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MASON&WALES ARCHITECTS

SPECIFICATION

NEW RESIDENCE

for

‘TIHI LODGE’

144J ARROWTOWN-LAKE HAYES ROAD
QUEENSTOWN

PROJECT NO: **6565**

FOR BUILDING CONSENT

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SPECIFICATION

of

WORK AND MATERIALS
required in the
CONSTRUCTION
of

'TIHI LODGE'
144J ARROWTOWN-LAKE HAYES ROAD
QUEENSTOWN

in accordance with
this Specification
and the Drawings

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CONDITIONS OF CONTRACT

By Others

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SEPARATE DOCUMENTS

ARCHITECTURAL APPENDIX
Refer to Separate Documentation
prepared by *Mason & Wales Architects.*

STRUCTURAL SPECIFICATION
Refer to Separate Documentation
prepared by *Batchelar McDougall Consulting (BMC).*

WATERPROOFING
Refer to Separate Documentation
prepared by *Nuralite Waterproofing Ltd.*

MECHANICAL SERVICES
Refer to Separate Documentation
prepared by *AIRMAX Ltd.*

HYDRAULIC SERVICES
Refer to Separate Documentation
prepared by *AIRMAX Ltd.*

H1 COMPLIANCE REPORT
Refer to Separate Documentation
prepared by *Building Envelope Optimisation (BEO).*

LANDSCAPE DESIGN
Refer to Separate Documentation
prepared by *BAXTER DESIGN.*

INTERIOR DESIGN
Refer to Separate Documentation
prepared by *TBC*

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SECTION 01 – PRELIMINARY AND GENERAL – ARCHITECTURAL

1.1 SCOPE OF WORK

The work in this contract consists of the setting up on site, erection and completion of the Building Structure, services and finishes, all as described on the Drawings and in the Specification.

This 'Architectural' – Preliminary and General Section, and other Sections, shall be read in conjunction with each different Trade Section of the Specification. The Main Contractor and Project Manager shall ensure that all relevant documents and information are made available to subcontractors for coordination.

Refer to Index Page to identify relevant Trade Sections and Contractual Documents.

Refer to 'Contractual' – Preliminary and General Section, prepared by the Engineer to the Contract *(Constructive Consultants Ltd).*

1.2 TRADE RELATIONS

This Specification is divided into Trade Sections for convenience of reference only. It is the responsibility of each trade to coordinate and cooperate with all other trades to ensure the proper completion of the work.

No claim shall be admitted for work not specifically mentioned but which is expressed or implied elsewhere in the Specification or on the Drawings.

Should any Tradesperson consider that the work of other Trades, or the condition of any surface is not in a satisfactory condition to ensure a proper finish to their work, they shall report to the Contractor and not proceed until the necessary alterations or improvements have been made.

1.3 CONDITIONS OF CONTRACT

Refer to Construction Contract and Schedules prepared by the Engineer to the Contract *(Constructive Consultants Ltd)*.

This Specification shall be read in conjunction with and shall be subject to the New Zealand Institute of Architects, Standard Conditions of Contract, SCC 2018 including the Schedules as noted, a copy of which shall form part of this Contract.

1.4 NOMINATED SUB-CONTRACTORS AND SUPPLIERS

Refer to Construction Contract and Schedules prepared by the Engineer to the Contract *(Constructive Consultants Ltd).*

The Nominated Sub-Contractors shall include: *TBC*

The Contractor acknowledges that these Sub-Contractors and Suppliers are acceptable to them or,

(a) note otherwise in the Tender, or

(b) withdraw from Tendering.

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The Contractor shall cooperate with all Nominated Sub-Contractors, provide all necessary openings and fixings and coordinate their respective activities with the work of the Contractor and other trades.

The Contractor shall allow for all costs incurred during the carrying out of the work.

The arrangements for Nominated Sub-Contractors shall be in accordance with NZ Institute of Architects, Conditions of Contract, Clause 8.3, Nominated Sub-Contractors.

1.5 SEPARATE CONTRACTS

Refer to Construction Contract and Schedules prepared by the Engineer to the Contract *(Constructive Consultants Ltd).*

The Principal may arrange for Separate Contracts to be carried out on site during the construction period.

The Separate Contracts may include:

- Earthworks
- Security System
- Telephone and Data Services
- Music System
- Audiovisual System
- Floor Coverings
- Landscaping
- Furniture Fit-out
- Heat Pump System
- Plant and Equipment Fit-out
- Window Treatments, Curtains, Drapes and Blinds

The Contractor shall allow to liaise with the Architect and Principal as soon as practicable to confirm the inclusion and scope of services for any Separate Contracts. The Contractor shall cooperate with all Separate Contractors, provide all blockings and ducts and coordinate their respective activities with the work of the Contractor and other trades.

The Contractor shall allow for all costs incurred during the carrying out of the Separate Contracts. NZ Institute of Architects, Conditions of Contract, Clause 8.4.7 is deleted.

In all other respects the arrangements for Separate Contracts shall be in accordance with NZ Institute of Architects, Conditions of Contract, Clause 8.4, Separate Contractors.

1.6 INSURANCE AND INDEMNITY

Refer to Construction Contract and Schedules prepared by the Engineer to the Contract *(Constructive Consultants Ltd).*

The Contractor shall indemnify the Principal and shall effect Insurances in accordance with the requirements of the NZ Institute of Architects General Conditions of Contract, Section 6, Insurance, and Schedules F1 thru F6 as required.

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The Contractor shall continue all Insurances following completion of the work until advised by the Principal that the Principal has arranged insurance of the building.

By the lodgement of each Progress Payment Claim, the Contractor gives notice that all of the Insurances are continued in effect.

1.7 INTELLECTUAL PROPERTY RIGHTS

1.7.1 All rights including copyright in the Service Materials belong to the Architect.

1.7.2 The Architect grants the Client, a non-exclusive Licence (which cannot be assigned) to use the Service Materials solely for purposes relating to this Project and for no other purpose ("the Licence").

1.7.3 Service Materials means any and all Drawings and other Documents or materials of any nature, including in electronic form, prepared by the Architect and/or Sub-Consultants in carrying out the Agreed Services.

1.7.4 The License is conditional upon the Client complying with all of the Client's obligations under the Agreement between the Client and the Architect, including the payment of all fees and disbursements due.

If this Agreement ends before completion of the Agreed Services, the License will still apply but to the completed Service Materials only. Partially completed Service Materials cannot be used by the Client without the Architect's prior written consent. Such consent will not be unreasonably withheld.

Future work on the Project using any part of the Service Materials for any alterations or extensions, without the Architect being appointed to provide related Services, will require the Client to obtain the Architect's prior written consent. Such consent will not be unreasonably withheld.

Re-using the Architect's Service Materials is acceptable only on receipt of the prior written consent of the Architect who is entitled to receive a royalty at an agreed rate for each reuse. Such consent will not be unreasonably withheld.

On completion of the Agreed Services or the early termination of this Agreement between the Client and the Architect is entitled to retain one copy of the completed Service Materials in printed or passive electronic form such as PDF. The Architect will not be required to provide any of the Service Materials in any active electronic form.

1.8 WORK SHOWN AND MENTIONED

This Specification and the Drawings show the extent of the work but there is no warranty expressed or implied that it shows each and every minor detail and item required to be included by the Contractor. Should any material, work or structural member appear to be inadequately described yet obviously necessary for the neat, strong and satisfactory completion of the work, the Contractor shall include and allow for same in their Tender.

The Specification and Drawings shall be read and construed as one document and any items appearing in one shall be deemed to appear in both.

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Any inconsistencies which may exist in the Tender Documents shall be resolved with the Architect prior to pricing the work. No claims for additional costs will be accepted due to the failure of the Contractor to resolve any matters during the Tender Period.

1.9 INCONSISTENCIES IN CONTRACT DOCUMENTS

If the Architect or the Contractor finds an inconsistency, error or omission either in a Contract Document or between Contract Documents, the other must be notified and the Architect and Project Manager/Principal must give a direction resolving the inconsistency, error or omission.

Inconsistencies in Contract Documents shall be resolved in accordance with the provisions of the Conditions of Contract with the exception that Specifications shall take precedence over the Drawings.

The Drawings and Specifications take precedence over the Standard Conditions of Contract.

Any Special Conditions of Contract take precedence over the Standard Conditions of Contract.

No inconsistency, error or omission invalidates the Contract.

If a direction which the Contractor could not have reasonably foreseen and made allowance for at the time of Tender, results in additional cost being reasonably incurred by the Contractor, the additional cost must be claimed by the Contractor.

If the direction causes a delay to the Contract Works then the Contractor must apply to extend the time for completing the Contract Works within ten working days of receiving the direction.

1.10 RESOURCE CONSENT CONDITIONS

The Project is subject to Resource Consent. The Contractor shall comply with all conditions stated on the Resource Consent applicable to the site and to the contract work.

The Resource Consent Number RM250118.

The Resource Consent is attached as an appendix to this Section.

1.11 COVENANT AND CONSENT NOTICES

The Contractor shall comply with all conditions stated in the Covenants and Consent Notices for the Lot within the Hawthorn Sub-division. The Contractor shall familiarise themselves with these documents and processes and ensure that all persons entering the site are aware of their obligations, a copy of which can be obtained from the Principal.

1.12 BYLAWS, CONSENTS, CODE COMPLIANCE AND FEES

A separate Application for Building Consent together with the applicable Application Fee has been lodged by the Principal.

The contract work shall be carried out by Licensed Building Practitioners in accordance with all current Acceptable Solutions of the NZ Building Code and, except where inconsistent with the specific requirements of the Drawings or Specification, in accordance with the Approved Documents of the Building Industry Authority and the relevant Standards of Standards New

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Zealand and Bylaws, Building Consents and Resource Consents and the requirements of the New Zealand Building Act and the Territorial Authority and shall include obtaining approvals and certifications necessary for the completion of the work, the issue of the Code Compliance Certificate and and paying all associated fees and costs.

The Contractor shall arrange all Statutory Inspections required and shall provide evidence to the Architect ***OR*** Project Manager that such Inspections have been carried out.

The Contractor shall arrange for the issue of a Code Compliance Certificate at the completion of the building work confirming that the building complies with the relevant provisions of the New Zealand Building Code and as required by Queenstown Lakes District Council (QLDC) for the completion of the work and occupation of the building.

The Contractor shall deliver the Certificate to the Architect ***OR*** Project Manager.

The Code Compliance Certificate is required to be received before the complete occupation and use of the Building, the Practical Completion date of the Contract can be established, and the final payment made.

1.13 SITE

The Contractor and Sub-Contractors shall inspect the site and its surroundings and ascertain the nature and extent of the work involved, the rights and interests that may be interfered with and any other matter or thing which may influence the carrying out of the work in its entirety and shall be deemed to have based the tender on such an inspection.

The Contractor shall allow to locate, protect and relocate as necessary all Services on and to the site.

Provide and maintain a temporary vehicular site entrance in accordance with the Territorial Authority requirements.

The Contractor shall maintain and clean down access areas, footpaths and roadways at the end of each day, and during each day as necessary, to remove all loose and unsightly material and to maintain the areas free for convenient and safe access by Others.

The Principal and the Principal's representatives and the Architect and Consultants and their representatives shall have access to the site during normal working hours.

The Contractor shall take all necessary steps to minimise and mitigate noise, dust, fumes, sediment, smoke, rubbish and the like resulting from the execution of the Contract Works. The Architect or Principal may instruct work that is causing such nuisances to be suspected and/or to be carried out by alternative methods.

The lighting of fires on the site is absolutely prohibited.

Harassment of or causing nuisance to any persons on or near the site of any form is not acceptable and in which case the Contractor shall remove any Employee or Sub-Contractor's Employee from the site permanently if requested by the Architect ***OR*** Project Manager.

1.14 LEVELS AND DIMENSIONS

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The levels, dimensions and contours shown on the Drawings are understood to portray the site and the work, but it shall be the Contractor's responsibility to define the boundaries, check all levels and dimensions and accurately set out and position the work.

The position and level of the floor slab shall be agreed with the Principal prior to commencing construction and shall be set in accordance with the approved Resource Consent.

The Contractor and Sub-Contractors shall verify all dimensions on the job before commencing the preparation of Shop Drawings or the construction of the work.

Any approval of Shop Drawings or construction work shall not relieve the Contractor and/or Sub-Contractors from correcting at their own cost any error, omission or rectification required to meet the terms of this Specification.

1.15 SETOUT BY LICENSED SURVEYOR

Before commencing Construction provide the Principal with a Certificate prepared by a Licensed Cadastral Surveyor that the set-out is complete and that the Building is accurately placed on the Site with all heights in relation to the boundary points checked for compliance.

Any potentially necessary adjustments are to be determined and agreed to by the Contractor and Architect Principal before proceeding further.

1.16 SEDIMENT MITIGATION AND CONTROL

The Site shall be subject to Sediment Mitigation and Control rules in accordance with the Resource Consent No RM250118. The Sediment Mitigation and Control shall be completed and approved before any site works is commenced. The Sediment Mitigation and Control shall be constructed strictly in accordance with QLDC District Plan rules.

1.17 CONTRACTOR'S WORKING AREA

The Contractor's Working Area shall be the total area of the site.

The Contractor shall protect all Services, Trees and Shrubs outside the footprint of the new House/Building within the Contractor's Working Area unless otherwise noted.

The Contractor shall allow to cooperate with the Principal who may arrange Separate Contracts for Landscaping and Fitout Work and other work during the Contract Period and provide access to the Contractor's Working Area as necessary for the carrying out of this work.

The Contractor has rights of access only over the area of the reformed driveway as shown on the Site Plan.

If access for construction purposes is required outside the Contractor's Area, express permission shall be sought and obtained from the Owner of the property stating the nature and period of the required access.

The Contractor shall ensure that the normal use of the rest of the property is maintained at all times.

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The Principal and the Principal's representatives and the Architect and Consultants and their representatives shall have access to the whole site and House/Building during normal working hours.

The Contractor shall provide a key or keys to the Principal for access to the whole site and the new House/Building at all times.

1.18 WORK SITE BARRIERS – SITE HOARDING / SITE FENCING

Construct work site barriers as required to comply with provisions of the NZ Building Code Section F5/AS1 and Worksafe NZ and remove at the completion of the work.

1.19 PARKING AND TRAFFIC MANAGEMENT

Carparking for Contractors shall be within the Contractors working area.

Where a Traffic Management Plan is required for the completion of the Work, the Contractor shall allow to include all associated Applications, fees and provision for associated conditions in the Tender Offer and allow to carry out the work strictly in accordance with the approved Traffic Management Plan.

1.20 TEMPORARY SERVICES AND FACILITIES

1.20.1 Temporary Services: Temporary single-phase power and domestic water supply will be provided by the Principal to a single point on the site for reasonable use by the Contractor for Construction purposes. No three-phase power is available on site.

Distribution to the workfaces and provision of power or water in excess of these requirements shall be the responsibility of the Contractor.

The Contractor is responsible for all temporary working lighting and ventilation required to execute the Contract Works safely and properly.

1.20.2 Temporary Site Facilities: The Contractor shall provide a Site Office, Messing Facilities and temporary Electrical and Water, Telephone and Internet Services and make available to all Sub-Contractors. Arrange for meter readings for all Services at the start and completion of the work and pay all costs incurred during the Construction Period.

The Contractor may bring storage facilities onto the site and remove them at the completion of the work. They must be located, shifted, and removed from site as directed by the Principal.

The Contractor shall provide a mobile telephone and Email account for the Site Foreman.

1.20.3 Temporary Toilet Facilities: The Contractor shall provide and maintain temporary toilet facilities on site.

1.21 ACCESS SCAFFOLDING, HOISTING, AND CRAINAGE

The Contractor shall be responsible for the supply, installation, maintenance and operation of Access Scaffolding, Hoisting, and Cranage facilities and make available to all Sub-Contractors unless stated otherwise.

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No hoist, crane or other builder's equipment shall rest or be attached to, or suspended or braced from any part of the permanent structure without the consent of and in such a manner as shall be approved by the Architect and Structural Engineer.

No materials shall be stacked on concrete floors until at least four weeks after concrete is set and any materials subsequently stacked shall not exceed 300 kg per square metre loading or as advised by the Structural Engineer.

1.22 PROTECTION OF PROPERTY

The Contractor shall be responsible for the adequate protection and, where necessary, making good of all public and private property adjoining the site and shall pay all costs in connection therewith.

1.23 PROTECTION AND STORAGE

The Contractor shall be responsible for all protection and shall provide and fix all necessary temporary protection and adequate weatherproof storage for all components of all Sub-Contractors.

The Contractor shall protect from damage the Existing Services and existing trees, shrubs and planting on the site and on neighbouring properties.

At the completion of Sub-Contractors work, the Contractor shall inspect and, when approved, accept responsibility and take appropriate steps for protection until completion of the contract.

The Contractor shall provide and maintain temporary fire fighting equipment in positions suitable for immediate use and instruct their staff in its use until permanent equipment is installed and useable.

1.24 CONTAINMENT AND REMOVAL OF RUBBISH

The Contractor shall be responsible for providing adequate screens, containers, nets and barriers to contain materials and debris within the building and the Contractor's Working Area.

All rubbish shall be contained within the Contractor's Working Area in suitable storage and removal containers.

Rubbish shall not be allowed to build up to such an extent that it provides a hazard or nuisance to the works or to adjoining areas and shall be removed from the site at regular intervals.

The Contractor shall be responsible for removing all rubbish from the whole site during construction and at the completion of the work and shall leave the whole area in a clean and tidy condition.

1.25 WASTE MANAGEMENT - RECYCLING

The Building Act 2004 contains sustainability principles that the Building and Housing Group within the Ministry of Business, Innovation, and Enterprise and Building Consent Authorities (BCAs) must take account of under the Act. These include the efficient and sustainable use of materials and the reduction of waste during the construction process.

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The Principal fully supports reduction of waste from the construction process and requires Contractors to recycle timber and metal from any other general waste generated on site where appropriate.

1.26 SITE SECURITY

The Contractor shall accept the responsibility for the security of all site works at all times during the contract period to safeguard the Principal's interests.

The building shall be maintained in a secure state to prevent the entry of unauthorised persons at all times during the contract period.

The Contractor shall ensure that no action or omission on its part renders the site unsafe or insecure. If last to leave the site or working on the site after hours the Contractor shall ensure the site is secure upon leaving.

1.27 WORKING HOURS

All work shall be carried out during periods to comply with the provision of the covenants for the lot and which are acceptable to the Principal, the occupiers of the building and of adjoining buildings and the public. The working hours may be varied at the instruction of the Architect or by agreement at no cost variation if the work activities on the site cause nuisance or inconvenience.

1.28 STANDARDS

All work shall be carried out in accordance with current Ministry of Business, Innovation and Employment Regulations, Local Authority Requirements, the Construction Act and Regulations, the Acceptable Solutions, unless otherwise noted, of the NZ Building Code, NZS 3604:2011, the Health and Safety at Work Act and approved Codes of Practice current at the date of Tender.

With respect to the Health and Safety in Employment Act, it is the Contractor's responsibility to act as the employer and person who controls the place of work and to comply with the requirements of the Act accordingly.

It is the Contractor's sole responsibility to comply with all of these Regulations and all other relevant Regulations.

All workmanship shall be according to the best trade practice such that a high standard of finish will be obtained. Where relevant, workmanship shall comply with British and New Zealand Standard Specifications and appropriate Codes of Practice to the entire satisfaction of the Architect.

Where Statutes, Standards, Codes of Practices, Manufacturer's Instructions, and the like, are referred to in the Contract Documents, this means the latest published version of these documents unless specifically noted otherwise.

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1.29 FOREMAN

The Contractor shall employ a competent On-Site Project Manager and Foreman on the site at all times for the full period of the Contract. During the contract period, the Architect reserves the right to approve or disapprove of any On-Site Project Manager or Foreman that the Contractor appoints to the contract and, if the performance of their duties is considered to be unsatisfactory, to require the appointment of a new On-Site Project Manager/Foreman.

The Contractor shall state the name of the Project Manager and Foreman in Contract Documents and advise the Architect in writing.

1.30 CONTRACT PERFORMANCE AND QUALITY ASSURANCE

It is of the utmost importance to the Principal that the work is carried out:

(a) in accordance with all relevant Regulations
(b) in accordance with all relevant Development Controls
(c) in accordance with the Construction Documentation
(d) in accordance with best trade practice
(e) using materials and construction techniques which are as specified and fit for the purpose
(f) to a very high standard of finish and workmanship
(g) to completion on time

It is the Contractor's responsibility to ensure that all of these requirements are met.

The Contractor shall have systems and management in place to ensure the specified level of quality is maintained at all times for the Contract Works.

1.31 PROGRAMMING OF CONSTRUCTION WORK

The Contractor shall provide an indicative Building Construction Programme to the Architect with their Tender. A fully detailed Construction Programme shall be forwarded within 10 working days of Tender acceptance.

The Construction Programme will be a critical path network which will indicate:

(a) The basic construction sequence.
(b) The estimated durations for major activities including key sub-trades.
(c) Activities constituting the Critical Path.
(d) Any design, fitout and access constraints and important aspects of construction.
(e) Major milestone events.
(f) The work of Nominated and Separate Sub-Contractors.
(g) Lead-in times for the supply of materials.
(h) Times for review, preparation and re-submission of Shop Drawings.

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On the fifteenth day of each month of the contract period the Contractor shall submit a written report to the Architect detailing progress in relation to the Construction Programme and include a schedule of pre-ordering of critical items.

The Contractor shall cooperate fully with the Architect and the Principal, or their representative, to monitor and review the Construction Programme so that the Principal is assured that critical dates will be met.

Allow to adjust the Construction Programme as required during the course of the contract to ensure that this requirement is met.

The Project will be monitored at two weekly intervals. These monitors will compare actual progress achieved against the Construction Programme. The Contractor shall prepare a written Report at two weekly intervals, describing in detail the state of progress of each trade at the monitor and issue to the Architect and Principal. These Reports will also highlight potential delays to the Construction Programme to enable early remedial action to be taken.

1.32 PROGRESS MEETINGS - *TBC*

1.33 CONTRACTOR AND SUB CONTRACTOR DESIGNED ITEMS

Where specified in work sections, the Contractor and their Sub Contractors shall allow for the detailed design of specified items and submit these for review by the Project Team in form of Shop Drawings.

The design shall be conveyed at appropriate scales to enable good legibility. Allow time in the programme for the preparation, coordination and review of all shop drawings. Allow also for such resubmission and further review as ay be required prior to fabrication. No extension of time will be allowed for resubmission and further review.

Agree and arrange for such direct contact as is appropriate between detailer, consultant and others whose input may be required in the preparation of the shop drawings. Such direct communication does not relieve the contractor of the need to carry out their own coordination and check of shop drawings.

Before submitting the shop drawings for review, carry out coordination to ensure that allowance has been made for all other parts of the work that relate to the work detailed in the shop drawings.

The contractor is solely responsible for coordination of shop drawing dimensions with site measurements.

Review of shop drawings does not relieve the contractor of responsibility for the correctness of the shop drawings, site dimensions, the overall design, coordination and performance, or for ensuring the work is carried out in compliance with the contract documents. It does not remove the need for the contractor to comply with the stated requirements, details and specifications of the manufacturers and suppliers of individual components, materials and finishes. Review cannot be construed as authorising departures from the contract documents.

The following schedule lists elements of the project which will require shop drawings. Note that this list may not be exhaustive.

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Schedule of Elements Requiring Shop Drawings

- Prenail Timber Frames and Trusses
- Structural Steel / Metal Components
- Decorative Steel / Metal Components
- Aluminium Windows and Doors
- Timber Windows and Doors
- Steel Windows and Doors
- Fireplaces
- Frameless Glass Screens
- Frameless Glass Balustrades

1.34 COORDINATION OF THE WORK

1.34.1 General: The Contractor shall coordinate the work to ensure that the requirements of the Drawings and Specifications are met.

In particular, the Contractor shall coordinate the construction of the building work including the set-out of Structure and running of Services ready for the final fitting and finishing of the work.

The Contractor shall arrange for the preparation of all necessary Coordinated Shop Drawings for the work to avoid the clash of Structure and Services and to ensure the fitting of finishes and Services in approved positions.

These Drawings shall be developed and updated to same as records of 'As Built'.

1.34.2 Coordination of Sub-Contractors: The Contractor is responsible for the coordination of the Sub-Contractors work including the work of the Nominated and Separate Sub-Contractors.

The Contractor shall hold Coordination Meetings with Sub-Contractors, suppliers etc at intervals as necessary to ensure the coordination of all work.

1.35 MATERIALS AND WORKMANSHIP

All materials shall be new, unless otherwise specified, and of best quality and shall comply with all relevant and applicable standards.

The Contractor shall apply to the Architect by email for approval to substitute any materials or construction methods other than those specified.

All work shall be carried out by competent Tradespeople in the most approved trade manner.

Should any Tradesperson consider that the work of another trade or the condition of any surface is not in a satisfactory condition to ensure a proper finish for their work, they shall notify the Contractor before commencing their work and shall not proceed until the necessary alterations or improvement has been effected. Failing such notice, the trade concerned, together with the Contractor, will not be relieved of any responsibility for poor results due to previous unsatisfactory conditions.

All materials and all fixings throughout the building shall meet the requirements of NZS 3604 2011, including Section 4, Durability, to suit the appropriate Exposure Zone.

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The Architect has the right to have any part of the work opened up or cut away for inspection. If the work is found to be defective it shall be made good in accordance with the Specification at the Contractor's expense.

1.36 RESPONSIBILITY AND LIABILITY

The Contractor shall at all times be solely responsible for executing, completing and maintaining the works strictly in accordance with the terms of the contract.

At no time during the continuance of the contract shall the Architect or Engineer act or be deemed to act for or on behalf of the Contractor or so as to relieve or release the Contractor in any way from their responsibility.

No inspection or interim approval of the works or any part thereof made or given by the Architect or Engineer during the execution of the works and prior to the final acceptance of the work at the end of the maintenance period shall relieve or release the Contractor in any way from their responsibility.

The intent and spirit of this Specification is to provide for the work herein described to be fully completed in every detail for the purpose designed and it is understood that the lodgement of a tender carries with it an obligation to finish everything reasonable and necessary for the work notwithstanding any omission in this Specification.

1.37 PROTRACTED INVOLVEMENT OF THE CONSULTANTS

If there is protracted involvement of the Architect or any other Consultant due to the actions or omissions of the Contractor and/or a Sub-Contractor during the carrying out of the work, or there is a delay to the completion of the contract work, defects liability work or the resolution of the final accounts for the contract caused by the Contractor or a Sub-Contractor, the reasonable additional costs of the Architect and any other Consultant incurred as a result of the protracted involvement, where those costs are greater than can be reasonably or practically charged to the Principal, shall be calculated on a time charge basis plus reimbursable expenses e.g. tolls, fax and travelling costs, if any, and deducted from the adjusted contract sum.

1.38 VISUAL APPEARANCE OF THE SPACES

The Principal requires that all of the building work presents a visually tidy appearance.

The Design Consultants have designed, selected, specified and coordinated materials, fittings and systems to assist this outcome.
The Contractor and Sub-Contractors shall ensure that the installation of all materials, fittings and systems on site achieves a planned, tidy and coordinated appearance.

For example, to avoid visual clashes:

- All work, and especially the first fix of Services Installations, shall be planned and coordinated well in advance of the work being carried out on site.
- The setout of Architectural Surfaces and details shall be coordinated.
- Structural Systems and Connections shall be of tidy appearance.
- Service Runs – ducts, pipes, drains, wiring etc. shall be concealed.

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- If it is not possible to conceal the Services due to, for example, clashes with structure, alternative concealed routes shall be found and confirmed with the Architect prior to Construction.
- If it is not possible to find alternative concealed routes, the Services shall be fixed neatly and run in straight lines parallel to architectural or structural elements with the minimum possible number of changes in direction.
- The placement of items at all locations in the 'seen' areas shall be planned, i.e. fittings should be aligned with other elements or fittings, and shall not be installed in the 'middle' of surfaces unless specifically instructed by the Architect.
- All items shall be colour-coordinated with the surrounding surfaces.

In the case that either the Contractor or Sub-Contractor is not sure if an installation will be acceptable, they shall contact the Architect prior to installing the supply lines, fixtures or fittings and/or the item and/or carrying out the work.

The Contractor shall alert all Sub-Contractors to these requirements, and shall introduce the subject and retain it on the agenda for discussion at all Toolbox/Site Meetings.

1.39 COMPLETION AND CLEANING

At completion, all exposed surfaces, including glass and sanitary fittings, shall be left cleaned, and with all labels removed, other than those specifically required for Compliance or Warranty purposes. All Services shall be functioning and the whole Building shall be fit for immediate occupation, waterproof and to the approval of the Architect.

Unused building materials and rubbish shall be removed from the whole site area.

Final cleaning shall be carried out by a recognised Commercial Cleaner, just prior to the handover of the completed work.

1.40 REMOVAL OF LABELS

All externally visible stickers and labelling, other than those specifically required for Compliance or Warranty purposes, shall be removed from fittings, fixtures and equipment with special care to avoid damage or scratches to surfaces.

Fixtures and fittings to have stickers removed include: lights, window frames, blinds, plumbing fittings, etc.

1.41 METER READINGS - *TBC*

The Contractor shall arrange for meter readings at the time of handing over the completed Contract and shall pay all dues to that date.

1.42 AS-BUILT DOCUMENTS AND RECORDS

The Contractor shall prepare As-Built Documents and Records showing the As-Built positions of all built work and Building Services and deliver them to the Principal.

The As-Built Drawings in PDF format, as well as 2D and 3D CAD files, are required to be received before the date of Practical Completion can be established.

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1.43 OPERATING AND MAINTENANCE MANUALS

The Contractor shall prepare Operating and Maintenance Manuals for the Building Services installations and Appliances and deliver them to the Principal.

The Operating Manuals are required to be received before the date of Practical Completion can be established.

1.44 COMPLIANCE SCHEDULES

The Contractor shall arrange for the issue of all necessary Compliance Schedules for all items and systems called for under the New Zealand Building Code and the Building Consent.

The Contractor shall deliver the Schedules to the Architect.

The Compliance Schedules are required to be received before the completion date of the Contract can be established and the final payment made.

1.45 WARRANTIES

The Warranties as called for in the Specification shall be provided in favour of the Principal by the Contractor.

Warranty periods will commence from the date of Practical Completion of the Contract. Where there is any discrepancy between the guarantor's form of warranty and the Contract Documents, the Contract Documents will take precedence. All warranties shall include making good of consequential damage to adjoining materials and finishes.

Refer NZ Institute of Architects General Conditions of Contract, Clause 4.7, Warranties and Schedule G1, Warranty Agreement, and Specification, Section 34.

Should the Tenderer wish to offer separate Warranties or Guarantees these shall be clearly identified as optional with associated costs, terms and conditions clearly defined. Where Warranties differ from NZIA SCC1, they are non-complying and not acceptable.

1.62 PROJECT SIGN BOARD

The Contractor shall allow to supply and install a Sign Board to an agreed size and location on Site. The Architect shall supply all necessary digital files to a local Signwriter and shall provide approval in writing of any proofs prior to the signage being completed and erected. Remove the signboard at the completion of the work.

1.63 ARCHITECT'S SIGN BOARD

The Contractor shall allow to install the Architect's Sign Board (supplied) in an agreed location on Site.

1.64 CONTRACTORS, SUB-CONTRACTORS AND SUPPLIERS SIGNBOARDS

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No signs are permitted on the site, unless approved in writing by the Principal.

1.65 OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

The Contractor and Sub-Contractors shall comply with the requirements and recommendations of the Health and Safety in Employment Act and Health and Safety in Employment Regulations, the Site Safe Construction Safety Management Guide, and associated Codes of Practice and Guidelines and all relevant Acts, Regulations and Codes of Practice (approved or voluntary) applying to the trade or profession within which they operate.

The Contractor shall prepare a Site Safety Management Plan for the Project. The Contractor shall comply with all requirements of the Site Safety Management Plan. Prior to commencing work on site, the Contractor shall make available to all Employees and Sub-Contractors who will be on site at Safety Induction Meetings held by the Contractor.

All staff employed by the Contractor or Sub-Contractors are to be fully trained in the work undertaken or are to be closely supervised by someone who is.

The Contractor shall provide a Hazard Management Plan for their specific works including the works of Nominated Sub-Contractors under their management. The Plan shall include, as a minimum:

- Identification of the hazards that the Contractor is likely to encounter in the execution of the Works.
- Details of how such hazards will be eliminated or managed to ensure the safety of the Contractor's Employees, Sub-Contractors and others.
- A Plan of how regular monitoring of hazards shall be carried out by the Contractor.

The Contractor shall maintain a Register of Accidents and Near-Misses that occur in the execution of the Works. Details of such accidents shall be provided to the Principal within 2 days of their occurrence.

The Principal is to be advised of all hazardous plant, machinery, or substances which are to be brought onto the site.

The Contractor shall provide protective clothing, e.g. safety helmets, hi-viz jackets, safety footwear, safety glasses, etc. for up to three visitors to the site at any one time.

The Contractor shall have in place a COVID-19 Controls Plan to guide how the Principal, Contractor and Sub-Contractors will manage work on site and the controls they will use to minimise the risk of COVID-19 transmission under Alert Level 3 and 2. The Plan shall comply with the requirements and recommendations of the current version of the COVID-19 Health and Safety Protocols for New Zealand Residential Construction Sites which is a supplement to the COVID-19 Standards for Operating New Zealand Construction Sites developed by CHASNZ.

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SECTION 03 – EXCAVATION

3.1 GENERAL

Read in conjunction with Specification, Section 1, Preliminary and General and the Conditions of Contract.

Refer to Separate Documents prepared by Batchelar McDougall Consulting (BMC) and GeoSolve Engineering Consultants.

All excavations shall be carried out neatly to the line, levels, slopes and dimensions called for on the Drawings and as required for the satisfactory completion of the work. Check all dimensions on site before commencing work.

3.2 EXISTING SITE

The Contractor shall take great care to protect all Existing Services, Buildings, Trees, Shrubs and Planting to the areas not affected by the building work.

3.3 EXISTING SERVICES

Locate Existing Underground Services before beginning excavation and take all necessary precautions to protect same.

3.4 EXCAVATION

Strip the area of the building works and remove the topsoil and organic material.

All topsoil shall be deposited where directed on site.

Excavate to the levels as required to provide a sound, uniform foundation bedding.

The depth of foundations shall be the minimum dimensions to reach good ground as defined in NZS 3604:2011.

Excavation shall be carried out neatly and to the minimum widths necessary for the satisfactory completion of the works.

Particular care shall be taken at all times to ensure that support for the foundation of earlier work is maintained.

The Contractor shall be responsible for the support of the sides of all excavations and floor slabs until they are supported by the new permanent structure.

Excavation shall be carried out in a manner which does not unduly disturb the land surrounding the excavated area or impair its stability or effectiveness for the purposes involved.

Overtrim or overexcavation from the excavation levels, lines, slopes or dimensions shown on the Drawings or as required for the satisfactory completion of the work shall be made up with mass concrete or compacted gravels if foundations are located or bear on the area of overbreak or overexcavation. Where foundations do not bear on areas of overbreak these shall be backfilled with any suitable back-filling material which will not reduce in volume.

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To minimise dust formation, minimise the extent of earth exposed by cutting and filling at any one time.

To minimise sedimentation, place silt fences across any flow paths below the cut/fill areas and stockpiles.

All excavated material, other than topsoil and material to be used for backfilling, shall be removed from the Site.

At completion of the work, deposited topsoil shall be spread on Site where directed.

3.5 FOUNDATION DRAINAGE

Excavated areas shall be drained so that surface water does not flow into the excavations.

3.6 BACKFILLING AND FILLING UNDER GROUND FLOOR SLABS

The excavated areas directly underneath the slabs shall be filled to the levels shown with suitable material compacted in layers of 300mm maximum thickness.

The top 50mm of filling shall be sand or fine gravels compacted by saturating and tamping and screeded level.

Sand backfilling shall be compacted by saturating and compacting with suitable concrete vibrators.

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SECTION 04 – CONCRETE

4.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General the Conditions of Contract and the Structural Engineers Specification prepared by *Batchelar McDougall Consulting (BMC*).

All concrete work shall comply with the requirements of NZS 3109, Specification for Concrete Construction and NZS 3114, Specifications for Concrete Surface Finishes.

Site concrete shall be certified 10 MPa after 28 days and insitu concrete shall be certified 25 MPa after 28 days.

Reinforcing mesh shall comply with AS/NZS 4671.

4.2 CONCRETE FOUNDATION WALLS AND FOOTINGS

4.2.1 General: Construct reinforced concrete footings as shown on the Structural Engineers Documentation, NZS 3109 and NZS 3114.

Soil Bearing Capacity: A site-specific Geotechnical Report has been prepared by *GeoSolve Engineering Consultants* and reviewed by the Project Structural Engineer. The Contractor shall liaise with these two parties to confirm specific soil bearing capacity during construction, if required, to the Engineers satisfaction prior to undertaking any foundation work.

4.2.2 Retaining Walls: Exterior walls where the finished concrete slab level is below ground level shall be protected with selected waterproofing membrane supplied by *Nuralite Waterproofing Ltd*.

Refer to Specification Section 14, Carpentry.

4.2.3 Field Drainage: Refer to Specification Section 18, Drainage.

4.3 CONCRETE FLOOR SLABS

4.3.1 General: Construct reinforced concrete floor slabs to the areas shown on the Drawings to comply with the Structural Engineers Documentation and NZS 3114. All workmanship shall comply with NZS 3101.

Concrete slab on grade floors shall have a finished floor level at least 225mm to unprotected ground level, 150mm above paved levels and 100mm at masonry veneer clad exterior walls in accordance with NZS3604:2011, 7.5.2.1 unless otherwise shown on the Drawings

4.3.2 Reinforcing: Cast concrete floor slabs as shown, reinforced as shown on the Structural Engineers Documentation and to comply AS/NZS 4671. All reinforcing shall be placed, tied and prepared to ensure the minimum cover is achieved in all instances. Allow to coordinate in-slab hydronic heating piping as required to maintain the appropriate cover of both reinforcing and heating pipes.

4.3.3 Sub Base Preparation: Remove all vegetation and topsoil and place 150mm minimum of compacted hardfill under all concrete floor slabs. Hardfill material shall be as Specified by the Structural Engineer.

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4.3.4 Damp Proof Membrane: Refer to the documentation prepared by *Nuralite Waterproofing Ltd* for all under slab tanking, as shown on the Drawings.

4.3.5 Inspection: Ensure no concrete work is poured prior to inspection by the local TA and/or Project Structural Engineer.

4.3.6 Concrete Mix: The concrete shall be the strength, grade, and quality as Specified by the Structural Engineer and tested in accordance with NZS3109. All concrete placed directly from a concrete truck shall have a maximum aggregate size of 19mm and concrete placed using a concrete pump shall have a maximum aggregate size of 13mm.

4.3.7 Concrete Texture: The concrete slabs to receive floor coverings shall be class U3 Troweled Finish.

4.3.8 Finish: U3 Troweled Finish.

4.3.9 Sawcuts: Concealed construction cuts and sawcuts shall be as located on the Structural Engineers Documentation and performed within 24 hours of the concrete pour.

4.3.10 Slab Recesses: Cast recesses in slab as necessary for the fitting of sills to windows and doors. The top edge of the sills shall finish flush with the adjoining floor coverings as shown on the Drawings. Ensure that rebates are sized to suit the correct profile of the window and suites.

Allow to form recesses in the slab as necessary to all level entry showers to ensure 1:50 minimum falls to shower drains. Refer to the Drawings for locations.

Allow to form recesses in the slab as necessary for all recessed electrical floor boxes. Refer to the Drawings for locations.

Cast in all post supports and all other necessary fittings.

4.3.11 Slab Coordination: Allow to coordinate with the necessary sub-contractors regarding the in-slab hydronic floor heating to ensure the system is installed in accordance with the proposed design by AIRMAX Ltd.

4.3.12 Slab Insulation: Refer to Specification Section 14, Carpentry.

4.4 CONCRETE FLOOR SLABS - EXPOSED AGGREGATE

Refer to the documentation prepared by Baxter Design Landscape Architects for the Specification and location of all Exposed Aggregate Concrete

4.5 SUSPENDED CONCRETE FLOOR SLAB

4.5.1 General: Construct reinforced suspended concrete floor slab to the areas shown on the Drawings and as shown on the Structural Engineers Documentation complying with NZS 3114.

4.5.2 Finish: The slab shall be finished with a steel float ready for the laying of floor coverings.

4.5.3 Slab Recesses: Cast recesses in slab as necessary for the fitting of sills to windows and doors. The top edge of the sills shall finish flush with the adjoining floor coverings as shown on the Drawings. Ensure that rebates are sized to suit the correct profile of the window and suites.

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Allow to form recesses in the slab as necessary to all level entry showers to ensure 1:50 minimum falls to shower drains. Refer to the Drawings for locations.

Cast in all post supports and all other necessary fittings.

4.5.4 Coordination: Allow to coordinate with the necessary sub-contractors regarding the in-slab hydronic floor heating to ensure the system is installed in accordance with the proposed design by Airmax Ltd.

4.6 MOISTURE CONTENT OF CONCRETE FLOOR SLABS

The moisture content of concrete floor slabs shall be measured prior to the laying of the floor coverings.

If the moisture content of the slabs is in excess of that allowed by the floor covering, the concrete slabs shall be treated by the application of Markham Distributing Ltd Aquron 2000 moisture sealing compound applied strictly in accordance with the manufacturer's printed instructions by an approved applicator.

Before proceeding with the work, confirm that the moisture sealing compound is compatible with the floor covering application systems, including adhesives, primers and leveling compound underlayments.

Provide a written warranty for the moisture sealing compound system for a period of 15 years. The warranty shall cover workmanship and materials, and shall guarantee the performance of the system as a concrete moisture seal suitable for the application of the floor finishes, and including that floor finishes and floor coverings will be protected from damage by moisture migration.

4.7 INSITU CONCRETE – EXPOSED ARCHITECTURAL FINISH - *TBC*

4.8 PRECAST CONCRETE – EXPOSED ARCHITECTURAL FINISH

TBC for lintels as shown on the Drawings.

The Contractor and the Precast Panel Supplier shall liaise with the Design Team prior to ordering of the precast panels to review and confirm the exact methodologies to prepare, construct and place the Precast Concrete Walls.

4.9 PROTECTION

Refer to Specification Section 14, Carpentry.

4.10 INSULATION TO CONCRETE SLAB AND WALLS

Refer to Specification Section 14, Carpentry.

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4.11 AQURON 1000 – CONCRETE CURING, HARDENING AND ANTI-DUSTING FOR NEW AND EXISTING CONCRETE

Supply and apply Markhams Aquron 1000 specialist concrete treatments strictly in accordance with the manufacturer's printed instructions www.aquron.co.nz, 0800 693 694. Treatments to new concrete to be carried out at time of paving and curing as specified.

4.12 AQURON 2000 – CONCRETE WATERPROOFING AND MOISTURE CONTROL

Supply and apply Aquron specialist concrete treatments strictly in accordance with the manufacturer's printed instructions www.aquron.co.nz, 0800 693 694. Treatments to new concrete to be carried out at time of paving and curing as specified.

4.13 AQURON PAVER SEALER

Supply and apply Aquron specialist concrete treatments strictly in accordance with the manufacturer's printed instructions www.aquron.co.nz, 0800 693 694. Treatments to new concrete to be carried out at time of paving and curing as specified.

4.14 CONCRETE FIREPLACE HEARTH

Refer to Specification Section 14, Carpentry.

4.15 CONCRETE FIREPLACE MANTLE

Refer to Specification Section 14, Carpentry.

4.16 CONCRETE LANDSCAPE COMPONENTS

Refer to the documentation prepared by Baxter Design Landscape Architects.

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SECTION 05 – STRUCTURAL STEEL

5.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

Refer to Separate Document prepared by *Batchelar McDougall Consulting (BMC).*

All work, except where inconsistent with the specific requirements of this Specification, shall be carried out in accordance with the relevant standard of the Standards Association of New Zealand and the New Zealand Building Code.

All materials and all fixings throughout the building shall meet the requirements of NZS 3604 2011, including Section 4 Durability, to suit the appropriate exposure zone.

The exposure zone for the site is:

Zone B: Low Risk – Inland areas with little risk from wind blown sea-spray salt deposits.

All work shall comply with the provisions of NZS 3404, Steel Structures Standard and the related and referenced standards listed in Appendix A of NZS 3404.

In particular the attention of the Contractor and Sub-Contractor is drawn to the following:

Section 14	Fabrication
Section 15	Erection
Section 16	Modification of Existing Structures
AS1111 & AS1252	Bolting Standards
AS1553 & AS1554	Welding Standards
NZS 2980	Qualification Tests for Metal Arc Welders

Welds shall in general be GP class welds, except for butt welds which shall be SP.

All welds shall be "all round" to seal joints from the ingress of moisture. Cap the ends of all hollow sections.

All welds in exterior or in visible locations shall be ground smooth.

5.2 PROPRIETARY FIXINGS AND FASTENERS

All proprietary fasteners and fittings such as Dynabolts and Chemset anchors shall be installed as specified by the manufacturer. Anchors shall be supplied complete by the one manufacturer. Bolts from manufacturer shall not be mixed with anchors from another. Anchors are generally referenced on the Drawings, by bolt (i.e. thread) size, and not, in the case of expanding shell anchors, by anchor diameter or hole size eg. M16 refers to D20 series Dynabolts.

All high strength bolted (grade 8.8) connections shall be of bearing type, full tightened (/TB).

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Washers shall be used to give bolts and nuts a satisfactory bearing. Tapered washers shall be used where necessary or washers shall be otherwise suitably shaped. Washers for galvanised bolts shall be galvanised.

5.3 GALVANISED

Galvanising shall comply with AS 1650. Steelwork as shown on the Drawings shall be Hot Dip Galvanised.

5.4 PRIMING AND PAINTING OF HOT DIP GALVANISED STEEL

Prepare and prime hot dip galvanised steelwork as follows:

(a) Solvent clean to degrease.
(b) Wash with clean water.
(c) Prime steel with Resene Ameron Vinyl Etch to a DFT of 20 microns.

Prepare steel and apply primer strictly in accordance with the manufacturer's printed instructions. Top coats are specified in Specification, Section 30, Painting.

Make good site welds and any damaged primer with Resene Ameron Amercoat 68A Zinc Epoxy Primer.

5.5 STRUCTURAL ENGINEERING SPECIFICATION

Refer to Specification prepared by *Batchelar McDougall Consulting (BMC)* Structural Engineers.

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SECTION 10 – CONCRETE MASONRY

10.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

Unless otherwise specified or detailed all materials and workmanship shall conform to The New Zealand Building Code, NZS 3604, Light Timber Frame Buildings and NZS 4210:2001 Code of Practice for Masonry Construction, Materials and Workmanship. NZS 4229 Code of Practice for Concrete Masonry Buildings Not Requiring Specific Design, and NZS 4230 Code of Practice for Design of Masonry Structures.

Refer to the Documentation and Specification prepared by the Project Structural Engineer *Batchelar McDougall Consulting (BMC).*

10.2 MATERIALS

10.2.1 Concrete Blocks: Shall be Winstones or similar approved concrete blocks complying with NZS 3102, Concrete Masonry Units.

Concrete blocks shall be true, well shaped and uniform in size, colour, texture, without excessive chipping or cracks. Blocks from one manufacturer shall not be used adjacent to blocks from another manufacturer. Blocks of inferior grading shall be removed and replaced at the Sub-Contractor's expense.

Concrete blocks shall, in general, be of the depressed-web, open ended type blocks, except where specials are required at the ends of the walls, and the like. Cleanouts shall be formed by laying open-ended depressed-web blocks upside down.

Insulated Concrete Forms (ICF): Shall be Superform Blockwork to as indicated on the Structural Engineering Drawings.

Refer to specification by *Superform* which is attached as an appendix to this Section.

10.2.2 Cement: shall be ordinary Portland cement complying with NZS 3122, Portland Cement.

10.2.3 Sand: shall be clean, washed, sharp river or pit sand well graded and free from loam, clay, dust, organic or other deleterious matter. Grading shall be such that 100% passes a 2.238mm BS sieve and not more than 10% passes a 0.149 sieve.

10.2.4 Coarse Aggregate: shall be clean, crushed and screeded river or quarry gravel complying with NZS 3121, Water and Aggregate for Concrete. 100% shall pass 13mm BS sieve and not more than 10% shall pass a 2.38mm BS sieve.

10.2.5 Reinforcing Steel: shall be deformed mild steel complying with NZS 3402, Steel Bars for Reinforcement of Concrete.

10.3 STORAGE OF MATERIALS

10.3.1 Blocks: Blocks shall be delivered to the site in a dry condition, shall be stacked on pallets in a dry location and shall be kept clean and dry on the site by suitable polythene covers.

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10.3.2 Aggregates: Aggregates shall be stored on hard clean surfaces, free from contamination from dirt and mud, and shall be contained within timber bulkheads.

10.3.3 Reinforcement: When delivered to the site shall be stacked at least 300mm clear of the ground, on cross timbers at 1.5 M centres. At the time of concreting reinforcement shall be free of loose rust, mill scale, dirt, oil, paint, dried mortar, or any covering which will flake off.

10.4 TRADESMEN

All work, particularly reinforcement placement and grout filling, shall be supervised by a foremen or leading hand who is a Registered Mason. No work shall proceed without a Registered Mason on the site.

10.5 DAMP PROOF COURSE

All concrete surfaces on which Stone is to be laid, shall be painted with Equus Aquafin-2K/M Plus in accordance with the Manufacturer's printed instructions.

10.6 WATERPROOFING

Refer to the project Specific Documentation prepared by *Nuralite Waterproofing Ltd* for all waterproofing and tanking Specification.

Refer to Specification Section 14, Carpentry.

10.7 MORTAR

Refer to the Documentation and Specification prepared by *Batchelar McDougall Consulting (BMC).*

10.8 WORKMANSHIP

10.8.1 General: All Work shall comply with NZS 4210:2001 Code of Practice for Masonry Construction, Materials and Workmanship. Work shall be carried out by tradesmen skilled in concrete block construction in accordance with best trade practice.

All work, and in particular, reinforcement placement and grout filling shall be supervised by a foreman or leading hand who is a Registered Mason. No work shall proceed without a Registered Mason on the site.

Ties to masonry veneer walls shall be built in and spaced at every second course vertically and at 800 centres staggered horizontally and within 300mm of all openings. Ties shall be fixed to structure with 50mm galvanised threaded nails without damaging building paper.

Blocks shall be laid level in regular courses in running bond all plumb and true to line, properly bonded, bedded and jointed in mortar.

Perpends shall be kept true to line with vertical joints centred on adjoining blocks and lining with joints in alternate courses.

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Build in all fittings, fastenings and frames as required. All pipes etc shall be concealed within walls.

Concrete, grout and mortar spilled on other work shall be cleaned off as the work proceeds. The blocklayer shall provide all necessary covers to protect other finished work from his own operations.

10.8.2 Block Cutting: Purpose made blocks shall be used wherever possible for all doors, lintels, openings, corners, ends etc to keep block cutting to a minimum. Provide and place such special blocks as may be required to maintain the specified bond. Cutting where necessary shall be neat and regular and shall generally be done with a masonry saw. Use open-end blocks to contain vertical reinforcement, and bond beam blocks with knock in ends to contain horizontal reinforcement. Use lintel blocks over doors and windows.

10.8.3 Cleanouts: Cleanout shall conform to NZS 4210 Clauses 2.7 and 2.8 and the following:

(i) Cleanouts shall be at 400 crs max at every horizontal construction joint.

(ii) Cleanouts shall be formed by laying open ended depressed-web blocks upside down with the face shells removed as necessary.

(iii) All loose material shall be removed by hosing through the cleanouts with a water jet at the end of each day's work or 25mm of sand shall be placed at the bottom of the grout space and the loose material removed with the sand prior to grouting.

(iv) Cleanouts shall be boxed prior to grouting unless the blocks form the finished visible surface in which case face shells shall be mortared in.

10.8.4 Jointing: All joints shall be flushed up solid and shall be concave struck to a dense hard surface as the work proceeds.

10.9 REINFORCEMENT

Refer to the Documentation and Specification prepared by *Batchelar McDougall Consulting (BMC).*

10.10 CONCRETE FILL TO CELLS

Refer to the Documentation and Specification prepared by *Batchelar McDougall Consulting (BMC).*

10.11 WALL JUNCTIONS

Face shells shall be cut and removed at wall junctions to ensure a free passage of grout between the walls. Punching a small diameter hole through face shells to position starters will not be acceptable. Refer to Construction Details.

10.12 CLEANING DOWN

At completion clean down all surfaces to remove mortar splashes, droppings etc, remove all offcuts, sand, gravel, planks, plant etc and leave work in a clean and tidy condition.

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SECTION 11 – STONE MASONRY WORK

11.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

Unless otherwise specified or detailed all materials and workmanship shall conform to The New Zealand Stone Masons Association Best Practice Guide, The New Zealand Building Code, NZS 3604, Light Timber Framed Buildings; NZS 4210, Code of Practice for Masonry Construction, Materials and Workmanship; NZS 4229, Code of Practice for Concrete Masonry Buildings Not Requiring Specific Design; and NZS 4230, Code of Practice for Design of Masonry Structures.

11.2 SCOPE

Construct veneer walls, fireplace front, landscape walls, outdoor fire and chimney/s with selected Stonework all as shown and detailed on the drawings.

11.3 MATERIALS

Stone: *Stone selection TBC for approval by the Architect and the Principal*.

See below Image showing the required appearance and finish of the Exterior and Interior Stonework.



Reference Image taken from Te Kano winery, Bannockburn - indicative only.

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Storage of Materials: The Stone shall be delivered to the site in a dry condition and shall be kept clean and dry on the site by suitable polythene or similar covers. Aggregates shall be stored on hard clean surfaces, free from contamination from dirt and mud, and shall be contained within timber bulkheads.

Fixing Ties: shall be as Specified and detailed by the Structural Engineer.

Lintel Angles: shall be as Specified and detailed by the Structural Engineer.

11.4 MORTAR

Mortar shall be mixed in accordance with best trade practice to an even consistency. Sloppy mortar shall not be used. Mortar shall have a 28 day compressive strength of 12 MPa. Proportions specified may be varied to approval to suit the grading of sand available. Mortar shall be composed of one part cement to one part lime to four parts sand. The use of proprietary plasticiser is also permitted.

11.5 DAMP PROOF COURSE

All concrete surfaces on which Stone is to be laid, shall be painted with Equus Aquafin-2K/M Plus in accordance with the Manufacturer's printed instructions.

11.6 WORKMANSHIP

Work shall comply with the requirements of NZS 4210, Code of Practice for Masonry Construction, Materials and Workmanship.

The Stonework shall be carried out by expert Stone Masons employed by a Specialist Firm. Only the highest standard of workmanship will be accepted.

Stone must be dry when laid. At the completion of each day's work, exposed tops of walls shall be protected from weather.

11.7 WALLS

Sample: A Sample of Stonework showing the agreed stone type and dimensions, ratio of stone and visible mortar shall be erected for approval by the Architect and the Principal before the work commences. The Sample shall remain on site until the completion of the work.

STONE VENEER TO MASONRY WALLS

Waterproofing: Apply Equus Aquafin-2K/M Plus to cleaned and prepared concrete masonry walls in accordance with the manufacturers printed instructions prior to fixing the cavity battens.

Drained Cavity: Provide a 50mm air gap to the top and bottom of the cavity to allow for the free draining and ventilation of the cavity in conjunction with perpends in the stonework. Ensure the cavity is isolated from the roof cavity with a suitable vapour barrier or as shown on the Drawings.

Substrate: Refer to Specification Section 14, Carpentry for the stonework backing.

Stone Veneer Ties: Fix the veneer ties into the structural cavity battens through the stonework backing with the required fixing and to the spacing as specified by the Structural Engineer.

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Stone Veneer: Lay the selected stone veneer to perfectly vertical planes to all wall faces, internal and external corners. All joints in the Stonework shall be fully filled, show minimum thickness and be raked out to maximum possible depth and packed to a dense, hard finish as the work proceeds. Perpends to the top and bottom courses at approximately 500mm centres shall be raked out to a minimum height of 50mm to provide a minimum of 1000mm^2 per linear meter of cavity ventilation and drainage.

Mortar and other materials spilled on adjoining work shall be cleaned off as the work proceeds. The stone mason shall provide all necessary covers to protect other finished work from his own operations.

Reveals shall be neatly formed from stone and fixed securely in position.

Stone Sills shall be neatly cut from stone to the profiles shown and fixed securely in position.

Build in all fittings, fastenings and frames as required. All pipes etc shall be concealed within walls.

STONE VENEER TO INSULATED CONCRETE FORMS (ICF) WALLS

Waterproofing: Apply Equus Aquafin-2K/M Plus to cleaned and prepared Insulated Concrete Form (ICF) walls in accordance with the manufacturers printed instructions prior to fixing the cavity battens.

Drained Cavity: Provide a 50mm air gap to the top and bottom of the cavity to allow for the free draining and ventilation of the cavity in conjunction with perpends in the stonework. Ensure the cavity is isolated from the roof cavity with a suitable vapour barrier or as shown on the Drawings.

Substrate: Refer to Specification Section 14, Carpentry for the stonework backing.

Stone Veneer Ties: Fix the veneer ties into the structural cavity battens through the stonework backing with the required fixing and to the spacing as specified by the Structural Engineer.

Ensure the cavity is isolated from the roof cavity with a suitable vapour barrier or as shown on the Drawings.

Stone Veneer: Lay the selected stone veneer to perfectly vertical planes to all wall faces, internal and external corners. All joints in the Stonework shall be fully filled, show minimum thickness and be raked out to maximum possible depth and packed to a dense, hard finish as the work proceeds. Perpends to the top and bottom courses at approximately 500mm centres shall be raked out to a minimum height of 50mm to provide a minimum of 1000mm^2 per linear meter of cavity ventilation and drainage.

Mortar and other materials spilled on adjoining work shall be cleaned off as the work proceeds. The stone mason shall provide all necessary covers to protect other finished work from his own operations.

Reveals shall be neatly formed from stone and fixed securely in position.

Stone Sills shall be neatly cut from stone to the profiles shown and fixed securely in position.

Build in all fittings, fastenings and frames as required. All pipes etc shall be concealed within walls.

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STONE VENEER TO TIMBER FRAMED WALLS

Substrate: Refer to Specification Section 14, Carpentry for the substrate to the stonework.

Stone Veneer Ties: Fix the veneer ties into the structural cavity battens through the stonework backing with the required fixing and to the spacing as specified by the Structural Engineer.

Stone Veneer: Lay the selected stone veneer to perfectly vertical planes to all wall faces, internal and external corners. All joints in the Stonework shall be fully filled, show minimum thickness and be raked out to maximum possible depth and packed to a dense, hard finish as the work proceeds. Perpends to the top and bottom courses at approximately 500mm centres shall be raked out to a minimum height of 50mm to provide a minimum of 1000mm^2 per linear meter of cavity ventilation and drainage. Ensure the perpends are vermin protected.

Mortar and other materials spilled on adjoining work shall be cleaned off as the work proceeds. The stone mason shall provide all necessary covers to protect other finished work from his own operations.

Reveals shall be neatly formed from stone and fixed securely in position.

Stone Sills shall be neatly cut from stone to the profiles shown and fixed securely in position.

Build in all fittings, fastenings and frames as required. All pipes etc shall be concealed within walls.

11.8 EXTERIOR FIREPLACE SURROUNDS AND CHIMNEYS

Construct fire surrounds and chimney facings to the Exterior Fireplaces in selected Stonework as specified and as detailed on the Drawings.

11.9 INTERIOR FIREPLACE SURROUNDS AND CHIMNEYS

Construct fire surrounds and chimney facings to the Interior Fireplaces in selected Stonework incorporating Precast, Prefinished Concrete Mantles and Hearths to the sizes shown and as detailed on the Drawings.

11.10 LANDSCAPING WALLS

Construct Landscaping Walls as shown and as detailed on the Drawings, prepared by *Baxter Design Landscape Architects.*

11.11 CLEANING DOWN

At completion, clean down all surfaces and remove mortar splashes, droppings etc, remove all offcuts, sand, gravel, planks, plant etc.

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SECTION 12 – METAL WORK

12.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

The scope of the work in this Section includes the supply, fabrication, delivery to Site and erection of all metalwork and the supply and fitting of all bolts, nuts, washers and other fittings.

All materials and all fixings throughout the building shall meet the requirements of NZS 3604, 2011, Timber Framed Buildings, including Section 4, Durability, to suit the appropriate Exposure Zone.

The Exposure Zone for the Site is:

Zone B: Low Risk – Inland areas with little risk from wind blown sea-spray salt deposits.

12.2 MATERIALS

12.2.1 General: All metals shall be of the best grades and qualities, suitable for the intended purpose, free from defects, true to size and form and shall comply with the requirements of the relevant New Zealand or British Standard.

12.2.2 Bolts: Bolts, nuts and washers shall be of the same material as that fastened. Bolts shall be of sufficient length to provide a full length of threaded portion in the nut without excessive projection beyond.

12.2.3 Proprietary Materials: All proprietary fittings and materials etc shall be of approved manufacture and design.

12.2.4 Durability: All materials and all fixings throughout the building shall meet the requirements of NZS 3604, 2011, Timber Framed Buildings, including Section 4, Durability, to suit the appropriate Exposure Zone.

12.3 FABRICATION

12.3.1 General: The dimensions of all metalwork shall be established by site measurement in conjunction with the Drawings. Any difference in measurements as shown on the Drawings shall be checked with the Architect before proceeding.

All metalwork shall be assembled strictly in accordance with the Drawings and the Specifications. The accuracy shall be such that all parts shall fit together when erected without straining or forcing. All sections shall be quite straight and shall be cut to correct length by flame cutting and grinding, sawing or cropping. All lengths shall have ends finished flat and square to the longitudinal centre line and all cuts shall be free from burrs.

As far as possible all work shall be completed in the workshop, only connections shown on the drawings shall be done on the site.

12.3.2 Welding: All welding shall be carried out by skilled tradesmen and shall comply with BS 5135 Welding, Metal-arc, Carbon Steels. All welds shall be ground off where exposed.

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All welds and metal surfaces of steelwork shall be ground smooth to provide perfectly smooth surfaces as judged by running a finger over the surfaces of the metal and/or weld.

12.4 PAINTING

The preparation of all metalwork including that for durability shall be specified by the Structural Engineer. Refer to Specification Section 30, Painting, for all Architectural Finishes.

12.5 ARCHITECTURALLY EXPOSED STRUCTURAL STEEL

12.5.1 General: All Architecturally Exposed Structural Steel (AESS) shall conform to AS/NZS 5131 for the categories noted for each element.

Shop Drawings shall be provided of all AESS elements for review by the Architect, Structural Engineer and Principal well in advance of any fabrication. The fabricated elements shall be made available subsequent to fabrication but before coating/finishing for review by the Principal or their representatives. Samples of paint or coatings shall be provided to the Architect and Principal for review of the agreed system prior to any finishing work. The fabricated and finished elements shall be made available for review by the Principal or their representatives prior to delivery to site.

Take special care in handing steel elements to avoid marking or distorting the steel members and damaging any shop finishing, paint or coatings. All slings and tie-downs shall be appropriate so as not to damage the components whilst moving or transporting.

The fabricator shall liaise with the Contractor, Principal and Engineer on appropriate methods of temporary propping.

Any repairs to AESS elements shall not be apparent when completed.

Allow to protect all AESS elements until construction is complete.

12.5.2 West Elevation Balconies: Shall be fabricated to AESS Category 4

12.5.3 Entry Porch: Shall be fabricated to AESS Category 4

12.6 EXTERIOR HANDRAILS

Supply handrails to the sizes shown and fix in positions as shown and as detailed on the Drawings.

TBC with Landscape Architect.

12.7 BLACKENED STEEL – INTERIOR

The Contractor and the Steel Fabricator shall liaise with the Design Team prior to ordering of the steel panels to review and confirm the exact Specification including thickness, steel type and finishing products prior to site measure and fabrication.

A finished sample shall be provided from the fabricator for confirmation by the Architect prior to ordering and fabrication of the Blackened Steel.

Refer to Specification Section 30, Painting.

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12.8 BLACKENED STEEL – EXTERIOR

The Contractor and the Steel Fabricator shall liaise with the Design Team prior to ordering of the steel panels to review and confirm the exact Specification including thickness, steel type and finishing products prior to site measure and fabrication.

Refer to Specification Section 30, Painting.

Sample: A Sample of Blackened Steel showing the agreed finish shall be erected for approval by the Architect and the Principal before the work commences. The Sample shall remain on site until the completion of the work.

Rainscreen Panels: Fabricate steel rainscreen panels, folded and shaped as shown and detailed on the Drawings with 3mm thick hot roll steel panels. All panels shall be carefully measured and fitted into place to ensure that negative details are consistent across the panels and across the building. An indicative layout has been shown on the drawings, if additional negatives are required to facilitate installation the steel fabricator shall submit drawings to the Architect for approval of any amendments to the panel layout prior to fabrication and fitting on site.

Fixings: Fix the steel panels to the substructure with stainless steel screw fixings to an approved layout to suit the size and weight of the panels. The fixings will be a visible element of the façade so the layout and spacing shall be consistent and continuous across the surfaces of all the panels.

Substructure - Steel: Fix the steel panels over custom fabricated steel top-hat and Z sections spaced to suit the size and weight and fixing of the panels as well as the locations of negative joints as shown on the Drawings. The top-hat and Z sections shall be fixed over 6.5mm Vaproshim SA spacer to provide a weatherproof gasket, through the Hardiflex cladding and into the structure of the building using approved stainless steel screws. Ensure studs and blocking are installed to facilitate the layout of the panels.

At negative joints, all visible faces of the top-hat sections shall be finished with an approved paint in matte black finish.

Coordination: Allow to coordinate all penetrations through the steel rainscreen for extract vents, fireplace flues etc.

Refer to Specification Section 30, Painting

12.9 CHIMNEY FLUE AND SLEEVE - TBC

Supply steel chimney flue and sleeve as detailed on the Drawings. The exposed liner and cowl shall be painted with heat resistant paint in an approved colour.

12.10 CHIMNEY CAP - TBC

Supply steel chimney cap to the Living Room fireplace as detailed on the Drawings. The chimney cap shall be painted with heat resistant paint in an approved colour.

12.11 FIREPLACES - TBC

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SECTION 13 – ALUMINIUM JOINERY

13.1 GENERAL

13.1.1 General: Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

13.1.2 Scope: The work in this Section includes the design, supply, fabrication and installation of aluminium framed Exterior Windows and Doors complete with glazing.

13.1.3 Performance: The Aluminium Joinery Supplier shall be responsible for ensuring that the work described in this Specification is carried out to meet the terms of the Specification and to be completed in every detail for the purpose designed. The lodging of a Tender by the Aluminium Joinery Supplier carries with it the responsibility to finish all work which is reasonable and necessary for completion of the installation notwithstanding any omission in the Specification.

13.1.4 Site: The Aluminium Joinery Supplier shall inspect the Site of the Building and its surroundings and ascertain the nature and extent of the work involved, the rights and interests that may be interfered with and any other matter or thing which may influence the carrying out of the work in its entirety and shall be deemed to have based the Tender on such an inspection.

13.1.5 Schedule of Exterior Windows and Doors: Refer to the Schedule of Exterior Windows and Doors on the Drawings. Attention shall be given to the General Notes in conjunction with the construction details for the intent of the aluminium joinery setouts and other relevant considerations.

13.1.6 Shop Drawings: The Aluminium Joinery Supplier shall provide the Architect with Shop Drawings of the proposed Windows and Doors to match the Exterior Windows and Doors Schedule, for approval in writing by the Architect prior to fabrication. Approvals shall not reduce the responsibility of the Aluminium Joinery Supplier to provide the joinery of the required performance and dimensions.

The Shop Drawings at a minimum shall include the following:

- Reference to the Architectural Drawing Reference, e.g., W01, D02, etc
- Dimension of the Windows and Doors including any specific heights relating to the setout of jamb liners, transoms, etc
- Profile/Extrusion type including glazing beads and sizes including any strengthening fins, box sections, etc
- Liner type
- Glass Specification and Insulation R Value
- Specifications of proposed Hardware including locks, handles, actuators, etc including make, types, colours and finishes, locations and setout.
- Proposed Colour and Finish to the aluminium
- Electrically Operable Windows including wiring details of motors, actuators, brackets, cabling and controls

13.1.7 Compliance with Specification: The lodging of a Tender for the supply and installation of the joinery confirms that the complete system is designed and installed to meet the requirements of this Specification in all respects.

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13.2 STANDARDS

All Joinery shall be designed and manufactured in strict accordance with:

Building Code	E2/AS1, F4/AS1, G4/AS1,H1/AS1-AS2, H1 VM1-VM2
AS/NZS 1170	Structural Design Actions
AS/NZS 1580	Methods of test for paints and related materials
AS/NZS 1734	Aluminium and Aluminium Alloys – Flat Sheet, coiled sheet and plate
AS/NZS 1866	Aluminium and Aluminium Alloys – Extruded Rod, Bar, Solid and Hollow Shapes
NZS 4211	Specification for Performance of Windows
NZS 4223.3	Glazing in Buildings – Human Impact Safety Requirements
NZS 4303	Ventilation for acceptable indoor air quality
AS/NZS 4680	Hot-dip Galvanized (Zinc) Coatings on Fabricated Ferrous Articles
WGANZ	Guide to Window Installation as described in E2/AS1
	Relevant Manufacturers Guidelines

13.3 PERFORMANCE

The joinery shall confirm to the parameters required under NZS 4211 including, deflection, opening sashes, air infiltration, water penetration, ultimate strength, torsional strength of sashes, marking.

The structural and weather-tight performance of the completed joinery, the glazing and infill panels is the responsibility of the aluminium joinery supplier.

The Aluminium Joinery Supplier shall be responsible for the determination of the Wind Zone and the calculation of the required Ultimate Limit State (ULS) for the building however it shall not be less than the values determined for the Very High Wind Zone. If specific design parameters are required the supplier shall contact the project Structural Engineer.

13.4 MATERIALS

Aluminium Extrusions shall comply with AS/NZS 1866. Branded and extruded for anodising or powder coating. Aluminium Sheet and Strip shall comply with AS/NZS 1734 of suitable thickness. Rolled for anodising or powder coating.

Warranted Performance

Warranties are made up of a colour warranty (for colour fade and chalking), durability warranty (film integrity for aluminium only), and corrosion warranty (for steel only) and are only valid on recommended project types and conditions.

Warranted Performance

	Warranty	Fluoroset	Electro	Charisma	Duratec	Duralloy +Plus	Protexture	Duralloy
Alumi Shield™ Warranty	Aluminium Durability	35 Years	25 Years	25 Years	25 years	15 years	15 years	10 years
	Aluminium Colour	30 Years	15 Years	15 Years	20 years*	15 years	15 years	10 years
Steel Shield™ Warranty	Steel Durability	Up to 10 Years	Up to 10 Years	Up to 10 Years	Up to 10 Years	Up to 10 Years	Up to 10 Years	Up to 10 Years
	Steel Colour	30 Years	15 Years	15 Years	20 years*	15 years	15 years	10 years

*Excludes Intensity – 15 Year

13.4.1 Powdercoat Finish: All aluminium shall have Dulux Duralloy Powdercoat in selected colour and finish, meeting or exceeding AAMA2603 and AS3715 Standards. The supplier shall allow for the Dulux Pearlescent Range of colours in their price.

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13.4.2 Fastenings: Screws and lugs for assembly and fixing of metal windows shall be of stainless steel.

13.4.3 Glazing Strip: Glass shall be held in metal frames with neoprene resilient glazing strip and clip-in aluminium beads to match window frames.

13.4.4 Draught Strip: Draught strips shall be continuous mohair pattern fitted into extrusion channel.

13.4.5 Flashings: All window and door flashings shall be 0.7mm BMT aluminium in finish to match the aluminium frames unless noted otherwise. The flashings shall be supplied by the Aluminium Joinery Supplier.

13.5 WINDOWS

13.5.1 Window Frames: All windows shall be constructed using Altus Pacific 52 Thermal Series aluminium frames, suitable for double glazing and shall be glazed with square, clip-in, glazing beads.

The mullions and transoms shall be of the least possible width compatible with the requirement to provide sufficient strength for the window frame. All strengthening fins shall be confirmed and approved through the Shop Drawing approval process.

Sills to non-thermal frames shall incorporate a condensation channel with drains to the exterior.

The heads shall line with adjoining heads to Windows and Doors unless otherwise specified.

The top surface of the bottom track to sliding window frames as scheduled shall finish flush with the top surface of the adjoining bench tops where applicable.

The transoms shall be fixed with the top edge at as shown on the Schedule. Transoms shall line with adjoining transoms unless otherwise specified.

All window and door frames that extend to the floor shall be dimensioned and fitted so that the top surface of the sills shall finish flush with the top surface of the adjoining floor coverings, unless

13.6 DOORS

13.6.1 Doors and Frames: All aluminium doors and frames shall be constructed using Altus Pacific 52 Thermal Series aluminium frames, fitted with a continuous, mohair, Draught Strip to jambs and head and an approved weather seal to the sill, suitable for double glazing and shall be glazed with square, clip-in, glazing beads complete with approved sill supports, or equal approved, if approved in writing by the Architect, prior to the acceptance of a Tender for the work.

There shall be no transoms fitted to the Sliding Doors.

All window and door frames that extend to the floor shall be dimensioned and fitted so that the top surface of the sills shall finish flush with the top surface of the adjoining floor coverings, unless otherwise specified. The contractor shall allow for adequate rebates to concrete slabs.

13.6.2 Window and Door Liners:

Timber Liners – Paint Finish: Aluminium frames as noted on the Drawings shall be fitted with 19mm, H3.1 minimum treated clear Dressing Grade, Pinus Radiata liners, pre-primed and ready for the fixing of architraves by Others.

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Plasterboard Liners: Aluminium frames as noted on the Drawings shall be fitted with appropriate reveal adaptors to receive 13mm plasterboard linings. Refer to Specification Section 14, Carpentry for Plasterboard Specification.

Aluminium Liners: Supply and fix 0.6mm thick aluminium flashings and trims in powdercoat finish to match the colour of the frames, heads, sills and jambs as shown and as necessary.

Liners to Stonework: Refer to the Schedule and the Drawings for windows and door frames which have stonework reveals. These frames shall be supplied with no liners.

13.7 FABRICATION AND ASSEMBLY

13.7.1 Standards: Fabrication shall be carried out in the best workmanlike manner. Assembly shall, as far as practical, be carried out under factory supervision and control. Members shall be of sufficient strength for their purpose, they shall be neatly cut and accurately assembled in such a way as to develop full strength requirements in all joints. All cut edges shall be concealed.

13.7.2 Sizes: Finished frames shall be produced within a dimension tolerance not more than plus or minus 2mm on outside dimensions of height and width. Frames shall be square and without twists.

13.7.3 Assembly: Corners and joints shall be mechanically cut to mitre or butt together and be screw fixed in keyways incorporated into the sections. All corner joints in frames shall be perfectly square sealed with butyl mastic.

13.7.4 Fixing Brackets: Fixing brackets including sill supports shall be in concealed positions and attached by concealed fastenings to the frames. Brackets shall be located at centres as required to suit the size, weight and configuration of the window or door. The Aluminium Joinery Supplier shall confirm at the time of Tender any special requirements for sill supports.

13.7.5 Contact of Materials: Aluminium surfaces which will be placed in contact with dissimilar metals (other than stainless steel) concrete, mortars or plastic shall be painted with a coating of heavy bodied bituminous paint. Care shall be taken to ensure that no paint appears on the face of the frames.

13.7.6 Fixings: All fixings shall be concealed.

13.8 FITTINGS AND HARDWARE

13.8.1 General: All fittings shall be removable for replacement or adjustment without damaging frames. Plated or coated fittings not compatible with aluminium shall be insulated with a suitable material.

13.8.2 Approval of Hardware: The Aluminium Joinery Supplier shall provide Shop Drawings and Specifications of the Windows and Doors, fittings and hardware including the types, colours, finishes and positions Fittings for final approval by the Architect prior to fabrication.

13.8.3 Hardware Selection: All windows and doors shall be fitted with Altus ‘Malta’ Series hardware in colour-matched, powder coat finish in selected colour.

13.8.4 Alternative Hardware: Selected window and door hardware may be substituted for custom supplied hardware i.e., Chant, FSB, to be fitted complete with locks and latches, or using proprietary mechanisms as scheduled.

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The Aluminium Joinery Supplier shall advise cost variation, including credit for proprietary hardware, and confirm suitability of components and warranties.

13.8.5 Awning and Sash Windows: All awning and sash windows, shall be fitted with wedgeless window fasteners.

At awning windows, the fasteners shall be fitted to the bottom frame 150mm in from the sides of the sash and the handles of the fasteners shall point towards the centre of the sash.

At casement windows, the top fastener shall be fitted 150mm below the top of the sash but not more than 1.8 M above the floor. The bottom fastener shall be fitted 150mm up from the bottom of the sash. The handles of the fasteners shall point towards the floor.

All awning and sash windows where required by Regulation, except electrically operable windows, shall be fitted with approved, in writing by the Architect, concealed restrictor stays, sized to suit the aluminium suite and the size and weight of the opening sash.

13.8.6 Sliding Windows: All Sliding Windows shall be fitted with recessed flush pull handles unless otherwise noted and fitted with the bottom edge 150mm above the sill.

Allow to coordinate sill heights to suit benchtops, desks, and other joinery units. Unless otherwise noted, benchtops shall run into the sills of the joinery without upstands.

Locks and snibs for Sliding Windows shall be positioned below the window pull, unless otherwise noted.

All Sliding Windows shall be fitted with recessed flush bolts finished in the same colour as the frames to catch in sill track with window open 40mm.

13.8.7 Sliding Doors: All Sliding Doors unless otherwise noted, shall be fitted with Sliding Door Pull Handles (not D Handles) in the suite, material and finish as specified above to both sides of the door centred at 1000mm above the floor with double cylinder dead locks fitted at 50mm below the door pull, unless otherwise noted, to the inside face of the door only. Supply two keys per lock.

All Sliding Doors to Bedrooms shall be fitted with recessed flush bolts finished in the same colour as the frames to catch in the sill track with door open 40mm.

13.8.8 Hinged Doors: All Hinged Doors shall be fitted with selected Lever Handles in the suite, material and finish as specified above to both sides of the Door with the lever handle centred at 1000mm above the floor, with double cylinder deadlocks with turnsnib to interior face of Exterior Doors and latch sets all fitted below the handle. Supply two keys per lock.

13.8.9 Bi-folding Doors: All Bi-folding Doors shall be fitted with selected low profile, Bi-folding Door Handles in the suite, material and finish as specified above operating two-point bi-folding locks to both sides of the door, double cylinder deadlocks with turnsnib to interior face of Exterior Doors fitted at 50mm below the Latch set. Supply two keys per lock.

13.8.10 Door Hinges: Hinged Doors as shown on the drawings shall be fitted on four fixed pin, 100mm 3-leaf, aluminium hinges in colour to match the door frame.

13.8.11 Pivot Door Hinges: Door AJ02 shall be fitted in aluminium frame on Dorma top Strap DM7421 with pivot DM806 and bottom pivot DM8550. *TBC with Contractor*

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13.9 GLAZING

13.9.1 General: Glass shall comply with the current version of NZS 4223, Parts 1, 2, 3 and 4, Glazing in Buildings, and the requirements as set out in the current Building Code.

13.9.2 Glazing: All glass shall be weight-for-size or as specified and shall be fixed with neoprene gaskets or tape and clip-in aluminium beads. All gaskets shall extend the full length of all frames, be securely fixed and provide an air tight seal.

The supply and fixing of glass and glazing shall be carried out by skilled glaziers under the control of the Aluminium Joinery Supplier who shall accept responsibility for this part of the work.

13.9.3 Double Glazing: Supply and fit Metro Performance Glass, or equal approved, double-glazed Insulating Glass Units to the Joinery scheduled incorporating toughened glass (weight for size) where required by Regulation. The double-glazed units shall be fitted strictly in accordance with the Manufacturer's printed instructions and shall carry a 10-year printed Warranty against all construction and performance defects.

Manufacturers Labels where required to be within the insulated glass units must be positioned on a vertical edge away from handles, and out of the direct line of sight.

13.9.4 Glass:

(a)	Clear Glass:	Shall be Clear, Float Glass – weight for size.
	Schedule:	All aluminium window and door joinery unless otherwise noted.
(b)	Safety Glass:	Shall be Clear, Toughened Float Glass – weight for size.
	Schedule:	All aluminium window and door joinery as required by Regulation and as shown on the Schedules.
(c)	Laminated Glass:	Shall be Clear, Laminated Glass – weight for size.
	Tinted Glass:	Shall not be used.
	Schedule:	As shown on the Drawings
(d)	Obscure Glass:	Shall not be used.
	Schedule:	As shown on the Drawings
(e)	Double Glazing:	Shall be Viridian Lightbridge 1.1 high performance Low-E, Insulating Glass Units incorporating Toughened Glass where required by Regulation.
	Schedule:	All aluminium window and door joinery unless stated otherwise.

13.10 GLAZING OPTIONS

Alternative Prices for Glazing Options shall be clearly identified as over or under cost to the standard Tender Offer.

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13.11 SCHEDULE OF ALUMINIUM FRAMED WINDOWS AND DOORS

The sizes and configurations of the Aluminium Windows and Doors are scheduled on the Drawings. Refer also to the General Notes and relevant construction details to determine the logic and design intent for the set out of all windows and doors.

The overall Width of each Door is as stated.

The overall Height of each Door is as stated.

All dimensions shall be checked on the site and any variations to the Schedules of Sizes shall be approved by the Architect in writing before the manufacture of the frames.

The Heads of all adjacent Windows and Doors shall line up throughout the job unless otherwise noted.

13.12 INSTALLATION

The aluminium joinery shall be installed using only fixing and fastenings recommended by the Manufacturer of the component being fixed and to comply with the wind pressures for the Site. Ensure all fixings exposed to the weather are aluminium or stainless steel.

All Aluminium Joinery shall be fitted up to the dimensions as shown on the approved Shop Drawings at maximum 450mm centres along all reveals, and a maximum of 150mm from reveal ends over suitable plastic horseshoe packers, except at the heads, no greater than 10mm thick or as shown. Ensure fixings do not penetrate any flashings.

Frames noted as Maximum shall have the minimum thickness of packers to allow the frames to be constructed to the maximum possible width.

Frames shall be set straight, plumb and level. Care shall be taken to ensure that frames are not distorted during fixing. Confirm that the wall openings have been prepared ready for the installation of the joinery prior to proceeding.

Airseals: Install proprietary PEF backer rods with a suitable diameter between the reveals and the wall framing and seal to a depth of 10-20mm with an approved flexible sealant compatible with the flashing tape. Tool sealant to form a smooth radius using a metal spatula to provide a continuous airtight seal to the perimeter of the windows and doors. The use of low expansion foams shall be limited to areas where flexible sealant cannot be used. High expansion foams shall not be used.

The Door Frames shall be dimensioned and fitted so that the top surface of the Sills to the Doors shall finish flush with the top surface of the adjoining Floor Coverings.

The heads and transoms to the Doors shall be of exactly the same height and line with the heads and transoms to the adjacent Doors and Windows, unless otherwise specified.

Doors shall be fitted with continuous mohair draught strip to jambs, head and meeting stiles and an approved weather seal to sills.

Frames shall be fitted to line up throughout the work.

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13.13 PROTECTION

The Aluminium Joinery Supplier shall be responsible for the adequate protection of frames and glazing during transit, storage on site and installation and until approved and accepted by the Contractor. The Contractor shall then be responsible for protection from approval to completion of the Contract.

13.14 CLEANING AND REMOVAL OF STICKERS

The Aluminium Joinery Supplier shall be responsible for trade cleaning all glass and frames, and removing brand label stickers not required for compliance or warranty to frames, at the time of acceptance by the Contractor.

The Contractor shall be responsible for final commercial cleaning at completion of the Contract.

13.15 WARRANTIES

13.15.1 Window and Door Frames and Fittings

The Aluminium Joinery Supplier shall provide a printed Warranty for the Windows and Doors, all Frames and Fittings for a period of five (5) years and a printed warranty for the Sealants for a period of ten (10) years to the Contractor in accordance with the Conditions of Contract.

The Warranty comes into effect on the date of Practical Completion of the Building and shall provide a Warranty against defects in materials, workmanship, construction and performance and shall include for the making good of resulting damage to structure and finishes caused by the loss of weather tightness and the entry of wind or water.

13.15.2 Double Glazing

The Aluminium Joinery Supplier shall provide a printed Warranty for the double glazing units for a period of ten (10) years to the Contractor in accordance with the Conditions of Contract.

The Warranty comes into effect on the date(s) of Practical Completion of the Building and shall provide a Warranty against defects in materials, workmanship, construction and performance and shall include for the making good of resulting damage to structure and finishes caused by the loss of weather tightness and the entry of wind or water.

13.15.3 Powdercoat Finish

The Aluminium Joinery Supplier shall provide a printed Warranty for the Powdercoat Finish as per the schedule below:

Powdercoating System	Durability Warranty	Colour Warranty
Dulux Duralloy	10 Years	10 Years
Dulux Dualloy +PLUS	15 Years	15 Years
Dulux Protexture	15 Years	15 Years
Dulux Charisma	25 Years	15 Years
Dulux Duratec	25 Years	20 Years
Dulux Fluorset	35 Years	30 Years

The Warranty comes into effect on the date(s) of Practical Completion of the Building and shall provide a Warranty against defects in materials, workmanship, construction and performance and

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shall include for the making good of resulting damage to structure and finishes caused by the loss of weather tightness and the entry of wind or water.

13.16 SKYLIGHTS

Refer to Specification Section 14, Carpentry.

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SECTION 13B – STEEL WINDOWS AND DOORS

13.1 GENERAL - *Internal Steel doors TBC with Interior Designer.*

13.1.1 General: Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

13.1.2 Scope: The work in this Section includes the design, supply, fabrication and installation of steel framed Interior windows and doors complete with glazing.

The Steel Window and Door Manufacturer shall be responsible for the installation of all windows and doors in positions shown on the Drawings.

13.1.3 Performance: The Steel Window Contractor shall be responsible for ensuring that the work described in this Specification is carried out to meet the terms of the Specification and to be completed in every detail for the purpose designed. The lodging of a Tender by the Steel Window Contractor carries with it the responsibility to finish all work which is reasonable and necessary for completion of the installation notwithstanding any omission in the Specification.

13.1.4 Compliance with Specification: The lodging of a Tender for the supply and fixing of the windows and doors confirms that the complete window and door system is designed and installed to meet the requirements of this Specification in all respects.

13.2 MATERIALS

13.2.1 Steel Frame and Doorset Sections shall comply with BS6510.

13.2.2 Zinc Metal Spray: Steel frame to be steel grit blasting prior to application of 75-100 microns minimum zinc metal spraying with coating thickness when measured to AS 3094.3

13.2.3 Fastenings: Screws and lugs for assembly and fixing of steel windows shall be of stainless steel.

13.2.4 Glazing Strip: Glass shall be held in metal frames with neoprene resilient glazing strip and slip-in steel beads to match window frames.

13.2.5 Draught Strip: Draught strips shall be continuous mohair pattern fitted into extrusion channel.

13.2.6 Equal Approved Products: All ‘equal approved’ products shall be submitted for approval by the Architect and Principal at time of Tender.

13.3 DOORS

13.3.1 Hinged Doors and Frames: The hinged doors and frames shall be constructed using Southern Steel Windows Limited “Ottostumm”, Thermally Broken Steel Joinery, suitable for double glazing and shall be glazed with glazing beads.

13.3.2 Door Liners: The door frames shall be fitted with ex 25 clear Dressing Grade H3.2 finger jointed Pinus Radiata liners ready for the fixing of architraves by Others.

13.3.3 General: The door frames shall be dimensioned and fitted so that the top surface of the sills to the doors shall finish flush with the top surface of the adjoining floor coverings.

The heads to the doors shall be of exactly the same height and line with the heads to the adjacent doors, unless otherwise specified.

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Doors shall be fitted with continuous mohair draught strip to jambs, head and meeting stiles and an approved weather seal to sills.

13.4 FABRICATION AND ASSEMBLY

13.4.1 General: Windows and doors shall be constructed with complete steel frames and shall be glazed.

13.4.2 Standards: Fabrication shall be carried out in the best workmanlike manner. Assembly shall, as far as practical, be carried out under factory supervision and control. Members shall be of sufficient strength for their purpose, they shall be neatly cut and accurately assembled in such a way as to develop full strength requirements in all joints. All cut edges shall be concealed.

13.4.3 Sizes: Finished frames shall be produced within a dimension tolerance not more than plus or minus 2mm on outside dimensions of height and width. Frames shall be square and without twists.

13.4.4 Assembly: Corners and joints shall be mechanically cut to mitre or butt together and be screw fixed in keyways incorporated into the sections. All corner joints in frames shall be perfectly square sealed with butyl mastic.

13.4.5 Fixing Brackets: Fixing brackets shall be in concealed positions and shall be attached by concealed fastenings to frames. Brackets shall be located at 900mm maximum centres and shall be of minimum section 25 x 2mm stainless steel.

13.4.6 Contact of Materials: Steel surfaces which will be placed in contact with dissimilar metals (other than stainless steel) concrete, mortars or plastic shall be painted with a coating of heavy bodied bituminous paint. Care shall be taken to ensure that no paint appears on the face of the frames.

13.4.7 Fixings: All fixings shall be concealed.

13.5 FITTINGS AND HARDWARE

13.5.1 General: All fittings and hardware (or equal approved fittings and hardware) shall be approved by the Architect and Principal and shall be removable for replacement or adjustment without damaging frames. Plated or coated fittings not compatible with aluminium shall be insulated with a suitable material.

13.5.2 Hinged Doors: Hinged Doors shall be fitted in four fixed pin 100mm 3-leaf steel hinges in colour to match door frame per door.

All hinged doors shall be fitted with Chant hardware (or equal approved) handles in powdercoat colour to match door frames to both sides of the door fitted over double cylinder deadlocks with turnsnib to interior face of exterior doors and latch sets fitted at 1000mm above the floor.

All doors over 2.0 M high shall be fitted with extended length recessed mounted flushbolts to the head of the door with lever at 1.8 M above the floor.

13.6 GLAZING

13.6.1 General: Glass shall comply with NZS 4223, Parts 1, 2 and 3, Glazing in Buildings.

13.6.2 Glazing: All glass shall be weight-for-size or as specified and shall be fixed with neoprene gaskets or tape and clip-in steel beads. All gaskets shall extend the full length of all frames, be securely fixed and provide an air tight seal.

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The supply and fixing of glass and glazing shall be carried out by skilled glaziers under the control of the Steel Window Contractor who shall accept responsibility for this part of the work.

13.6.3 Glass:

(a)	Clear Glass:	Shall be Clear, Float Glass – weight for size.
	Schedule:	All Doors unless otherwise noted.
(b)	Safety Glass:	Shall be Clear, Toughened Float Glass – weight for size.
	Schedule:	All Doors unless otherwise noted.

13.7 SCHEDULE OF WINDOWS AND DOORS

The sizes of the windows and doors are shown on the Drawings.

13.8 PROTECTION

The Steel Window Contractor shall be responsible for the adequate protection of frames during transit, storage on site and installation and until approved and accepted by the Contractor. The Contractor shall be responsible for protection from approval to completion of the Contract.

13.9 CLEANING

The Steel Window Contractor shall be responsible for cleaning all glass and frames at the time of acceptance by the Contractor.

The Contractor shall be responsible for final cleaning at completion of the Contract.

13.10 GUARANTEES

Window and Door Frames and Fittings

The Steel Window Contractor shall provide a printed guarantee for the Window and door Frames and Fittings for a period of five (5) years to the Contractor in accordance with the General Conditions of Contract.

The guarantee comes into effect on the date of Practical Completion of the building and shall provide a guarantee against defects in materials, workmanship, construction and performance and shall include for the making good of resulting damage to structure and finishes caused by the loss of weather tightness and the entry of wind or water.

The guarantee comes into effect on the date of Practical Completions of the building and shall provide a guarantee against defects in materials, workmanship, construction and performance and shall include for the making good of resulting damage to structure and finishes caused by the loss of weather tightness and the entry of wind or water.

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SECTION 14 – CARPENTRY

14.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

All work shall be done in a workmanlike and the best and most approved trade manner in accordance with The N.Z. Building Code and NZS 3604:2011, Timber Framed Buildings.

All materials and all fixings throughout the building shall meet the requirements of NZS 3604 2011, including Section 4, Durability, to suit the appropriate exposure zone.

Zone B: Low – Inland areas with little risk from wind blown sea spray salt deposits.

The Wind Zone for the Site is:

Very High - with a maximum Ultimate Limit State (ULS) wind speed of 50/ms

14.2 TIMBER

All timber shall be of the qualities and grades specified and shall conform to the requirements of the current NZS 3631, National Grading Rules and NZS 3602, Timber and Wood-based Products for Use in Building.

Treated timbers shall be treated in conformity with NZ Timber Preservation Council requirements and comply with MP 3640. External and other timbers shall be pressure treated to the appropriate NZ TPC Standards.

All framing timber shall be reduced to a moisture content not greater than 18%, dressed four sides and eased.

All framing timbers shall be sized using the tables provided in NZS 3604:2011 for Pinus Radiata VSG 8/MSG 8 timber unless noted otherwise.

All finishing timbers shall be reduced to a moisture content not greater than 18% for exterior use and less than 10% for interior use based on oven dry weight and machine dressed on four faces. Internal timbers shall, in addition, be machine glass-papered to a smooth surface. Remove all accessible defects to the satisfaction of the Architect.

14.3 SCHEDULE OF TIMBERS

All framing timbers shall be Pinus Radiata VSG 8/MSG 8 timber unless otherwise specified treated in accordance with NZS 3602:2003, Timber and Wood-based Products for Use in Building.

Alternative timber species may be considered if approved in writing by the local Territorial Authority.

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Location of Timber	Treatment Level	Durability Performance
Floor Framing		
Timber (in contact with the ground):		
Pinus Radiata	H5	50 years
Deck timber framing (not protected from the weather):		
Pinus Radiata	H3.2	50 years
Ground Floor Subfloor framing (protected from the weather):		
Pinus Radiata	H1.2	50 years
Ground Floor timber framing (protected from the weather):		
Pinus Radiata	H1.2	50 years
Oregon	H1.2	50 years
Midfloor timber framing to dry areas:		
Pinus Radiata	H1.2	50 years
Oregon	–	50 years
Midfloor timber framing to wet areas:		
Pinus Radiata	H3.2	50 years
Structural Framing (unless otherwise specified)		
Posts (not protected from the weather):		
Pinus Radiata	H3.2	50 years
Posts (protected from the weather):		
Pinus Radiata	H1.2	50 years
Decking		
Unroofed Decking:		
Pinus Radiata	H3.2	15 years
Kwila – heart	–	15 years
Purple Heart Hardwood	–	15 years
Garapa	–	15 years
Outdure EcoDecking	–	10 years
Flooring – in any conditions		
Timber Flooring:		
Particle Board	–	50 years
Macrocarpa – heart	–	50 years
Matai – heart	–	50 years
Rimu – heart	–	50 years
Eucalyptus – (Tasmanian Oak)	–	50 years
Tawa	H1.2	50 years
Pinus Radiata	H1.2	50 years
Beech – heart	–	50 years

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Location of Timber	Treatment Level	Durability Performance
Flooring – exposed to ground atmosphere		
Timber Flooring:		
Particle Board	–	50 years
Plywood	–	50 years
Pinus Radiata	H1.2	50 years
Macrocarpa – heart	–	50 years
Matai – heart	–	50 years
Rimu – heart	–	50 years
Eucalyptus (Tasmanian Oak)	–	50 years
Tawa	H1.2	50 years
Flooring – to wet areas		
Timber Flooring		
Plywood	H3.2	50 years
Pinus Radiata	H3.2	50 years
Wall Framing		
Timber Wall Framing in Exterior Walls with masonry veneer:		
Pinus Radiata	H1.2	50 years
Oregon Structural Grade	–	50 years
Timber Wall Framing in Exterior Walls:		
Pinus Radiata	H1.2	50 years
Oregon Structural Grade	H1.2	50 years
Timber Wall Framing in enclosed decks/balconies:		
Pinus Radiata	H3.2	50 years
Timber Wall Framing supporting enclosed decks/balconies:		
Pinus Radiata	H1.2	50 years
Timber Wall Framing supporting veneer shelf angles:		
Pinus Radiata	H3.2	50 years
Timber Wall Framing in Exterior Walls with monolithic cladding:		
Pinus Radiata	H1.2	50 years
Timber battens behind cladding to form cavity:		
Pinus Radiata	H3.2	50 years
Timber strapping behind internal linings:		
Pinus Radiata	H1.2	50 years
Timber Wall Framing in unlined buildings:		
Pinus Radiata	H1.2	50 years
Oregon Structural Grade	–	50 years
Timber Wall Framing in Internal Walls – load bearing:		
Pinus Radiata	H1.2	50 years
Oregon Structural Grade	–	50 years

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Location of Timber	Treatment Level	Durability Performance
Timber Wall Framing in Internal Walls supporting wet area floors:		
Pinus Radiata	H3.2	50 years
Timber Wall Framing in Internal Walls – non-load bearing:		
Pinus Radiata	H1.2	15 years
Oregon Structural Grade	–	15 years
Kiln Dried Radiata Pine	–	15 years
Roof Framing		
Timber Roof Framing/Roof Trusses/Purlins > 10˚ roof slope:		
Pinus Radiata	H1.2	50 years
Oregon Structural Grade	–	50 years
Timber Enclosed Roof Framing/Roof Trusses/Purlins < 10˚ roof slope		
Pinus Radiata	H1.2	50 years
Timber Enclosed Skillion Roof Framing/Purlins > 10˚ roof slope:	H1.2	50 years
Pinus Radiata	H1.2	50 years
Oregon Structural Grade		
Timber Enclosed Skillion Roof Framing/Purlins < 10˚ roof slope		
Pinus Radiata	H1.2	50 years
Timber Valley Boards/Box Gutters/Flashing Supports		
Pinus Radiata	H1.2	50 years
Timber Supporting Roof Penetration Flashings		
Pinus Radiata	H1.2	50 years
Timber Upstands to roof decks		
Pinus Radiata	H1.2	50 years
Timber Rafters exposed to exterior		
Pinus Radiata	H3.2	50 years
Timber Rafters/Purlins to Roofs with Plywood Sarking to membrane roofing, shingles or sarked tray roofing	H1.2	50 years
Roof Sarking		
Plywood Roof Sarking below membrane roofing, shingles or sarked tray roofing	H3.2	50 years

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Location of Timber	Treatment Level	Durability Performance
Ceiling Framing		
Timber Ceiling Framing:		
Pinus Radiata	H1.2	50 years
Oregon Structural Grade	–	50 years
Exterior Wall Linings/Finishing Timbers		
Weatherboards:		
Pinus Radiata	H3.2	15 years
Larch – heart	–	15 years
Macrocarpa – heart	–	15 years
Cedar	–	15 years
Plywood Bracing	H3	50 years
Plywood Not Providing Bracing	H3	15 years
Fascia/Barge/Coverboards/Facings:		
Pinus Radiata	H3.2	15 years
Larch – heart	–	15 years
Macrocarpa – heart	–	15 years
Cedar – heart	–	15 years
Base Battens:		
Pinus Radiata	H3.2	15 years
Larch – heart	–	15 years
Macrocarpa – heart	–	15 years
Cedar – heart	–	15 years
Exterior Joinery:		
Pinus Radiata	H3.2	15 years
Cedar – heart	–	15 years
Macrocarpa – heart	–	15 years
External Stairs/Balustrades:		
Pinus Radiata – heart	H3.2	15 years
Macrocarpa – heart	–	15 years
Kwila – heart	–	15 years
Eucalyptus – heart	–	
External Pergola Timbers:		
Pinus Radiata	H3.2	15 years
Macrocarpa – heart	–	15 years
Kwila – heart	–	15 years
Eucalyptus – heart	–	15 years
Interior Wall Linings		
Plywood Sheet Bracing	–	50 years

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Location of Timber	Treatment Level	Durability Performance
Interior Finishing Timbers (unless otherwise specified)		
All Interior Finishing Timbers:		
Pinus Radiata	–	5 years
Oregon	–	5 years
Macrocarpa	–	5 years
Eucalyptus (Tasmanian Oak)	–	5 years
American White Oak	–	5 years
Timber Reveals to Aluminium Windows and Doors:		
Pinus Radiata	H3.2	15 years
Eucalyptus (Tasmanian Oak)	–	15 years
American White Oak	–	15 years

The Contractor shall ensure that all fixings, nails, screws, bolts, glues etc are compatible with the treated timber or other timbers scheduled.

14.4 PRIMING

The Painter shall prime all exterior timbers to be painted including external faces, ends and butts of finishing timbers, backs of frames and backs of any exterior finishing timbers which come in contact with concrete or concrete block.

14.5 DAMP PROOF COURSE

Between all faces of framing timbers in contact with concrete or masonry fit in place Thermakraft Supercourse 500 polyethylene Damp Proof Course (DPC) or similar approved, in full lengths and widths to suit the timber.

14.6 WATERPROOFING AND TANKING

Refer to the project Specific Documentation prepared by *Nuralite Waterproofing Ltd* for all waterproofing and tanking Specification.

This Documentation is attached as an appendix to this Section.

The Contractor shall supply a PS3 for the Waterproofing Install to the Local Council.

14.7 FLOORING

14.7.1 Plywood Flooring (Attic): Fix 19mm CHH Ecoply H3.2 CD grade F8 tongue & grooved or equal approved, plywood flooring to the areas shown on the Drawings. Lay the sheets and fix with approved adhesive and mechanical fixings all in accordance with the manufactures printed instructions and the Structural Engineers Documentation.

14.8 TIMBER WALL FRAMING

14.8.1 Wall Plates: Under all walls lay full width wall plates treated as scheduled in long lengths, securely fixed with nail plates at junctions and joints, securely fixed to the floor structure

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as shown on the Structural Engineers Documentation. Top plates shall be securely fixed with nail plates at joints and junctions and securely spiked to studs.

14.8.2 Wall Framing: Set out and frame up walls as shown on the Drawings to provide rigid walls true to line and plane. Wall framing shall be carried out using timbers sized as shown on the Drawings, treated as scheduled and in accordance with NZS 3604:2011, Section 8 Walls, a copy of which will form part of this Specification.

Studs shall be spaced at 400mm maximum centres to suit set out of wall linings and fittings.

All exterior timber framed walls shall be constructed with ex150 x 50 timber.

Note: Framing shall be set out to suit the thickness of wall linings to ensure that adjoining wall surfaces finish in one plane.

At framed walls over 9M long, form Control Joints in the wall framing (double studs spaced 20mm apart) and wall lining (sheets spaced 15mm apart) using Rondo P35 Control Joints all constructed and fitted strictly in accordance with the printed instructions included in the GIB Site Guide.

Provide blocking and support for sanitary fittings, joinery, window and door frames, stair handrails etc as required.

14.8.3 Lintels: Lintels not otherwise noted on the Structural Engineers Documentation shall be of the size required for the various spans in accordance with NZS 3604:2011, Timber Framed Buildings. Provide positive connection between lintels and studs using an appropriate Pryda Strapbrace fixed strictly in accordance with the Manufacturer's printed instructions.

14.8.4 Dwangs: Dwangs shall be the full depth of the studwork by 50mm thick and spaced at centres and to suit external wall claddings and internal wall linings and fittings.

14.8.5 Posts and Beams: All concealed post and beam junctions shall be fixed with approved proprietary connectors as specified by the Project Structural Engineer.

All exposed posts and beams shall be in Selected Hardwood approved by the Architect and shall be fixed as detailed.

14.8.6 Bracing: Bracing shall comply with the requirements of the Structural Engineer's Bracing Design and NZS 3604:2011, Timber Framed Buildings.

14.8.7 Straightening: All framing shall be straightened to finish true to line and plane before linings are fixed.

14.8.8 Strapping: Strapping shall in sizes as indicated on the Drawings in No. 1 Framing Pinus Radiata treated as scheduled, spaced from concrete and concrete masonry surfaces as necessary with approved DPC, and in all cases packed level and securely fixed at centres to suit the wall linings.

14.8.9 Prenail Wall Framing: The contractor shall liaise with the prenail supplier to prepare shop drawings for review by the Architect prior to manufacture. The shop drawings shall clearly note all relevant dimensions including rough openings for all external and internal window and doors based on the schedules prepare by the Architect. The supplier shall be aware of the setout of the windows and doors as noted.

The prenail supplier, in collaboration with the main contractor shall limit the use of unnecessary blocking, dwanging etc to minimise the extent of thermal bridging through the wall whilst still allowing for all necessary requirements for fixing of internal and external linings, fixtures, fittings etc.

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14.9 ROOF FRAMING

Refer to the Structural Engineer's Drawings for Details of Roof Structure and Framing.

14.9.1 Roof Framing: Frame up the Roofs and Soffits as shown on the Drawings and in accordance with the Structural Engineer's Bracing Design and NZS 3604:2011, Timber Framed Buildings for the wind zone as defined above, all securely fixed, notched, bolted and braced to form perfectly flat and true planes ready for the fixing of roof coverings.

Frame up around all openings in the roof as necessary.

All exposed rafters shall be equally spaced.

14.9.2 Roof Framing – Supporting Plywood Sarking: Roof framing to support plywood sarking to membrane roofed areas shall be spaced at 400mm centres maximum or as shown on the Structural Engineers Documentation laid to falls with solid blocking at sheet joints. Fix tapered furring strips laid to minimum falls as shown on the Drawings to the same width, spacing and treatment as the rafters, with solid blocking at sheet joints.

Refer to the Roofing Manufacturer's instructions for the fixing requirements to support snow straps and/or rails.

14.9.3 Proprietary Roof Trusses:

Design: All roof trusses, bracing, and connections shall be designed in accordance with the Frame and Truss Manufactures Association Code of Practice (FTMA COP) for the required structural loadings as determined by the Project Structural Engineer, NZS3604 and ASNZS 1170.

The roof trusses shall allow for the heel heights, eave depths etc as shown on the Drawings and all necessary penetrations, ductwork, plant, equipment and access hatches, ladders etc within the layout of the truss members.

Roof trusses shall be at 900 maximum centres unless otherwise advised.

Shop Drawings: Supply a full set of 'For Construction' shop drawings for review by the Architect, Project Engineer and Main Contractor prior to fabrication. Shop drawings shall clearly indicate the location, type and dimensions of all truss members to enable efficient review by the project team.

Producer Statement: Refer to the truss manufacturers producer statement for Design (PS1) which shall be supplied to the local Territorial Authority at the time of the Building Consent application. Any updates to the producer statement shall be resubmitted prior to the application for Code of Compliance.

Construction: Take delivery of the roof trusses and check relevant dimensions against the approved Shop Drawings prior to erection. Ensure trusses have a maximum moisture content of 16% at time of supply. Fit up in place in accordance with the truss suppliers and Structural Engineers Documentation and NZS 3604, all securely fixed, notched, bolted and braced to form perfectly flat and true planes ready for the fixing of roof coverings.

14.9.4 Plywood Sarking to Membrane Roofing - Warm Roof – Nuralite 3PT: Refer to the project Specific Documentation prepared by Nuralite for all waterproofing and tanking Specification.

This Documentation is attached as an appendix to this Section.

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14.10 PASSIVE ROOF VENTILATION

14.10.1 General: Allow to coordinate with the Roofer for the inclusion of passive eave and ridge ventilation in accordance with the Roofing Manufacturer's printed instructions, the provisions of the New Zealand Building Code E2/AS1 and the current version of the Metal Roof and Wall Cladding Code of Practice, Section 10, Roof Ventilation.

14.10.2 Passive Ventilation - Skillion Roof Framing: Supply and fix VENT VB20 extruded polypropylene ventilated battens complete with temporary adhesive backing on top of the purlins to create an unobstructed ventilation plane from eave to ridge.

Coordinate with the roofer to install VENT over-fascia vent model G1200N at the eaves.

Coordinate with the roofer to install proprietary venting components at the ridge.

14.10.3 Passive Ventilation - Truss Roof Framing: Coordinate with the roofer to install VENT over-fascia vent model G1200N at the eaves.

Coordinate with the roofer to install proprietary venting components at the ridge.

14.11 CEILING FRAMING

14.11.1 Ceiling Framing – Timber: Frame up ceilings and bulkheads in accordance with NZS 3604, Light Timber Framed Buildings, at heights shown on the Drawings with 100 x 50 ceiling joists at 450mm max centres (or as necessary to provide free access above ceilings and fixing for ceiling linings). All framing shall be fixed to plates securely fixed to the structure. Fix 100 x 50 droppers and runners as necessary to provide a rigid, flat structure.

Note: Framing shall be set out to suit the thickness of the ceiling linings to ensure that adjoining ceiling surfaces finish in one plane.

At framed ceilings over 9M long, form control joints in the ceiling framing (double studs spaced 20mm apart) and ceiling lining (sheets spaced 15mm apart) using Rondo P35 control joints all constructed and fitted strictly in accordance with the printed instructions included in the GIB Site Guide.

14.11.2 Ceiling Framing – Rondo Key-Lock: Construct ceilings at the heights shown on the Drawings using Rondo Key-Lock Direct Fixed System using the appropriate proprietary battens to suit the required ceiling suspension and support structure (timber framing, concrete etc) with furring channels spaced at 600mm centres max to provide a perfectly flat and rigid surface ready for fixing of 13mm plasterboard ceiling linings.

At framed ceilings over 12m long, form control joints using Rondo P35 control joint sections and ensure that the support structure is located in accordance with the manufacture's requirements.

The whole of the Rondo Key-Lock system shall be installed strictly in accordance with the Manufacturer's printed instructions to suit the application.

Provide fixing in ceiling framing for any recessed and pendant light fittings, fixtures fittings, grilles etc in the positions shown. Confirm the exact position and type of fitting on site with the Architect before proceeding.

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14.12 EXTERIOR FINISHINGS

14.12.1 General: Fix all exterior finishing timbers as necessary for the weatherproof, neat and satisfactory completion of the work. All timber shall be in Selected hardwood treated as scheduled unless noted otherwise.

14.12.2 Fascia Boards: Fascia Boards shall be in Selected hardwood with Band Sawn Face (BSF), unless noted otherwise to the sizes shown, fixed in long lengths, mitred at corners and bevel cut at longitudinal joints and securely nailed in position. Any cut ends or exposed edges shall be immediately sealed.

14.13 EXTERIOR LININGS

14.13.1 Wall Underlay – Rigid Air Barrier: Fix Thermakraft Watergate Plus Wall Underlay over 7mm H3.2 DD structural ply, to cover the whole exterior surface of the timber framed walls. The flexible Wall Underlay shall be lapped 300mm at sheet joins, be securely fixed and left free from tears.

The Wall Underlay shall return the full depth of the framing at all external door and window openings and shall have compatible self-adhesive corner and sill membrane flashings all fitted strictly in accordance with the Manufacturer's printed instructions and the New Zealand Building Code E2/AS1.

14.13.2 HardiFlex Cladding: Line the external wall areas where shown with 6mm HardiFlex sheet fixed strictly in accordance with the Manufacturer's printed instructions. Fit 0.55mm galvanised flashing to the horizontal joints set out to approval. The HardiFlex shall be fitted over ex 50 x 25, H3.2 treated merchantable grade Pinus Radiata horizontal castellated battens fixed over the rigid air barrier on the external face of the timber framing.

At sheet joints fix proprietary uPVC jointers and moulds in white colour ***OR*** seal using approved Inseal tapes and uPVC backflashings and approved sealant and leave ready for painting by Others.

14.13.3 Stonework Backing: Structural cavity battens for the stonework backing shall be ex 50x50mm H3.2 treated Pinus Radiata laid vertically and fixed through the Wall Underlay to the wall framing beyond at every stud with screw fixings and spacings as determined by the Structural Engineer. Stud centres for walls receiving stone facing shall be at 400crs max or as required to suit the layout of the fixing ties as determined by the Structural Engineer.

Cover the whole of the exterior strapped timber frame behind stone veneer with 6mm James Hardie, RAB installed vertically and fixed with Stainless Steel nails into vertical cavity battens in accordance with the current James Hardie Technical Specification manual.

Seal James Hardie, 6mm RAB at sheet joints, internal and external corners. All sheet joints shall be supported by timber framing. Seal all cut edges prior to installation. Seal sheet edges around window and door openings, meter boxes and other penetrations.

Cover the whole of the 6mm James Hardie, RAB backing board with Thermakraft 215 building paper to act as a slip layer between the stonework and backing board as detailed on the Drawings.

The backing shall be fitted to provide a 50mm air gap to the top and bottom of the cavity to allow for the free draining and ventilation of the cavity in conjunction with perpends in the stonework.

14.13.4 Backing Sheet Waterproofing - *TBC*

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14.13.5 Flashings: Install 0.55BMT galvanised back flashings to all internal and external corners as shown on the Drawings.

14.13.6 Solid Timber Soffits: Line all soffits as shown on the Drawings to the specification scheduled below, perfectly flat and true to plane.

Solid Timber Soffit Linings	
Location	Refer to the Drawings
Supplier	Rosenfeld Kidson ***OR*** Hermpac ***OR*** or equal approved
Species	Western Red Cedar
Grade	PC1, Vertical Grain without crown cut faces
Profile	RK InGrain RKA1040 (185x18.5mm) with 6mm negative or similar approved
Surface Finish	Bandsawn Face (BSF)
Fixing	Conceal Fixed
Coating	Approved Coating by Others
Colour	Refer to Specification Section 43 – Architectural Materials Schedule

Coating: All cedar shall be factory coated on all surfaces (four sides) with the surface finish scheduled above ready for final coats on site. Any cut ends or exposed edges shall be immediately sealed. Allow for adequate lead times in the contract to call for and for review of samples by the Architect and/or Principal prior to ordering. Refer to Specification Section 43 – Architectural Materials Schedule for colours

Allow for adequate lead times in the contract to call for and for review of samples by the Architect and/or Principal prior to ordering.

14.14 EXTERIOR WINDOWS AND DOORS

Refer to Specification Section 13, Aluminium Joinery.

Take delivery of all Exterior Windows and Doors and fix in position with flashings at head, jambs and sills all as detailed and in accordance with best trade practice. Seal all round exterior of frame and as necessary with Silaflex MS sealant in colour to match wall finish and leave weathertight.

The heads of adjacent Exterior Windows and Doors and Interior Doors shall line up unless otherwise noted.

Nail fixing of timber window and door reveals shall not be permitted.

Provide WANZ or customised aluminium support bars to all window and door sills fixed strictly in accordance with the Manufacturer's printed instructions.

Note: The top edge of the sills to Exterior Doors shall finish flush with the adjoining Floor Coverings as scheduled and noted on the Drawings.

Plasterboard Window Liners: Line window reveals as noted on the Drawings with 13mm GIB Toughline Aqua plasterboard. External and internal corners shall be formed, square stopped and finished to perfectly straight lines. Fit Perforated Metal Angles in single lengths at all external corners.

Refer to Specification section 21, Tiling for tiled window and door reveals

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14.15 FLASHINGS

All flashings shall be constructed to the sizes and falls as described in NZBC, E2, Table 7.

All flashings shall be constructed in materials to comply with NZBC, E2, Table 20, “Materials Selection” and Table 21, “Compatibility of Materials Subject to Runoff”.

All visible flashings shall be Aluminium or Colorsteel/Colorcote.

Supply and fix 0.7BMT aluminium flashings to aluminium framed windows and doors and where shown on the Drawings in powdercoated finish to match the door and window specification and colour. Consult with the Architect for confirmation of all colours if required.

Supply and fix 0.55BMT galvanised flashings to concealed locations as noted on the Drawings.

All flashings shall be neatly fitted as detailed and in accordance with best trade practice, true to line, and watertight.

The flashings to the roof are specified in Specification, Section 16, Roofing.

14.16 INSULATION

Refer to Specification, Section 40, Building Thermal Envelope H1, Energy Efficiency Report for minimum thermal insulation requirements.

All Insulation shall be installed strictly in accordance with the Manufacturer’s printed instructions.

14.17 INSULATION – CONCRETE SLAB

14.17.1 Under Slab on Grade: Lay 280mm Bulk EPS insulation made up of two layers of 100mm Expol Thermaslab H, and one layer of 80mm Expol Thermaslab H as shown on the drawings.

Cover the whole area under the concrete slab.

The EPS shall be fitted on top of the DPM and directly under the concrete slab.

Allow to co-operate with the Electrician and Underfloor Heating Contractor in the placement of Floor Heating Cables and/or Heating Pipes and take every precaution to ensure the long working life of the cables/pipes during the placement of the concrete.

14.17.2 Perimeter Insulation: Install *Resene Construction Systems (RCS)* XTherm Blue 50mm Perimeter Edge Insulation as per the manufacturers written instructions.

Refer to Specification Section 24, Solid Plaster.

14.17.3 Suspended Concrete Floors - *TBC*

14.18 INSULATION – WALLS

Refer to the documentation prepared by *Building Envelope Optimisation (BEO)* for the Specification and Location of all wall types and insulation values.

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14.18.1 Timber Framed Walls: Insulate all 140mm thick external timber framed walls, including to the Garage, and the internal walls with Selected insulation as scheduled and shown on the Drawings.

All insulation batts shall be fixed tightly between the timber framing members to completely cover the whole wall surface of the building strictly in accordance with the Manufacturer's printed instructions.

14.18.2 Blockwork / Concrete Walls: Insulate the whole interior face of all exterior blockwork and concrete walls with Selected insulation as scheduled and shown on the Drawings cut to fit tightly at all joints.

The insulation shall be fixed with an approved adhesive. All gaps and openings in the insulation shall be fitted with an approved sealant.

Electrical cables in XPS insulation shall be run in PVC or PE conduit.

Note: Extruded Insulation Board is typically pink or yellow in colour. It is not the same as expanded polystyrene (EPS) which is white in colour.

Schedule of Walls to be thermally insulated

140mm Timber Framed Walls:	Earthwool Glasswool Wall R4.40 (140mm)
240mm Masonry Block Walls:	Nuralile Enertherm PIR R4.55 (100mm)
190mm Masonry Block Walls:	XPS R1.80 (50mm)

14.19 INSULATION – WALLS – SOUND CONTROL

14.19.1 Sound Control Insulation – Wall: Insulate the whole area of the walls scheduled with 100mm thick 'Silencer' Fibreglass Insulation Batts fixed tightly between the timber framing members to completely cover the whole wall surface strictly in accordance with the Manufacturer's printed instructions.

Schedule of Internal Walls with acoustic insulation

All internal walls to bathrooms as noted on the drawings.

TBC

14.20 INSULATION – ROOFS AND CEILINGS

Refer to the documentation prepared by Building Envelope Optimisation (BEO) for the Specification and Location of all wall types and insulation values.

14.20.1 Roofs and Ceilings: Insulate all timber framed roof and/or ceiling areas unless otherwise noted with Selected insulation as scheduled and shown on the Drawings. Insulation Batts shall be fixed tightly between the timber framing members to completely cover the whole roof and/or ceiling area as shown on the Drawings. The insulation shall be free from gaps, folds or compression to ensure a consistent and complete insulating layer. Ensure the correct clearances are maintained to all electrical equipment including light fixtures and control gear, fireplace flues and roof underlays.

14.20.2 Skillion Roofs: Insulate all skillion roof areas with Selected insulation as scheduled and shown on the Drawings. Insulation Batts shall be fixed tightly between the timber framing members to completely cover the skillion roof areas as shown on the Drawings. The insulation shall be free from gaps, folds or compression to ensure a consistent and complete insulating

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layer. Ensure the correct clearances are maintained to all electrical equipment including light fixtures and control gear, fireplace flues and roof underlays.

For any roofing or celling areas where space is less than that required for the specified thickness of insulation, the Contractor shall install the maximum thickness of insulation batts available ensuring that the required 25mm separation is maintained to the roofing underlays or substrates.

14.20.3 Membrane Roofs: Refer to the project Specific Documentation prepared by *Nuralite Waterproofing Ltd.*

Schedule of Roofs to be thermally insulated

240mm rafters:	Earthwool Glasswool Skillion R6.0 (215mm)
190mm rafters:	Earthwool Glasswool Skillion R5.0 (165mm)
Membrane roof:	Nuralile Enertherm PIR R4.55 (100mm)
Timber trussed 1:	Earthwool Glasswool Ceiling R7.0 (330mm)
Timber trussed 2:	Earthwool Glasswool Ceiling R5.0 (165mm)

14.21 INTERIOR WALL LININGS

14.21.1 GIB Board Linings: To achieve a high standard of finish to all of the GIB Board surfaces to avoid surface waves, ridges at sheet joints, popping of fixings etc, it is the responsibility of the Contractor to ensure that all stages in the storage, handling, fixing and stopping of the GIB Board are carried out strictly in accordance with the Instructions described in the GIB Site Guide.

14.21.2 GIB Board Standard Wall Linings: Line all internal walls, unless otherwise specified, with 13mm GIB Board glue and screw fixed and jointed strictly in accordance with the Manufacturer's printed instructions.

Fit Rondo P35 Control Joint to all GIB Board lined walls equally spaced at 9M max centre along the length of the wall strictly in accordance with the Manufacturer's printed instructions.

External and internal corners at wall/ceiling junctions shall be formed, square stopped and finished to perfectly straight lines.

At external corners and at exposed edges of GIB Board, or where the GIB Board sheet meets dissimilar materials, the edges shall be finished using standard GIB perforated metal edge linings, stopped and finished to perfectly straight lines.

There shall be no mouldings at the internal wall or ceiling junctions unless otherwise noted.

Fit Perforated Metal Angles in single lengths at all external corners.

Stop up and finish all GIB Board to areas concealed from view e.g. above ceilings to GIB Board Finish Level 1 and to all areas exposed to view including inside cupboards and wardrobes to GIB Board Finish Level 4.

14.21.3 GIB Board Aqualine Wall Linings: Line all internal walls to all wet areas unless otherwise specified, with 13mm GIB Aqualine glue and screw fixed and jointed strictly in accordance with the Manufacturer's printed instructions.

External and internal corners at wall/ceiling junctions shall be formed, square stopped and finished to perfectly straight lines.

All exposed edges of GIB Board or where the GIB Board sheet meets dissimilar materials, the edges shall be finished using standard GIB perforated metal edge linings, stopped and finished to perfectly straight lines.

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There shall be no mouldings at the internal wall or ceiling junctions unless otherwise noted.

Fit Perforated Metal Angles in single lengths at all external corners.

Stop up and finish all GIB Aqualine to areas concealed from view e.g. above ceilings, to GIB Board Finish Level 1, and, to all areas exposed to view, to GIB Board Finish Level 4.

14.21.4 GIB Board Braceline Wall Linings: Line internal walls shown on the Structural Engineer's Drawings with 13mm GIB Braceline glued and fixed and jointed strictly in accordance with the Manufacturer's printed instructions.

External and internal corners at the wall/wall junctions and at wall/ceiling junctions shall be formed, square stopped and finished to perfectly straight lines.

All exposed edges of GIB Board or where the GIB Board sheet meets dissimilar materials, the edges shall be finished using standard GIB Perforated Metal Edge Linings, stopped and finished to perfectly straight lines.

There shall be no mouldings at the internal wall or ceiling junctions unless otherwise noted.

Fit perforated metal angles in single lengths at all external corners.

Stop up and finish all GIB Braceline to areas concealed from view e.g. above ceilings to GIB Board Finish Level 1 and to all areas exposed to view to GIB Board Finish Level 4.

14.21.5 Solid Timber Wall Linings: Line all interior walls as shown on the Drawings to the specification scheduled below, perfectly flat and true to plane.

TBC by Interior Designer

Interior Solid Timber Wall Linings	
Location	Refer to the Drawings
Supplier	*TBC*
Species	*TBC*
Grade	*TBC*
Profile	*TBC*
Surface Finish	*TBC*
Fixing	*TBC*
Coating	TBC
Colour	TBC

14.21.6 Villaboard Wall Linings: Line walls to be tiled with 9mm Villaboard set out in single sheets as substrate to Tiling fixed and jointed in accordance with the Manufacturer's printed instructions.

14.22 INTERIOR CEILING LININGS

14.22.1 Vapour Control Layer: Install Pro Clima Intello Plus Internal Airtightness System on the warm side of the roof framing as shown on the Drawings to limit the transmission of vapour into the ceiling cavities. Install as a continuous layer free from rips and tears and joined and sealed with ProClima Tescon Vana taped joints.

Penetrations through the vapour barrier shall be kept to an absolute minimum and shall be tightly sealed with proprietary Pro Clima accessories, pockets, tapes, grommets etc.

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Pre-strip the top plate of any interior walls that extend to the underside of the rafters with Intello to ensure a simpler connection and sealing of the membrane.

Ensure the system is installed in accordance with the Manufacturer's printed instructions.

14.22.2 GIB Board Ceiling Linings: Line all ceilings, unless otherwise specified, with 13mm GIB Board, glue and screw fixed and jointed strictly in accordance with the Manufacturer's printed instructions.

Internal and external corners at wall/ceiling and ceiling/ceiling junctions shall be formed, square stopped and finished to perfectly straight lines.

All exposed edges of GIB Board, or where the GIB Board sheet meets dissimilar materials, the edges shall be finished using standard GIB perforated metal edge linings, stopped and finished to perfectly straight lines.

There shall be no mouldings at the internal wall/ceiling junctions unless otherwise noted.

Fit Perforated Metal Angles in single lengths at all external corners.

Stop up and finish all GIB Board ceilings exposed to view to GIB Board Finish Level 4.

14.22.3 GIB Aqualine Ceiling Linings: Line all ceilings to all wet areas, unless otherwise specified, with 13mm GIB Aqualine glue and screw fixed and jointed strictly in accordance with the Manufacturer's printed instructions.

Internal and external corners at wall/ceiling and ceiling/ceiling junctions shall be formed, square stopped and finished to perfectly straight lines.

All exposed edges of GIB Board, or where the GIB Board sheet meets dissimilar materials, the edges shall be finished using standard GIB perforated metal edge linings, stopped and finished to perfectly straight lines.

14.22.4 Solid Timber Ceiling Linings: Line all ceilings as shown on the Drawings to the specification scheduled below, perfectly flat and true to plane.

TBC by Interior Designer

Solid Timber Ceiling Linings	
Location	*TBC*
Supplier	*TBC*
Species	*TBC*
Grade	*TBC*
Profile	*TBC*
Surface Finish	*TBC*
Fixing	*TBC*
Coating	*TBC*
Colour	*TBC*

All cedar shall be factory coated on all surfaces (four sides) in selected colour ready for final coats on site. Any cut ends or exposed edges shall be immediately sealed.

Allow for adequate lead times in the contract to call for and for review of samples by the Architect and/or Principal prior to ordering.

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14.23 INTERIOR DOORS

Take delivery of all Interior Doors and Frames and fix in position with PRYDA Jamb Fixa concealed fixing brackets.

14.24 CAVITY SLIDING INTERIOR DOORS

Refer to Specification Section 15, Joinery.

14.25 INTERIOR FINISHINGS

The Main Contractor shall liaise with the Painting Sub-Contractor to ensure the preparation and fixing of all finishing timbers is completed to ensure that any potential issues with shrinking, cracking of the final paint finish are minimised. All interior finishing timbers shall be stored to acclimatise to the interior environment in which they are being installed to minimise movement due to fluctuating moisture content. All interior finishing timbers shall have a moisture content of less than 10%.

14.25.1 Cornices: There shall be no cornices fitted up at the wall/flat ceiling junctions unless otherwise noted.

14.25.2 Skirtings: Supply and fix clear Dressing Grade Pinus Radiata skirtings to the profiles shown on the Drawings in long lengths, bevel cut at joints, mitred at corners and scribed at internal corners to all wall/floor junctions. Skirtings shall be in single lengths, mitred at corners and fixed securely.

14.25.3 Architraves: Supply and fix clear Dressing Grade Pinus Radiata Door and Window Architraves to the profiles shown on the Drawings and as detailed neatly fitted to all window and door openings. Architraves shall be in single lengths, mitred at corners and fixed securely

14.25.4 Architraves to Lift Doors: Supply and fix selected clear Dressing Grade Pinus Radiata Architraves to the profile shown in single lengths, bevel cut at joints, mitred at corners and fix securely all true to line.

14.26 JOINERY

Take delivery of all joinery items, cabinets, benches, stairs, stair balustrades, stair handrails, shelving, etc and fix neatly, secretly and securely into position.

Benches shall be fitted up on site tight against wall linings with clear neoprene bead fitted at wall junction.

14.27 HARDWARE

Allow the Prime Cost scheduled for the supply only of selected Hardware, for example, door furniture, locks, latches, door closers, door stops, joinery furniture, toilet paper holders, etc.

Provide Master Key System for the House.

Take delivery of the Hardware, fit up on the job as instructed and leave in perfect working order.

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14.28 SPECIALIST SERVICES

Allow to co-operate with Specialist Installers selected by the Principal regarding the installation of:

Telephone Services
Internet and Data Services
Security and Smoke Alarm Systems
Audiovisual Systems
Home Automation System
Garden Irrigation System

Supply and install conduits and draw wires through floors and walls as required by the Installers for their wiring. All wiring and conduits shall be concealed.

Advise the Installers when the building is ready to install the cabling or conduit for their installations.

14.29 MECHANICAL SERVICES

Refer to the Mechanical Services Specification, prepared by *Airmax Ltd.*

Allow to coordinate the installation of all concealed ducts, conduits and draw wires, refrigeration and drainage pipes as required by the installer. Allow to install all ceiling access panels and service hatches as shown on the Drawings.

Coordinate the installation of all indoor and outdoor equipment, as Drawn and Specified, in approved locations.

Ensure the location of all supply and return grilles are coordinated within the building. All grilles shall be custom painted/coated in selected colours and finishes to match the surrounding building elements. A schedule shall be coordinated with the Architect or Interior Designer prior to ordering and installation

All control gear, screens, remotes etc shall be located in an approved position set out to suit other Architectural elements such as light switches. Where possible these shall colour-matched.

Allow to coordinate all commissioning requirements of the system.

All work shall be carried out in a tradesman-like manner and strictly in accordance with the Heat Pump Manufacturer's printed instructions and left in perfect working order.

14.30 CAVITY BEHIND APPLIANCES

Construct cavity in wall framing thickness behind all Sanitary Fittings and Appliances for the installation of pipes etc to enable Appliances e.g. Dishwasher, Clothes Washing Machine, Clothes Dryer, etc to be fitted with the front face flush with the adjoining wall or joinery surfaces.

14.31 CEILING ACCESS LADDERS

Supply and fit a Youngman Easiway Loft Ladder and access panel where shown in accordance with the Manufacturer's printed instructions and leave in perfect working order.

Supply and fit Sellwood R28 600mm wide Attic Ladder in location as shown on the Drawings.

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The Ladder shall be installed strictly in accordance with the Manufacturer's Printed Instructions and left in perfect working order.

14.32 THRESHOLDS

Refer to Specification Section 15, Joinery.

14.33 GARAGE DOORS

Supply and fit Dominator fully insulated overhead sectional lift garage door with Horizonal Western Red Cedar panels in Band Sawn Face (BSF) finish, coated and finished as shown on the drawings.

The doors shall be supplied with Low Headroom Kit (200mm) and Dominator Secure Garage Opener. The doors shall be supplied with 2no. Remote Control Units, a keypad operated opener outside of the north edge of the door, and a wall mounted operating switch located in approved position inside the Garage.

Confirm with the Principal for other optional extras such as external openers, auto lock, rechargeable battery backup, auto lock, infra-red safety beams, smart phone control, additional remotes and solar kits and install as required

The Doors shall provide a clear daylight opening(s) as scheduled below:

Form rebates in concrete slabs to suit the thickness and position of the Garage Door in the wall.

The Contractor shall arrange and provide all warranty information to the Principal commensurate with the final specified door and opener system prior to Practical Completion.

The whole installation shall be installed in accordance with the Manufacturer's printed instructions and leave in perfect working order.

14.34 STAIR BALUSTRADES AND HANDRAILS - *TBC with Fabricator/ Joiner*

14.35 FIREPLACE – WARMINGTON OUTDOOR FIREPLACE

Take delivery of Warmington Outdoor Fireplace as scheduled below complete with firebox, adapter, metal heat shield, stainless steel flue kit, stainless steel weathershield, and install as shown on the Drawing and in accordance with the manufacturers printed instructions.

Warmington Outdoor Fireplace 1	
Location	Loggia
Model	Nouveau BBQ
Construction	Mild Steel (Std)
Size	1500
Flue	Single
Gas Starter	None
Extras	Confirm with Principal

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Warmington Outdoor Fireplace 2	
Location	Terrace
Model	Nouveau BBQ TBC
Construction	Mild Steel (Std)
Size	1500
Flue	Single
Gas Starter	None
Extras	Confirm with Principal

Allow to vent the heat cell and provide outside air to the Caitec system with 2no.100mm diameter vent pipes through the building structure to the exterior capped with suitable vermin proof mesh.

Coordinate for the mantels and hearth as shown on the Drawings and complete the installation in accordance with the Manufacturers printed instructions and relevant regulations and leave in perfect working order.

14.36 FIREPLACE – INDOOR SPATHERM WOOD FIRE

Take delivery of Spartherm Single XL Wood Burning Fireplace, complete with Triple Cased Flue Kit, Flue Dropbox, Handle, and Cowl. Install into heat resistant Skamotec 225 heat cell, strictly in accordance with the manufacturers installation instructions and as shown on the Drawings.

Requires air intake from outside or from inside the room where fire installed; refer to Drawings for vent locations. Combustion air drawn from outside via a 150mm diameter pipe is preferred option for optimal burning and efficiency; refer to Drawings for vent locations.
Coordinate for the hearth as shown on the Drawings and complete the installation in accordance with the Manufacturers printed instructions and relevant regulations and leave in perfect working order.

Confirm with Principal and Architect any optional extras as offered, including heat transfer kit to adjacent rooms.

Spatherm Indoor Fireplace	
Location	Living
Model	Single XL (Varia ASh-P8)
Construction	Mild Steel (Std)
Size	1150 (1370 cavity)
Flue	Single
Extras	TBC

14.37 FIREPLACE – ESCEA INDOOR GAS FIRES

Take delivery of Escea Gas fireplaces scheduled below complete with all accessories including fascias, fuelbeds, flue kits, cowles etc. Confirm with the Principal prior to ordering for the inclusion of any other optional extras such as Wire Mesh Screens. Refer to the Drawings for detailing of fireplace walls and surrounds.

External Universal Vertical Powerflue (UVP) Cowls shall be located and installed where shown on the Drawings observing all clearance requirements. Allow to paint the standard metal cowl and rigid liner in a selected paint finish.

Install the appliance and flue components all in accordance with the Manufacturers Printed Instructions and relevant regulations and leave in perfect working order.

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Escea Fireplace Schedule					
Room	**Model No.**	**Fascia**	**Fuelbed**	**Flue Type**	**Extras**
Den	DS1400	Frameless	Woodland	Powerflue	Confirm
Games	DF960	Frameless	Woodland	Powerflue	Confirm

Refer to Specification Section 17, Plumbing for Gas supply and Gas bottle enclosures.

The Principal shall arrange with the Gas Supplier for the supply and installation of the Gas Bottles and Cabinet.

14.38 FREESTANDING FLUE

Supply and fit freestanding flue extension

Room	Fire	Model	Notes
Loggia	Warmington	Nouveau BBQ	

14.39 FIRE SURROUND - *TBC*

14.40 MANTLEPIECE - *TBC*

Fit up mantlepiece as supplied by Joiner as detailed on the Drawings.

Fix 19mm thick Micore 160 heat resisting board in a recess in the bottom surface of the mantelpiece to finish flush with the bottom of the mantelpiece. The board shall extend over the full length and width and to within 10mm of the front edge of the mantelpiece.

14.41 HEARTH - *TBC*

Construct hearth as detailed on the Drawings.

14.42 AIR SUPPLY VENTS

Construct air supply vents to fireplaces as shown on the Drawings with vermin proof grille to exterior, galvanised sheet steel 200mm x 75mm ducting to interior with F.B. finish sliding grille.

14.43 APPLIANCES

Take delivery of all Appliances as shown on the Drawings as scheduled as supplied by the Principal or Others and install in accordance with the Manufacturer's printed instructions.

Schedule:
- Range
- Refrigerator – Plumbed
- Wall Oven
- Cooktop
- Microwave Oven
- Dishwasher/Dishdrawer
- Waste Disposal Unit

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Rangehood
Clothes Washing Machine
Clothes Dryer
Laundry Tub
Extract Fan
Boiling/Chilled Tap

Connect up all Appliances with electrical supplies and control switches and water supply and drainage pipe runs all fixed in positions concealed from view within the wall framing to enable the Appliances to be fixed flush with the finished wall surface, and leave in perfect working order.

14.44 RANGEHOODS - *TBC*

The Principal shall supply the Rangehood.

Allow to co-ordinate and confirm with *Airmax Ltd* for connection of Rangehood/s extract to Mechanical Ventilation system.

Supply and install rigid metal vent pipe strictly in accordance with the Rangehood Manufacturer's printed instructions.

Install Rangehood/s, ducting and cowl (if required) strictly in accordance with the Manufacturer's printed instructions and leave in perfect working order.

14.45 EXTRACT VENTING

Refer to Specification Section 21, Electrical.

14.46 PERGOLA - *TBC*

Construct pergola/s as drawn using selected Hardwood.

14.47 MIRRORS

Supply 6mm Polished Plate Mirrors with coated backing to suit wet areas to the sizes shown on the Drawings with all edges ground, polished and sealed.

Mirrors shall be concealed fixed with adhesive on approved packers to suit Heated Mirror Pads.

The mirrors in Ensuite 1, Shower, Bathroom, Ensuite 2 and Ensuite 3 shall be fitted with Mirror Image Heated Mirror Pads, or similar approved system, to cover the whole surface of each mirror all strictly in accordance with the Manufacturer's printed instructions and leave in perfect working order. The control switch shall be fitted in an approved, concealed position inside the wall cabinet.

14.48 GLASS SPLASHBACK - *TBC*

Supply and install Metro Glass glass splashback backpainted in selected colour to the sizes and position shown in Kitchen.

The splashback shall be glue fixed with approved adhesive.

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14.49 HANDRAILS - *TBC*

14.50 GLASS BALUSTRADES - *TBC*

14.50.1 Channel Fixed Glass Balustrades to *Ensuite 2*: Supply and fix Metro Performance Glass Balustrades in 12mm toughened safety glass as shown on the Drawings using proprietary Freestanding Cantilever Fixing method.

The Balustrades shall be constructed with the top edge at 1000mm above the floor surface with the edges of all panels finishing to straight lines and the face of all panels true to line and plane.

At changes of direction, and intermediate panel junctions, the glazing panes shall be neatly spaced with 10mm gap as shown, all true to line and plane.

Co-ordinate with the Tiler, for finishing of Terrace Paving around Glazed Balustrades.

The whole installation shall be fitted in accordance with the Manufacturer's printed instructions and left rigid and secure.

14.50.2 Shop Drawings: The Supplier shall submit Shop Drawings to the Architect and Principal for review prior to manufacture. The Drawings shall include all relevant dimensions, hardware locations and sizes, fixing types colours, finishes, glass specifications and any other relevant information to completely describe the proposed installation. Approvals shall not reduce the responsibility of the Manufacturer or Installer on the performance of the product or install in any way.

14.51 FRAMELESS GLASS SHOWER SCREENS – VIRIDIAN EUROGLASS

14.51.1 Scope: The work includes the design, fabrication, supply and installation of frameless glass screens and doors to the locations as shown on the Drawings.

14.51.2 Shower Screens and Doors: Supply and install Viridian Euroglass VFloat SuperClear (low iron clear) toughened Grade A Safety Glass screens and doors.

Shower Channels and end caps shall be in custom powdercoated finish in selected colour or polished chrome finish and shall be structurally adhered to the tiles taking care not to penetrate the waterproofing membrane.

The use of metal or glass bracing elements shall be avoided unless absolutely necessary. Should bracing elements be required, use toughened safety glass panels. All bracing elements shall be shown on the Shop Drawings and confirmed with the Architect and Principal prior to manufacture.

14.51.3 Hardware: All hinges, handles, channels and any other optional hardware shall be illustrated on the Shop Drawings for approval by the Architect and Principal. Hinges shall be spaced as required and in selected finish. *TBC by Interior Designer.*

14.51.4 Seals: The glazed door to the Steam Shower shall incorporate proprietary plastic seals to enable sealing of the room.

14.51.5 Shop Drawings: The Supplier shall submit Shop Drawings to the Architect and Principal for review prior to manufacture. The Drawings shall include all relevant dimensions, hardware locations, channel sizes, finishes and glass type and colour and any other relevant information to completely describe the installation.

14.52 SPLASHBACK IN KITCHEN

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Allow a sum for the selected Splashback to the Kitchen Cooking Area and install as drawn.

14.53 OPERABLE LOUVRE ROOF - LOCARNO

Supply and install Locarno RL 200, Motorised Operable Lovre Roof in powdercoat finish in selected colour to the size and position shown on the Drawings.

The Operable Roof shall be fitted complete with proprietary, flat-bottomed gutters and all motorised mechanisms and controls as required and shall be installed strictly in accordance with the Manufacturer's printed instructions and left in perfect working order.

The Louvres shall lift up at the 'north' edge.

Connect drainage from proprietary gutters through the perimeter frame to concealed downpipes.

14.54 WINDOW TREATMENTS - *TBC*

14.54.1 Recessed Blind Extrusions – Single Blinds: Supply and fix Vanda Recessed Flushboxes where shown on the Drawings and in coordination with the final Interior Designers documentation. Supply the aluminium extrusions in selected powdercoated finish complete with end caps and removeable cover plate. They shall be mitred at all corners. The Electrician shall allow to provide the necessary connections to all automated blinds. Ensure all clearances are maintained and complete in accordance with the Manufactures Printed Instructions.

14.55 SMOKE AND HEAT ALARMS – CAVIUS

Supply and install battery operated, Cavius 78mm, Photoelectric Smoke Alarms where shown on the Drawings.

Supply and install battery operated, Cavius 65mm, Heat Alarms with 5yr replaceable battery where shown on the Drawings.

Allow to connect all Smoke and Heat Alarms wirelessly for simultaneous warning. Allow to supply smart remote for alarm deactivation and fix in place in an approved location on site.

14.56 TERRACE PAVING - *TBC with Landscape Architect & Interior Designer*

Refer to the project Specific Documentation prepared by Baxter Design Landscape Architects.

14.57 EXPOSED AGGREGATE CONCRETE PAVING - *TBC with Landscape Architect*

Refer to the project Specific Documentation prepared by Baxter Design Landscape Architects.

The concrete paving outside the Garage shall be constructed with 25mm thick by 100mm deep Hardwood timber battens set out to the grid pattern and to the levels and falls as shown on the Drawings.

The concrete paving shall have an exposed aggregate finish.

These slabs shall be formed and finished using the integral mixing method to give an exposed river gravel finish.

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The Contractor shall supply details of the mix to be used and submit a sample of the finished surface to the Architect for prior approval.

The concrete shall be placed, vibrated, screeded and bullfloated to leave approximately 2mm of cement paste over the aggregates.

The slabs shall be saw cut as shown.

After partial curing this paste shall be washed off to expose the aggregate.

The slabs shall then be cured by laying Hessian sheets lapped and well fixed down at the edges, and retained in place for 48 hours in saturated condition.

After curing a mild acid wash (50% hydrochloric acid) may be applied to remove any remaining cement paste.

The surface shall be thoroughly washed to provide even colouration and texture across the whole surface.

14.58 LIFT

Refer to Specification Section 22, Lift.

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SECTION 15 – JOINERY

15.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

15.2 STANDARDS

Joinery shall be soundly constructed in accordance with best trade practice and conform with the requirements of AS/NZS 4386.1 (Assembly) and AS/NZS 4386.2 (Installation).

All timber shall be of the qualities and grades specified and shall conform to the requirements of NZS 3631, National Grading Rules and NZS 3602:2003 Timber and Wood-based Products for Use in Building.

All solid timber and veneer shall be selected to match the colour and grain of the adjoining timber.

All timber shall be machine dressed on four faces and all surfaces exposed to view shall be machine glasspapered to a smooth finish. Remove all accessible arises, all rough or uneven patches and other surface defects to the satisfaction of the Architects.

All timber shall be seasoned and reduced to a moisture content of 14% based on oven dry weight.

15.3 MATERIALS

15.3.1 Timbers: All joinery timbers shall be as specified of the qualities and grades specified and, where applicable, shall conform with NZS 3631, National Grading Rules.

All adjoining timbers to be natural finished shall be exactly grain and colour matched.

15.3.2 Particle Board: Shall be Customwood MDF Board, or similar approved, of the thickness specified, or adjusted to suit loads as required.

15.3.3 Fastenings: Nails, screws, bolts and other fastenings shall be the best of their respective kinds, be galvanised for exterior work or as otherwise specified or detailed. Lengths and gauges shall be in accordance with sound trade practice. Wood screws shall comply with NZS 841, Wood Screws. Corrugated fasteners shall not be used.

15.3.4 Glue: Wood glue shall comply with BS 4071, Adhesives – polyvinyl acetate for wood. Glues for laminated plastic shall be ICI synthetic resin syrup and hardener for large areas and ICI synthetic resin and gap filler powder for edges. Glues shall be used strictly in accordance with the manufacturer's printed instructions.

15.4 PRESERVATIVE TREATMENT

Treated timbers shall be treated and branded in accordance with NZS 3602:2003, Timber and Wood-Based Products for Use in Building.

All Pinus Radiata timber used in the work shall be preservative treated.

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15.5 FINISH

All timber shall be machine dressed on four faces and all surfaces exposed to view shall be machine glasspapered to smooth finish. Remove all accessible arises, all rough or uneven patches and other surface defects to the satisfaction of the Architect.

Stopping shall be coloured to match where not covered by paint. Exposed knots, twists, checks and woolly grain will not be permitted.

15.6 MOISTURE CONTENT

All timber shall be seasoned either in the open air or in an approved kiln by approved processes and shall be reduced to a moisture content of 14% based on oven dry weight. Kiln dried timber shall be treated in conformity with NZS 632, Kiln Drying of Timber. Joinery shall be adequately stored and protected so as to be retained at the prescribed moisture content after delivery to the site. Where considered necessary, moisture tests shall be carried out prior to manufacture prior to delivery and before fitting on the site. The cost of such tests shall be borne by the material supplier or the Joiner as the case may be.

15.7 EXTERIOR TIMBER WINDOWS AND DOORS

Refer to separate documentation prepared by *ThermaDura* for the specification of all exterior timber Doors and Windows in locations as shown on the Drawings.

This Documentation is attached as an appendix to this Section.

15.7.1 Awning Windows – Operable Electric: Awning windows at high level as shown on the Drawings shall be fixed with UCS Twin Quaser 230v, or similar approved, motors, actuators and brackets, sized to suit each Window. All wiring shall be concealed from view. The installation shall operate silently and smoothly and shall be left in perfect working order.

The colour and finish of the Window Operators shall match the colour and finish of the Window Frames. All cabling shall be concealed.

15.7.2 Schedule of Electric Opening Windows - *TBC*

Window	Room	Notes

Fix the Control Pad to be located on wall in approved location, with provision to connect to home automation system.

The Timber Window and Door Supplier shall provide Shop Drawings showing the position and wiring details of motors, actuators, brackets, cabling and controls for approval by the Architect in writing prior to manufacturing and installation.

All Components shall be co-ordinated to suit Window Treatments.

15.8 EXTERIOR DOORS

15.8.1 Exterior Door Schedule: Refer to the Architectural Drawings for all door dimensions, frame types, door leaves, hinges and hardware.

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15.8.2 Custom steel clashed Entry Door: Door AJ02 shall be a custom insulated door clashed with blackened steel to match adjacent cladding. The Joiner shall supply shop drawings for approval by the Architect prior to construction of the door. Fix Raven RP31 Door Seal at bottom of Door.

Door AJ02 shall be fitted with a selected Fritz Jurgens pivot door System to be confirmed with Joiner.

15.9 INTERIOR DOORS

15.9.1 Interior Door Schedule: Refer to the Architectural Drawings for the Interior Door Schedule for all door dimensions, frame types, door leaves, hinges and hardware.

15.10 STAIRS

Refer to the Architectural Drawings for stair and handrail specifications.

15.11 JOINERY FITTINGS

Refer to the documentation prepared by the Interior Designer for the specification and location of all benchtops, carcase work, door and drawer fronts, shelving, benchtops, fixtures, hardware, accessories, and finishes.

In lieu of detailed interior fitout design. the Interior Architect shall prepare all Monetary Sums relating to interior joinery fitout and provide to the Contractor for inclusion in pricing documentation.

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SECTION 16 – ROOFING

16.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

The supply and installation of the roofing shall be in accordance with the roofing manufacturers printed instructions, the provisions of the New Zealand Building Code E2/AS1 and the current version of the Metal Roof and Wall Cladding Code of Practice.

All materials and all fixings throughout the building shall meet the requirements of NZS3604 2011, including Section 4, Durability, to suit the appropriate exposure zone.

The Exposure Zone for the Site is:

Zone B: Low – Inland areas with little risk from wind blown sea spray salt deposits.

The Wind Zone for the Site is:

Very High - with a maximum Ultimate Limit State (ULS) wind speed of 50/ms

Supply all Roofing complete with all necessary battens, underlays and flashings.

Fix all Roofing, gutters and flashings, square and true to line to ensure a neat and tidy finish and perfect water and weathertightness.

Refer to the Drawings for location and extent of each roofing type.

16.2 FLASHINGS

16.2.1 General: The Roofing Contractor shall be responsible for the fitting of flashings to all roof penetrations and to all roof edges, for example, parapets, adjoining walls, ridges, cappings, etc.

16.3 PASSIVE ROOF VENTILATION

Refer to Specification Section 14, Carpentry.

Allow to coordinate with the Roofer for the inclusion of passive eave and ridge ventilation in accordance with the Roofing Manufacturer's printed instructions, the provisions of the New Zealand Building Code E2/AS1 and the current version of the Metal Roof and Wall Cladding Code of Practice, Section 10, Roof Ventilation.

16.4 NURALITE NURAPLY 3PM WARM ROOF SYSTEM

Refer to Appendix attached to this Section for full Nuralite Nuraply 3PM Specification and Certificate of Conformity.

16.4.1 Roofing: shall be 4mm thick Nuralite Nuraply 3PM, 2 Part Bituminous Membrane – in selected colour to be confirmed by Principal.

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16.4.2 Workmanship: All of the work shall be carried out by approved skilled tradespeople strictly in accordance with the Manufacturer's printed instructions and shall be left neatly finished with all parts true to line and perfectly watertight..

16.4.3 Warranty: provide a full system warranty which warrants the roofing installation and materials watertight and free from defects for twenty (20) years. The Contractor shall allow to coordinate with Nuralite to register the Project at the beginning of the Project, pay the required registration fee and provide the Principal with the required Documentation at the completion of the job.

16.5 METAL ROOFING – SINGLE LOCK STANDING SEAM

16.5.1 Roofing: shall be Single Lock Standing Seam Roofing in 0.55g BMT Colorsteel in Endura finish in selected colour and G10 low gloss finish cut to single lengths extending from ridge to spouting.

16.5.2 Ridging: shall be purpose made continuous, ventilated ridge cap with a maximum overall width of 200mm, in the same metal and finish as the Roofing, in long lengths, as detailed.

16.5.3 Barge Flashings: shall be purpose made in same metal finish as the Roofing in continuous lengths and as detailed.

Underlay: 3D Separation Mesh (8mm) over Pro Clima Solitex Mento 3000 roofing underlay on plywood sarking, strictly in accordance with the manufacturers printed application guide and relevant standard construction details. The underlay shall be free from tears and watertight.

16.5.4 Purlins: shall be ex 75x50mm, H1.2 treated Pinus Radiata laid on the flat, spaced at 450mm centres (per WorkSafe 'Working on roofs - good practice guidelines' for eliminating falls through design) fixed in accordance with the manufacturer's specifications and NZS 3604.

16.5.5 Ventilation Battens: Supply and fix selected 45x20mm ventilated battens fixed over the purlins rafters to provide ventilation to the roof cavity.

16.5.6 Plywood Sarking: shall be 17mm DD Grade H3.2 CCA Treated Structural plywood.

16.5.7 Fixing: All roofing components shall be carefully handled to prevent damage in transit and installation. Damaged roof components will not be accepted.

Fix purlins in long lengths at 600 centres maximum with joints staggered and secured in accordance with NZS3604.

Fix castellated ventilation battens over purlins.

Fix plywood sarking strictly in accordance with the Roofing Manufacturer's printed instructions.

Fix underlay over plywood lapped 200mm at joins, drawn tight and securely fixed. The underlay shall be free from tears and watertight.

Roofing shall be laid in single lengths with stopped ends at ridges and lipped at gutters.

The Roofing seam set-out is to be coordinated and confirmed by the Project Manager and Architect, for alignment of seams with Spouting Brackets and various roof penetrations

Stopped ends shall be formed in each tray of the roofing using the purpose-made tool. Take care to avoid tearing the metal and all sheets so damaged shall be replaced.

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Carry roofing 50mm over all spoutings and the ends of all trays shall be lipped with the purpose-made tool.

Clip roofing to all gutters in accordance with the Manufacturer's printed instructions.

At parapets, walls and ridges and any other position where restriction of movement could take place a gap of approximately 25mm shall be left.

The roofing shall be fixed strictly in accordance with the Manufacturer's printed instructions with standard double clip fastenings at every purlin for each pan. The clips shall be fixed at the purlins with fasteners supplied for the purpose by the Roofing Manufacturer.

Fix ridging at ridges and hips and barge flashing at gables in accordance with the Manufacturer's printed instructions.

16.5.8 Bird and Vermin Proofing: Fix VENT over fascia vent Model G2500N at the eave line, in positions shown and as detailed on the Drawings.

16.5.9 Workmanship: All of the work shall be carried out by skilled tradespeople strictly in accordance with the Manufacturer's printed instructions and shall be left neatly finished with all parts true to line and perfectly weathertight.

Remove all metal swarf, including metal offcuts, drillings, filings, etc, and all other waste construction materials from the roof, gutters and spoutings.

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16.6 SLATE ROOFING

16.6.1 Roofing: Supply and install selected Canadian slates in accordance with the slate manufacturer's specification attached as an appendix to this Section.

All roofing components shall be carefully handled to prevent damage in transit and installation. Damaged roof components will not be accepted.

16.6.2 Fixing Battens: 50x30mm H3.2 treated horizontal slate fixing battens fixed atop counter battens @210 c/c

16.6.3 Counter Battens: 20x45mm H3.2 treated counter battens perpendicular to fixing battens, fixed atop each rafter.

All battens shall be checked for moisture content, particularly ridge purlins, and shall have a moisture content of 16% maximum to prevent the occurrence of buckling of ridge flashings.

16.6.4 Fixings: Fix roofing through to battens with approved, stainless steel (304, consider 316 for longer-life option) clout nails all set out to perfectly straight lines to the fixing pattern as required by the roofing supplier with fixing length to achieve a minimum of 35mm embedment into the purlins.

16.6.5 Underlay: Pro Clima Solitex Mento 3000 roofing underlay on plywood sarking, strictly in accordance with the manufacturers printed application guide and relevant standard construction details.

The underlay shall be free from tears and watertight.

16.6.6 Passive Roof Ventilation: Refer to Specification Section 14, Carpentry.

16.6.7 Bird and Vermin Proofing: Supply and fix VENT Eaves Vent 1200N at the eaves.

16.6.8 Workmanship: All the work shall be carried out by skilled tradespeople strictly in accordance with the Manufacturer's printed instructions and best trade practice and shall be left neatly finished with all parts true to line and perfectly watertight.

Remove all waste construction materials from the roof, gutters and spoutings.

16.6.9 Warranty: Provide a written warranty which shall guarantee the roof watertight and free from defects in materials and workmanship for five (5) years.

16.7 WARRANTIES – METAL ROOFING

16.7.1 Warranty: Provide a printed written Warranty from the roofing rollformer/supplier and fully supported by the Steel Supplier which shall Warranty the roofing watertight and free from defects in materials and workmanship for 18 years covering the Paint Surface against flaking, peeling and excessive fade, and 30 years against Perforation as a result of corrosion.

The printed Warranty shall be provided by the Rollformer in accordance with the requirements of the Steel Supplier. A draft Warranty, if different from the periods stated above, shall be provided with the Tender. In the absence of an alternative draft Warranty, the Warranty Periods as stated above shall apply.

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16.8 SPOUTINGS

16.8.1 Custom Colorsteel Spouting 1: Supply and fix custom Colorsteel spouting as indicated on the Drawings.

Supply and fix custom-made 0.95 gauge Colorsteel Maxam Spoutings in selected colour and finish to match roofing formed to the profile as detailed (150x 200 square). Internal and External Brackets shall be fabricated from 50x5mm Mild Steel with selected powdercoat finish to match at 600 centres max. End Caps shall be reinforced to prevent buckling. Spouting shall be fixed with fall to outlets not exceeding 3mm per 1M length in perfectly straight sections.

Provide a printed warranty from the rollformer/supplier and fully supported by the rollformer manufacturer which shall guarantee the Spoutings watertight and free from defects in materials and workmanship for 30 years against perforation as a result of corrosion.

Supply and fix Nylex Gutter Guard to the full length of all Spouting. - TBC

16.8.2 Custom Colorsteel Spouting 2: Supply and fix custom Colorsteel spouting as indicated on the Drawings.

Supply and fix custom-made 0.95 gauge Colorsteel Maxam Spoutings in selected colour and finish to match roofing formed to the profile as detailed. Internal and External Brackets shall be fabricated from 50x5mm Mild Steel with selected powdercoat finish to match at 600 centres max. End Caps shall be reinforced to prevent buckling. Spouting shall be fixed with fall to outlets not exceeding 3mm per 1M length in perfectly straight sections.

Provide a printed warranty from the rollformer/supplier and fully supported by the rollformer manufacturer which shall guarantee the Spoutings watertight and free from defects in materials and workmanship for 30 years against perforation as a result of corrosion.

Supply and fix Nylex Gutter Guard to the full length of all Spouting. - TBC

16.9 DOWNPIPES

Supply and fix 0.55BMT Colorsteel Maxam 80mm diameter in selected colour on galvanised powder coated holder batts in the same colour as the downpipe at 900 mm centres, to perfectly vertical lines.

Changes in vertical direction of the Downpipes shall not be permitted except in the positions and at the angles as shown on the Drawings. Joints shall be mitred and welded.

Proprietary elbow joint connections shall not be used.

Note: The Stormwater Drainage connections shall be coordinated in advance to suit the location and size of the downpipes and slab edge thickening and detailing prior to forming of the slab to ensure there is no requirement to have offsets or cranks in the vertical downpipes.

Carry the foot of each Downpipe inside the socket of the drain outlet and seal in place with cement mortar haunching finishing 150mm above finished ground level.

Fit PVC domed leaf baskets to the top of each Downpipe.

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16.10 WARRANTIES – METAL SPOUTING AND DOWNPIPES

16.10.1 Warranty: Provide a printed Warranty from the roofing rollformer/supplier and fully supported by the Steel Supplier which shall Warranty the Colorsteel Spoutings and Downpipes watertight and free from defects in materials and workmanship for 10 years covering the paint surface against flaking, peeling and excessive fade, and 15 years against perforation as a result of corrosion.

16.11 ROOF PENETRATIONS - *TBC*

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SECTION 17 – PLUMBING

17.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

All Sanitary Work shall, unless otherwise noted, be carried out in accordance with the Acceptable Solutions G12/AS1, Water Supplies, and G13/AS1, Sanitary Plumbing, of the NZ Building Code and AS/NZS 3500, Plumbing and Drainage and shall be carried out by Registered Tradesmen and, subject to the Regulations, be in accordance with the Drawings and this Specification and to the satisfaction of the Local Authority Inspector and the Architect.

The work includes the supply and fitting up of all plumbing, soil, waste and vent pipes, gutters, spoutings and rain water pipes and the supply and fitting of all Sanitary Fittings, taps, faucets, valves and cocks as necessary.

All materials shall be of the gauge, width, size and type specified, shall be the best of their respective kinds and shall comply with all relevant standard specifications.

All pipes shall be securely fixed and spaced from the structure by resilient mounts.

17.2 WATER PIPES

All hot and cold water pipes shall be ‘Dux Secura Gold’ or equal approved Polybutylene 1 piping system to comply with AS/NZS 2642 and shall be installed to the requirements of AS/NZS 3500 and in accordance with the requirements of the NZ Building Code.

17.3 WASTE AND VENT PIPES

Soil, waste and vent pipes shall be manufactured from PVC-U complying with AS/NZS 1260 PVC-U Pipes and Fittings for Drain, Waste and Vent Applications.

Supply Acoustop Barrier Wrap supplied by Forman Building Systems or Acoustiflex PL supplied by Allproof Industries and fix to all waste and soil pipes from Upper Floor Fittings, all strictly in accordance with the Manufacturer’s printed instructions.

Supply and fit Studor Air Admittance Valves instead of exposed vent pipes. Valves shall be fitted in accessible positions in the roof space and shall be insulated to protect against freezing.

Where the Plumber considers that it is absolutely necessary for pipes to extend through the roof, the Plumber shall provide a proposal to the Architect for approval before proceeding with the work. In these cases, it is expected that the vents shall be grouped into one vent pipe below roof level, and routed to a position concealed from view e.g. on the other side of a ridge. The pipe shall extend to 450mm maximum above roof level and be fitted with PVC baskets.

Refer to Specification Section 18, Drainage for wastes to tiled showers.

Refer to Schedule of Plumbing Fittings by Interior Designer for Shower and Floor Wastes.

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17.4 PIPE RUNNING

Liaise with the Contractor before construction to determine the routing of pipes to ensure that all water supply, soil, waste and vent pipes shall be concealed from view within the structure of the building. No pipes shall be fitted in positions exposed to view.

All waste pipes shall be fitted securely to maintain the minimum required falls to ensure a quick and quiet discharge from each fitting.

All soil, waste and vent pipes shall be fitted with cleaning eyes at all branches and changes of direction.

All soil and waste pipe shall be installed as per the Manufacturer's printed instructions using sound dampening brackets where required to provide sound insulation.

All supply and waste pipes and control cocks at Basins and Toilet Flushing Cisterns shall be concealed from view. If fittings are concealed in mortar or concrete the fittings shall be wrapped with a suitable material against corrosion.

If supply and waste pipes can not be concealed and, following the approval of the Architect, they shall be fabricated to straight lines or a perfect radius with the minimum number of bends and chrome plated. If exposed traps are necessary, supply pipe and fit Chrome Plated, Bottle Traps.

All pipes shall be supported at 1.0M max centres and anchored at each and every change of direction using brackets or clips suitable for pipes to prevent sagging and vibration.

17.5 PIPE INSULATION

All cold water pipework exposed to the outside air temperature and all hot water pipework regardless of location, shall be insulated with Insul-tube or equal approved pipe insulation being 22 mm wall thickness for all sizes of pipework. Bends shall be segmented and wrapped. All insulation shall be fitted in accordance with the Manufacturer's printed instructions and to approval.

17.6 COLD WATER SUPPLY

The plumber shall verify the location of the established connection point on site prior to preparing their tender. Refer the Drawings for surveyed location of all services. Run pipes from this existing connection point, complete with all fittings, support and fixings, joins and install to manufactures specifications. Size all pipes, branches and connections to deliver the acceptable flow rate to NZBC G12/VM1 or NZBC G12/AS1 Table 3. Allow the expected concurrent use of adjoining fixtures and size the piping layout to eliminate loss of pressure at any point by simultaneous draw-off.

Pipework support spacing to be firmly fixed and buffered to eliminate noise and hammer, with preformed tee-connection take-offs and branches, with machine made 3 diameter bends, complete with necessary valves and fittings. Conceal pipework and pressure test before the wall linings are fixed.

Supply and fix an Apex 3:1 Filter/Isolator/Non-return Valve in an in-ground toby box to the supply pipe in an accessible position approved by the Architect.

Connect 25mm water supply pipe at the edge of the Building.

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Run separate 25mm pipes to Hot Water Cylinder(s), Bath(s) and Shower(s) and 16mm supply pipes to all other fittings.

Supply and fix an accessible Apex 3:1 Filter/Isolator/Non return Valve in an in-ground toby box to the cold water supply pipe in an approved position in the garden.

Supply and fix a pipe to drain the whole water supply system including the Hot Water Cylinder/s complete with a stop cock in a position approved by the Architect.

17.7 HOT WATER SUPPLY

Refer to the documentation prepared by Airmax Ltd for the specification and location of all Hot Water Cylinders complete with seismic stays, overflow tray and drain to exterior.

Provide a printed warranty from the manufacturer of the Hot Water Cylinder which shall warranty the Hot Water Cylinders free of all defects for a period of ten years from the date of Practical Completion of the Contract.

Allow to run separate 25 mm supply pipes to the Shower(s) and to the Bath(s) and a further, separate 16 mm supply pipe to serve all other fittings.

Supply and fix a 3-port tempering valve to hot water supply pipe set at 55ºC.

Supply and fix drain point and Control Tap for the Hot Water Cylinders and run drain to the exterior of the building. If a drain to the exterior is not practical, supply and fix a Hose Tap threaded for the connection of a hose for drainage.

17.8 GAS SUPPLY AND INSTALLATION

17.8.1 Gas Supply: The Principal shall arrange with the Gas Supplier for the supply and installation of the Gas Bottles and Cabinet.

17.8.2 Gas Installation: The Gas Cylinders shall be installed in accordance with all Regulations and be securely supported and fitted with approved rain cover.

Supply and install concealed Rehau Rautitan gas pipes and Rautitan gas fittings including all control valves etc to service Gas Califont(s), Gas Fireplace(s), Gas Cooktop(s), Gas BBQ Bayonet(s), all strictly in accordance with current version of the MBIE 3 Gas Regulations.

Rautitan gas fittings shall be made of DZR Brass with yellow marking with Compression Sleeve Jointing Method, manufactured in accordance with AS 2345. Rautitan gas pipe made of peroxide cross-linked polyethylene PEX/Al/PE composite pipe with the yellow outer layer, certified to AS 4176.8, Approval mark AMI75687, maximum operating pressure 70kPa, maximum operating temperature 60ºC, with Design Life 50 years and 25 year Rehau Manufacturer's Warranty. Installers to be a member of the Rehau Authorised Installer Network (RAIN), familiar with the materials and the techniques specified in the Installation of Rautitan gas strictly in accordance with AS/NZS 5601.1 and the Manufacturer's printed instructions.

17.8.3 LPG Cabinets: Supply and fix ENCLOSE Gas Bottle Enclosure in selected powdercoat finish strictly in accordance with the Manufacturer's printed instructions and leave in perfect working order. *TBC*

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17.9 GAS FIREPLACES

17.9.1 Refer to Specification Section 14, Carpentry for all Fireplaces.

17.10 SANITARY FITTINGS

Take delivery of Principal supplied Sanitary Fixtures and Fittings and fix in place where shown in the Interior Architects Drawings in accordance with the Manufacturers Printed Instructions and best trade practice. Remove all packing and labels from fittings and leave in perfect working order.

17.11 TAPS

Refer to the documentation prepared by the Interior Designer.

17.12 SHOWER MIXING VALVES

Refer to the documentation prepared by the Interior Designer.

17.13 SHOWER ROSES

Refer to the documentation prepared by the Interior Designer.

17.14 HOSE TAPS

Supply and fix Methven Model 19 x 15 mm unpolished Brass Hose Taps fitted 600mm above finished ground level in positions shown on the Drawings. Note that supply pipes shall be concealed in the wall.

17.15 BOILING / CHILLED / SPARKLING WATER TAP

Refer to the documentation prepared by the Interior Designer.

17.16 APPLIANCES

Refer to the documentation prepared by the Interior Designer.

The Principal or their representative shall prepare a schedule of all appliances confirming their plumbing requirements. The Contractor shall allow to liaise with the Principal to confirm the contractual arrangements on the supply of all appliances.

Allow to install the hot and cold water supply pipes and drainage pipes necessary for the Appliances concealed within the wall framing.

Fix remote stopcocks in approved concealed positions for the Dishwasher, Refrigerator and Clothes Washing Machine with hose connections fixed within the thickness of the framing behind the Appliance to allow the Appliances to be fixed flush with the finished wall surface behind, and leave in perfect working order.

Allow to take delivery of all appliances as scheduled and as shown on Drawings.

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17.17 VENTILATION DUCT

TBC with Interior Designer

17.18 WATER FILTER

TBC with Interior Designer

17.19 WATER FILTER FOR REFRIGERATOR

TBC with Interior Designer

17.20 FLOOR DRAINS / LEVEL THRESHOLDS / CHANNELS / SUMPS

Refer to Specification Section 18, Drainage.

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SECTION 18 – DRAINAGE

18.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

All drainage work shall, unless otherwise noted, be carried out in accordance with the Acceptable Solutions E1/AS1, Surface Water and G13/AS2, Foul Water Drainage, of the NZ Building Code or Standards Association of Australia, AS 3500: Part 2: National Sanitary Plumbing and Drainage Code, and shall be carried out by a licensed Drainlayer strictly in accordance with the Drawings and this Specification and all relevant regulations, Local Authority and Department of Labour (OSH) requirements.

18.2 SCOPE OF THE WORK

The work includes the supply and installation of Stormwater Drains and Foul Sewer Drains as required to connect to Local Authority services.

18.3 MATERIALS

Drains shall be PVC-U pipe and fittings to conform to AS/NZS 1254 PVC-U Pipes and Fittings for Stormwater and Surface Water Applications.

18.4 DRAINS

Lay PVC-U drains of the sizes shown on the Drawings and as required by the Regulations. Pipes shall be laid and bedded uniformly using compacted granular material so that every pipe and fitting rests evenly on a solid bearing throughout the whole length of pipe.

Provide all inspection points, rodding points, inspection chambers or access chambers as required by the NZ Building Code.

All drains shall be left in perfect working order with trenching backfilled to finished ground level.

18.5 DRAINS UNDER THE BUILDING

Drain pipes laid under concrete floor slabs shall be in straight sections without junctions and with access points at both ends brought to the surface of the ground or slab. All under floor drains shall be encased in 100mm concrete all round.

18.6 WASTEWATER SYSTEM

Refer to the Architectural Drawings for Wastewater System designed by *Mason & Wales Architects*

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18.7 STORM WATER SYSTEM

Refer to the Architectural Drawings for Wastewater System designed by *Mason & Wales Architects*

18.8 GROUND DRAINS

Lay 110mm Iplex NEXUS® Hi-Way Heavy Duty Subsoil Road Drainage System drains just below the lowest floor level behind all retaining walls.

Fill around drains and behind retaining walls with free draining material and cover with a layer of filter cloth.

Connect ground drain to a mud tank and into the stormwater services.

18.9 EXTERIOR SURFACE WATER DRAINS – LEVEL THRESHOLD - *TBC*

Supply and install Allproof Industries PC180L level threshold perimeter drains in the locations as shown on the Drawings with custom made SS Wedge Wire grates. Ensure internal and external corners are mitred not butt jointed and care is taken to detail around changes in external cladding thickness.

Connect to stormwater drains via pit/sump.

Cast concrete channel with Allproof precast concrete inline sump and allow to connect to the stormwater drains.

18.10 EXTERIOR SURFACE WATER SUMPS - *TBC*

Install surface water sumps as required by the Regulations at positions indicated on Drawings. Allow to connect to the stormwater drains.

Surface water sumps to concrete and tile terraces shall be Allproof Industries 350x350mm Plastic Pits with Aluminium Grates in custom powdercoated colour.

Surface water sumps to concrete driveway areas shall be Allproof Industries 375x375mm Polymer Concrete Pits with risers as required with Cast Iron Grates.

18.11 EXTERIOR SURFACE WATER DRAINS – LINEAR STYLE

Supply and install Allproof Industries 100MM Opening Polymer Concrete TBC grate to the locations shown on the Drawings. Supply with all accessories including joiners, end caps and inline sump as required and connect to the stormwater system.

18.12 SHOWER WASTES

Shower Waste – Tiled Grate: Supply and install Allproof Industries Tile Waste Kit with 80mm SS Invisidrain with tile insert in the positions shown on the Drawings fixed flush with the floor surface and connect to waste pipes.

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Shower Waste – Tiled Floors – Channel: Supply and install Allproof Industries Vision Series Stainless Steel channel grate system with 80mm outlet and Tile Insert fixed flush with the floor surface and connect to waste pipes.

Refer to the Drawings for location and sizes of shower wastes. Confirm with the Interior Designer prior to ordering.

Install all shower wastes in accordance with the manufacturers printed instructions and leave perfectly watertight.

Refer to Specification Section 26, Tiling

18.13 AS-BUILT DRAINAGE PLAN

Prepare dimensioned, As-Built Drawings to scale of the whole Drainage System and submit to the Main Contractor and Principal for submission to the Local Authorities to satisfy the Code of Compliance Certification at the completion of the work.

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SECTION 21 – ELECTRICAL

21.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

All Electrical work shall conform to the NZ Building Code, AS/NZS 3000, Electrical Installations, shall be carried out by registered tradesmen and subject to the Regulations, be in accordance with the Drawings and this Specification and to the satisfaction of the Local Supply Authority and the Architects.

The work in this Section includes the supply and installation of meter panels, distribution boards, cabling, wiring, light fittings, switches, sockets etc to complete the work as shown and specified and shall be carried out in accordance with best trade practice. All positions as shown on the Drawings are approximate only and must be confirmed with the Principal before final installation. Any alteration of position of a switch, socket or light fitting within the same room will not be considered as grounds for extra work.

21.2 MAINS

The Electrician shall verify the location and capacity of the established connection point on site prior to preparing their tender. Refer the Drawings for surveyed location of all services.

Provide and install an underground TPS mains supply from Local Power Supply Authority Service and run to Meter Board in accordance with Local Authority requirements. Cooperate with the Drain Layer and Telecommunications Installer to the share trench if possible. The Mains Cable shall be sized to supply the Electrical Load as indicated by the electrical requirements shown on the Drawings and in this Specification.

21.3 DISTRIBUTION BOARD

Supply and fix a metal enclosed, flush mounted Distribution Board containing miniature circuit breakers and switches for all circuits and the Smart Meter in the positions shown on the Drawings. Allow space for additional circuits to be incorporated at a later date.

21.4 METERING

The Distribution Board shall house a Smart Meter suitable for single phase. The Smart Meter selection shall be as coordinated with the Local Lines Company to ensure compatibility. Install in accordance with the Manufacturer’s printed instructions.

21.5 WIRING

All wiring of sub-circuits shall be carried out in TPS cabling of sufficient size for the intended use of fittings.

Electrical cables in XPS insulation shall be run in PVC or PE conduit.

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21.6 ACCESSORIES

All switches (vertical format) and socket outlets (horizontal format) shall be as selected by the Interior Designer and confirmed with the Architect/ Principal.

Supply and fix HPM Excel 30mA Electresafe or PDL 695RCD protected power points to wet areas as required by Regulation in locations confirmed on the Site by the Principal.

Provide remote switches in approved concealed positions to activate separate socket outlets, also in concealed position, to the Oven, Cooktop, Refrigerator/s, Washing Machine, Clothes Dryer, Dishwasher, Rangehood, Towel Rail Heaters and the boiling/chilled tap, etc.

Schedule of Sensor Activated Light Switches
Room TBC

Schedule of Time Delay Switches
Room TBC

Light switches (vertical format) shall be centred at 1000mm above the floor and socket outlets (horizontal format) shall be fixed with their bottom edge 100mm above the top of the skirting unless otherwise noted.

Schedule of Light Dimmers
Room TBC

Place and orientate the lights to cover the whole perimeter of the house even if they are not required for other reasons.

Note: These lights are to function as the “security system” to illuminate the adjoining area i.e. not all exterior lights for the house, to illuminate the whole of the area surrounding the house.

Location of Movement Sensors
Room TBC

21.7 RECCESSED FLOOR BOXES

Supply and install Cableaway FB Series Floor Outlet Box complete with 19mm recessed stainless steel lid to the locations shown on the Drawings. The Contractor shall allow to recess the boxes to ensure a flush transition at the specified floor finish.

The floor box shall include 4no auto switched power plates and 4no data plates.

Alternatively, the Contractor shall form a suitable recess in the concrete floor, line the inside and coordinate for a removable flush mounted lid capped with the surrouniding floor material. The electrician shall all for the box to be populated with the required outlets.

21.8 LIGHT FITTINGS

Refer to the documentation prepared by *ECC* for the specification and location of all Light Fittings.

The Principal shall arrange for the supply of all Light Fittings and lamps.

Refer to Specification Section 33, Monetary Allowances for the Prime Cost Sum for the supply only of light fittings and lamps.

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The Architect, Interior Architect or Consulting Lighting Designer shall provide the Contractor and Principal with a coordinated lighting layout. The Electrician shall allow to mark up the position of all Light Fittings for approval on Site prior to fixing. After the positions have been approved, fix all light fittings in position, neatly, securely and true to line, and leave in perfect working order.

21.9 HEATED TOWEL RAILS

The Electrician shall arrange for the supply of all Heated Towel Rails.

Refer to the documentation prepared by the Interior Designer for the specification and location of all towel rails and isolation switches and accessories.

The Towel Rails shall be fitted to the setout shown on the Drawings and as approved by the Principal or their representatives.

All wiring shall be concealed unless otherwise specified. Locate the isolating switch and any control gear, timers etc in approved position and in accordance with the manufacture's requirements.

Heated Towel Rails shall be installed strictly in accordance with Manufacturer's printed instructions and left in perfect working order.

21.10 BATHROOM FAN HEATERS

Allow provision to 'wire up' bathroom fan heaters in approved locations for future install. Cables shall be neatly coiled in the wall for future access.

21.11 EXTRACT FANS

Refer to the Mechanical Services Specification, prepared by *Airmax Ltd.*

The fans shall have a quiet operation and be switched without run-on timers (Electrician/ Specialist Contractor to confirm with Principal) to the light switch location within the room or in alternative approved position.

Supply and install rigid metal ducting strictly in accordance with the extract fan manufacturer's printed instructions and exhaust roof where shown on the Drawings. The ducting shall be installed with the minimum number of bends possible taking into account the fan suppliers recommendations.

Inline fans shall be positioned within the ceiling space to allow for periodic servicing or replacement.

Where multiple extract cowls penetrate the envelope of the house, these shall be grouped together where possible and share a common flashing. Where possible and when inline fans have been specified, ducting shall share a common cowl(s). All visible cowls shall be in custom powdercoated finish in selected colour.

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Schedule of Extract Grilles				
Room	**Mounting Material**	**Supplier**	**Ceiling Grille**	**Notes**
Ens. 1	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Ens. 1 Shower	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Powder Room	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Scullery	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Ens. 2	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Bathroom	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Ens. 3	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Ens. 3 Shower	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Shower Room	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Laundry Guest	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic
Laundry	Plasterboard	Ventech	VSQ 250M	Frameless – Square Magnetic

The Extract Fans shall be switched from the light switch, with adjustable time delay, switch-off function.

21.12 MIRROR DEMISTERS

Supply and fix mirror demister system to cover the whole surface of the fixed mirror or as shown on the Drawings to each Ensuite and Bathroom and leave in perfect working order all strictly in accordance with the Manufacturer's printed instructions. The control switch for the demister system shall be fitted in an approved concealed position or as shown on the Drawings.

21.13 SPECIALIST SERVICES

Allow to cooperate with Specialist Installers selected by the Principal regarding the installation of:

Telephone Services
Internet and Data Services
Security and Smoke Alarm Systems
Home Entertainment, TV, Audio and Visual Systems
Home Automation System

21.14 SECURITY ALARM SYSTEM

Allow to cooperate with a Separate Contractor regarding the installation of a Security Alarm System.

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Supply and install conduits and draw wires through floor and walls as required for the installation of the cabling. All wiring and conduits shall be concealed.

21.15 SMOKE AND THERMAL ALARMS

Refer to Specification Section 14, Carpentry

21.16 TV AERIAL/DISH

Allow to cooperate with a Separate Contractor regarding the installation of the TV aerial and cabling.

Supply and install conduits and draw wires through floors and walls as required for the installation of the cabling. All wiring and conduits shall be concealed.

External aerials and satellite dishes shall be fitted in concealed locations approved by the Architect before installation. Fixing in highly visible locations such as chimneys is not permitted. The satellite dish(s) shall be colour matched to the mounting surface when this is an option.

21.17 AUDIOVISUAL SYSTEM - *TBC*

Allow to cooperate with a Separate Contractor regarding the installation of the Audiovisual system and the T.V. aerial and cabling from the Aerial to the Patch Panel.

Supply and install conduits and draw wires through floors and walls as required for the installation of the cabling. All wiring and conduits shall be concealed.

Supply and fix 'splitter' in a central location equidistant from TV aerial socket outlets and aerial positions.

Supply and fix coaxial TV cable and run from splitter to each TV aerial socket and from splitter to aerial to be located in an approved location. The TV aerial shall be fitted by Others.

External aerials shall be fitted in locations approved by the Architect before installation.

21.18 SMART PACKAGE LIGHTING CONTROL - *TBC*

21.19 DUCTED HEATING AND COOLING SYSTEM

Refer Specification, Section 14, Carpentry.

Allow to cooperate with Specialist Sub-Contractor regarding the installation of the Heating and Cooling System. Confirm with the supplier all for power supply requirements for the indoor and outdoor units. Supply all necessary conduits and draw wires through the floors and walls as required for the installation of the cabling. All wiring and conduits shall be concealed.

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21.20 WIRE-UP

Allow to wire to and connect up the following equipment which will be supplied as noted, with power supplies in concealed positions and remote, accessible control switches.

Item	Supplied By	Notes
Hot Water Cylinders	Electrician	
Ovens	Principal	
Cooktops	Principal	
Microwave	Principal	
Waste Disposal Unit	Principal	TBC
Boiling / Chilled Tap	Principal	TBC
Dishwasher / Dishdrawer	Principal	
Rangehood	Principal	
Washing Machine	Principal	
Clothes Dryer	Principal	
Extract Fans	Electrician	
Skylights	Contractor	TBC
Towel Rail Heaters	Electrician	
Bathroom Fan Heaters	Electrician	TBC
Undertile Heating System	Electrician	
In Slab Heating System	Specialist Contractor	
Mirror Demisters	Electrician	
Electric Window Treatments	Specialist Contractor	TBC
Ducted Heating and Cooling System	Specialist Contractor	
Gas Fireplaces	Plumber	
Garage Door System	Contractor	
Spa Pool	Principal	TBC
Security System	Specialist Contractor	TBC
Passenger Lift	Specialist Contractor	
Electric Vehicle Charger	Electrician	TBC

21.21 UNDER TILE HEATING – DE-VI / TECCOM SYSTEM

Refer to the documentation prepared by *Tec Com Ltd.*

This Documentation is attached as an appendix to this Section.

Supply, install and commission DeVi Thin Mat Under Tile heating complete with Devitiouch / Ecofloor digital thermostats incorporating optional Wi-Fi control and NTC floor sensors.

Equipment supplied by Tec Com Limited Dunedin, phone (03)455 0080 / 0800 338 443).

Design as per attached drawings and schedule and strictly in accordance with manufacturers printed instructions.

All mats shall comply with NZ Standard 60335 (flexible sheet heating) providing a full earth braid conductor.

Contractor shall accurately mark all partitions and fixed joinery prior to installation, including a 900mm x 100mm section behind opening doors to accommodate a future door stop.

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Thermostats and isolators shall be positioned at the end of wall areas as approved by the Architect.

Mats shall have a 20-Year Dei manufactures warranty issued on completion and supply of test results.

Controls shall be guaranteed for (5 years Devitouch & 2 Years Ecofloor) from date of commissioning.

Refer attached schedule of Floor Areas and Locations.

SCHEDULE OF UNDER TILE HEATED AREAS

Room	Notes
Ensuite 1	
Ensuite 2	
Ensuite 3	
Bathroom	
Shower Room	
Mudroom/ Laundry	

21.22 HEATING SYSTEM

Refer to the Heating and Hot Water System Documents as designed by *Airmax Ltd.*

Allow to cooperate with the Nominated Sub-Contractor and provide all necessary Electrical Supplies and Connections.

21.23 DOOR BELL - *TBC*

Supply and fix a Friedland Model D117 or equal approved door bell complete with transformer and wire to Friedland Model D534 lightspot bell push all in positions as directed.

21.24 ELECTRIC VEHICLE CHARGING - *TBC*

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SECTION 22 – LIFT

22.1 PRELIMINARIES

22.1.1 General: Read in conjunction with Specification, Section 1, Preliminary and General and the Conditions of Contract.

Refer to the documentation prepared by *Powerglide Elevators* for the specification and location of all Lifts

This Documentation is attached as an appendix to this Section.

22.1.2 Standards: The work shall be carried out by a specialist firm employing trained and experienced staff who shall carry out the work to the satisfaction of the Principal and Architect.

22.2 SCOPE

The scope of work in this Section includes the design, supply and installation in full working order of one hydraulic platform passenger Lift.

22.3 STANDARDS

All work in this contract shall comply with the New Zealand Building Act, NZS 4332-1997, and NZS 4121, Design for Access and Use of Buildings and Facilities by Disabled Persons.

22.4 DESIGN

It shall be the responsibility of the Lift Contractor to specifically design the Lift to exactly suit its intended purpose the dimensions of the building.

22.5 COMMISSIONING

It shall be the responsibility of the Lift Contractor to install the Lift in full working order and to achieve all of the permits and approvals required to allow its commissioning and uninterrupted use.

The Lift Contractor shall maintain the complete installation for one year after the commissioning of the Lift.

22.6 MAINTENANCE CONTRACT

The Lift Contractor shall maintain the Lift for twelve months from the date of Practical Completion of the contract work.

The Lift Contractor shall state the cost of a maintenance contract for the Lift following the first year of use as part of their tender.

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SECTION 24 – SOLID PLASTER

24.1 GENERAL

Refer to the project Specific Documentation prepared by Resene Construction Systems for all Solid Plaster Specification.

This Documentation is attached as an appendix to this Section.

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

24.1.1 Standards: The work shall be carried out by Specialist Firms employing trained and experienced staff who shall carry out the work in accordance with the Manufacturer's printed instructions, best trade practice and to the satisfaction of the Principal and Architect.

All work shall be carried out in accordance with NZS 4251, Code of Practice for Solid Plastering.

All dressed woodwork, finished surfaces, windows, glass etc shall be effectively protected against droppings or damage.

All undercoats shall be cross hatched. Where pipes are brought through floors, walls, beams, etc finish to sleeves provided and not against pipes and, where necessary, make good after other trades. The Plasterer shall mark the position of all fixings etc built into concrete. The whole of the work shall be plumb and be left in perfect order without cracks, all arrises and angles shall be sharp and true.

24.2 SCOPE

The work includes the application of Plaster to all exposed areas of slab edge.

24.3 ROCKCOTE PLASTER SYSTEM

The Plaster System shall be Resene Construction Systems, Masonry Render System applied in a selected colour and selected texture. The system shall be installed by an LBP Registered Rockcote Plasterer.

Provide the Manufacturer's printed Performance Guarantee including 15 year Performance Guarantee and 5 year Workmanship Warranty.

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SECTION 26 –TILING

26.1 GENERAL

26.6.1 General: Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

26.6.2 Standards: The work shall be carried out by Specialist Tiling Companies employing trained and experienced staff who shall carry out the work in accordance with the Manufacturer's printed instructions, best trade practice and to the satisfaction of the Principal and Architect.

All work shall be carried out in accordance with:

NZBC E3/AS1, E3/AS2,
AS 3740: Waterproofing of domestic wet areas
AS/NZS 1884: Floor Coverings – Resilient Sheet and Tiles – Installation Practices
AS 3958: Ceramic Tiles – Guide to the Installation of Ceramic Tiles
AS/NZS 4858: Wet Area Membranes
Code of Practice for Internal Wet Area Membranes by the Waterproofing Membrane Associate of NZ
BRANZ Good Practice Guide: Tiling

26.2 SCOPE OF TILING

The work includes the laying and finishing of selected tiles to the areas as shown on the Drawings.

26.3 SUPPLY OF TILES

The Principal or their representative shall arrange to supply all tiles. Allow to take delivery and lay to the areas scheduled and as shown on the Drawings.

The Contractor shall allow in their Tender all remaining labour and materials to complete the section of work as specified below. The Tiler shall allow to lay the tile formats as scheduled by Others.

26.4 INTERNAL FLOOR AND WALL TILING

26.4.1 Tiles: Tiles shall be Ceramic, Porcelain or Natural Stone Tiles in selected colour and finish. Refer to schedules prepared by Others for all tile types, thickness, formats etc.

26.4.2 Tile Sealers: Pre seal all Natural Stone Tiles before laying with an approved tile sealer compatible with the selected tiles strictly in accordance with the manufacturer's printed instructions. The Tiler shall confirm with the supplier to ensure the correct specification is obtained.

26.4.3 Extent of Wet Area Waterproofing: Waterproof all surfaces to be tiled to wet areas to create a continuous barrier including:

- All floors to enclosed wet areas with 150mm minimum upstands to walls. Where upstands cannot be formed, such as at doorways and at full height exterior windows, the waterproofing shall be enclosed by suitable water-stops.

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- Floor areas to open plan spaces extending 1500mm minimum from all water sources such as sinks and dishwashers, and covers the floor aera contained by wall upstands and water-stops located to suit the extent of tiling.
- All enclosed and open shower areas extending from floor level 300mm minimum above a fixed shower rose and 600mm beyond the maximum reach of a hand-held shower rose.
- All faces of built-in bath plinths extending outward 300mm minimum from the plinth to all surrounding wall surfaces.
- All wall faces behind freestanding baths extending outward 300mm minimum beyond the bath to all surrounding walls surfaces.
- All wall faces behind Wall Mounted Wash Hand Basins and Vanities Units extending outward 300mm minimum.
- All wall faces behind water supply or waste pipework such as wall mounted mixers and spouts where they pass through the wall extending outwards 300mm minimum.
- All other surfaces which the main contractor and waterproofing applicator deem prudent to suit the fixtures and fittings and layouts proposed.

26.5 INTERNAL WET AREA WATERPROOFING – MAPEI SYSTEM

Prime all concrete and fibre cement board walls and floor surfaces to be waterproofed with Mapei Primer 3296 and apply Mapei Mapelastic AquaDefense undertile waterproofing membrane. Apply Mapei Mapeband SA waterproof bandages at all changes in plane including at all internal and external corners and wall-floor and wall-wall junctions.

Dress the waterproofing membrane into all tile wastes, shower drains and other outlets in accordance with the manufacturers printed instructions. Refer to Specification Section 18, Drainage.

Prime all concrete areas to receive electric undertile heating with Mapei Eco Prim T Plus prior to installing the heating cables. Encapsulate the cables with Mapei Ultraplan Renovation fiber-reinforced self-levelling compound strictly in accordance with the manufactures printed instructions. The tiler and electrician shall check and confirm any special requirements of the heating mats prior to installation.

All shower enclosures shall be constructed and detailed as shown on the drawings stepped down 10mm from the adjoining floor surface and laid to 1:50 minimum falls to the floor waste.

The Tiler shall allow to liaise with the Contractor and the Frameless Glass supplier to ensure the construction details as drawn are coordinated prior to any work commencing.

All materials shall be applied strictly in accordance with the Manufacturer's printed instructions.

The Specification above assumes the use of Ceramic or Porcelain Tiles up to 800x800x12mmm. The tiler shall confirm the suitability and compatibility of the waterproofing system after confirmation of the final tile selections. The Tiler shall contact Mapei for an alternative specification if required.

26.5.1 Shower Wall Recesses: Form shower wall recesses to the size and location shown on the Interior Designers Drawings to the maximum depth of the 140mm framed walls. Waterproof as required and in accordance with the waterproofing manufacturers requirements.

26.5.2 Tile Fixing – Mapei System: Fix tiles to the substate with Mapei Keraflex Maxi S1 or Mapei Ultralite S1 adhesive strictly in accordance with the Manufacturer's printed instructions. The Tiler shall confirm the suitability and compatibility of the tile adhesive after confirmation of the final tile selections and substrate. The Tiler shall contact Mapei for an alternative specification if required.

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The tiles shall be laid to an approved set out by the Interior Designer with all joints lining up with the minimum possible width joints in straight lines with the minimum possible lippage.

The Tiler shall allow for all expansion joints to the perimeter of the tiled areas and at all internal corners. Expansion joints for large areas of tiling shall be located at approximately 3.0m centres each way or as required to suit the final tile selection and shall coincide with concrete construction joints where applicable. Fill joints sealed with Mapei Mapesil AC silicone sealant or equal approved flexible, neutral cure silicon sealant with anti-microbial properties

Install aluminium tile angles in selected powder coated finish to all exposed tile edges as shown on the Drawings.

All tiles at external corners, unless otherwise noted, shall be mitred.

Refer to the Interior Designers Drawings for the method of tile transitions and joints at external corners.

The Specification above assumes the use of Ceramic or Porcelain Tiles up to 800x800x12mmm. The tiler shall confirm the suitability and compatibility of the tile fixing system after confirmation of the final tile selections. The Tiler shall contact Mapei for an alternative specification if required.

26.5.3 Tile Grout - Mapei Epoxy System: All tile joints shall be flush pointed with non-porous Mapei Kerapoxy Grout in selected colour tooled to provide a smooth, easily cleanable surface.

The Tiler shall confirm the suitability and compatibility of the tile grout after confirmation of the final tile selections. The Tiler shall contact Mapei for an alternative specification if required. Mapei do not recommend Epoxy Grout for Natural Stone Tiles.

All grouting shall be placed by Mapei trained applicators and shall be finished in accordance with best trade practice.

26.5.4 Tile Grout Sealer: Seal the grout with an approved penetrating grout sealer in accordance with the manufactures printed instructions.

26.6 EXTERNAL FLOOR AND WALL TILING

26.6.1 General: Refer to Drawings and Specification prepared by the Landscape Architect to be confirmed by the Interior Designer.

26.7 WARRANTIES

Provide a written warranty on the manufacturers/suppliers standard form for the tiles for a period of no less than 2 years.

Provide a written warranty on the manufacturers/suppliers standard form for the tiles for a period of no less than 15 years for Mapelastic AquaDefense, Mapelastic Smart and Mapegum WPS and 10 years for all other Mapei tiling products

Provide a written warranty from the tiler for a period of no less than 2 years for workmanship.

All warranties shall commence from the date of practical completion of the contract works.

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26.8 PRODUCER STATEMENTS

26.8.1 General: The waterproofing installer shall compile all necessary documentation and prepare the Producer Statement PS3 – Construction and deliver to the Main Contractor in support of the Code of Compliance Certificate.

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SECTION 29 – FLOOR COVERINGS

29.1 GENERAL

29.1.1 General: Read in conjunction with Specification, Section 1, Preliminary and General and the Conditions of Contract.

29.1.2 Standards: The work shall be carried out by specialist firms employing trained and experienced staff who shall carry out the work in accordance with the manufacturer's printed instructions, best trade practice and to the satisfaction of the Principal and the Architect.

29.1.3 Preparation: The Contractor shall inspect the floors to be covered. All floors shall be cleaned down, patched as necessary and made good ready for the application of the floor coverings. There shall be no extra charge for floor preparation.

Refer to Specification, Section 04 Concrete, Moisture Content of Concrete Floor Slabs.

29.1.4 Completion: At completion of the work all floors shall be left thoroughly cleaned and all surplus material shall be removed from the site.

29.2 SCOPE OF THE WORK

The work includes the supply and fixing of carpet, and timber flooring as specified and scheduled.

The Floor Plan is a guide only – accurate measurements shall be made on the Site by the Contractor.

29.3 CARPET

29.3.1 Schedule of Work: The carpet shall be laid in the following areas:

29.3.2 Carpet Selection: *TBC by Interior Designer*

29.4 TIMBER FLOORING

29.4.1 Schedule of Work: Timber flooring shall be laid in the following areas:

Room	Selection	Notes
Living	TBC	
Laundry	TBC	
Kitchen	TBC	
Gym	TBC	
Hall 1	TBC	
Hall 2	TBC	
Den	TBC	
Study	TBC	
Dining	TBC	
Wine	TBC	

29.4.2 Timber Flooring Selection: *TBC by Interior Designer.*

29.4.3 Skirtings: Timber skirtings shall be fitted by the Carpenter.

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SECTION 30 – PAINTING

30.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the Conditions of Contract.

All work shall be carried out in accordance with NZS 2311, Guide to the Painting of Buildings.

The painting of Structural Steelwork shall be carried out in accordance with NZS 2312:2002 Guide to the Protection of Structural Steel Against Atmospheric Corrosion by the use of Protective Coatings.

30.2 SCOPE

The following scheduled surfaces shall not be painted or will be finished by others. Allow to finish all other surfaces as specified.

Surfaces, which shall not be painted:

a. Roofing, spoutings, downpipes and flashings
b. Metal window and door frames
c. Exterior plaster surfaces
d. Hardwood timber work
e. Garage Doors
f. Cedar weatherboards and facings
g. Blackened steelwork

30.3 PAINT AND MATERIALS

Only paint manufactured by Resene Paints Ltd or Dulux New Zealand shall be used. The paint shall be delivered to the site in unbroken packages bearing the Manufacturers name and brand.

All paint colours shall be mixed and tinted by the Paint Manufacturer.

All other materials shall be of the types specified being delivered to the site in unbroken packages bearing the Manufacturer's name and brand. Materials (other than paint) may be substituted where approved by the Architect.

30.4 WORKMANSHIP

All materials shall be applied strictly in accordance with the Manufacturer's printed instructions. Competent tradesmen in accordance with sound trade practice using tools and equipment, which will ensure a first-class finish, shall carry out all work. All locks bolts, fittings etc shall be removed before the preparatory processes are commenced and secured in position on completion of the work. All exposed surfaces including the inside of cupboards, inside faces and edges of doors, top and returns of dovetails of drawer fronts to fittings, and the top and bottom edges of all facings etc shall be painted the same number of coats. At completion clean off all marks, clean both sides of glass, remove all debris and leave clean and tidy.

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30.5 INSPECTION OF SURFACES

The Painter shall inspect all surfaces to be finished and report any defects to the Contractor. Work shall not proceed until unsatisfactory surfaces have been made good. Surfaces to be finished shall be clean and smooth, rubbed down before painting and between coats. Any work damaged by dust, rain or any other cause shall be made good by rubbing down and recoating.

30.6 PROTECTION

Provide all necessary coverings, guards, warning notices etc necessary for the proper protection of adjoining surfaces. All marks on adjoining surfaces shall be removed completely.

30.7 PRIMING, SEALING AND STOPPING

The priming coat shall be brushed thoroughly in to completely cover the entire surface and shall not be flowed on. After priming or sealing has set all nails holes, cracks, shrinkage or other cavities shall be neatly filled and stopped with putty. For stained or clear finished work stopping shall be stained to match surface.

30.8 SANDING

All individual coats of Paint or Polyurethane shall be thoroughly sanded to remove nibs and other imperfections prior to the application of subsequent coats.

30.9 COLOUR SCHEME

The Interior Designer shall prepare a Colour Scheme for all painting and staining work throughout the building. The paint and stain colours shall be approved before the work proceeds from samples placed in relevant positions on the site by the Painting Sub-Contractor.

All paint colours shall be mixed and tinted by the Paint Manufacturer.

30.10 SPECIFICATION COORDINATION

Refer to the Structural Engineers Documentation prepared by Batchelar McDougall Consulting (BMC) for all coating systems required to satisfy the durability requirements of the Structural Steel and other structural components.

Refer to the Interior Designers Documentation prepared by Others for a full interior paint, stain and colour schedule including specifications.

30.11 EXTERIOR WORK

30.11.1 Clear Finish on Timber - *TBC*

Schedule of Work	Doors, including top and bottom edges, and door frames.
Specification	Apply two coats of Sikkens clear Exterior Timber Finish or similar approved strictly in accordance with the Manufacturer's printed instructions.

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30.11.2 Stain on Timber:

Schedule of Work — All exposed timberwork unless otherwise noted.

Specification — Apply three coats of Drydens wood oil with Colourtone+ additive or similar approved, in selected colours.

30.11.3 Finish to Hardwood Timbers - *TBC*

Schedule of Work — Hardwood Posts, Beams, Outriggers & Facings

Specification — Apply two coats of Drydens OilStain clear with Drydens Colourtone+ additive or similar approved, in selected colour applied on site in accordance with the manufacturers current Data Sheet.

Ensure that all cut ends are sealed with Drydens Wax End Seal.

30.11.4 Paint on Metalwork:

Schedule of Work — All exposed Structural Steelwork.

Specification — Thoroughly wash down all surfaces to be painted with Resene Roof Wash strictly in accordance with Resene Data Sheet D89.

Apply one coat of Resene Galvo-One primer or similar approved, strictly in accordance with Resene Data Sheet D41.

Apply two coats of Resene Lustacryl semi-gloss acrylic enamel or similar approved, strictly in accordance with Resene Data Sheet D310.

30.11.5 Paint on Hardiflex:

Schedule of Work — All Hardiflex wall cladding behind Rainscreen.

Specification — <u>Preparation</u>

Ensure all nail heads are flush with the surface. Spot prime nail heads with Resene Galvo-Prime strictly in accordance with Resene Data Sheet D402.

<u>Painting</u>

Apply one coat of Resene Concrete Primer Undercoat strictly in accordance with Resene Data Sheet D405.

Apply two coats of Resene Sonyx 101 semi-gloss acrylic strictly in accordance with Resene Data Sheet D30.

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30.11.6 Paint on Plaster:

Schedule of Work: All Exterior Plaster Surfaces.

Specification

Preparation

Refer to separate specification by Resene Construction Systems (RCS)

Painting

Refer to separate specification by Resene Construction Systems (RCS)

30.11.7 Paint on PVC:

Schedule of Work: Exposed PVC Piping (vent pipes etc).

Specification

Preparation

Mix one part of Resene Roof Wash & Paint cleaner with three parts of fresh water. Apply a liberal wash of this mixture to the surface with a nylon bristle brush or broom. Thoroughly scrub the surface to ensure complete removal of all grease and other contaminants. Refer to Resene Data Sheet D88.

Thoroughly wash down with copious quantities of clean water to remove all roof wash residues.

Painting

Apply two coats of Resene Lumbersider satin acrylic in accordance with the Manufacturer's printed instructions in selected colour.

30.11.8 Clear Sealer to Concrete:

Schedule of Work: All exposed precast concrete, concrete, concrete sills, outdoor fire hearth, concrete driveway, paths. *TBC*

Specification

Painting

Apply two coats of Resene Concrete Conserver strictly in accordance with Resene Data Sheet D58.

30.11.9 Blackened Steelwork:

Specification

Preparation

Clean and degrease to remove excess rust, oils, dust etc.
– method to be discussed and agreed with fabricator

Painting – *TBC with fabricator*

Apply one coat of Flood Penetrol Oil, applied evenly with an applicator pad, not a rag – the exact method to be discussed and agreed with fabricator following samples prepared by the fabricator and approved by the Architect.

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30.12 INTERIOR WORK

30.12.1 Paint on Gib Board, Gib Aqualine, Gib Fyreline, Villa Board:

Schedule of Work — All Gib Board/Gib Aqualine, Gib Fyreline and Villa Board walls and ceilings exposed to view including concealed Light Shafts where applicable, unless otherwise noted.

Interior Designer — Refer to Specifications and Schedules prepared by the Interior Designer for confirmation of the paint system, gloss levels etc.

Specification

(a) Walls to Dry Areas

Preparation
Apply one coat of Resene Broadwall Waterborne Wallboard Sealer applied strictly in accordance with Resene Data Sheet D403.

Painting
Apply two coats of Resene SpaceCote Low Sheen Water Based Enamel strictly in accordance with Resene Data Sheet D311.

(b) Walls to Wet Areas

Preparation
Apply one coat of Resene Sureseal Waterborne Pigmented Sealer applied strictly in accordance with Resene Data Sheet D42a.

Painting
Apply two coats of Resene SpaceCote Low Sheen Kitchen & Bathroom Waterborne Enamel applied strictly in accordance with Resene Data Sheet D311K.

(c) Ceilings to Dry Areas

Preparation
Apply one coat of Resene Broadwall Waterborne Wallboard Sealer applied strictly in accordance with Resene Data Sheet D403.

Painting
Apply two coats of Resene Ceiling Paint Waterborne Flat Acrylic applied strictly in accordance with Resene Data Sheet D305

(d) Ceilings to Wet Areas

Preparation
Apply one coat of Resene Sureseal Waterborne Pigmented Sealer applied strictly in accordance with Resene Data Sheet D42a.

Painting
Apply two coats of Resene SpaceCote Low Sheen Kitchen & Bathroom Waterborne Enamel applied strictly in accordance with Resene Data Sheet D311K

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30.12.2 Paint on Timberwork:

Schedule of Work: Paint Grade Doors, Finishing Timbers.

Specification

Preparation

Thoroughly sand to a smooth, clean surface. Lightly sand all edges. Wipe surface with a damp rag to remove dust.

Fill any holes or cracks with Epox-O-Bond Epoxy and sand smooth strictly in accordance with Resene Data Sheet D808.

Painting

Apply one coat of Resene Quick Dry Acrylic Primer Undercoat strictly in accordance with Resene Data Sheet 45.

Apply two coats of Resene Uracryl 402 urethane acrylic semi-gloss strictly in accordance with Resene Data Sheet RA55.

30.12.3 Stain on Timber:

Schedule of Work: All Interior Timber Work including, cedar ceilings, trims, wall linings

Specification

Preparation

Ensure the timber to be stained has been prepared in accordance with Drydens recommendations.

Application

Apply two coats of Drydens WoodOil Clear with Drydens Colourtone+ additive or similar approved, in selected colour in accordance with the manufacturers current Data Sheet and application recommendations. The initial coat may be a factory applied machine coat.

Specification

Preparation

Ensure the timber to be stained has been prepared in accordance with Drydens recommendations.

Application

Apply two coats of Drydens WoodMaster low build timber stain with Colourtone+ additive or similar approved, in selected colour in accordance with the manufacturers current Data Sheet and application recommendations. The initial coat may be a factory applied machine coat.

For wet areas such as bathrooms or where a wipeable surface is required, overcoat the stained timber with 3no coats of Dulux Maxiproof Clear Polyurethane in Matte Finish.

Provide samples of the stain finish including polyurethane top coats for approval by the Architect and Principal prior to application on site.

Ensure the stain and Polyurethane is applied strictly in accordance with the manufacturers respective Datasheets.

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30.12.4 Paint on Interior Structural Steelwork:

Schedule of Work — All Structural Steelwork in areas Concealed from View, i.e.

Upper Floor Level to Plant and Offices and steelwork concealed within the building structure.

Specification — As per Engineers specification.

The structural steelwork in these areas shall be primed as specified and not over-coated.

30.12.5 Concrete Finish to Exposed Concrete Slab or Hearth:

Refer to Specification Section 4, Concrete for Aquron 1000 surface treatment to concrete surfaces

Aquron 1000 shall be applied at time of curing strictly in accordance with the Manufacturer's printed instructions.

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SECTION 34 – WARRANTIES

34.1 GENERAL

Read in conjunction with Specification, Section 01, Preliminary and General and the New Zealand Institute of Architects Conditions of Contract, Clause 4.7, Warranties and Schedule G1, Warranty Agreement.

The Contractor shall provide Warranties for all items as scheduled against defects in materials, workmanship, construction/installation and performance and shall include for the making good of resulting damage to structure and finishes.

The Warranty Period shall be for a minimum as stated from the date of Practical Completion of the House.

The Contractor shall obtain all Warranties in writing and submit to the Principal.

34.2 SCHEDULE OF WARRANTIES

Section	Item	Period
04	Aquron 300 Mixwater Concrete Additive	Fifteen (15) years
	Aquron 1000 Concrete Treatment	Fifteen (15) years
	Aquron 1200 Concrete Water Repellent	Five (5) years
	Aquron 2000 Concrete Waterproofing	Fifteen (15) years
	Aquron Masterseal Clear Sealer	Five (5) years
13	Aluminium Joinery	
	(a) Frames and Fittings	Five (5) years
	(b) Powdercoating Durability (film integrity)	
	Duralloy	Ten (10) years
	Duralloy +PLUS	Fifteen (15) years
	Chrisma (Solid Flat Matt Colour Range)	Twenty Five (25) years
	Duratec	Twenty Five (25) years
	Fluoroset	Thirty Five (35) years
	(c) Powdercoating Colour (colour fade and chalking)	
	Duralloy	Ten (10) years
	Duralloy +PLUS	Fifteen (15) years
	Chrisma (Solid Flat Matt Colour Range)	Fifteen (15) years
	Duratec	Fifteen (20) years
	Fluoroset	Thirty (30) years
13	Double Glazing	Ten (10) years
14	Wall Cladding	
	(a) Colorsteel Maxam	
	Flaking, Peeling, Fading	Fifteen (15) years*
	Perforation	Fifteen (15) years*
	Powdercoated Steel	
	(a) Powdercoating Durability (film integrity)	
	Duralloy	Ten (10) years
	Duralloy +PLUS	Ten (10) years
	Duratec	Ten (10) years
	Fluoroset	Ten (10) years
	(b) Powdercoating Colour (colour fade and chalking)	

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Section	Item	Period
	Duralloy	Ten (10) years
	Duralloy +PLUS	Fifteen (15) years
	Duratec	Twenty (20) years
	Fluoroset	Thirty (30) years
14	CS For Doors Cavity Sliding Doors	
	(a) Cavity Sliders	Ten (10) years
	(b) Wardrobe Sliders	Ten (10) years
	(c) Track Systems	Ten (10) years
	(d) Pre-Hung Jambs	Ten (10) years
	(e) Door Leaves	Five (5) years
	(f) Automatic Units	Five (5) years
	(g) Electrical Components and Parts	One (1) year
	(h) Labour Services (workmanship)	Three (3) months
14	Dominator Garage Doors	
	(a) Door	Ten (10) years
	(b) Door Surface Coating	One (1) year
	(c) Other Door Componentry	Ten (10) years
	(d) Door Opener	Ten (10) years
	(e) Door Opener Tracks, Accessories	One (1) year
14	Prestige Garage Doors	
	(a) Aluminium Frame and Frame components	Lifetime
	(b) Powder coating	Fifteen (15) years
	(c) Hardware	One (1) year
	(d) Door Opener – Precision, Genius, (20,000 cycles)	Seven (7) years
	(e) Door Opener – Smart Pro Heavy Duty, (30,000 cycles)	Seven (7) years
14	Escea Fireplaces	
	(a) Firebox	
	Parts and Labour	Two (2) years
	Parts Only	Five (5) years
	(b) All other parts	Two (2) years
14	Warmington Fireplaces	
	(a) SI 400 - SI 1100*	Five (5) years
	(b) SI 1250 and larger* (Residential & Commercial)	Two (2) years
	(c) Flue System (approved Warmington systems only)	One (1) year
	*Refer to Warmington for exclusions	
14	Warmington Fireplaces	
	(a) Outdoor Nouveau Wood and Pizzeria*	One (1) year
	(b) Flue System (approved Warmington systems only)	One (1) year
	*Refer to Warmington for exclusions	
14	Warmington Fireplaces	
	(a) Custom Built and Traditional*	One (1) year
	(b) Flue System (approved Warmington systems only)	One (1) year
	*Refer to Warmington for exclusions	
14	Warmington Fireplaces	
	(a) Outdoor Nouveau Gas*	One (1) year
	(b) Open Gas Firebox and Gas burners	One (1) year

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Section	Item	Period
	*Refer to Warmington for exclusions	
14	Warmington Fireplaces	
	Kiwi Grill – all models	One (1) year
14	Trendz Fireplaces	
	(a) Concrete Enclosure – Structural Cracking	Two (2) years
14	The Fire Dept Fireplaces	
	(a) Firebox	Five (5) years
	(b) Other Components	Two (2) years
16	Metal Roofing	
	(a) Colorsteel Maxam	
	Flaking, Peeling, Fading	Eighteen (18) years*
	Perforation	Thirty (30) years*
	(b) Colorsteel Altimate	
	Flaking, Peeling, Fading	Check*
	Perforation	Check*
	(c) Zincalume	
	Perforation	Fifteen (15) years
	(c) Colorcote ZinaCore	
	Flaking, Peeling, Fading	Check*
	Perforation	Check*
	(c) Colorcote MagnaFlow	
	Flaking, Peeling, Fading	Check*
	Perforation	Check*
	(c) Colorcote AlumiGard	
	Flaking, Peeling, Fading	Check*
	Perforation	Check*
16	Membrane Roofing	
	(a) Viking Enviroclad TPO Membrane Roofing	Twenty (20) years
	(b) Nuralite 3PM	
	Installation	Five (5) years
	Manufacturer	Twenty (20) years
16	Metal Spoutings and Downpipes	
	(a) Colorsteel Maxam	
	Flaking, Peeling, Fading	Ten (10) years*
	Perforation	Ten (10) years*
	(b) Colorsteel Altimate	
	Flaking, Peeling, Fading	Check*
	Perforation	Check*
	(c) Colorcote MagnaFlow	
	Flaking, Peeling, Fading	Check*

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Section	Item	Period
	Perforation	Check*
	(f) Colorcote AlumiGard	
	Flaking, Peeling, Fading	Check*
	Perforation	Check*
17	Hot Water Cylinder(s)	Ten (10) years
17	Rheem Continuous Flow Water Heater(s)	
	(a) Parts and Labour	Three (3) years
	(b) Heat Exchanger	Ten (10) years
	Rinnai Continuous Flow Water Heater(s) – Without Controllers EF26 and A-Series - Residential	
	(a) Residential Heat Exchanger Parts	Ten (10) years
	(b) Residential Heat Exchanger Labour	Three (3) years
	(c) All other Parts - Parts	Three (3) years
	(d) All other Parts - Labour	Three (3) years
	Rinnai Continuous Flow Water Heater(s) – With Controllers EF26 and A-Series- Residential	
	(a) Residential Heat Exchanger Parts	Twelve (12) years
	(b) Residential Heat Exchanger Labour	Three (3) years
	(c) All other Parts - Parts	Five (5) years
	(d) All other Parts - Labour	Three (3) years
21	Devi Underfloor Heating	
	(a) Cables	Twelve (12) years
	(b) Controls	Five (5) years
21	Devi Underfloor Tile Heating	
	(a) Cables	Twenty (20) years
	(b) Devi Touch Controls	Five (5) years
	(c) All other Controls	Two (2) years
24	Resene Construction Systems Plaster	
	(a) Performance	Fifteen (15) years
	(b) Workmanship	Five (5) years
26	Tiles Manufacturer / Supplier for tile supply	Two (2) years
26	Mapei Waterproofing Products	
	(a) Mapelastic Aqua Defense, Mapelastic Smart and Mapegum WPS	Fifteen (15) years
	(b) For other Mapei Tiling Products	Ten (10) years
26	Tiler – workmanship	Two (2) years
30	Resene X-200 Paint System	Ten (10) years
30	Resene Aquashield Paint System	Ten (10) years

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6.0 WHAT WARRANTS WARRANTING?

6.1 Key items for which warranties might be considered are those relating to weathertightness and waterproofness. Others relating to appearance matters may also be considered. Without limiting warranties that an architect might require, the following are the most common:

(a)	Tanking (bituminous and sheet)	15 years minimum
(b)	Curtain walling	5 years minimum
(c)	Metal cladding	15 years
(d)	Roofing	15 years
(e)	Aluminium joinery	2 years
(f)	Tiling	2 years
(g)	Timber strip and overlay flooring	1 year
(h)	Vinyl, linoleum and cork surfacing	5 years
(i)	Carpeting	5 years
(j)	Painting	2 to 5 years
(k)	Specialist protective coatings	5 years minimum
(l)	Plumbing systems	2 years
(m)	Drainage systems	2 years
(n)	Electrical items	1 year

The information contained herein is intended as an advisory service only. No warranty or guarantee whatsoever is given as to the accuracy of any information contained in this Practice Note, nor is any liability accepted for any actions taken based on this information. You should seek professional advice on any specific matters pertaining to topics discussed herein.

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SECTION 38 – PRODUCER STATEMENTS

38.1 PS1 - PRODUCER STATEMENTS OF DESIGN WORK

The following PS1 Producer Statements are attached:

STRUCTURAL DESIGN:
Refer Separate Documentation prepared by *Batchelar McDougall Consulting (BMC).*

TRUSS DESIGN:
Refer Separate Documentation prepared by *Trusstech*

MECHANICAL SERVICES
Refer Separate Documentation prepared by *Airmax Ltd.*

38.2 PS3 - PRODUCER STATEMENTS OF CONSTRUCTION WORK

The following PS3 Producer Statements are required to be submitted to the Project Manager ***OR*** Architect prior to Practical Completion and Code of Compliance Certification:

DRAINAGE:
Separate Documentation shall be prepared by the ***Drainlayer***.

GENERAL CONSTRUCTION WORK:
Separate Documentation shall be prepared by the ***Main Building Contractor***.

PLUMBING:
Separate Documentation shall be prepared by the ***Plumber***.

TANKING:
Separate Documentation shall be prepared by the ***Applicator or Installer***.

WATERPROOFING:
Separate Documentation shall be prepared by the ***Applicator.***

BALUSTRADES:
Separate Documentation shall be prepared by the ***Installer***.

SOLID FUEL HEATING:
Separate Documentation shall be prepared by the ***Installer***.

SOLAR OR HEAT PUMP WATER HEATING:
Separate Documentation shall be prepared by the ***Installer***.

UNDERFLOOR HEATING:
Separate Documentation shall be prepared by the ***Installer***.

STRUCTURAL GLASS BALUSTRADES:
Separate Documentation shall be prepared by the ***Designer or Manufacturer***.

The Contractor who carried out the building work shall issue a PS3 to confirm that this building work is in accordance with the consented plans, relevant BRANZ appraisals and the NZ building code.

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SECTION 40 – BUILDING THERMAL ENVELOPE

40.1. GENERAL

Refer to the documentation prepared by *Building Envelope Optimisation (BEO)* for all H1 calculations

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SECTION 41 – CERTIFICATE OF DESIGN WORK

MEMORANDUM FROM LICENSED BUILDING PRACTITIONER ARCHITECTURAL

Form 2A: Section 30C or Section 45, Building Act 2004

THE BUILDING

Street address: 144J Arrowtown – Lake Hayes Road	
Suburb: Lake Hayes	
Town/City: Queenstown	Postcode: 9371

THE OWNER

Name(s): Chester and Kathryn Moynihan	
Mailing address:	
Suburb:	PO Box/Private Bag:
Town/City:	Postcode:
Phone number:	Email address: moynihank.1@gmail.com

BASIS FOR PROVIDING THIS MEMORANDUM

I am providing this memorandum in my role as the: *[Please tick the option that applies]*

	sole designer of all of the RBW design outlined in this memorandum – I carried out all of the RBW design myself – no other person will be providing any additional memoranda for the project
	lead designer who carried out some of the RBW design myself but also supervised other designers – this memorandum covers their RBW design work as well as mine, and no other person will be providing any additional memoranda for the project
✓	**lead** designer for all but specific elements of RBW – this memorandum only covers the RBW design work that I carried out or supervised and the other designers will provide their own memoranda relating to their specific RBW design
	specialist designer who carried out specific elements of RBW design work as outlined in this memorandum – other designers will be providing a memorandum covering the remaining RBW design work

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IDENTIFICATION OF DESIGN WORK THAT IS RESTRICTED BUILDING WORK

I, **Hamish M Muir** carried out or supervised the following design work that is Restricted Building Work (RBW):

Design work that is Restricted Building Work		**Description**	**Carried out/ supervised**		**Reference to Plans and Specifications**
[Tick]		*[If appropriate, provide details of the restricted building work]*	*[Specify whether you carried out this design work or supervised someone else carrying out this design work]*		*[If appropriate, specify references]*
PRIMARY STRUCTURE: B1					
All RBW design work relating to B1				Carried out	Separate Consultant
				Supervised	
Foundations and subfloor framing				Carried out	Separate Consultant
				Supervised	
Walls				Carried out	Separate Consultant
				Supervised	
Roof				Carried out	Separate Consultant
				Supervised	
Columns and beams				Carried out	Separate Consultant
				Supervised	
Bracing				Carried out	Separate Consultant
				Supervised	
Other				Carried out	Separate Consultant
				Supervised	

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EXTERNAL MOISTURE MANAGEMENT SYSTEMS: E2					
All RBW design work relating to E2				Carried out Supervised	
Damp proofing		*Designed and Detailed in accordance with the Manufacturer's Branz Appraised Documents and Code Mark Certificate*		Carried out Supervised	Separate Consultant
Roof cladding or roof cladding system	✓	*Designed and Detailed in accordance with the Manufacturer's Branz Appraised Documents and Code Mark Certificate*	✓	Carried out Supervised	Refer to Drawings and Specification
Ventilation system (for example, subfloor or cavity)			✓	Carried out Supervised	Refer to Drawings and Specification
Wall cladding or wall cladding system	✓	*Designed and Detailed in accordance with the Manufacturer's Branz Appraised Documents and Code Mark Certificate*	✓	Carried out Supervised	Refer to Drawings and Specification
Waterproofing		*Designed and Detailed in accordance with the Manufacturer's Branz Appraised Documents and Code Mark Certificate*		Carried out Supervised	Separate Consultant
Other				Carried out Supervised	

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FIRE SAFETY SYSTEMS: C1 – C6					
Emergency warning systems, evacuation and fire service operation systems, suppression or control systems, or other				Carried out	N/A
				Supervised	

Note: The design of Fire Safety Systems is only Restricted Building Work when it involves small-to-medium apartment buildings as defined by the Building (Definition of Restricted Building Work) Order 2011.

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WAIVERS AND MODIFICATIONS

Waivers or modifications of the Building Code are required ☐ Yes ☑ No

If Yes, provide details of the waivers or modifications below:

Clause	Waiver/modification required
[List relevant clause numbers of Building Code]	*[Specify nature of waiver or modification of Building Code]*

ISSUED BY

Name:	**HAMISH M MUIR**
Registered Architect Number:	**3261 HM**
Mailing address:	P O BOX 5455, DUNEDIN 9058
Street address or registered office:	46 YORK PLACE, DUNEDIN 9016
Phone number:	Landline: (03) 477 1096
Fax number:	(03) 477 7675
Email address:	architects@masonandwales.com
Website:	www.masonandwales.com

DECLARATION

I, **HAMISH M MUIR**, on behalf of Mason & Wales Architects Ltd, Licensed Building Practitioner, state that I have applied the skill and care reasonably required of a competent design professional in carrying out or supervising the Restricted Building Work (RBW) described on this form, and that based on this I also state that the RBW:

(a) complies with the Building Code; or

(b) complies with the Building Code subject to any waiver or modification of the Building Code recorded on this form.



Signature:

Date: 17.04.2025

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SECTION 42 – RESOURCE CONSENT

Refer to the Resource Consent No RM240537 issued by the QLDC and dated 27 March 2025.

The resource consent is attached as an appendix to this Section.