish from the work area.

C. Leave floors broom clean at completion.

19.18 COMPLETION

Leave all surfaces flush and even, remove blemishes and leave in a satisfactory condition ready for painter.

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

20. CERAMIC TILING

PART I GENERAL

20.1 SCOPE

Supply & Installation of Ceramic Tile work including but not limited to:

Preparation of surfaces before tiling or bedding

Bedding screeds where required

Wall tile

Floor tile

Cleaning of finished tiled surfaces.

20.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Wall Construction

Floor Construction

20.3 QUALITY ASSURANCE

Qualifications: Tiling Sub-contractor to submit to Superintendent, evidence of reliability in quality of work and performance.

Samples: Provide samples of tiles specified; not less than 4 units of each.

20.4 REFERENCES

AS 1428	Design for access and mobility. *There are 5 parts. 1992 – 2010.*
AS 2358 1990	Adhesives - For fixing ceramic tiles *Plus 1 Amdt, 1994.*
AS/NZS 3661.2 1994	Slip resistance of pedestrian surfaces – Guide to the reduction of slip hazards.
AS 3740 2010	Waterproofing of domestic wet areas.
AS 3958	Ceramic tiles.
3958.1 2007	Guide to the installation of ceramic tiles.3958.2 1992
AS 3972 2010	General purpose and blended cements.

Contact www.ardexaustralia.com for technical advice regarding waterproofing matters and technique.

20.5 SUBMISSIONS

Submissions required prior to installation; product specifications for:-

adhesives, primers, prepared grouts, moisture resisting admixtures.

20.6 DELIVERY, HANDLING AND STORAGE

Deliver to the site in original, unopened containers with grade, type and quality indicated on the labels. Provide secure and dry storage.

20.7 WARRANTY

Provide a warranty covering defects in materials and installation for a period of five years from the date of Practical Completion.

PART II MATERIALS

20.8 ADHESIVES

A. Interior/Dry Area Adhesives: Organic based adhesive, complying with AS 2358:

B. Interior/dry area adhesives: organic based adhesive, complying with AS 2358.

20.9 EXTENT OF TILING

Floor Tiles:

Refer to Colour / Finishes Schedule & Architectural Plans

Wall tiles:

Refer to Colour / Finishes Schedule & Architectural Plans

Storage:-

Allow to store, on site where directed, the following tiles:-

15 off:- Floor Tiles for each colour combination.

15 off:- Wall Tiles for each colour combination.

20.10 TACTILE FLOOR INDICATORS

Internal stair 1 top and bottom and external stair 2 bottom to be provided with Tactile Systems Ceramic Tactile Warning Integrated 300mm x 300mm. Refer to colour schedule for nominated colours. Extend ceramic tiles to min. full width of stairs. Do not cut any tiles to match stair width, project ceramic tiles past edge of stairs to maintain full tiles. Centre overall width of ceramic tiles to staircase centreline.

Recess external tactile ceramic tile to finish flush with concrete paving.

Internal tactile ceramic tiles to be laid over concrete slab, provide feather edge topping around tiles to allow carpet tile to finish flush with top of ceramic tile.

20.11 WALL TILE TRIM EDGE

Allow for 3mm flat bar – Mill Finish along the exposed edge of all wall & skirting tiles

Allow for 3mm rounded edge – Mill Finish along all exposed external corners of wall & skirting tiles

20.12 TILE EDGE THRESHOLD

Provide DTA transition edge 8mm – Plain trim to tile edge along abutting floor surfaces.

20.13 GROUT

Prepared Grout: Inorganic Portland cement integrated, ready-to-use, dry-curing grout, equal to products manufactured by Australian Building Adhesives Pty. Ltd.

Colour of grout to match tile finish.

Supply Waterproof grout for wet area tiling.

20.14 EXPANSION JOINTS

Silicone rubber, as recommended by manufacturer and the Australian Standard for each type of tile insert relevant to the applicable Australian Standard. Colour to Superintendents selection.

PART III EXECUTION

20.15 EXAMINATION

Visit site and inspect conditions, comparing conditions to Drawings, before delivery of materials to site.

Rectify any discrepancy or unsuitability of substrate.

Start of work means total acceptance of conditions.

20.16 CONDITIONS OF INSTALLATION

A. Install backing boards or panels in accordance with manufacturer's precise instructions.

B. Allow cement-rendered surfaces to dry out at least 7 days, and preferably 14 days, before tiling. Longer curing times are required if recommended by adhesives' manufacturers.

C. Rectify substrate so that when checked with a 2m straightedge, gap shall not exceed 6mm.

D. Allow new concrete to dry out for at least 4 weeks before rendering or direct fixing of tiles.
Wall screeds: uniform in plane and lightly combed. Floor screeds: broom finished.

20.17 EXPANSION JOINTS

Set out panels of tiling so that tiles may expand or contract to and from corners of tiled walls and floors. Allow for expansion in each corner of 5mm minimum. Fill expansion joints with silicone rubber.

20.18 INSTALLATION - GENERAL

A. Wall tiling: comply with the recommendations of AS 3958.1 and AS 3740.

B. Floor tiling: comply with the recommendations of AS 3958.1 and AS/NZS 3661.2.

C. Adhesives: comply with AS 2358 and recommendations of adhesive manufacturer.

D. Sealing: where tiles are cut around penetrations for taps and outlets, seal thoroughly with silicone rubber to prevent water entry behind tiles.

E. Membrane: install to manufacturer’s instructions, with a 100% waterproof result.

20.19 SETTING OUT

A. As far as possible, set out work so that no tile less than half size occurs. Align joints in floor tile at right angles to each other and straight with walls to conform to patterns selected. Verify locations of equipment before installing tile. Co-ordinate with plumbing and other trades. Fully tile surfaces under surface-mounted items.

B. Expansion Joints
Set out panels of tiling so that tiles may expand or contract to and from corners of tiled walls and floors. Allow for expansion in each corner of 5mm minimum. Fill expansion joints with silicone rubber.

C. Control Joints
Provide control joint
1. At junctions of dissimilar wall construction.
2. In walls, no more than 2.5 apart.
3. At junctions of wall and floor in multi-storey buildings.

D. Form junctions of different materials (eg. tiles to carpet) so that they occur under the centre line of doors.

20.20 BEDDING MIXING

A. Tile fixing mortar is to be adequately cohesive and water retentive but not richer than 1:3 nor leaner than 1:4 cement/sand by volume.

Within these limits the choice of the precise proportions is governed by the need to produce a mortar of the required properties with the minimum water content. These proportions will depend on the sand in use and is found by practical trial before tile fixing starts.

B. Once the proportions are established, make every attempt to minimise random variations. Batch by weight wherever possible. Do not batch with shovels.

C. The mixing of mortars by a suitable machine is to be preferred whenever it is practicable.

D. Volume batching: base batching on multiples of a whole bag of cement (50kg, approximating 0.035m3 or 35 litres). In such cases measure by volume using correctly made gauge boxes or other suitable containers of fixed, measurable volume. This method allows water addition to be checked and thus permits approximate mix proportions to be established and maintained.

E. Where mixing by machine is not possible, mortars may be mixed on a clean non-absorbent surface using clean hand tools. Whatever method of mixing is used, blend the materials thoroughly in the dry state before water is added. Continue mixing until the batch has a uniform consistency.

F. No water should be added once mixing is complete. Discard mortar which is unused within 2 hours of adding the mixing water.

20.21 TOLERANCES AND CLEANING

A. General: Install tiles in true planes so that when checked with a 2m straightedge, gap under the straightedge does not exceed 3mm. In sloped floor tiling this tolerance does not apply across intersections of fall planes. Adjust tiles within 10 minutes of fixing.

B. Cleaning: Cleaned down using a damp cloth before cement smears and surplus mortar begin to harden on the surface or in the joint spaces, care being taken to avoid disturbance of the tiles during the setting of the bedding.

C. Lighting: Whenever possible the lighting at the time of applying the bedded finish is not to be appreciably different from the ultimate permanent lighting.

20.22 GROUTING

A. Except as otherwise required, do not commence grouting for at least 24 hours after placing of tile. Follow specific instructions of materials manufacturer

B. Grout mix:

1. General use, except as noted below: Apply an approved pigmented prepared grout mix, 1 part Portland cement to 1 part fine dry sand by volume mixed to a paste consistency with the minimum of water; too wet a mix may result in the joint filling cracking or drying out.
2. Floors: Prepared grout, acid resistive.
3. Walls: Epoxy-based mortar grout, mildew resistant.
4. Colours: as selected by the Superintendent.

C. Grouting and Curing:

1. Apply the grouting mix to as large an area as can be worked before hardening commences. Apply with a squeegee working back and forth over the area until the joints are completely filled. Remove surplus grout from the tiles with the aid of a damp, not wet, cloth and the joints then tooled. After the grouting has dried, final polish using a clean, dry cloth.
2. Remove surplus grout from the floor surface; on no account use sawdust for this purpose, as there is a danger that sawdust entering moist joint surfaces may break down their strength, and cause them to become porous.

3. In dry weather, grout joints after maintaining damp condition for three days by sponging down, fog-spraying or other methods. Allow floors to set 48 hours before traffic.

20.23 PROTECTION

Prevent walking on or contact with floor or wall tiles for a minimum of seven days. During that period, cover floor tiles

20.24 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

21. PAINTING

PART I GENERAL

21.1 SCOPE

Supply labour and materials, services and equipment necessary for the preparation, application and finishing of painting and staining as indicated on drawings, schedules and as specified herein, to internal and external surfaces of building, as follows:

Refer Schedule of Finishes.

Consult with the Superintendent with regard to requirements of other trade sections of the specification which require painting, and include as part of the work of this trade section the appropriate preparation, painting, and finish required to complete the installation., as follows:

A. To all new construction.

B. Existing areas directly affected by the proposed.

C. To all existing internal areas affected by new works (new printing area, 106-store 3, 109-art class 2).

21.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

A. Substrates to be painted.

B. Cleaning and finishing.

C. Scaffolding.

21.3 QUALITY ASSURANCE

A. Compatibility of Shop and Field Paints:

Determine that the materials specified in the Schedule of Finishes are compatible with shop coats. Failure to do so will be construed as accepting the paints specified. Contractor is to correct, at his own expense, defects in his work resulting from the use of such materials.

B. Test Samples:

1. Prepare test samples for painting types and typical locations, where determined by Superintendent. Do not commence painting of the substrate type until the sample is approved by Superintendent. Apply samples in conditions approximating as closely as possible the lighting conditions of the finished work.
2. Test Samples include the suitable preparation of substrates.
3. After approval, Test Samples are to be the standard for quality control of the completion of work of same type.

21.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 2311 2009 Guide to the painting of buildings.
(NB: maintain this document at the project site by the contractor as a controlling general reference).

AS/NZS 2312 2002 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings. *Plus 1 Amdt, 2004.*

21.5 SUBMISSIONS

Submit the following materials:

A. Product literature on proposed painting systems.

B. Colour samples for approved painting materials. Identify samples with:

1. Manufacturer's colour code and colour name (if any)
2. Match to Schedule Colour Code and name.

C. Samples are not to be less than 100 x 100mm, and are to be of the same gloss level as the Scheduled colour.

21.6 DELIVERY, HANDLING AND STORAGE

A. Store materials in designated spaces in a manner which meets the requirements of applicable codes and fire regulations. When not in use, keep such spaces locked and inaccessible to those not employed under this Section. Provide each space with a fire extinguisher of carbon dioxide or dry chemical type bearing a tag of recent inspection.

B. Bring materials to the building and store in manufacturer's original sealed containers, bearing the manufacturer's standard label, indicating type and colour. Deliver materials in sufficient quantities in advance of the time needed in order that work will not be delayed in any way.

C. Temperature: Comply with the requirements of Clause 6.3 of "AS 2311 The painting of buildings" and of paint manufacturers with regard to both ambient temperature and relative humidity.

21.7 PROJECT CONDITIONS

Temperature: comply with the requirements of clause 6.3 of AS/NZS 2311 The painting of buildings, and of paint manufacturers with regard to both ambient temperature and relative humidity.

21.8 WARRANTY

Provide a written warranty stating that preparation of surfaces, materials and material application installed under this contract will show no deterioration and remain in good condition for a period of seven years from date of Practical Completion.

PART II MATERIALS

21.9 MATERIALS

General:

REFER TO COLOUR SELECTION SCHEDULE AND SPECIFICATION

Where manufacturer makes more than one grade of any material specified, use the highest grade of each type, whether or not the material is mentioned by trade name in these Specifications.

Use Paints and finishes used for the project may be manufactured by one or more of the following manufacturers, (Dulux, Wash and Wear) using only paint from the PREMIUM RANGE:

Superintendent may approve other products. Apply to Superintendent for approval of alternatives.

Provide materials necessary for preparation of surfaces, and for application of paint finishes.

21.10 SCHEDULES

BUILDING EXTERIOR

Item	Material	Finish	Colour
External Walls	Render	Not painted	REFER TO COLOUR SCHEDULE
Soffit linings	Cement Sheet Lining	Note painted	
Entry Doors	Timber	Not painted	
Door Frames	Metal	Not painted	
Portico frame/Metalwork	Metal	Not painted	
Feature trims	Render, Timber	Not painted	
Roof	Colorbond	Not painted	
Gutter & Fascia	Colorbond	Not painted	
Exposed Flashings	Colorbond	Not painted	
Downpipes	Colorbond	Not painted	
Downpipes	UPVC	Paint Finish:- e2 & e5	Fascia colour

BUILDING INTERIOR

Item	Material	Finish	Colour
Wall linings, Ceilings & Bulkheads	Plasterboard	Paint Finish:- i4	REFER TO COLOUR SCHEDULE
Doors generally & Cornice	Readicoat Hardboard	Paint Finish:- i1	
Apartment Entry doors	Solid Timber panel	Paint Finish:- i6	
Architraves & Skirtings	Pre-primed MDF	Paint Finish:- i5	
Bathroom Ceilings	Plasterboard	Paint Finish:- i2	
Metalwork	Base metal	Paint Finish:- i7	
Hand rail	Stainless steel	Not painted	
Plywood wall lining	plywood	Paint finish i8	

21.11 SCHEDULE OF PAINT SYSTEM

BUILDING EXTERIOR

System	Surface	Treatment/Coating	
e1	New Metalwork	Prepare Surface	Coat 1 – Zinc rich metal primer Coat 2 – Ultra enamel gloss Coat 3 – Ultra enamel gloss
e2	Zincalume Sheet	Prepare Surface:	Coat 1 – Etch primer Coat 2 – Ultra enamel gloss Coat 3 – Ultra enamel gloss
e3	Item removed		
e4	External Doors	Prepare Surface	Coat 1 – Undercoat primer Coat 2 – Ultra enamel gloss

			Coat 3 – Ultra enamel gloss
e5	UPVC	Prepare Surface	Coat 1 – Undercoat sealer Coat 2 – Sunproof Low Sheen Coat 3 – Sunproof Low Sheen

BUILDING INTERIOR

REFER TO COLOUR SELECTION SCHEDULE.

Note: all paint to be dulux wash & wear

System	Surface	Treatment/Coatings	
i1	Doors (pre-primed)	Prepare Surface	Coat 1 – enamel semi gloss Coat 2 – enamel semi gloss
i2	Wet area Ceilings.	Prepare Surface	Coat 1 – All purpose undercoat Coat 2 – Acrylic semi gloss Coat 3 – Acrylic semi gloss + mould inhibitor
i3	Plasterboard Ceilings	Prepare Surface	Coat 1 – All purposes undercoat Coat 2 – low sheen Coat 3 – low sheen
i4	Plasterboard walls	Prepare Surface	Coat 1 – All purposes undercoat Coat 2 – Living proof acrylic low sheen Coat 3 – Living proof acrylic low sheen
i5	Pine pre-primed	Prepare Surface	Coat 1 – enamel semi gloss Coat 2 – enamel semi gloss
i6	Bare Timber	Prepare Surface	Coat 1 – All purpose undercoat Coat 2 – Acrylic gloss Coat 3 – Acrylic gloss
i7	Bare metal	Prepare Surface	Coat 1 – Zinc rich metal primer Coat 2 – Ultra enamel gloss Coat 3 – Ultra enamel gloss
i8	Plywood	Prepare Surface	**Farben Painting & Decorating are to be the nominated painter for the finish of plywood as per below method**: Lightly spray sheets with water Roll dexpress merbu Wipe off twice to get all streaks out 1 coat of clear satin polyurethane Install sheets to wall Fill nail holes Light sand and 1 coat of clear satin polyurethane

21.12 PRIMING MATERIALS

Colours of priming coats (and body coats where specified) are to be lighter than those of finish coat.

PART III EXECUTION

21.13 COLOUR SCHEME

The total colour scheme shall be as selected by the Proprietor. Details are to be supplied to the Builder on request so that no undue delays are caused.

Allow for three colour schemes made from the colour combination scheduled above. The colour scheme shall carry through the entire building..

Exposed galvanised roof frame members do not require painting, excepting where damaged by construction activities or unless noted otherwise on drawings.

Structural support beams and trim work are the exception to the above.

The Superintendent will prepare a final Schedule of Colours in sufficient time before commencement of work.

21.14 EXAMINATION

Inspect surfaces and determine that they are in proper condition to receive the work to be performed under this Section. Refer 18.14 A, below.

The starting of work under this Section will be taken to mean acceptance of such surfaces as being satisfactory and defects in work resulting from accepting poor surfaces are to be corrected at no cost to the Proprietor.

Refer AS 2311 Appendix C.

21.15 PREPARATION

A. General: Prepared to a standard not less than that described under AS 2311, Section 3: Preparation of Un-Painted Surfaces, pages 17 - 22 inclusive, and other Clauses of Australian Standards referenced therein. This Standard is incorporated by reference as part of this Specification and applies to the work below to the same extent as if written herein.

B. Broom clean floor surfaces before painting. Remove dust, dirt, plaster, grease and other extraneous matter affecting the finish work.

C. Putty-stop or plug nail holes and cracks on both exterior and interior work, as required. Natural or stained wood finishes are to have putty coloured to match. Putty wood after prime coat or sealer coat has been applied.

D. Clean bare metal surfaces of mill scale, rust, grease, oil, dirt, or other foreign matter, then properly washed with spirit or other approved cleaning agents. After cleaning, etch, pickle, prime, or otherwise prepare, as recommended by the paint manufacturer.

E. Remove blisters or other imperfections in previous coats caused by foreign substances or paint skins from painted surfaces before the subsequent coat is applied.

F. Rub down wood and metal surfaces before finishing and between coats with No. 00 and finer sandpaper or steel wool, leaving a perfectly clean surface. Sand smooth-finished surfaces before finishing and between coats as required to smooth out rough areas and to assure a smooth, even finish. Surfaces to receive paint are to be smooth and free of sandpaper scratches, mill-marks, and other imperfections.

G. Remove hardware, accessories, plates, lighting fixtures and similar items in place prior to painting and re-position upon completion of each space, or protect as otherwise directed by Superintendent.

H. Thoroughly stir materials in containers before application, unless otherwise directed by the manufacturer of the paint used, to ensure uniformity of colour and mass. Strain out paint skins or other materials which would cause lumps or roughness. Thin only as recommended by the manufacturer.

I Furnish and lay suitable drop cloths in areas where painting is being done to protect floors and other surfaces from damage during the work.

21.16 APPLICATION

A. General:

Execute work of this Section in strict compliance with paint manufacturer's recommendations, and with the provisions of AS 2311, Section 6: Paint Application, pages 36 - 40 inclusive. This Standard is incorporated by reference as part of this Specification and applies to the work below to the same extent as if written herein. In the event of conflict between manufacturer's recommendations and the provisions of AS 2311, manufacturer's recommendations govern.

B. Maintenance or Repainting

Execute work of this Section in strict compliance with paint manufacturer's recommendations, and with the provisions of AS 2311, Section 7: Maintenance of Painted Surfaces on pages 41 - 45 inclusive and Section 8: Maintenance Painting Systems, pages 47 - 49. This Standard is incorporated by reference as part of this Specification and applies to the work below to the same extent as if written herein. In the event of conflict between manufacturer's recommendations and the provisions of AS 2311, manufacturer's recommendations govern.

21.17 CLEANING

At completion of work in each area, remove paint spots, oil and stain from adjacent surfaces, including finish hardware. Replace hardware previously removed.

There is to be no cleaning of any paint brushes, paint or equipment on-site. All cleaning of painting equipment must be carried out outside of the Victory Lutheran College grounds.

21.18 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

22. CARPET FLOOR COVERINGS

PART I GENERAL

22.1 SCOPE

Supply and install Carpet material with necessary accessories and related equipment required for the work to areas as indicated.

A. Supply and installation of Carpet

B. Supply and installation of Entrance Matts.

C. Supply and installation undertaken by the Proprietor.

22.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Concrete

Internal wall construction

22.3 QUALITY ASSURANCE

Suppliers and installers need to be widely experienced in the class of work required for the work of this Section.

22.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS/NZS 1385 2007 Textile floor coverings - Metric units and commercial tolerances for measurement.

AS/NZS 2270 2006 Plywood and blockboard for interior use. *Plus 1 Amdt 2007.*

AS/NZS 2455 Textile floor coverings - Installation practice.

2455.1 2007 General. *Plus 1 Amdt 2009.*

AS 4288 2003 Soft underlays for textile floor coverings.

Comply also with instructions of manufacturers of materials to be installed.

22.5 SUBMISSIONS

Provide samples and data sheets of materials.

Obtain Superintendent's approval for each item before ordering.

22.6 DELIVERY, HANDLING AND STORAGE

Deliver manufactured materials in the original packages, containers, or bundles bearing the name of the manufacturer. Protect materials from dampness. Store off the ground or slab, under cover and away from wet walls and other damp conditions, in an approved secure location in the building.

22.7 WARRANTY

Provide a warranty covering aspects of the installation performed by this trade, against defective materials and workmanship for a period of five (5) years from the date of Practical Completion. The warranty includes a statement that the whole of the work has been carried out in accordance with AS 1884 and the instructions of the manufacturers of components in effect at the time of installation.

PART II MATERIALS

22.8 CARPET:

Refer to Colour / Finishes Schedule & Architectural Plans

Laying Diagrams

Prepare laying diagrams showing locations and directions of seams and cross joints. Submit to obtain approval from the Superintendent before making up carpet.

22.9 ENTRY MAT

Refer to Colour / Finishes Schedule & Architectural Plans

22.10 COORDINATION

Coordinate the supply and installation of floor coverings with the Proprietor and allow access to Site Amenities for the sub-contractors. Prepare and clean each area in readiness for the floor covering.

22.11 STAIR 1 NOSING

Allow for 'Stair Nosing Australia 16 Series' or equal stair nosing strip in clear anodised with carborundum grey insert. Installed to manufacturers specifications.

PART III EXECUTION

22.12 EXAMINATION

Acceptance: visit site and inspect conditions, comparing conditions to drawings before delivery of materials to site. Notify Superintendent of discrepancy or unsuitability of substrate. Comply with appropriate clauses of AS/NZS 2455.1. Start of work means total acceptance of conditions.

22.13 PREPARATION BY BUILDER

Making good to existing floor and wall surfaces are not covered under the Provisional Allowances. The Builder is required to repair, clean the surfaces and make good prior to laying of floor coverings.

Comply with referenced Standards and manufacturer's recommendations regarding environmental conditions.

Comply with AS/NZS 2455.1. Comply with Appendix B to ensure moisture content of concrete does not exceed the stated limit.

Space enclosure: do not install material until space is enclosed and weather-proof, until wet-work in space is completed and nominally dry, and until ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

Repair by approved means imperfection of the floor surface which might impair the finished carpeted surfaces.

Broom clean or vacuum clean surfaces upon which carpet is to be laid.

On completion of cleaning, obtain Superintendent's approval of surface and follow such standard as he may determine for preparation throughout the project.

Transitions:

Allow to screed transitions so floor finishes remain level.

22.14 INSTALLATION

Carpet Fixings

Secure to the sub-floor in accordance with the manufacturer's instructions, and the recommendations of the Standard.

Form junctions of different materials (eg. tiles to carpet) so that they occur under the centre line of doors.

22.15 LAYING UNDERLAY

Comply with AS/NZS 2455.1

Cover the whole area to be carpeted.

22.16 STRETCHING CARPET

Tightly stretch carpet between fixings, using power stretchers where necessary. Maintain seams in straight lines.

Comply with AS/NZS 2455.1.

22.17 CARPET SEAMS

Comply with AS/NZS 2455.1.

22.18 DEMOUNTABLE PARTITIONS

Partitions which are shown having:

Carpet on one side and another floor finish on the other side will be erected before the carpet is laid.

Carpet on both sides, will be erected after the carpet is laid.

22.19 INSTALLATION ON STAIRS

Comply with AS/NZS 2455.1.

22.20 CLEANING AND PROTECTION

Comply with AS/NZS 2455.1.

On completion of laying each section of carpet, remove dirt, threads, scraps of left-over carpet, etc., and vacuum the surface clean and free from dust, etc.

After inspection by the Superintendent, cover the carpet in each section with an approved protective covering.

Maintain the cover in good order and condition, remove the same and finally clean the carpet at Practical Completion.

22.21 SPARE CARPET

Provide spare carpet of each type laid.

Deliver to the site wrapped with secure protection.

Do not deliver to the site until directed by the Superintendent. Place in its final storage location.

22.22 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Superintendent.

23. RESILIENT FLOOR

PART I GENERAL

23.1 SCOPE

Supply and install resilient floor surfacing material with necessary accessories and related equipment required for the work including but not limited to:

A. Vinyl sheet to Floors

B. Vinyl tile

C. Vinyl skirting

23.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Concrete Internal wall construction

23.3 QUALITY ASSURANCE

Suppliers and installers need to be widely experienced in the class of work required for the work of this section. At a place selected by the Superintendent, construct a prototype of a completed installation of vinyl floor and skirtings, 3 square metres in area. On completion of the prototype and approval by the Superintendent of aspects of the installation, the work remains in place and becomes the standard for the remaining work.

23.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS 1884 1985 (Obsolescent) Floor coverings - Resilient sheet and tiles - Laying and maintenance practices.

AS/NZS 3661.2 1994 Slip resistance of pedestrian surfaces – Guide to the reduction of slip hazards.

Comply also with instructions of manufacturers of materials to be installed.

23.5 SUBMISSIONS

Provide samples and data sheets of materials.

Obtain Superintendent's approval for each item before ordering.

23.6 DELIVERY, HANDLING AND STORAGE

Deliver materials in the packaging of the supplier, bearing the brand name, colour, thickness and other relevant data.

Store materials in a secure dry area away from other materials which may cause deterioration.

23.7 WARRANTY

Provide a warranty covering aspects of the installation performed by this trade, against defective materials and workmanship for a period of 5 years from the date of Practical Completion. The warranty includes a statement that the whole of the work has been carried out in accordance with AS 1884 and the instructions of the manufacturers of components in effect at the time of installation.

23.1 PROTECTION

Apply suitable hardboard or plywood to completed floors and maintain in position until final cleaning prior to Practical Completion. Remove and replace work which cannot be successfully repaired or cleaned.

PART II MATERIALS

23.1 VINYL PLANK FLOORING

Refer to Colour / Finishes Schedule & Architectural Plans

Vinyl Colour Sample

Before ordering vinyl planks, supply 4 No. samples of the selected colour(s) of vinyl. Obtain Superintendent's written approval before final order.

Laying Diagrams

Prepare laying diagrams showing locations and pattern directions. Submit to obtain approval from the Superintendent before making up carpet.

Transitions:

Allow to screed transitions so floor finishes remain level.

23.2 VINYL SHEET FLOORING

Refer to Colour / Finishes Schedule & Architectural Plans

Vinyl Colour Sample

Before ordering vinyl planks, supply 4 No. samples of the selected colour(s) of vinyl. Obtain Superintendent's written approval before final order.

PART III EXECUTION

23.3 EXAMINATION

Examine the site conditions applicable to each installation and comply with AS 1884.

Start of work means total acceptance of conditions.

23.4 PREPARATION

Prepare each area to be surfaced in accordance with AS 1884. Test the dryness of concrete sub-floor in accordance with AS 1884.

23.5 GREEN SLAB SEALER

Refer to Specification 14.6 for concrete slab treatment.

23.6 INSTALLATION

A. Delay installation of sheet until concrete has dried to the percentage established in Appendix A of AS 1884.

B. Adhesives: comply with AS 1884, and manufacturer's instructions.

C. Install material in accordance with AS 1884, including conditioning of both the materials and the sub-floor.

D. Form junctions of different materials (eg. carpet) so that they occur under the centre line of doors.

23.7 CLEANING

Remove excess adhesive and blemishes from the completed surfaces of flooring and skirtings.

23.8 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the Superintendent.

24. JOINERY

PART I GENERAL

24.1 SCOPE

The work of this Section covers the supply and installation of manufactured casework items.

It includes but is not limited to:

A. Cabinets and cupboards

B. Shelving

24.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Carpentry

Wall Finishes

Floor Finishes

Ceiling Finishes

Plumbing

Electrical Installation

24.3 QUALITY ASSURANCE

A. Manufacturers and installers are required to be widely experienced in the relevant aspects and class of work required for this section.

B. At a place selected by the Superintendent, construct a prototype of a completed installation. Include in this prototype all elements required by this specification, finished in every respect. When approved by the Superintendent, each prototype remains part of the work and becomes the standard for the remaining work.

24.4 REFERENCES

Comply with applicable portions of the Australian Standards:

AS/NZS 1859	Reconstituted wood-based panels – Specifications.
1859.1 2004	Particleboard. *Plus 2 Amdts, 2006 - 2011.*
AS 2754.2 1991	Adhesives for timber and timber products - Polymer emulsion adhesives.
AS/NZS 2924	High pressure decorative laminates – Sheets made from thermosetting resins.
AS/NZS 4386	Domestic kitchen assemblies.

24.5 SUBMISSIONS

Submit the following prior to fabrication:

Product literature on all proposed hardware items including components.

Technical data on all melamine laminates proposed for use.

Thickness of al materials at typical locations.

24.6 DELIVERY, HANDLING AND STORAGE

Do not delivery work to the site until after completion of other trade activities which could soil, damage or cause deterioration of manufactured joinery items l.

Prevent soiling, damage or deterioration during delivery, storage and handling.

Keep site storage to a minimum. Install directly in place, but refer to Clause 28.10.

If circumstances make storage necessary in areas other than the final location, store only in those that meet the requirements specified for installation areas.

PART II MATERIALS

24.7 FABRICATION

Advise Superintendent when the first of any group of items is ready for inspection not less than four days before delivery is due at the site. Where work is found not to comply with documentation, the Superintendent will order rectification. The Superintendent will be the sole decision-maker regarding compliance or non-compliance.

24.8 INSPECTION BEFORE DELIVERY

Construct by screwing and gluing or other approved method. A dry stapled assembly will not be approved.

Fabricate bench tops as indicated in a manner recommended by the material's manufacturer. Fabricate units without joints unless counter length exceeds maximum available length of materials.

Seal joints between counter and splash back with matching colour silicone. Wherever possible, per-cut openings to receive hardware, appliances, plumbing fixtures, electrical work and similar items.

Locate openings accurately using templates or roughing-in diagrams for proper size and shape. Smooth edges of cut-outs and, where located in bench tops and similar exposures, seal edges of cut-outs with a water resistant coating.

24.9 CUPBOARD CONSTRUCTION

Generally:	* Form joinery units from white HMR particle board * Fixing must not be shown on front of fittings, with all fixing from behind. * Screwed and glued fixings shall be used wherever possible in preference to nailing.Finish bench tops, kick rail and wall abutments with an approved silicon sealant. * Ensure structural capabilities of all units are adequate. * Joiner to allow for all staining and finishing of all raw exposed timber.
Colours:	Refer to Colour / Finishes Schedule
Bench Tops:	High Pressure laminate 32 mm Aquaboard with 6x6mm Pencil Round Post formed top and bottom leading edges.
Cupboard Facings:	16mm MDF vertical laminate board to all exposed facing with 1mm ABS edging.
Shelving and divisions:	25mm HMR white particle board with 1mm ABS edging
Toe recess:	50 x 100mm laminated.
Hinges:	Fully concealed self closing hinges equal to "Blum".

Drawers:	Blum “TANDEMBOX”, (steel white) with “BLUMOTION”. Include for:- 4 No. cutlery drawers to Kitchen
Furniture:	LINCOLN SENTRY “TIBURON” polished chrome 160mm (1-509-108)
Cupboards with locks:	Provide Carbine cylinder lock compatible with a 6 pin key. To be keyed alike to the master key system.

PART III EXECUTION

24.10 EXAMINATION

Visit the site and inspect conditions. Check dimensions and compare all aspects with the drawings and specification. Resolve differences before ordering materials or starting work.

Start of work means total acceptance of all conditions.

24.11 PREPARATION FOR INSTALLATION

Prior to installing, condition joinery to the average humidity conditions prevailing in the installation areas.

Delivery anchoring devices and similar inserts required to be built into substrates well in advance of the fixing of fittings and provide full details when they are to be fixed by others.

Prior to installation, examine shop-fabricated work for completeness and remedy and deficiencies.

Include back priming. Remove packing where not required.

Thoroughly clean all floors and walls that will be permanently concealed by joinery.

24.12 INSTALLATION

Use concealed shims as required to install the work plumb, level, straight and distortion free within close tolerances

Scribe and cut to fit adjoining work; refinish cut surfaces or repair damaged finishes at cuts.

Secure joinery with anchors of blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required to complete the installation.

Except where pre-finished matching fastener heads are required, use fine finishing nails, countersunk and filled flush. Use matching filler where a transparent finish is required.

Install casework without distortion so that doors will fit openings properly and be accurately aligned.

24.13 HARDWARE

Install all door and joinery hardware as scheduled, listed and required in full compliance with the manufacturer's recommendations.

Adjust as needed to centre doors in openings.

24.14 ADJUSTMENTS, CLEANING, FINISHING AND PROTECTION

A. Finish the work specified in this Section and remedy anything not finished at the shop or any other stage prior to completion.

B. Adjust joinery to achieve a uniform appearance.

C. Lubricate and clean hardware making any final adjustments needed for proper operation.

Remove all handling marks from visible joinery surfaces.

D. Protection: Do everything needed to ensure that all work is without damage or deterioration at completion.

25. LIFT

PART I GENERAL

25.1 SCOPE

A. Design, engineer, supply, install, test and commission a complete lift service for the described functions and in locations shown on drawings. Provide a warranty and maintenance schedule for each item installed.

B. This section of work includes but is not limited to all of the above for:

Lift service - hydraulic – passenger.

Lift service - passenger - servicing car park.

Lift service – goods.

C. Lift requirements .

Have 2 button fully collective control.

Have fully automatic levelling with a tolerance of +/- 12mm.

Be fitted with horizontally sliding centre opening doors of adequate fireproof rating.

Be smooth and quiet in operation.

Be in accordance with the current SAA Lift Code and the requirements of all authorities having jurisdiction over the works.

25.2 RELATED WORK

Coordinate and cooperate with other trades responsible for:

A. Construction of the lift shaft and ventilated lift motor room.

B. Forming lift motor floors to this contractor's drawings and/or directions.

C. Building in of inserts supplied by this contractor to this contractor's drawings and/or directions.

D. Building in of door frames after erection by this contractor.

E. Forming of sill supports.

F. Lighting to motor room.

G. Forming and making good of recesses at landings for car position indicators and call buttons.

H. The supply and installation of electrical MIMS submains to a point designated by this contractor in the plant room.

I. Guards to well openings.

J. Sign writing "DANGER" notices as instructed on lift motor supply room doors.

K. Supply and installation of lift floor finish.

L. Provision of fire protection (dry type sprinkler heads) within lift motor room.

M. Provision for a fire extinguisher to the satisfaction of the appropriate codes.

1. Electric fans, luminaries and power outlets, including cabling, are to be supplied and installed by others.
2. Participate in pre-installation conferences arranged by mechanical engineer and comply with decisions made at each.

25.3 QUALITY ASSURANCE

A. Materials supplied, installed and made fully operational are required to be of the best quality available.

B. Formal Quality Assurance procedures in accordance with the requirements of AS/NZS 9001 are mandatory.

C. Provide evidence with tender of means by which the above is to be implemented, together with tenderer's qualifications as required by 103 (b) above.

D. Take measurements at site during construction of structures related to installation of lifts. Report discrepancies to contractor if they occur.

25.4 REFERENCES

Comply with applicable portions of current editions of the following Australian Standards:

AS/NZS 1170	Structural design actions.
1170.1 2002 (R2016)	Permanent, imposed and other actions. 2 Amdts 2005, 2009.
1170.2 2011 (R2016)	Wind actions. 5 Amdts 2011-2017.
1170.3 2003 (R2016))	Snow and ice actions. 2 Amdts 2007, 2017.
1170.4 2007 (R2018)	Earthquake actions in Australia. 2 Amdts 2005, 2018.
AS 1289.0 2014	Methods of testing soils for engineering purposes - Definitions and general requirements.
AS 1428.4.1 2009	Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators.
AS/NZS 1554	Structural steel welding.
1554.1 2014	Welding of steel structures. Amdts 2015, 2017.
AS 1735	Lifts, escalators and moving walks. There are several parts.
1735.1 2016	General requirements.
AS/NZS 2311 2017	Guide to the painting of buildings.
AS 4431 2019	Guidelines for safe working on new lift installations in new constructions.

Comply with requirements of statutory authorities having jurisdiction.

Comply throughout with the current edition of the NCC.

25.5 SUBMISSIONS

A. Submit with tender data containing component manufacturer's description of material proposed for installation.

B. Provide fully detailed shop drawings.

1. Provide full and complete drawings of all the equipment that is proposed to be supplied and copies of all layout drawings. Submit for approval, detail drawings of manufactured items before manufacture commences. All drawings are to be approved in writing before work is commenced.
2. Submit all layout drawings, giving details of all access requirements and of any holes or items of equipment to be built, in sufficient time for approval and for the completion of such work.
3. Thoroughly check all shop drawings prior to submission as regards measurements, materials and details to satisfy himself that they conform to the intent of the drawings and specifications.
4. All checking and approving of shop drawings are to be construed as gratuitously assisting the contractor and approval is given for the manufacture without prejudice to the responsibility of the contractor for the errors or omissions which may exist thereon.
5. Approval of drawings is not to be construed as authorising variations or increased costs.
6. Where errors or omissions are discovered later, make good at the contractor's expense, irrespective of any prior approval.

7. The layout as shown on the architectural drawings is to be considered as diagrammatic and approximate only. Locate fittings to suit the actual equipment to be installed and building details.
8. Submit, when requested, quality control schedules and documents to be used in notification of quality of materials and installation.

C. Within 7 days of notification of acceptance of tender submit 3 copies of detail drawings showing:

1. Maximum loads and reactions on the building structure created by the movement of the lift, locations of bond blocks.
2. The location and dimensions of openings required in the lift motor room slab and at landings for call buttons and lift car position indicators.
3. The construction and details and dimensions of the lift cars, landing doors and the landing door frames and surrounds.
4. The location and apparatus required to be provided in the lift motor room for the installation, servicing and removal of the motor room plant, together with loads required to be handled by the foregoing equipment.
5. The extent of lift over runs top and bottom of the lift shaft.
6. The maximum electrical current per phase and neutral to be carried by the lift supply cable.
7. The minimum size of HRC fuse that will adequately carry peak loads without operation.
8. Terminal position of lift submains.

25.6 DELIVERY HANDLING AND STORAGE

Arrange with builder for delivery of equipment at times appropriate to meet installation schedules. Comply with decision made at pre-installation conference. When installed, protect equipment from damage. Make good damage which does occur at no cost to the proprietor.

25.7 MAINTENANCE

The contract maintenance period of the lift is to commence on the date on which the lifts are placed in regular service following the satisfactory completion of tests and final painting.

The contractor is to fully maintain the lifts in proper working order for a period of twelve (12) months from the above date, free of cost.

In the event of the maintenance proving unsatisfactory or if any breakage or serious defect occurring in any part of the equipment, or if unsatisfactory operation of the lift, the maintenance period is to be extended until such time as the lifts have been operated to the satisfaction of the consulting engineer for a period of one (1) calendar month.

Tenderers will include, as a separate item, the annual cost of a twenty (20) year comprehensive maintenance contract covering regular maintenance and breakdown calls made during normal working hours. The cost "out-of-hours" calls are to be charged separately. The maintenance contract is to commence immediately on the date of expiration of the free maintenance period. Full particulars of the maintenance agreement are to be supplied with tenders.

PART II MATERIALS

Before ordering materials obtain and provide to the architect written evidence that items to be installed comply with Australian Standards and are approved by statutory authorities having jurisdiction.

If non-approved materials or components are installed, replacement will be at contractor’s expense.

25.8 LIFT SELECTION

In order to confirm the lift requirements, lift pit, lift height clearance etc, the school has selected Tesla Elevators and engaged with them to provide preliminary drawings and quote of the lift for this project.

The builder is to engage with Tesla Elevators through contact below to coordinate updated quote, purchase and installation of the lift.

Tesla Elevators – Appendix 28.4 lift quote

Sales & Design:- David Milenkovic

Phone: 1300 0 TESLA (1300 083752)

Mobile: 0402 753 733

Email: david@teslaelevators.au

Web: www.teslaelevators.au

Office: 6/210 Boundary Rd, Braeside VIC 3195

25.9 LIFT MACHINES AND EQUIPMENT

Refer to Tesla Elevator quote

25.10 LEVELLING

Fit each lift machine with accurate levelling devices, which are to operate on the main hoist motor progressively, so that the lift comes to a stop by progressive deceleration and without discontinuity.

The equipment is to level the lifts automatically and independently of operation by passengers and without the required tolerance independent of load, speed or stretch of rope.

The tenderer is required to set out in the schedule, the accuracy of levelling which he is prepared to guarantee. Any error in levelling under any condition, loading and regardless of direction of travel, is not to exceed +/- 12mm.

25.11 GUIDES

Lift cars and counterweights with roller type guide shoes. Pay particular attention to the sound isolation of guide and rollers from guest rooms in residential buildings.

25.12 WELL EQUIPMENT

Guide Rails

Guide rails for both cars and counterweights: planed “T" section steel rails of sufficient rigidity to withstand such stresses as may be expected during both normal and emergency operation.

Fix the guide rails to the building to allow for the settling of the building and compression of columns and acoustically isolate from the building structure in the accommodation areas.

The counterweights frames: arrange so that fillers can be added or removed without disturbing the ropes.

The ropes: of a type specifically intended for duty, make provision for easy adjustment to ensure that equal tension is applied to all ropes.

Buffers for the lifts: of approved design.

The completed installation: quiet in operation and be designed with this in view. Determine the cause and eliminate, at contractor’s expense, any undue noise. No noise from the lift motor room and shaft may be audible on any of the occupied floors.

This contractor is required to carry out the well flushing and supply and install all necessary trimming beams.

25.13 LIFT CARS

Refer to Tesla Elevator quote.

Lift floor is to have carpet tiles as per general foyer area (not included in Lift quotation).

25.14 CAR AND LANDING DOORS

Refer to Tesla Elevator quote.

Provide door operating mechanism capable of operating the doors at the maximum speed permitted by the regulations without undue noise, vibration or shock.

25.15 LANDING DOOR SURROUNDS

Return the composite internal wall lining at both lift door openings.

25.16 LANDING INDICATORS AND CONTROLS

Supply over each landing door an approved illuminated indicator designed to show when a lift is about to stop at the floor and its direction of travel.

At the same time, the gong is to sound to attract the attention of the intending passengers. The indicators are to give sufficient advance warning to enable passengers to reach the landing doors prior to their actual opening.

Provide each with an "UP" and "DOWN', button, (except on terminals), which automatically illuminate to indicate that the call has been registered, and a digital display to indicate if lift is out of service.

Install the call button panel to the requirements of the NCC warning against the use of lifts in the event of fire.

25.17 CONTROLS

Equip the lifts with fully automatic microprocessor controls.

Software based which continuously monitors the lift traffic to automatically adjust the lift operation to provide minimum waiting intervals.

25.18 LIFT DISTRIBUTION BOARD

As per Tesla Lift requirements and BSG Electrical.

Lift control cabinet located in western air-lock.

25.19 PERFORMANCE MONITORING SYSTEM

Provide for the supply and installation of a complete remote monitoring system to detect irregularities in operating sequence and performance of lifts. Items and function required include but are not limited to:

A. Diagnose lift performance.

B. Detect developing faults.

C. Pinpoint maintenance needs.

D. Record intermittent faults.

E. Provide a record of events leading up to a fault, or unsatisfactory performance.

F. Provide notification of lift failure.

G. Relay an alarm signal in the event of someone being trapped in the lift.

H. High level interface with BAS system.

Tenderers are to submit full monitoring details of the proposed system on the Tender Form.

25.20 SHOP FABRICATION

General: design fabricated items so that possible work is done before delivery. Fully protect for shipment. Take possible care to prevent damage.

A. Welding External Items: conform to the recommendations of AS/NZS 1554, noting particularly the design criteria.

B. Flanges: concealed where possible. Sleeve connecting railings inside railing sections and secure with flush or set screws. Except where access is impossible, connection screws and bolts will be on the underside of joints.

C. Fasteners on the top of railing sections will not be permitted.

D. Weld shop connections for steel fabrications, and bolt field connections.

E. Provide smooth finishes to exposed surfaces with sharp well-defined lines and arrises. Mill to a close fit machined joints. Design necessary lugs, brackets and similar items so that work can be assembled and installed in a neat, substantial manner.

F. Provide ample strength and stiffness by using appropriate metal thickness of assembly and supports.

G. Provide holes and connections as required to accommodate the work of other trades and for site assembly of metalwork. Drill or punch and ream in the shop.

25.21 MISCELLANEOUS

Fasteners: provide required bolts, screws, inserts, fasteners, templates and other accessories required for a complete installation. Coordinate with other trades as to the proper fastening systems suitable for the substrates to which the item is to be secured. Refer to architect if in doubt. Fasten galvanised items with galvanised fasteners.

PART III EXECUTION

25.22 EXAMINATION

Inspect site conditions before fabrication, where possible, and before delivery of materials. Ensure conditions are satisfactory for installation. Arrange for rectification required.

Ensure tasks and activities comply with the OHS Act, OHS regulation, OHS Code of Practice and/or Australian Standards, as relevant. Start of work means total acceptance of relevant conditions.

25.23 PREPARATION

A. Field measurements: do not delay job progress. Allow for adjustments and fitting of the work in the field where taking of measurements might cause delay.

B. Coordination with work of others: furnish to each relevant trade foreman anchorages and setting drawings, diagrams, templates and instructions for installation of items having integral anchors which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to the project site.

25.24 INSPECTION AND REINSTATEMENT

A. Check fabrications as they are unloaded at the project site for evidence of physical damage.

1. Treat damaged fabrications as follows:

Damage through galvanising: perform immediate inorganic zinc silicate paint or cold-galvanising repair. Do not install until reinstated.

2. Architectural metalwork: returned to shop for repair or replacement.

B. Verify anchors, bolts and other required anchorage items for proper size and accurate location prior to erection.

25.25 INSTALLATION

A. Anchorage: except for anchorages furnished herein but placed by other trades, set and secure necessary anchorages, including concrete and masonry inserts, bolts, wood screws and other connectors as needed. Perform cutting, drilling and fitting as needed, locating anchorages and holes to ensure proper positioning of completed work.

B. Fit: during installation and assembly, form tight joints with exposed connections accurately fitted, and reveals uniform. Finish work accurately, plumb, level, square and true in reference to adjacent construction. Make tolerances conform to Australian Standards.

C. Finish: do not cut or abrade shop finishes which cannot be completely restored in the field.
The use of gas-cutting torch in the field for correcting fabrication errors will not be permitted. Fabrications may be cut shorter with power hacksaws on site.
Isolate dissimilar metals likely to be subject to moisture with inert materials, not visible on completion of installation.

E. Install equipment to the satisfaction of the architect and consulting engineer.

25.26 FIELD QUALITY CONTROL

When requested arrange for the manufacturer of products to instruct installers regarding correct installation.

25.27 PROTECTION

Cover work: immediately following installation, wrap or cover architectural metalwork to avoid wear and tear of finish during subsequent construction.

25.28 COMMISSIONING

Perform each test necessary to prove that each item of equipment performs as intended by the manufacturer and the consulting engineer. Include the supply of necessary standard test weights. Repeat tests on items which fail to perform as required until approval is achieved.

Provide required calculations certifications etc. to the satisfaction of statuary authorities.

25.29 CLEANING

Clean materials installed to the satisfaction of the consulting engineer. Remove temporary protective coatings.

25.30 COMPLETION

Complete contracted work in accordance with contract documents and written variation orders issued by the consulting engineer.

26. MECHANICAL SERVICES

PART I GENERAL

26.1 SCOPE

The work shall include the supply, installation, testing, commissioning and maintenance of all mechanical services shown on the contract drawings and specified herein including the provision of all manufactured items, materials, labour, cartage, tools, plant, appliances and fixings necessary for the installation together with all union and incidental works.

Refer to the **MECHANICAL SERVICES DRAWINGS AND SPECIFICATION** contained thereon in conjunction with this specification.

26.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Metal Decking and Roof Plumbing

Metalwork

Air Distribution Ductwork

Electrical Installation

26.3 QUALITY ASSURANCE

A. Provide written evidence to Superintendent and/or Engineer of required experience and skills of personnel proposed for this project.

B. Ensure electrical and plumbing work is performed only by electricians and plumbers with qualifications. Submit evidence of these qualifications.

26.4 REFERENCES

Comply with applicable portions of the following Australian Standards:

AS 1324	Air filters for use in general ventilation and air-conditioning.
AS 2913 2000	Evaporative air-conditioning equipment.
AS/NZS 3666	Air-handling and water systems of buildings - Microbial control.

Comply also with the requirements of Environmental and Statutory Authorities having jurisdictions.

26.5 SUBMISSIONS

Submit data on packaged units and manufacturers of other components.

Provide drawings of preferred locations and sizing details of roof top platforms required to support units and service personnel where they are to be provided by others.

Submit to Superintendent operation and maintenance instructions for units and other items

26.6 DELIVERY STORAGE AND HANDLING

Arrange with Builder dates of delivery and installation of units and associated components, cranage or handling to installed position and maintenance arrangements.

Where possible, install materials directly in place. Store other materials in a secure location on site as directed by Builder.

26.7 WARRANTY

Provide a warranty to the proprietor via Superintendent that units which fail within the warranty period of five years from the date of Practical Completion will be repaired or replaced contracted, where maintenance is not performed by this Contractor.

26.8 MAINTENANCE

Provide an agreement form to be submitted to Proprietor offering regular maintenance of the entire installation for the agreed upon period.

Detail the precise activities of maintenance offered.

PART II MATERIALS

26.9 THE WORK SHALL INCLUDE:-

Refer to MECHANICAL SERVICES Working Drawings and specifications and instructions.

a) Refer to Mechanical Working Drawings and Specification in conjunction with this specification.

b) Supply and installation ducted and high wall split reverse cycle airconditioning systems to the development. Including all associated ductwork, grilles and fitments to complete the installation and commissioning.

c) Mechanical ventilation system.

d) Provision, by arrangement with the Builder or otherwise, of all related hoisting and scaffolding.

e) Give all notices, pay all fees, and obtain all permits and approvals for the whole of the works.

f) Provision and fixing of all holding down bolts, penetration sleeves, etc., where required to be built-in during construction.

g) Weatherproof flashing of all pipes, ducts, etc., penetrating the roof and external walls.

h) Testing and commissioning of all equipment installed under this Contract.

i) Provision of operating and maintenance instructions and service manuals at practical completion.

j) Maintenance of the installation during defects liability period.

26.10 WORK BY BUILDER

Refer to MECHANICAL SERVICES Working Drawings and specifications and instructions.

The following work will be provided by the Builder not covered under Mechanical Services.

a) Access routes and openings in walls, ceilings and at other positions required for adjustment, inspection, maintenance and cleaning of mechanical services, to the Contractor's details.

b) Provision of false ceilings and bulkheads for housing services generally as shown on the drawings.

c) Roof penetration up-stands and under-flashings.

Electrical supply to selected equipment local isolation switches as scheduled.

PART III EXECUTION

26.11 EXAMINATION

Inspect drawings and visit site. Check aspects of required work such as plant platforms, refer any discrepancy to Builder and/or Superintendent for decision and correction.

Start of work on site means total acceptance of conditions.

26.12 ROUGH-IN APPROVAL

Allow to coordinate a walk through of the building with Builder & Superintendent at rough-in stage to confirm location of all ceiling / wall units and location of wall mounted A/C controllers.

26.13 MOUNTING

Mount units on suitable vibration eliminators to prevent the transmission of noise or vibration to the building.
Co-operate with roof installer to ensure watertight installation.

26.14 CONDENSATE DRAINS

Drain roof-top units to the nearest downpipe or gutter via a trapped 20mm dia PVC pipe.

26.15 CONNECTION

Provide electrical connection to temporary power supply until permanent power is available.
Connect direct to main switchboard to space allocated for mechanical services and for future equipment.
Provide flexible ductwork between unit and supply air fixed ducts. Provide weatherproof coverings over connections to external units.

26.16 COMMISSIONING

Operate the system for ten days in summer and record results with a hydrograph. Operate also in Winter with similar recording of results for five days. Rectify any faults. Obtain Engineers' and Superintendents' approval on completion of commissioning.

26.17 COMPLETION

Complete the contracted work in accordance with contract documents and written variation orders issued by Superintendent.

27. ELECTRICIAN

PART I GENERAL

27.1 SCOPE

Refer to the ELECTRICAL SERVICES DRAWINGS contained thereon in conjunction with this specification.

The work of the Section includes but is not limited to the design, supply and installation of electrical transmission and reticulation materials from the mains supply to parts of the building site, and connection for:

Mains and Sub-mains

Main Switchboards and metering

Distribution Switchboard complete with Earth Leakage Circuit Breakers

Lighting and emergency lighting

Light fittings

General purpose outlets

Communications, Telephone, pre-wire all points and block cabling

Implied work for a completed installation

27.2 RELATED WORK

Co-ordinate and co-operate with the following trades:

Floor Construction

Wall Construction

Ceiling Construction

Carpenter and Joiner

27.3 QUALITY ASSURANCE

Licensed electrical technicians only may perform work, experienced in the requirements of the project. Licences are those issued by the State Authority having direct control or interest in the work.

Perform the entire installation in accordance with the requirements of the Statutory Authority having jurisdiction.

27.4 REFERENCES

Comply with applicable portions of the following standards, codes and rules:

Building Code of Australia

AS/NZS 1680	Interior lighting. There are 9 parts and 1 Amdt, 1991 - 2009.
AS/NZS 2053	Conduits and fittings for electrical installations. There are 8 parts, 1995 - 2002.
AS 2293	Emergency escape lighting and exit signs for buildings.
AS/NZS 3000 2007	Electrical Installation (known as the Australian/New Zealand Wiring Rules).There is 1 Amdt, 2009. This Standard is in constant revision and comes in 4 different forms.
AS 3786 1993	Smoke alarms. There are 4 Amdts, 1995 - 2004.
HB 252 2007	Communications Cabling Manual – Module 3: Residential communications cabling handbook.
AUSTEL TS 008	Requirements for authorised cabling rules (wiring rules) (Superseded)
IEC 15018 2005	Information technology – Generic cabling for homes.

27.5 ELECTROMAGNETIC COMPATIBILITY

Ensure the entire installation; including all electrical equipment meets the Electromagnetic Compatibility requirements of the Australian Communications Authority.

27.6 WIRING INSTALLATION

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.7 WARRANTY

Provide a warranty covering aspects of required work of this Trade Section, for a period of not less than ten years from the date of Practical Completion.

27.8 FEES AND NOTICES

Pay fees, and submit notices to Supply Authority
Arrange for inspections by Authority Inspector and obtain final certificate.

PART II MATERIALS

27.9 FITTINGS LOCATED ON PLYBOARD

All fittings located on plyboard surfaces are to be in a black finish

27.10 FIRST AID ROOM – WARMING DRAWER

Supply and install to location shown on architecturals and joinery plans in first aid room:
Smeg Linea 15cm Warming Drawer with touch Controls – Neptune Grey CPRT115G

27.11 CEILING FANS

All ceiling fans are to be in black finish

27.12 EARTHING

Provide electrical earthing to the complete installation in accordance with the current regulations.

27.13 ELECTRICAL SUPPLY

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.14 CONSUMER MAINS

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.15 MAIN SWITCHBOARD / METERING

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.16 DISTRIBUTION BOARDS

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.17 ACCESSORIES

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.18 MECHANICAL SERVICES

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.19 LOAD BALANCE

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.20 LIGHT FITTINGS

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.21 EMERGENCY LIGHTING

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.22 COMMUNICATIONS CABLING

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.23 TELEVISION – MATV SYSTEM

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.24 SECURITY

The schools nominated security provider / installer is 'Security One'.

PART III EXECUTION

27.25 EXAMINATION

Start of work means total acceptance of conditions.

27.26 PREPARATION

Provide necessary safety or security controls where required to ensure safe practices and installations.

A. Slab penetrations for floor-mounted general purpose outlets (GPOs), telephone outlets etc.
B. Chasing and making good for conduit access for skirting
C. Chasing and wiring duct, GPO's switches etc.
D. Supply and installation for access opening where required.
E. Provision of electrical riser.
F. Provision of signwriting to main switchroom and distribution board.
G. Forming, trimming, patching and making good of openings for luminaries to sizes required by the Electrician.
H. Provision of concrete
I. Making good existing roadway etc.

27.27 POWER SHUT-DOWN COORDINATION

Any proposed power shut-down's are to be coordinated with the school min. 5 week days prior. The request shall confirm the date, day, time of power off, duration or power off and time of power back on.

27.28 INSTALLATION

Comply with Regulatory requirements relating to installation methods and systems.

Ensure that installations are within the regulatory maximum loads and tolerances.

A. Secure cable, using materials specified above, at centres recommended by Regulations and/or manufacturer.

B. Conceal wiring and cable equipment. Conduit cables where necessary or required in approved material.

C. Provide for Fire Rated penetrations where cables pass through suspended floor slabs and dividing walls.

27.29 TESTING ON COMPLETION

Test the complete electrical installation to ensure that all systems function and operate satisfactorily and comply with Authority requirements.

Arrange Practical Completion inspection and complete any defect items to the satisfaction of the Supervisor.

27.30 AS-INSTALLED DRAWINGS

Refer to ELECTRICAL SERVICES Working Drawings and specifications and instructions.

27.31 ADJUST AND CLEAN

Adjust installations of components to ensure proper fit and alignment.

Remedy items of inefficient operation or of doubtful performance.

Clean visible items to original condition. Remove debris from installation in concealed spaces.

27.32 PROTECTION & COMPLETION

Protect installed items from damage from any source until Practical Completion. Complete contracted work in accordance with contract documents and written variation orders issued by Superintendent.

28. APPENDIX

28.1 HYDRAULIC SERVICES: PLANS & SPECIFICATION.

28.2 MECHANICAL SERVICES: PLANS & SPECIFICATION

28.3 ELECTRICAL SERVICES: PLANS & SPECIFICATION

28.4 LIFT QUOTE

28.5 GEOTECHNICIAN'S REPORT: 24AWG1627

28.6 ANCHOR SAFE QUOTE 39897 DATED 8/5/2025

28.7 SECTION J REPORT: NRG EFFICIENT HOMES

28.8 GENERAL INFORMATION

Construction details.

Door Schedule.

Fitting and Fixtures schedule and Specification.