NEW DWELLING

at

#19 Sam John Place, Lake Hāwea

Lot 2, DP 588410

for

Jude Battson Family Trust

October 2026

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BATTSON SPECIFICATION – NEW DWELLING AT 19 SAM JOHN PLACE

1. PRELIMINARY AND GENERAL

1.1. NAMES AND ADDRESSES

PRINCIPAL Jude Battson Family Trust
19 Sam John Place
Wanaka
PHONE 027 5616088
EMAIL: judebattson60@gmail.com

ARCHITECT Red Gecko Ltd
1st Floor, 3 Cliff Wilson Street
Wānaka
CONTACT - Kat West / Allison Swintz
PHONE 03 443 2567
EMAIL: kat@redgecko.co.nz

TRUSS CENTRAL TRUSS and FRAME Ltd.
CONTACT: ANDY HAIG
EMAIL: andy@ctf.co.nz
PHONE (03) 443 8756

1.2. SCOPE OF WORK

THIS CONTRACT comprises the construction of a new single storey dwelling at 19 Sam John Place, specifically on Lot 2, DP 588410.

Site to be excavated as required to form a level building platform. Note benching requirements under new fill areas on slope.

NEW CONSTRUCTION:
Foundations: ICF Blocks
Floor: Concrete
Walls: Timber framed
Roof structure: Timber trusses and rafters
Wall cladding: Corrugate profile steel / Vertical timber weatherboard
Roof cladding: Corrugate profile steel

All as shown in the accompanying drawings and as described in this specification.

1.3. THE SITE

THE SITE IS LOCATED at: 19 Sam John Place, Hāwea, being Lot 2, DP 588410

ACCESS to the site during construction is via the existing vehicle crossing and driveway from Sam John Place.

WORKING AREA for the CONTRACTOR will be confined to the site.
DO NOT use the site for any purpose other than to carry out the works.

1.4. SITE ZONES

Site Specific Zones are as scheduled below:

WIND: High
EARTHQUAKE: 3
EXPOSURE: B

SNOW: N5
ALTITUDE (AMSL): 350m

1.5. BY-LAWS AND REGULATIONS

BUILDING CONSENT AUTHORITY (BCA) TERRITORIAL / LOCAL AUTHORITIES:
Queenstown Lakes District Council
Otago Regional Council.

DISTRICT PLAN ZONE: Suburban Residential
ORC AIRZONE: 2

The MAIN CONTRACTOR shall comply with all the relevant Territorial Authority requirements, conform in all respects to the bylaws of the Territorial Authority and be responsible for all damage to public and private property caused by the work.

1.6. SITE SAFETY

The MAIN CONTRACTOR shall prepare a site safety plan specific to the project.

Site safety shall comply with F5/AS1. The following MINIMUM safety measures shall be included in the site safety plan prepared by the CONTRACTOR:

- Signage prohibiting unauthorised entry to the site to be placed at all property entrance(s)
- Specific hazards to be fenced when workers are absent from the immediate vicinity.
- Fences to comply with F5/AS1 Paragraph 1.1:
  1.1.1 Fences and hoardings shall extend at least 2.0 m in height from ground level on the side accessible to the public.
  1.1.2 An acceptable fence may be constructed with galvanised chainlink netting having a maximum sized grid of 50 mm x 50 mm. Post spacing shall be a maximum of 2.5 m, and the gap between the bottom of the fence and ground no greater than 100 mm.
- Note, under F5/AS1 barriers are not necessary for domestic dwellings up to 2 storeys above ground level unless specific hazards exist. Specific hazards to be assessed by the CONTRACTOR prior to starting work on site.

1.7. CONSENTS

BUILDING CONSENT: the PRINCIPAL shall obtain the building consent and any other approvals required for the works to start.

The MAIN CONTRACTOR shall give all notices for inspections etc and obtain all further consents required for the work.

1.8. INSPECTIONS

ALL Inspections as required by the BCA or the ENGINEER must be completed at each stage before any further work is carried out.

1.9. DOCUMENTS

The Contract Documents are complementary and comprise the following:

- Separate Contract with the builder
- ARCHITECTURAL Drawings:

  000. Cover Sheet
  101. Site Plan
  102. Ground Floor Plan
  103. Foundations & Plumbing Plan

104. Framing & Bracing Plan
105. Roof Framing Plan
106. Electrical Plan
107. Reflected Ceiling Plan
108. Roof Plan
201. Elevations
202. Elevations
301. Section X1
302. Section X2
303. Section X3
304. Section X4
305. Section X5 West
306. Section X5 East
307. Section X6
401. Details 1:10
402. Details 1:5
403. Details 1:5
404. Details 1:5
405. Details 1:5
501. Perspectives

- This Specification
- Supporting Documentation attached and listed on page 2 (includes NZ Standards and NZ Building Code Acceptable Solutions)
- Product Manufacturer's Specifications, Instructions & Data Sheets, NZ Standards and NZ Building Code Acceptable Solutions attached and listed on page 2
- All other fittings & materials' Manufacturer's Specifications, NZ Standards and NZ Building Code Acceptable Solutions as required for construction

1.10.MANUFACTURER'S DOCUMENTATION

CONTRACTOR TO OBTAIN CURRENT DOCUMENTATION. Where a Manufacturer's installation, application and execution requirements are referred to in this specification, the CONTRACTOR must hold current copies on site and ensure they are fully aware of this documentation.

The MAIN CONTRACTOR shall obtain and keep on site the relevant latest version of such documentation and make it available to workers carrying out that part of the work.

1.11. NZS/AS STANDARDS

Where a NZ or Australian Standard is referred to in this specification, the standard current at the time of writing of this specification (see cover page) including amendments and provisional editions shall apply unless specifically stated otherwise.

The MAIN CONTRACTOR is expected to possess the current copies of all NZ standards referred to in this Specification, on the drawings, or otherwise required for the satisfactory completion of the work.

It is the responsibility of the MAIN CONTRACTOR to be familiar with the materials and expert in the techniques quoted in these publications.

1.12. STANDARDS AND QUALITY OF WORK

The materials, quality of work and finish to each section, though not specifically mentioned, shall be the best of their respective kinds.

All work shall be in compliance with all relevant Building Acts, New Zealand Codes and Standards. Mention of a standard in this specification does not imply a complete list of relevant standards has been provided.

1.13. RESTRICTED BUILDING WORK

Where required by the Building Amendment Act 2012 it is the MAIN CONTRACTORs responsibility to ensure that all Restricted Building Work is carried out by an appropriate Licensed Building Practitioner.

1.14. SHOWN AND MENTIONED

The Contract Documents show the extent and nature of the works but there is no warranty expressed or implied that they show each and every minor detail or item required to be included by the CONTRACTOR.

Work not mentioned in the drawings or this specification but obviously necessary for the neat, strong and satisfactory completion of the contract shall be allowed for in the contract price and carried out by the respective trades.

The CONTRACTOR (and SUB CONTRACTORS) shall draw attention, in writing, to the PRINCIPAL to any significant such item allowed for, or not allowed for, in their price for the work.

In addition, if an omission or error is found in the documentation, the CONTRACTOR must notify and confirm with the ARCHITECT, PRINCIPAL and for structural detail, the ENGINEER, before proceeding.

1.15. GUARANTEES

The MAIN CONTRACTOR is responsible for the appropriateness and fitness of all the materials and quality of work incorporated into the job.

The terms and conditions of any warranty or guarantee provided shall not in any way negate the minimum remedies available under common law.

1.16. INSURANCE

Before commencing this contract, the MAIN CONTRACTOR shall affect any necessary insurances with an approved company.

A policy shall be maintained for the duration of the contract to ensure all materials on site and any completed work are insured for their true replacement value against fire and theft.

The MAIN CONTRACTOR shall also effect and maintain such insurance as will protect him/her and the PRINCIPAL from any and all claims relating to public liability with respect to this project.

1.17. SUBCONTRACTORS

Provide the PRINCIPAL with a written list of all SUB CONTRACTORS and their contact details.

The MAIN CONTRACTOR shall ensure that all persons engaged in the works are aware of all items in the Specification and on the Drawings

The MAIN CONTRACTOR shall ensure all SUBCONTRACTORS allow to coordinate with other trades as required for the completion of the work. Each trade is to leave their section of the work clean and tidy.

The MAIN CONTRACTOR is to facilitate and coordinate the works of all trades. Identify and sufficiently forward notify the appropriate persons of all deadlines for the supply of components, fittings, information etc.

EACH SUBCONTRACTOR is required to NOTIFY the MAIN CONTRACTOR immediately if any tradesperson considers that the general condition of the previous work is unsatisfactory for the proper completion of their own work. Do not proceed until necessary improvements have been made.

1.18. TEMPORARY SERVICES

Power, water, phone etc are already laid to the site. Arrange and pay for adequate temporary connections to these services for the duration of the contract.

Arrange and pay for temporary toilets, storage, staff lunch and site office space for the duration of the contract. Remove completely upon completion of the works.

1.19. DRAWINGS TAKE PRECEDENCE

Where an item is specifically noted on the drawings, the Drawings take precedence over this Specification.

Larger scale (eg 1:10) take precedence over smaller scale (eg 1:100) Drawings.

STRUCTURE: With respect to specific design structural detail only, the Structural ENGINEER's Specification and details shall take precedence over this Specification & the Architectural Drawings.

If in doubt confirm with the ENGINEER AND the ARCHITECT before proceeding.

1.20. DIMENSIONS

Except where noted otherwise, all dimensions are between bare faces of structural members.

DO NOT scale off the drawings. If in doubt confirm with the ARCHITECT or the PRINCIPAL before proceeding.

1.21. PROVIDE AND FIX

When the words "provide" and "fix" are used separately in the Documents, it shall be taken to mean "provide AND fix" unless explicitly stated otherwise.

1.22. APPROVED, SELECTED

The words "approved" or "selected" when used in the Documents, mean the approval of the PRINCIPAL, or their representative. The CONTRACTOR shall give adequate notice of these decisions.

1.23. ITEMISE COSTS

When invoicing, provide an itemised list of all materials and labour costs, including margins and Preliminary & General Costs.

1.24. EQUIVALENT ITEMS

When an equivalent item has been allowed for in this specification, approval must be gained from the PRINCIPAL, and the Territorial Authority / BCA where required, before proceeding.

Notify proposed substitution of specified products, prior to ordering. Notification to include but not be limited to:

- Product identification
- Manufacturer's name, address, telephone number, website and email address
- Detailed comparison between the properties and characteristics of the specified product and the proposed substitution

- Statement of NZBC compliance including durability
- Details of manufacturer warranties

Plus an assessment of:

- Any changes required to the programme including any extension of time required if applicable to the contract
- Any consequential effects of the proposed substitution
- Any effect the substitution may have on Health & Safety requirements
- Allowance for time and cost for re-design and documentation (if applicable)
- Allowance for time and cost for obtaining an amendment to the Building Consent (if applicable)
- Any change in cost associated with the proposed substitution

1.25. VARIATION TO THE CONSENT

Where the MAIN CONTRACTOR has sought acceptance of a substitution or a variation which is for the CONTRACTOR'S own convenience and the substitution or variation requires an amendment to the Building Consent, the CONTRACTOR must apply for and obtain the required amendment.

The CONTRACTOR must:

- Obtain approval for substitutions from the contract administrator.
- Prepare and provide to the BCA all documentation required for the variation.
- Pay all fees and other costs associated with this amendment.
- Where the amendment affects other approved plans, also amend those plans (or pay for them to be amended).

Where the PRINCIPAL is proposing a substitution or a variation which requires an amendment to the Building Consent, the MAIN CONTRACTOR must provide to the PRINCIPAL information that the CONTRACTOR has that is required for the amendment.

The PRINCIPAL will:

- Prepare and provide to the BCA all documentation required for the amendment.
- Pay all fees and other costs associated with this amendment.
- Where the amendment affects other approved plans, also amend those plans.

1.26. SITE STORAGE

Allow to take deliver and store on site all materials as required for construction to allow a timely programme of work.

Store on a level, firm base, well ventilated and completely protected from weather and damage.
Avoid distortion and contact with damaging substrates
Reject all damaged material.

1.27. ADJACENT PROPERTIES

The MAIN CONTRACTOR shall communicate and cooperate with adjoining property owners to minimise the impact of noisy equipment or processes.

2. SITE WORKS

2.1. GENERAL

The EXCAVATORS are required to inspect the site, check all ground and floor levels and satisfy themselves as to the precise nature of the ground.

The MAIN CONTRACTOR shall take great care to protect all existing trees, shrubs and planting in the areas not affected by the building work.

Excavations shall be carried out in such a manner as to not unduly disturb the surrounding ground.

SETTING-OUT CERTIFICATE: If requested by the BCA in the building consent conditions, and before commencing construction, provide the PRINCIPAL with a certificate from a registered surveyor that the setting out has been completed and the building is accurately placed on the site.

EXISTING SERVICES & CONNECTIONS: Locate existing underground services before any work is started. Any information provided regarding the location of these services is given in good faith but with no guarantee of accuracy as regards alignment or depth; furthermore no guarantee is given or implied that the information provided covers all existing services. Take any necessary precautions to protect existing service during the works.

MAKE GOOD at no extra cost, damage to existing services to the satisfaction of the appropriate controlling authority.

GROUND WATER LEVEL: Make all necessary investigations concerning the water level on the site.

2.2. SPOIL

TOPSOIL: Topsoil shall be retained separately from fill for later reuse when reinstating garden & grass areas. All topsoil and organic material shall be stripped from the area to be built on and the driveway and stored on site in consultation with the PRINCIPAL.

BACKFILLING: Retain sufficient material to use for backfilling and adjusting finished ground levels as shown on the drawings

HARDFILL: All other excavated material shall be removed from the site and disposed off at an approved landfill.

2.3. SOIL & EROSION MANAGEMENT

The MAIN CONTRACTOR shall prepare a Soil & Erosion Management plan specific to the site

Soil & erosion must be managed until the earthworks are complete, exposed ground stabilised and re-planted or otherwise covered by the work. The following techniques shall be utilised when required:

1. Water is available on site. Sprinklers shall be used in dry windy periods to control dust

2. Silt fences (hay bales retained by warratahs, with geotextile filter fabric on uphill side) shall be placed along downslope boundaries below any excavated areas during rain events.

3. Excavated topsoil shall be placed in temporary bunds to direct overland water flow to these fences.

4. All access shall be via the existing vehicle crossing and gravel driveway to minimise transfer of soil off the site.

2.4. EXCAVATION

LEVEL BUILDING PLATFORM: Site to be excavated to the line, levels, slopes and dimensions shown on the drawings, to provide a sound uniform building platform and as required for the satisfactory completion of the work. Check all dimensions on site before commencing work.

FOOTINGS: Excavate for all footings as shown on the drawings and with due regard to all relevant codes, standards and regulations, in particular NZS 3604.

Keep all excavations clear of water and debris. Foundation areas shall be drained such that surface water does not flow into the excavations

COMPLETION: After the foundations are completed, the excavations shall be filled and rammed up to the adjacent ground level. Note that the DPC shall be protected during any backfilling.

SURFACE WATER DRAINAGE: Shape the final ground levels such that surface water flows away from the finished building and there is no ponding on the completed site.

2.5. SERVICE TRENCHES

Excavate for new drains as required to comply with G13/AS2. The width of the trench shall be no less than the pipe diameter plus 200mm and have sufficient cover above the pipe to comply with G13/AS2 Fig 7 attached.

Ensure all trenches running parallel to the building are comply with G13/AS2 Fig 8 attached. (Horizontal separation is greater than the depth below the adjacent footing of the base of the trench).

No trench shall be left open for longer than 48 hours without additional support or separation provided.

2.6. GOOD GROUND

GOOD GROUND: The base of all footings shall be founded on "good ground" and be true and level with sides straight and plumb where required.

All footing excavations shall be penetrometer tested BY A SUITABLY QUALIFIED PERSON. Footing widths / design shall be revised by a Structural ENGINEER if soils are found to be weaker than the assumed amount.

2.7. DRIVEWAY

DRIVEWAY: Existing Gravel driveway already on site.
Scrape top soil off the extended driveway area. Excavate to provide a smooth surface & shape to prevent water ponding on the drive. Ensure ground falls away from the proposed building footprint for at least 1m horizontally.

Supply, lay and compact approved gravel to driveway area as shown on the drawings in consultation with the PRINCIPAL.

2.8. HARD LANDSCAPING

Scrape top soil off the hard landscaping areas as shown on the drawings. Excavate to provide a smooth surface & shape to prevent ponding against the buildings.

Build up compacted Hardfill, to a minimum of 100mm deep, to 100mm below finished paved levels. It is suggested that the hard-filling is carried out as soon as the excavation is completed, and that hard-filling is made good as necessary just prior to laying the finished paving

Top with an exposed aggregate concrete slab, falling to grassed areas. Ensure no ponding can occur on the sealed area.

2.9. GRASSED AREAS

Disturbed areas that will not be hard landscaped shall have topsoil replaced as soon as possible (ideally within 4 weeks of the excavations being complete), being sure to maintain necessary clearances to internal floor levels.

Sow with grass seed in consultation with the PRINCIPAL.

3. FOUNDATIONS & CONCRETE

3.1. GENERAL

Procedures and practises for the handling and placing of concrete shall comply with NZS 1900, NZS 3109, NZS 4229 and all Amendments thereto.

LOW CARBON: Obtain costings for using Firth Ecomix and Allied Ecrete as the concrete type in this project to reduce the embodied carbon in the building. With the approval of the PRINCIPAL, allow to supply this type of concrete for all concrete specified.

Provide and place reinforcing and concrete for footings, foundations, retaining walls and slabs as shown on the drawings and in compliance with these standards.

COORDINATE all under-slab services and related trades.

No concrete shall be poured during inclement weather.

FORMWORK: Allow for formwork to vertical faces of concrete below ground level. Faces may be cast against earth without formwork only if prior approval is obtained, and adequate measures are taken to prevent contamination of concrete and provide additional cover to reinforcing steel.

DAMAGE: Any concrete damaged during the job shall be removed and replaced by the MAIN CONTRACTOR without cost to the PRINCIPAL.

INSPECTIONS: No concrete shall be placed until the excavations, formwork and reinforcing have been inspected and approved by the BCA if required.

PROTECT: Protect all exposed finish floor slabs during further construction work with DPC and carpet / chipboard to minimise damage to the finished surface.

3.2. STRENGTH

STRENGTH: All concrete shall satisfy the requirements of NZS 3109 and comply with all the relevant specifications and tests. Unless noted otherwise on the drawings, strengths shall be as as scheduled below:

Type	28 day strength
Mass Concrete	**10MPa**
Foundations & Footings	**20MPa**.
Floor Slabs	**20MPa**
ICF wall grout	**20MPa**
All other in-situ concrete	**20MPa**

AGGREGATE: AP 19mm
WATER / CEMENT: max 0.55 ratio

3.3. REINFORCING

All reinforcing steel used shall comply with NZS 4671 and NZS 3604.
All reinforcing steel mesh shall be grade 500E ductile steel.
All reinforcing bars shall be grade 300E ductile steel

SECURE reinforcement adequately with tying wire. Bend wire well back clear of forms. Ensure that reinforcing is not displaced during concreting and vibration.

TYING WIRE to be mild drawn steel wire not less than 1.2m diameter.

BRACE all free ends of partially embedded reinforcing that could be displaced, thereby destroying bond in the concrete.

COVER to reinforcing bars to be as listed in Table 3 of NZS 3109 or Section 4.5 of NZS 3604 unless specifically shown otherwise on the drawings.

TOLERANCES ON REINFORCEMENT: To be within the requirements of clause 3.8 of NZS 3109.

3.4. CONCRETE FOOTINGS / PILES

Supply and install concrete footings as shown on the drawings.

Refer to Carpentry section for details of timber piles in concrete footings.

3.5. CONCRETE SLAB EDGE THICKENINGS (EAST VERANDAH)

CONSTRUCT concrete slab edge thickenings to comply with NZS3604:2011 Fig 7.13(B) attached.

REINFORCING: 2/D12 bottom, D12 top and D10 starters at max 600crs, lapped min. 300mmm with reinforcing mesh in slab.

COVER: Concrete cover between foundation edge reinforcing and exposed earth will be a minimum of 75mm & cover to formwork or exposed air will be a minimum of 50mm.

CONCRETE THICKENING: minimum 200 wide concrete footings with bases at least 200mm below level of original cleared ground, or as required to reach good ground.

3.6. ICF CONCRETE SLAB EDGE FOUNDATIONS

CONSTRUCT concrete slab edge foundations with ICF block formwork as shown on the Drawings. Note foundation edge dimensions and reinforcing details are as for NZS 3604 Fig. 7.13 (B)

CONCRETE FOOTING: minimum 300mm wide x 150mm deep concrete footings with bases at least 200mm below level of original cleared ground, or as required to reach good ground.

Concrete cover between reinforcing and exposed earth will be a minimum of 75mm & cover to formwork 50mm.

ICF BLOCKS: 300mm INSULFORM blocks (to give minimum 200mm concrete core)
BONDING PATTERN: Stretcher bond
TOLERANCES: Construct within the tolerances set out in the INSULFORM Technical Manual.

REINFORCING: 2/D12 bottom, D12 top and D10 starters at max 600crs, lapped min. 300mmm with reinforcing mesh in slab.

3.7. ICF CONCRETE FILL

Blocks to be braced and supported plumb and true with proprietary frames. Thoroughly clean the concrete voids.. Close clean out ports, only after inspection and approval.

ICF Blocks shall be solid filled with concrete as scheduled below:

AGGREGATE: AP13
STRENGTH: 20 MPa minimum

3.8. ICF SLAB EDGE CLADDING

Finish the outside face of the ICF foundation blocks as shown on the drawings with the following cladding system:

BOARD: 9mm KAPO board with paint finish, glue fixed to the outside face of the ICF blocks.
PANEL JOINTS: Paintable silicone or proprietary aluminium jointers
GLUE: SabreFix PU
FINISH: Paint
COLOUR: All colours to be confirmed by the PRINCIPAL.

3.9. FLOOR SLABS

Supply and install reinforced concrete floor slabs, on DPM, as shown on the drawings and as scheduled below:

REINFORCING: SE62 mesh
TOP COVER (interior slab): minimum 30mm
TOP COVER (exterior slab): minimum 50mm
SLAB THICKNESS: 100mm

FINISH: U3 (troweled finish suitable for direct fixed floors)
SIDE FINISH: F5

3.10. NON STRUCTURAL SLABS

PATIO: 100mm thick concrete floor slabs, reinforced with 665 grade 300 mesh, plus a D12 bar to all edges.

Pour an Ordinary Grade (20MPa) concrete slab, with saw cuts or construction joints to limit cracking at maximum 6m crs to form bays with sides at no more than 1:2 ratio.

FINISH: Brushed

3.11. FILL

Supply, lay and compact hardfill under all slabs as shown on the drawings.

Where Hardfill depth is less than 600mm total, the hardfill may comply with NZS 3604 as follows:

HARDFILL: Hardfill to be AP32 grade. Screen Hardfill to remove fines. Place hardfill under all concrete slabs and thoroughly consolidate to a minimum depth of 75mm. Compact in maximum 150mm layers.

BLINDING: Top off with minimum 25mm sand blinding, compacted by saturating and tamping and then screeded level.

CERTIFIED FILL: Where, after the excavation is completed, the hardfill depth will exceed 600mm, certified compacted fill must be placed in accordance with the ENGINEER's specification attached. Note the underlying ground may need to be tested prior to placing fill, so gain approval from the ENGINEER prior to starting the work.

OVER-DEPTH FILL: Additional depth, if once 600mm of fill has been placed the fill is not at slab base level, shall be made up with mass concrete. confirm with ARCHITECT.

3.12. DAMP PROOF MEMBRANE

Place a Damp Proof Membrane (DPM) in accordance with the drawings under all interior slabs and insulation, laid in strict accordance with the manufacturer's instructions to ensure watertightness.

DPM: minimum 0.25mm thick Black Polyethylene Sheet, lapped and taped with polyethylene self adhesive tap at joints.

3.13. INSULATION

Place under-slab and perimeter insulation as shown on the drawings.

UNDER-SLAB: 50mm of Closed Cell Foam insulation (Extruded Polystyrene - GOLDFOAM or similar) above the DPM

PERIMETER: Perimeter insulation is provided by the ICF foundation edge.

3.14. WET CURING

As soon as possible after the water sheen has disappeared from the surface of the floor slab, apply moisture to allow the concrete to “wet cure” for a **minimum** of 3 days. Confirm with the ENGINEER and / or the concrete manufacturer what period is required for the concrete to cure given the current environmental conditions and the result required.

Moisture may be applied via:

- sprinklers - a fine spray of water applied continuously ensuring that the surface does not dry out between applications
- ponding - create a sand dyke around the full perimeter of the slab and fill with water to a minimum depth of 2cm, maintained through the curing period
- covering - cover the entire slab with a moisture retaining fabric or wet sand. Ensure the surface of the slab is hard enough such that no damage or marking by the covering occurs. Keep the fabric continuously moist through the curing period

Note hydration is much slower in colder temperatures. If temperatures are near freezing, protect concrete after placing for at least 2 days using an insulating cover such as polystyrene sheets, sacking or dry sand covered with polythene sheet.

3.15. CRACK CONTROL

Provide SAW-CUTS to control cracking of floor slab at maximum 6m spacings. Saw cutting shall take place no later than 24 hours after the initial set for average ambient temperatures above 20^{O} C and 48 hours for temperatures below 20^{O} C.

Saw-cuts to be 5mm wide and 25% of the depth of the slab. Once concrete has cured, clean out saw cuts in slabs and fill with neat cement grout. Clean off excess to produce a flush finish.

4. CARPENTRY

4.1. GENERAL

Work shall comply with the following standards: NZS 1900, NZS 3602, NZS 3604 and be in accordance with the best trade practises.

All timber shall comply with NZS 3631.

Sizes shall comply with NZS 3601 unless otherwise specified on the drawings.

All framing shall be erected without deviation, true to line, level angle and plumb. Framing members shall be accurately cut to provide full contact over the bearing surfaces.

Temporarily prop, brace, tie and secure framing members as required until the framing is complete and self supporting.

Avoid checking and cutting where possible.

TOLERANCES for framework to be:

Straightness in each 8m (not cumulative)	+/-6mm.
Height	+/-3 mm.
Plumb in storey height	+/-3 mm.
Width and height of openings	+/-3 mm.

Framing members may be substituted with built up members in accordance with NZS 3604.

4.2. DAMP PROOF COURSE

Place a damp proof course (DPC) between all timber and concrete.

DPC: 750 micron Polyethylene damp-course

4.3. TIMBER TREATMENTS AND GRADE

Unless noted on the drawings or in the ENGINEER's specification all timber shall be:

GRADE: SG8 or better.
SPECIES: New Zealand Oregon (Douglas Fir / NZO) unless scheduled otherwise below.

Framing timber shall be seasoned or kiln dried and be straight and true, free from wind, warp and distortion.

Timber Location	Treatment Level
DECKS:	
Piles:	H5
Decking:	hardwood
Joists:	H3.2
Bearers:	H3.2
WALLS:	
Exterior Wall Framing:	H1.2
Cavity battens:	H3.2 /polypropylene
Internal Wall Framing:	H1.2
Weatherboards	Cedar
ROOF:	
Trusses and Rafters:	H1.2
Exposed roof framing:	H3.2
Valley boards / flashing supports:	H1.2

Soffit lining:	Fibre cement
Barge / Fascia Boards:	Pre-painted steel
Other Roof framing:	H1.2
POSTS & EXPOSED BEAMS:	H3.2
OTHER EXTERNAL TIMBER:	H3.2

The MAIN CONTRACTOR shall ensure that all fixings are compatible with the treated timber. Refer Fixings paragraph.

4.4. MOISTURE CONTENT

Maximum allowable equilibrium moisture content (EMC) for framing, to which linings are attached, in non air-conditioned or centrally heated buildings are :

Stage	**EMC**
Framing at erection	24% maximum
Framing at enclosure	20% maximum
Framing at lining	16% maximum

Be aware that Central Otago & the Southern Lakes has a lower ambient humidity than much of NZ, so moisture levels at equilibrium may be lower than the above. Joint details and construction timings must take this in to account.

4.5. TIMBER DECK FRAMING

Frame up the decks as shown on the drawings and as scheduled below:

Piles to be accurately positioned and set plumb and vertical, minimum 150mm out of finished ground. All piles to be accurately cut to enable the deck framing to be true and level.

Timber piles shall be cast into concrete footings with 100mm concrete under the base of the timber. Concrete shall be well compacted around the timber pile.

PILES: 125 x 125mm rough sawn timber

CONCRETE FOOTINGS shall be a minimum 400 x 400mm square unless noted otherwise on the drawings. Footing depths into cleared ground shall be minimum of:

ANCHOR PILES:	900mm	Refer to NZS 3604 Figures 6.9 & 6.10
ORDINARY PILES:	200mm	Refer to NZS 3604 Figures 6.2 & 6.3

The footing sizes shown are minimums requirements of bearing and uplift. Bearing depth may occur at lower levels. Any additional excavation caused by encountering poor ground conditions shall be treated as a variation provided such work has been authorised by the PRINCIPAL.

Place a damp proof course between all piles and bearers.
DPC: 750 micron Polyethylene damp-course.

BEARERS: 140x90 or 90x90 bearers as shown on the drawings.

JOISTS: 140x45 joists @ max 450 crs.

4.6. TIMBER DECKING

Ensure all decking timber is minimum FSC certified.

DECKING: 140x 21 timber decking, laid with groove side down and across the main traffic direction as shown on the drawings.

SPECIES: Vitex or equivalent durable hardwood

FINISH: Oil stain

4.7. WALL FRAMING

EXTERIOR WALLS:

STUDS: 140x45 at maximum 600crs and to suit fixing of linings and cladding unless otherwise specified on the drawings.
BOTTOM PLATES: 140x45 securely fixed with nail plates at junctions and joints
TOP PLATES: 2- 140x45 fixed with nail plates at junctions and joints

INTERIOR WALLS:

STUDS: 90x45 at maximum 600crs and to suit fixing of linings and cladding unless otherwise specified on the drawings.
BOTTOM PLATES: 90x45 securely fixed with nail plates at junctions and joints
TOP PLATES: 2- 90x45 fixed with nail plates at junctions and joints

CAVITY BATTENS:
Fix cavity battens to studs / dwangs as required, as shown on the drawings and as scheduled below, for each cladding type:

VERTICAL PRE-PAINTED STEEL: 18mm CAVIBAT battens fixed horizontally @max 800crs over dwangs as required by the selected flexible air barrier system.

VERTICAL CEDAR WEATHERBOARDS: 18mm VERTIBAT cedar battens fixed horizontally @480crs over dwangs

EXPOSED FIXINGS: At walls where the interior lining type requires exposed fixings, set out the framing to allow all fixings to be in perfectly straight lines both horizontally and vertically.

OVER-HEIGHT WALLS: In all cases, spacing & framing sizes to comply with NZS 3604. Refer NZS3604 Table 8.2.

Provide additional dwangs @max. 1350crs to support batt insulation and as necessary, for fixings, linings and fittings, and as required for GIBfix® system at wall junctions.

4.8. GIBFix® System

The Wall and Ceiling framing shall incorporate the GIBFix® Steel Angle System. Co-ordinate with the FRAME & TRUSS Manufacturer to provide framing in accordance with the GIBFix® 2016 Specification.

NOTE: This system means dwangs are only required at wall intersections or to support fittings and claddings.

Fix angle at internal corners of walls and at walls-ceiling junctions as required.

REFER to GIBFix® 2016 attached to this Specification.

4.9.FIRE RATED WALLS

As shown on the drawings, the wall between the garage and the studio shall be fire rated to 30/30/30. Ensure fire rated elements extend to the underside of the roofing.

Refer GIB specification GBTL30 attached. (1 layer 10mm GIB Fyreline each side of wall)

4.10. LINTELS & BEAMS

All lintels shall be 2-90x45 SG8 timber unless noted otherwise on the drawings. Specific lintel & beam sizes are shown on the Frame & Truss Manufacturer's Documents.

All lintels shall be fixed against uplift in accordance with the FRAME & TRUSS Manufacturer's Details

4.11. POSTS

Provide and install Prolam timber posts as shown on the drawings:

SPECIES: Prolam
FINISH: Visual
SIZE: 112x112
COATING: Paint

4.12.ROOF FRAMING

Frame up the roofs as shown on the drawings. Frame up around all openings in the roof as required.

TRUSSES: Roof trusses shall be designed by the Roof Truss Manufacturer. Details of the trusses and their connections along with a producer statement shall be provided to the PRINCIPAL for the issue of the Building Consent by the Local Authority.

The roof trusses shall be at maximum 900crs and allow for snow loading and wind loading specific to the site.

Rafter sizes and locations are noted on the Bracing & Framing Plan

PURLINS shall typically be 70x45 @ maximum 900crs in long lengths with joints staggered. Note edge spacing of purlins shall be max 800crs (corrugate) for high wind zone or above.

Add blocking or additional framing to support soffit linings as required.

4.13. CEILING FRAMING

Frame up the ceilings and bulkheads as shown on the drawings.

Strap the ceiling with 70x35 timber battens fixed at each rafter / truss and pack them as necessary to provide a totally flat surface for fixing the ceiling linings.

Provide fixings in the ceiling framing for recessed and pendant light fittings in consultation with the PRINCIPAL.

4.14. FIXINGS

Refer NZS 3604 Table 8.19 for timber framing not scheduled below.

Member	Fixing	Alternative fixing capacity
Ordinary Pile / Bearer	2/ 4.9mm galv wire-dogs and 2/ 100x3.75mm nails	
Anchor Pile / Bearer	Lumberlok® 12kN & 6kN anchor or braced pile fixing set	
Bearer / Joist	3/90x3.15 skew nails	6kN fixings adjacent joist to bearer at braced or anchor piles
Bearer / Joist	Joist hangers with type 17-12gx35mm Hex head screws	
20mm solid timber decking	10g x 65 torx s/s decking screws.	
Bottom Plates (concrete floor)	Approved masonry anchors @ max <900crs> 600crs and as required for bracing panels	-
Stud / Bottom plate	3/90x3.15 end nails	
Top plates / Stud (loadbearing walls)	2/90x3.15mm nails – end nailed + Lumberlok® studstrap	4.7kN
Lintels	Referenced Mitek details as per the frame and truss design	
Post / Footing	Bowmac bracket & M12 bolts	14.7kN / 8.8kN refer to drawings
Post / Beam	M12 bolts + 2 plates to comply with NZS 3604 9.3 (B)	14.7kN / 8.8kN refer to drawings
Rafters	2/90x3.15 skew nails + 2 wire dogs	4.7kN
Rafters to top plate	Simpson Strong Tie Variable Pitch connector with 40mmx3.75 nails	4.7kN
Rafters to beam	Simpson Strong Tie Slopeable Rafter hanger with 64x3.75mm nails	4.7kN
Purlins on flat	1x10g screw 80mm long	2.4kN
Trusses	Refer truss manufacturer's plan	-

4.15. DURABILITY

EXPOSURE ZONE: B
All exterior fixings to be hot dipped galvanised except that:

Bolts and fixings, other than proprietary galvanised steel brackets, in exposed situations or within 600mm of finished ground are to be minimum 304 grade Stainless steel.

All fixings in H3 or above treated exposed timber to be minimum 304 grade Stainless steel.

Cedar fixings to be stainless steel, copper or silicon bronze.

4.16. EXTERIOR WALL CLADDING ON TIMBER FRAMING

WARRANTY: All claddings to have minimum 15 year manufacturer’s warranty.

REFER MANUFACTURER'S SPECIFICATIONS FOR ALL CLADDINGS & UNDERLAYS

BUILDING UNDERLAY:
The building underlay shall be as scheduled below and be fixed to cover the whole exterior surface of the walls. The building underlay shall be lapped a minimum of 150mm at sheet joins, be securely fixed to the framing and be free from tears

The building underlay system shall return the full depth of the framing at all external window and door openings with self adhesive flexible flashing tape reinforcing to all corners and sill membrane flashings in accordance with the both the Joinery and barrier system manufacturers' details and the NZ Building Code.

UNDERLAY: MASONS UNI PRO FLEXIBLE AIR BARRIER or equivalent synthetic absorbent underlay. NOTE This air barrier is rated for external exposure for 90 days.

CLADDING:
Supply and install cladding as scheduled below:

TYPE 1 – VERTICAL WEATHERBOARD : vertical shiplap timber weatherboard, on horizontal VERTIBAT battens @ max. 480crs, on building underlay.
TIMBER SPECIES: Western Red Cedar
FINISH: Oil stain
COLOUR: TBC

FIXINGS - 75 x 3.15mm annular grooved rose head nail in centre of horizontal batten (or nails clenched each side). Note each horizontal batten shall be over a nog in the wall framing and cladding fixings will penetrate through cavity batten into wall framing.

TYPE 2 - PAINTED STEEL: Vertical COLORSTEEL tray profile, on 18mm horizontal MASONS polypropylene cavity battens, on building underlay
FINISH: Pre-painted
PROFILE: Corrugate
SUBSTRATE: COLORSTEEL MAXXAM 0.40mm
COLOUR: TBC

4.17. METAL ROOF CLADDING

REFER MANUFACTURER'S SPECIFICATIONS & DETAILS attached to this specification. The Roofing shall be installed strictly in accordance with the manufacturer's written instructions.

Note no copper or brass pipes shall discharge onto the roofs.

Allow for expansion of the roofing material at ridgelines and other positions where restriction of movement could occur.

Roofing shall be laid in single lengths with stopped ends at ridges and lipped at gutters.

Stopped ends shall be formed in each tray of the roofing using the purpose-made tool at upper ends of roof areas.

Care shall be taken to avoid tearing the metal or marking the paint finish. All damaged sheets shall be replaced.

Roofing shall carry 50mm over all spoutings and the ends of all troughs shall be lipped with the purpose-made tool.

STEEL ROOFING: Supply and install pre painted steel roofing, on roofing underlay, on steel support mesh if required, on purlins @ max 900 crs, on timber roof framing as shown on the drawings:

SUBSTRATE: 0.40mm COLORSTEEL MAXXAM

PROFILE: Corrugate
COLOUR: COLORSTEEL standard colour in consultation with the PRINCIPAL.

Note purlin end spacing 0.8m FIXING: 12gx65 screws with seals. Fix as per manufacturer's specification. (E2/AS1 Table 8.4.4.2A Type C1 - hit 1, miss 1….)

ROOFING UNDERLAY: MASONS UNI Plus Flexible Air Barrier System

STEEL SUPPORT MESH (where roof pitch <10˚ and underlay is installed vertically) : minimum 0.9 mm diameter steel wire mesh galvanised in compliance with AS/NZS 4534

FLASHINGS: Supply and fit metal flashings to match the roofing as shown on the drawings.

SOFFIT LINING: 7.5mm JAMES HARDIE Hardiegroove
FINISH: Paint

BARGE BOARDS: COLORSTEEL fascia system to match the roofing.

4.18. GUTTERS & DOWNPIPES

STORMWATER: provide and install pre-painted steel Gutters & Downpipes running to the stormwater soak pit as shown on the site plan.

Gutters shall be fixed as shown on the drawings with snow straps and brackets @ max 600 crs.

Fix bird-proof plastic wire "balloons" to the top inlet of all downpipes

GUTTERS: 140mm Half-round pre-painted steel gutters

DOWNPIPES: 80Ø pre-painted steel droppers, securely fixed with brackets at top and bottom, dropping directly into drains

REFER TO MANUFACTURER'S SPECIFICATIONS & DETAILS.

4.19. INTERIOR LININGS ON TIMBER FRAMING

REFER MANUFACTURER'S SPECIFICATIONS for all linings.

Supply and fix interior wall and ceiling linings as scheduled below:

PLASTER BOARD LININGS
Glue AND screw fix plaster board linings in accordance with the Manufacturers instructions. External and internal corners shall be formed, stopped up and finished to straight lines unless shown otherwise on the drawings.

Plaster board types shall be:
10mm GIB Braceline as required on the Bracing Plan.
10mm GIB Aqualine to wet areas and tiled walls
10mm Fyreline GIB to the fire rated wall
10mm Standard GIB Board to all other walls
13mm Standard GIB to ceilings

External angles to have GIB Gold Line Bullnose External 90 Degree Corner Trim
Internal angles to have GIB Gold Line Internal Trim over GIBfix support corners

STOPPED: Level 4
FINISH: Painted

TILED WALLS:

Refer Tiling section for details of tiles.

GARAGE PLYWOOD WALL LININGS: 9mm CD grade plywood, screw fixed with fair face showing, to interior walls as shown on the drawings.
FINISH: Linseed Oil

GARAGE PLYWOOD CEILING LININGS: 12mm CD grade plywood, screw fixed with fair face showing, to the ceiling as shown on the drawings.
FINISH: Linseed Oil

MDF CEILING LINING:
Southern Pine Products 135x12mm T&G MDF planks, in single lengths (no butt joins)
FINISH: Paint

4.20. ARCHITRAVES, SKIRTINGS ETC

TIMBER: Finger jointed pine, treated where required, carefully selected not to warp, twist or buckle.
FINISH: paint

DOOR FRAMES: 25mm timber frames

SKIRTINGS: Fin 90x15

ARCHITRAVES: 60x15

SCOTIA: At grooved timber ceiling, Fin 50x15mm batten around edge of ceiling, to match ceiling.

Where both walls & ceiling are GIB lined, the junctions shall be square stopped as shown on the drawings.

4.21. INSULATION

Install insulation as scheduled below, tightly fitted between the framing members with no gaps or compression folds.

WALLS: MInimum R4.0 batt insulation (140 framing, including house/studio to garage)

90mm GARAGE WALLS: R2.8 batt insulation

TRUSS CEILINGS: R6.0 batt insulation installed between the bottom chord of the truss, with XPS insulation cut to fit on top of the bottom chords, to the same height as the adjacent batt insulation.

VENTILATION GAP: Ensure a minimum of 25mm airspace is maintained above the insulation below the purlins. If required to achieve this, reduce the main insulation to R4.5 batt insulation and lay an additional R1.0 blanket under the rafters between the ceiling battens, running perpendicular to the rafters. Note the ceiling battens will need to be fixed prior to this second layer of insulation being installed.

WHERE TRUSS HEEL HEIGHT IS LESS THAN 260mm: Install R4.5 Pink® Batts® insulation at roof edge with insulation guard and insulation under compression below. Guard protects 25mm air gap above insulation. Compressed insulation complies with H1 edge insulation requirements. Refer calculations attached to this specification.

DURABILITY: Insulation to comply with NZBC B2/AS1 Table 1, Durability requirements of nominated building elements - 50 years.

4.22. SHOWER SCREENS

Allow to supply and install frameless 10mm toughened safety glass shower screens and door to the proprietary acrylic showers in the House Bathroom and the Studio Bathroom(may be supplied by shower manufacturer).

All safety glass to comply with NZS 4223.8: 2106

Note Ensuite to have shower curtain.

REFER TO MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

4.23. INTERIOR WINDOW & DOOR JOINERY

SWING DOORS: hollow core timber doors primed ready for paint finish.
FINISH: Paint

HARDWARE: Lever handle door sets, with privacy locks to bathroom and toilet doors, TBC by the PRINCIPAL

CAVITY SLIDERS: timber doors to match the swing doors ready for paint finish. CS or equivalent sliding gear with no visible bottom track.
FINISH: Paint

4.24. EXTERIOR WINDOW & DOOR JOINERY

Allow to supply and install aluminium exterior joinery with flashings at head, jambs and sill as detailed and in accordance with the Manufacturers specification and details.

GLAZING: Double
THERMAL EXTRAS: Low E, argon filled units
FRAME: Thermally broken aluminium
PROFILE: TBC
FINISH: Powder coated
COLOUR: TBC

Provide the PRINCIPAL with details of any additional costs associated with improved thermal spacers, triple glazed, low E 1-4 and Krypton filled systemsand allow to supply if requested.

All aluminium windows and doors shall be designed and manufactured in strict accordance with NZS 3504, Specification for Aluminium Windows; NZS 1170.5, Structural Design Actions; and NZS 4211, Performance of Windows and Amendments.

FLASHINGS: Door & window flashings shall be provided by the WINDOW & DOOR MANUFACTURER.

JAMB LINERS: ex. 25mm jamb liners, for architrave finish
TIMBER: Pinus Radiata finger jointed treated where required
FINISH: Paint
COLOUR: to be confirmed by the PRINCIPAL

The heads of adjacent exterior windows and doors and interior doors shall line up unless otherwise noted.

TOLERANCES: 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.

FIXINGS: All fixings shall be concealed

GARAGE DOOR: allow to supply and install a remote operated electric sectional tilt-panel Colorsteel garage door with keypad and remote control unit in consultation with the PRINCIPAL.

HARDWARE: Allow to supply and install door and window hardware in colour to match frame, as scheduled below and in consultation with the PRINCIPALs.

SWING DOORS: Handles to both sides of the door and double cylinder deadlocks with turnsnib on interior face
SLIDING DOORS: Door pulls to both sides of the door
CASEMENT WINDOWS: standard fasteners
SLIDING WINDOWS: Window pull & fastener on inside face of sliding sash
AWNING WINDOWS: standard fasteners

All fittings shall be removable for replacement or adjustment without damaging the frames.

All windows shall be fitted with Interlock weight for size friction stays.

Fit Door latch sets centred at 900mm above the finished floor level.

RESTRICTOR STAYS: Where required by regulation (eg windows at upper stories with sills below 760mm AFL or windows in access routes) opening windows shall be fitted with Interlock Stainless Steel Restrictor Safety Stays (minimum 2 per sash) limiting the opening to 100mm or less.

DRAUGHT SEALS: Doors shall be fitted with continuous draft seal strips to jambs, head & meeting stiles and an approved weather seal to sills.

AIR SEAL to NZBC E2/AS1:9.1.6 **Air seals**. Form an air-tight seal by means of proprietary expanding foam or sealants used with PEF backing rods, applied between the window / door reveal and structural framing to a depth of 10 - 20mm, to provide a continuous air tight seal to the perimeter of the window or door.

SEAL JOINTS: Seal frames to each other and to adjoining structure and finishes, all as required by the window and sealant manufacturer and to make the installation weathertight.. In very high and extra high or greater wind zones, seal between the window head and the head flashing. Do not seal the junction between the sill member and the cladding or sill flashing which must remain open..

MASTER KEYING: All exterior doors to be keyed alike.

4.25. GLAZING

All glass shall comply with NZS 4223.1,2 &3: 2016 Glazing in Buildings.

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.

DOUBLE GLAZING: Supply and fit Glass Tech, Insulating Glass clear glazed, sealed, double glazing units to all windows and doors unless noted otherwise on the drawings, incorporating safety glass (weight for size) where required by Regulation. The double glazing units shall be fitted strictly in accordance with the manufacturer’s printed instructions and shall carry a 10 year printed guarantee against all construction and performance defects.

GLAZED DOORS: All glazed doors shall be glazed with safety glass.

CLEAR GLASS: clear float glass to be fitted to all doors, windows and skylights unless noted otherwise in this specification.

CONFIRM whether OBSCURED GLASS is to be fitted to bathroom windows; Pilkington Satinlite Laminated, White or equivalent. Note safety glass is required in all bathrooms.

SAFETY GLASS: Safety glass locations to be confirmed by the WINDOW & DOOR MANUFACTURER.

GUARANTEE: All windows and doors, including the glazing units shall carry a 10 year written guarantee against all construction and performance defects.

4.26. SIZES

Sizes of all window and door openings are shown on the drawings.

Sizes are to inside faces of framing openings unless noted otherwise.

Where “Max” is noted, frames shall be constructed to the maximum possible size to completely fill the available opening.

All dimensions shall be **checked on the site and any variations shall be approved by the PRINCIPAL before the manufacture of the frames.**

The heads of all adjacent windows and doors shall line up throughout the job unless otherwise noted.

4.27. WINDOW & DOOR JOINERY FIXING

Frames shall not be fixed into openings which are out of square or the incorrect size. Packing space at ends of frames shall be no greater than 6mm unless otherwise confirmed with the PRINCIPAL.

The MAIN CONTRACTOR shall be responsible for making good all tolerances and ensuring all openings in the framework are square and the correct size as shown on the drawings.

Frames shall be set straight, plumb and level and fitted to line up with adjoining joinery. Leave all joinery with no distortions and in perfect working order.

4.28. FLASHINGS

GENERALLY: provide and fit 0.55mm BMT pre-painted steel flashings to exterior walls, roofs, joints etc as shown on the drawings to ensure that the entire job is waterproof.

All flashings shall be neatly fitted as detailed and in accordance with the best trade practice.

WINDOW & DOOR FLASHINGS: Fix min. 0.7mm BMT aluminium flashings as shown on the drawings to all aluminium framed doors and windows as required. Use proprietary flashings supplied by the Window and Door Manufacturer wherever possible.

NOTE windows and doors in walls with pre painted steel cladding shall have pre-painted steel flashings to suit the cladding as shown on the drawings.

DISSIMILAR MATERIALS: Ensure flashings are compatible with claddings and structure materials. Refer to NZS 3604, table 4.5 and the NZ Building Code E2/AS1Tables C.1.1.1.B & C for details.

CIRCULAR ROOF PENETRATIONS: Flash the terminal vent pipe AND chimney flue pipe with Dektite EPDM boot installed in strict accordance with the manufacturer’s instructions.

5. FINISHES

5.1. GENERAL

The PAINTER shall inspect all surfaces to be finished and report any defects to the MAIN 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 re-coating.

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.

All materials shall be delivered to the site in unbroken packages bearing the manufacturers name and brand.

PRIME / SEAL: Prime and or seal all bare surfaces as required by the finished system. 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.

SAND: All individual coats of paint or polyurethane shall be thoroughly sanded to remove nibs and other imperfections prior to the application of subsequent coats.

All paint shall be applied by roller where possible.

COLOURS: The paint colours shall be approved before the work proceeds from samples placed in relevant positions on the site by the PAINTER.

Confirm all colours with the PRINCIPAL prior to purchasing or ordering products.

REFER TO MANUFACTURERS SPECIFICATION AND DATA SHEETS FOR SYSTEM DETAILS

5.2. INTERIOR SURFACES

Interior Surface finishing systems shall be as scheduled below or equivalent systems approved by the PRINCIPAL:

Area	Substrate	Sealer	Finishing Coats	Notes
Painted Walls	Plaster board	Resene Waterborne Broadwall Sealer	Resene Zylone Sheen Zero – no added VOCs waterborne low sheen	VOC Red List Free Minimum 2 topcoats
Painted Ceilings	Plaster board	Resene Waterborne Broadwall Sealer	Resene Ceiling Paint	VOC Red List Free Minimum 2 topcoats
Painted Walls & Ceilings - Wet areas	Plaster board Aqualine	one coat Resene Waterborne Sureseal + one coat of Resene Quickdry waterborne primer	2 coats Resene SpaceCote Low Sheen Kitchen & Bathroom waterborne enamel	Minimum 2 topcoats

Painted Walls & Ceilings - Wet areas	Plaster board Aqualine	one coat Resene Waterborne Sureseal + one coat of Resene Enamel Undercoat (if Quick Dry is out of stock due to material shortages)	2 coats Resene SpaceCote Low Sheen Kitchen & Bathroom waterborne enamel	Minimum 2 topcoats
timber ceiling	plywood		linseed oil	Minimum 2 coats
timber walls	plywood		linseed oil	Minimum 2 topcoats
Tiles	GIB Aqualine® Plasterboard		Ceramic wall Tiles	Wet area tiles installed over Ardex WPM002 waterproofing membrane
Painted timber skirtingboards, etc	Solid timber	Resene Quick Dry Waterborne Primer Undercoat	Resene Lustracyl waterborne enamel paint system	Minimum 2 topcoats

5.3. EXTERIOR SURFACES

Exterior Surface finishing systems shall be as scheduled below or equivalent systems approved by the PRINCIPAL:

Note minimum LRV may be required for some substrates.

Area	Substrate	Sealer	Finishing Coats	Notes
Prepainted steel cladding and roofing			No additional finish	Replace damaged sheets.Touch up is not possible.
Soffit lining	Fibre-cement board		Resene Wintergrade Lumbersider	
weatherboard	cedar		CD50 Wood Oil	Sealer coat applied to all 4 faces before fixing boards
Foundation	KAPO board		Resene X200	Colour TBC
Timber decking	Solid Timber		Resene Decking and Furniture Oil	

5.4. FLOOR FINISHES

Allow to supply and install/fix/apply as required, the following flooring systems, in locations as shown on the drawings:

Type	Substrate	Sealer / Primer	Product	Notes
Vinyl Planks	Concrete	Floor leveling compound if required for smooth finish	Karndean Knight Plank or equivalent 2.0mm thick vinyl planks	Colour TBC
Timber flooring	Concrete	Floor leveling compound if required for smooth finish	Fortē Clip together floating floor	PRE-FINISHED
Interior Exposed Concrete - garage	Concrete		RESENE Cemseal or equivalent dust sealer	Acid etch concrete prior to sealing. Ensure concrete has cured sufficiently (no moisture is being released)
Carpet	Timber	Commercial carpet underlay	TBC	Smooth edge system

Allow for all fixings, trimming bars and finishes as required.

COLOURS:
Carpet to be selected by PRINCIPAL.
Timber to be selected by PRINCIPAL.
Vinyl to be selected by PRINCIPAL.
Tiles to be selected by PRINCIPAL, see TILING paragraph below.

ALL FLOORING TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND DETAILS.

5.5. TILING

All tiles to be selected by the PRINCIPAL.

Confirm all tiling systems with the PRINCIPAL prior to ordering materials.

Tile design and installation must comply with AS 3953:1:1991 and AS 3958:2:1991 – Ceramic Tiles part 1 – Guide to the installation of Ceramic tiles.

IN-FLOOR HEATING: Tiles to be laid with flexible grout and glue to prevent cracking of flooring if an under tile bathroom floor heating system is installed.

CONSTRUCTION JOINTS / SILICON GROUT: Provide construction joints where required by the substrate. All edge grouting to be MS silicon in colour to match grout or equivalent flexible tile grout system.

5.6. WET AREA TILES

Supply and place floor levelling compound in the pre-formed shower area recesses in the concrete floor slab to create a minimum 1:50 fall to wastes, as shown the drawings.

WATERPROOFING: Tiles to be laid over Ardex WPM 002 on both walls and floors in wet areas. Waterproofing membrane to be continuous from wall onto floor.

Ensure tile adhesive is compatible with waterproofing membrane.

REFER TO MANUFACTURERS SPECIFICATION FOR WATERPROOFING MEMBRANES

5.7. FLOOR TILES

Tiles suitable for flooring only to be laid on floors. Slip resistant tiles must be used in shower areas.

Floor tiles on timber floors to be laid over 6mm compressed sheet flooring laid over the structural floor prior to tiles and waterproofing membranes being installed.

5.8. WALL TILES

WALL TILES: Allow to supply and install wall tiles to 2200mm high (to match head height of doors & windows) on all walls of the Ensuite.

Tiles on timber framed walls to be laid over 10mm GIB Aqualine linings. Install board in accordance with the manufacturer’s technical specification and details.

SKIRTING: Allow to supply and install floor tiles as 100mm high skirting to walls adjacent to tiled floors where there are no wall tiles required.

6. JOINERY, FITTINGS & APPLIANCES

6.1. GENERAL

Timber joinery shall be soundly constructed in accordance with best trade practice.

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

All Pinus Radiata timber used in work to be fitted in wet areas shall be preservative treated.

All joinery positions shall be measured on site and confirmed with the PRINCIPAL before the units are constructed.

Where equipment and/or appliance selections have been made or where dimensions have been given for equipment and/or appliances, the MAIN CONTRACTOR or SUB CONTRACTOR shall verify any special requirements for that product prior to fabrication and/or installation of the joinery. Any errors shall be the responsibility of the CONTRACTOR.

6.2. KITCHEN, LAUNDRY, BATHROOM JOINERY

Allow to supply and install Kitchen Laundry & Bathroom joinery as shown on the drawings, in consultation with the PRINCIPAL and as scheduled below:

KITCHEN:
Joinery to be supplied by the PRINCIPAL as a separate contract. Allow to coordinate with separate CONTRACTOR.

LAUNDRY:
- Construct Solid timber shelving in consultation with the PRINCIPAL
- SS laundry tub & cabinet with washing machine connections
- door stop

BATHROOMS:
- Vanity
- Toilet roll holder
- robe hooks x 2
- door stop
- 500x900 Mirror with de-mist backing

ENSUITE:
- Vanity
- Toilet roll holder
- robe hooks x 2
- door stop
- 500x900 Mirror with de-mist backing

6.3. SPLASHBACKS

Supply and install tile splashbacks to kitchen bench AND bathroom vanities in consultation with the PRINCIPAL.

Tiles to be selected by the PRINCIPAL.

Seal the basin and top to the wall in accordance with the attached E3/AS1 Fig 3.

6.4. RANGEHOOD / EXTRACT DUCTS

Supply and install metal vent ducts for the rangehood & bathroom extractors strictly in accordance with the manufacturer's instructions, to exhaust through the exterior wall / soffit.

All ducts shall be installed to fall to the outside with minimal bends. Fit vermin proof grille to exterior end of duct. Where ducts are greater than 2m long use rigid ducting to reduce friction.

Refer to Electrical section for extract system specifications.

6.5. WARDROBE SHELVING

Construct wardrobe joinery units and storage within Wardrobes in consultation with the PRINCIPAL

6.6. LOG BURNER

Allow to provide and install a WOODSMAN FLARE log burner and flue as shown on the drawings and in consultation with the PRINCIPAL.

REFER TO MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

6.7. HEARTHS

Allow to provide and install a non-combustible tiled hearth to the fire if/as required by the fire manufacturer and in consultation with the PRINCIPAL. Finished hearth to be flush with adjacent flooring.

6.8. ELECTRICAL APPLIANCES

Electrical Appliances to be supplied by the PRINCIPAL. Allow to take delivery, store and install in accordance with the manufacturer's specification (coordinate with other trades as required) the following appliances:

Refrigerator
Oven
Cook top
Microwave
Dishwasher
Range hood
Clothes washing machine
Clothes dryer

Leave all in perfect working order with copies of the manufacturer's instructions for the PRINCIPAL.

7. PLUMBING & DRAINAGE

7.1. GENERAL

All plumbing and drainage work shall be carried out by a registered and licensed plumber and Drain-layer and shall comply with AS3500 parts 1, 2 & 3 to comply with the NZ Building Code.

The drawings indicate the general arrangement and pipe sizes. Whilst the installation may deviate from the routes shown on the plans, the sizes and connections to fixtures must adhere to the drawing.

EXISTING SEWER LATERAL: Confirm the location and depth of the existing sewer lateral on site prior to laying any new drains or positioning new plumbing fittings

The responsibility for correctly setting out in ground and under slab drainage is the responsibility of the Plumbing & Drainage CONTRACTOR.

All water pipes under a slab to be laid in a narrow trench on a bed of sand or fine-grained soil. The pipe must be at least 75 mm below the underside of the slab.

All pipes penetrating the slab shall be:

- installed at right angles to the slab surface
- lagged with an impermeable material for the full depth of the slab penetration. Impermeable lagging must be at least 6 mm thick.

Liaison with the MAIN CONTRACTOR to ensure all drains are correctly located and that all blocks and holes are in place before work on the concrete floor pad commences is paramount.

Extend a 20mm cold supply to the house, carry to the hot water heater allowing for stand pipes and all necessary branches.

Connect hot and cold water supply to new fittings.

7.2. IN LINE FILTER

Install an in-line filter immediately adjacent to the main isolating valve at the point of entry to the building, in an accessible position to allow for easy cleaning.

7.3. FITTINGS

All plumbing fittings are to be supplied by the PRINCIPAL and are scheduled below.

Allow to take delivery of fittings, store and install when required.

Room / Area	Fixture Type	Description
House Bathroom	Handbasin	integral with Vanity unit
	WC	Ceramic WC suite with dual flush capability
	Bath	Back to wall Acrylic Bath with support framing
	Shower	Proprietary shower base with built in screens and waste Slide Rail adjustable height Shower System
Ensuite	Handbasin	Ceramic Handbasin with bottle trap
	WC	Ceramic WC suite with dual flush capability
	Bidet Toilet seat	TBC

	Shower	Wet Area tiled floor and walls with custom glass screens & door. Slide Rail adjustable height Shower System including wall mixer
	Floor waste	Allproof 65mm square grate with leak proof flange and gully trap
Studio Bathroom	Handbasin	integral with Vanity unit
	WC	Ceramic WC suite with dual flush capability
	Shower	Proprietary shower base with built in screens and waste Slide Rail adjustable height Shower System
Kitchen	Dishwasher	Allowed for under Electrical Appliances
	Sink	Stainless steel sink with integral overflow
Laundry	Tub	Stainless steel laundry tub with integral overflow
Exterior	Hosetaps	Brass hose taps in locations as shown on the drawings
Taps		All taps to be Methven Futura series tapware or fittings to an equivalent standard

7.4. PIPEWORK

From connection point, run pipes complete with all fittings, support and fixing, joins and install to manufacturers specifications.

Size the pipes and branches in straight runs to deliver the acceptable flow rate to NZBC G12/VM1 or NZBC G12/AS1, table 3, Acceptable flow rates to sanitary fixtures at each outlet. Allow for 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.

POLYETHYLENE PIPE: Cross Linked Polyethylene Pipe to AS/NZS 2492 and fittings to AS/NZS 2537.2 with a minimum pressure capability of 1200 kPa complete with fittings and accessories brand matched to the pipe manufacturer's requirements with durability to NZBC B2/AS1, table 1 and NZBC G12/VM1.

HOT and COLD WATER: 20 and 15mm Barrier PE-X polyethylene, to BS 7291-3:2001

COLD Water supply to House: 20mm MDPE

All pipe penetrations through walls or ceilings where exposed should have a cover plate applied.

7.5. FLOW REDUCERS

Fit flow reduction valves to give the flow rates as scheduled below to the following fittings:

shower	12 litres /minute
wash hand basin	9 litres / minute

7.6. INSULATION

All pipe work is to be insulated using closed cell elastomeric pipe insulation to meet the requirements of NZS4305.

NOTE: As well as pipe work being insulated, all valves, vents and associated fittings shall be insulated to comply with H1/AS1.

No pipe work is to be insulated before it has been pressure tested.

7.7. HOT WATER

Allow to install the hot-water system as specified below. Confirm sizes of cylinders with the PRINCIPAL prior to ordering.

Allow for accessory elements such as pressure relief valves, expansion vessel as per G12/AS1 Fig 8a, flow control valves, pressure limit valves, isolating valves as required.

Install a tempering valve if required to control the hot water temperature at any sanitary fixture used for personal hygiene at not more than 50^{o}C.

Room / Area	Fixture Type	Description	Quantity
Hotwater - House	Cylinder	250 litre mains pressure hotwater cylinder with double thermostat and element and grade A1 insulation. Ensure hotwater cylinder is fitted with seismic restraints in accordance with Fig 14, NZBC G12/AS1	
Hotwater - Studio	Cylinder	120 litre mains pressure hotwater cylinder with double thermostat and element and grade A1 insulation. Ensure hotwater cylinder is fitted with seismic restraints in accordance with Fig 14, NZBC G12/AS1	

Hot water supply to the kitchen sink shall be sized to comply with the maximum run lengths below:

Maximum length(m)	pipe diameter(mm)
25	10
12	15
7	20

Showers shall have priority feeds with no “tees” to other fittings.

7.8. SAFE TRAY

Hot-water cylinder to be installed on an approved safe-tray with reliefs, drains and safety valves discharging to tray and 40mm trap to the waste water drains as shown on the plumbing / drainage plan.

7.9. TESTING

After installation of pipe work and BEFORE the application of insulation or backfilling, ALL pipe work will be subjected a pressure test of twice the working pressure of the systems.

This pressure shall be applied for a 5 hour period without any pressure drop

7.10. FOUL DRAINAGE

Every junction and bend shall be an inspection point. Place signal strip above all buried drains.

Provide as-built drainage plans to the PRINCIPAL on completion of the work.

FOUL DRAIN: 100mm uPVC, with inspection points and cleaning points as required, running to the existing foul sewer lateral on site.

Minimum gradient 1:60.

7.11. STORMWATER DRAINAGE

STORMWATER DRAIN: 100mm uPVC, with inspection points and cleaning points as required, running to a new soak pit on site.

Minimum gradient 1:120

7.12. SOAK PIT

Construct a rock filled soak pit in accordance with the NZ Building Code requirements and calculations attached to this specification.

SIZE: 4m x 2 m x 1.5m deep includes 0.2m cover
ROCKS: 100-150mm diameter round rocks.
FILTER CLOTH: CIRTEX FilterPlus or equivalent needle punched filter cloth with a mass per unit area of 140 grams/m² and a minimum thickness of 0.45 mm.

NOTE soakage rate to be tested at the actual location of the soak pit on site, once drains are laid and location confirmed. The size of the soak may need to be re-calculated if the rate measured is different to the initial calculation.

8. ELECTRICAL

8.1. GENERAL

All work to be carried out by a licensed electrician and shall comply with all relevant standards and regulations.

Allow for making all tests as prescribed by the regulations, pay all fees, obtain all consents and arrange inspections as required.

All material and equipment used in this contract shall comply with the local regulations and all relevant standard specifications.

TEMPORARY SUPPLY: Arrange and connect a temporary “MAIN CONTRACTOR’s” supply for the duration of the construction.

PERMANENT SUPPLY: Extend the power supply from the existing Toby at the street to the Meter Box & Switchboard. Arrange for the Electricity Supplier to provide a permanent connection in consultation with the PRINCIPAL.

METER BOX: Supply and fit Meter box in a location approved by the Electricity Supplier in consultation with the PRINCIPAL.

SWITCHBOARD: Provide and fit approved PDL DBF series switchboard, installed fully recessed where shown on the drawings. Height shall be 2m to the top of the board. Provide and install appropriated MCBs for all circuits. Label all circuits clearly at the switchboard.

EARTHING: Provide all necessary earthing to cables and exposed metals as required by the Electricity Supplier. Provide a driven main earth close to the meter-board suitable for the whole installation.

8.2. CABLING

MAIN CABLE – neutral screened 16mm underground cable, or as sized by the Electrician, as required for the length of run & demand.
Wire lights in 1.5mm 3 core
Wire power outlets in 2.5mm 3 core

Run cabling as required to establish circuits for all fittings and power outlets. Conceal all wiring.

Joints in cables will not be accepted.

Where possible drop cables from ceiling above, or in the bottom 300mm of a wall. Wire more or less parallel or perpendicular to structural elements. Support cable at regular intervals.

CONDUIT: Any wiring in concrete structure to be installed in PVC conduit to allow for future servicing and access.

POLYSTYRENE INSULATION: any wiring installed in walls with EPS or XPS insulation to be fully wrapped with EXPOL Wireguard or equivalent plasticiser protective barrier.

8.3. FITTINGS

Allow to install standard fittings, in accordance with the Electrical Layout Plan and in consultation with the PRINCIPAL, including the following:

SWITCHES: Allow to provide and install vertical format switches.

Provide remote switches to separate power outlets to ovens, cooktops, refrigerators, washing machines, clothes dryers, waste disposal units, dishwashers, rangehoods & towel rail heaters.

LIGHTS: Allow to supply, take delivery of, store, and install light fittings.

RECESSED LIGHT FITTINGS: All recessed light fittings to be IP / IC rated to allow full insulation cover.

LIGHT BULBS: Fit all new lights with LED bulbs in “warm white” tone, rated 3000K or less.

Provide artificial lighting to all habitable areas with no exterior windows to achieve a minimum of 20 lux of illuminance at floor level.

POWER OUTLETS: Allow to supply, take delivery of, store and install horizontal format double power outlets (3 per room).

KITCHEN:
- Electric Wall Oven
- Induction Cook top
- Range Hood with extract fan over hob ducted to outside
- Refrigerator
- Freezer
- Dishwasher

LAUNDRY:
- Dryer, vented direct to outside
- Extract fan over tub ducted to outside <if no windows>

LIVING:
- Heat pump - see Electrical Heating section below

BATHROOMS:
- Extract fan over shower ducted to outside
- Wall heaters
- Heated towel rails with concealed wiring.

GENERAL
- Heat pumps - see Electrical Heating section below
- Electric opening garage door

WATER HEATERS: Allow to coordinate with the Plumber and install a switched power supply and as required.

BIDET TOILET SEAT: Allow to coordinate with the Plumber and install a switched power supply and as required.

DOOR BELL: Allow to install electrically wired door bell in consultation with the PRINCIPAL.

HOT-WATER: Allow to coordinate with the Plumber and install the hot water heater as required.

8.4. HIGH RISK AREAS

Use fixed wired RCD protected socket outlets to 30mA or 10mA in areas that may represent increased risk of electric shock to the user:
- Areas frequented by infants (AS/NZS 3000 recommends 10mA)
- Wet areas: bathrooms, laundries, kitchens
- Near pools and water features
- Where intended for use with cleaning equipment
- Hand held tools subject to movement in use, i.e. workshops, garages

8.5. SMOKE ALARMS

Allow to provide and install standard battery powered fittings, in locations as shown on the Electrical Layout Plan and in consultation with PRINCIPAL.

F7/AS1 requires interconnected Type 1 smoke alarms, which must have a hush button to silence the alarm for at least 60 seconds, a test button, and a sound level that complies with NZS4514. 2021

Alarms are to be be hard wired or operated with a long life sealed and non removable battery.

8.6. RANGEHOOD

Supply and install a Range Hood as shown on the drawings, with extract fan ducted to outside with minimum 50 litre / second capacity.

MODEL: F&P HC90DCXB3

8.7. BATHROOM EXTRACT / VENTILATION SYSTEM

Supply and install bathroom extracts as shown on the drawings, with extract fans ducted to outside with minimum 25 litre / second capacity.

MODEL: VENTAIR Airbus 200/250 Premium Exhaust Fan or equivalent ceiling mounted ducted extract system

8.8. PHOTOVOLTAIC PANELS

Allow to coordinate with a separate contractor to install PV panels with a grid-tie system in consultation with the PRINCIPAL as shown on the drawings. Allow to provide an install conduit, power circuits etc as required to facilitate this.

8.9. ELECTRICAL HEATING / COOLING

Allow to take delivery, store and install a 5.5kW split system heat pump with indoor hi-wall unit in the Living area and exterior unit on the wast side.

8.10. UNDERTILE HEATING SYSTEM

CONFORM with the PRINCIPAL and if required, allow to support’s and install an under-tile electrical heating system in there Ensuite with thermostats and timers.

Locate the temperature probe at floor level, in a conduit to provide maintenance access.

8.11. EV CHARGING STATION

MINIMUM: Allow to provide and install a circuit to allow for a future electric vehicle charging station.

Provide a Mode 3 charging switched outlet on a separate sub-circuit with both overload and earth-leakage protection (Type B CD or Type A RCD with RDC-DD). The sub-circuit wiring is to be sized to accommodate the Mode 3 charger capacity.

Allow for a load rating of 32A

REFER to NZS PAS 6011:2021

9. BRACING

9.1. GENERAL

Bracing is provided in accordance with the bracing calculations attached OR the ENGINEER's Calculations <delete as required> and as scheduled below:

FOUNDATIONS: The Ground floor is concrete slab on ground and does not require specific bracing.

SUBFLOOR DECK - NORTH / EAST: The deck framing is directly attached to the concrete footings as shown on the drawings and is less than 2m wide. The finished level is 300mm above ground level. Additional bracing is not required

WALLS: Bracing is provided by timber framed bracing panels as shown on the Bracing Plan

ROOF: Roof to be braced by diagonally opposed in-plane 4.0 kN steel strip brace pairs in the plane of each section of roof as shown on the Bracing Plan

Refer to Gib Ezybrace Systems September 2016 for details of all Gib bracing panels.

Refer to ECOPLY Bracing Specifications October 2022 for details of all plywood bracing panels

9.2. DECK > 2m

SOUTH DECK: The deck framing is directly attached to the building concrete footings as shown on the drawings on two sides, and is also connected to the post footings as shown on the drawings.

As the deck is greater than 2m wide, additional anchor piles have been specified in accordance with the following calculations.

Deck Area: 33 sqm
Required Bu (1/2 EQ load) = 7.5/sqm = 247.5 each way
Provided: 2 Anchor piles @ 120 = 240 each way

10. COMPLETION

10.1. GENERAL

REMOVE all debris and surplus material not of value to the PRINCIPALs.

REMOVE all temporary markings, coverings and protective wrappings unless otherwise instructed.

REMOVE from the site all hoardings, surplus materials and all rubbish and dirt.

REINSTATE SITE in areas not covered by site finish work to original condition after removal of temporary works, services and completion of the work.

SPREAD topsoil in consultation with the PRINCIPALs and sow with selected grass seed as required.

Note that all earthwork areas are to be top soiled and grassed or otherwise reinstated within 4 weeks of the excavations being complete.

10.2. CLEANING

CLEAN **t**he works thoroughly inside and out, removing all splashes, deposits, rubbish and surplus materials.

All cleaning methods shall be as recommended by the manufacturer of the item being cleaned.

Clean out all spouting and downpipes, gullies. Flush out all drains

10.3. DOCUMENTS

Provide the PRINCIPAL with copies of the following documentation:

1 - ALL manufacturers maintenance instructions and operating manuals used in this project

2 - a copy of every policy of insurance—
(i) that the building CONTRACTOR holds in relation to the building work; and
(ii) that is current (i.e. subsisting) on completion;

3 - a copy of any guarantees or warranties that apply to materials or services that comprise the building work, including information about—
(i) whether the guarantees or warranties are transferable:
(ii) how to make claims under the guarantees or warranties:
(iii) whether the guarantees or warranties need to be signed and returned to the issuers in order to be valid;

4- information about the processes and materials that must be used to maintain elements of the building work if—
(i) maintenance is required to meet the durability requirements of the building code; or
(ii) the validity of any applicable guarantee or warranty could be affected by how and whether maintenance is carried out.

10.4. CODE COMPLIANCE CERTIFICATE

The PRINCIPAL shall apply for the Code Compliance Certificate. The MAIN CONTRACTOR shall supply all documentation (Producer statements, records or work, as built drawings) as required to facilitate this process as soon as the work is completed.

Information may be required either as a condition of the contract documents or as a condition of the building consent. It may include the following:

- Applicators approval certificate from the manufacturer / supplier
- Manufacturer's / supplier's warranty
- Installer / applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction review from an acceptable suitably qualified person

The issuing of a Code Compliance Certificate does not negate any minor defects identified by the ARCHITECT or the PRINCIPAL to be rectified by the CONTRACTOR.

10.5. PRODUCER STATEMENTS / RECORDS OF WORK

When producer statements or similar documentation verifying construction are required, provide copies to both the Building Consent Authority and the PRINCIPAL Provide producer statements in the form required by the BCA.

Obtain required documents from the relevant parties for delivery to the PRINCIPAL before the final inspection has been carried out by the BCA.

11. RISK MATRIX

Timber framed buildings to NZS 3604

Elevations			East	West	North	South	Comments
A. Wind Zone	Low	0					
	Medium	0					
	High	1	1	1	1	1	
	Very High	2					
B. Number of Storeys	Low	0	0	0	0	0	single
	Medium	1					two storey in part
	High	2					two storey
	Very High	4					> 2
C. Roof/wall intersection design	Low	0	0	0	0	0	gable roof with eaves
	Medium	1					gable roof no eaves
	High	3					high side mono ptich
	Very High	5					parapets, walls within roofs
D. Eaves width	Low	0			0		>600
	Medium	1					450-600
	High	2	2	2		2	100-450 or 450-600 second storey
	Very High	5					0-100
E. Envelope Complexity	Low	0		0			single cladding
	Medium	1	1		1	1	two claddings
	High	3					complex or multiple claddings
	Very High	6					multi-storey reentrant
F. Deck Design	Low	0	0	0	0	0	timber deck at ground
	Medium	2					timber at first floor
	High	4					enclosed at first floor
	Very High	6					
Total for each elevation			**4**	**3**	**2**	**4**	**Highest Risk Score 4**

Claddings chosen a) vertical timber weatherboards, on 20mm cavity

Maximum risk acceptable **20**

a) vertical Corrugate profile steel, on 20mm cavity

20

12. H1 ANALYSIS

12.1. GENERAL

CLIMATE ZONE: 6

12.2. NEW WORK

The new building will meet the current code requirements of H1 using the H1/VM1 Thermal Modelling method:

UNDER FLOOR: Min 50mm R2.5 Closed Cell Foam insulation (Expanded Polystyrene (EPS), with ICF perimeter foundation.

WALLS: Min R4.0 batt wall insulation (140 framing)

CEILING: R6.0 batt insulation between bottom chord of trusses with 50mm EPS cut to fit on bottom chord of trusses as shown on the drawings.

GLAZING: Thermally broken aluminium, double glazed, Low E, argon filled.

The energy use for the proposed building does not exceed the energy use of the reference building.

REFER to the NZGBC ECCHO calculation and report attached for means of compliance.