STONEWOOD HOMES

Thomson Moorthy Family Trust Specification, 35 Roses Saddle Rise, Wanaka

1 SCHEDULE OF MATERIALS 2
2 GENERAL REQUIREMENTS 4
3 EXCAVATION 11
4 CONCRETE & REINFORCING (SED) 13
5 BRICKLAYER 14
6 ALUMINIUM JOINERY 16
7 CARPENTRY 19
8 WATER SYSTEM 27
9 PLUMBING 30
10 SANITARYWARE, TAPWARE 32
11 DRAINAGE 33
12 ELECTRICAL 36
13 PAINTING 39
14 FLOOR COVERINGS 42

1 SCHEDULE OF MATERIALS

1.1 CLADDING TYPES

1.1.1 ROOF:

Metalcraft 185mm Colorsteel Fascia & Gutter

NZ Colorsteel MAXAM: Kahu Profile

1.1.2 UNDERLAY:

Thermakraft Covertek 215 Roof Underlay,

Designed to (Thermakraft Covertek 215 Synthetic self-supporting Roofing Underlay
Branz Appraisal #: 1229 (2023) amended 2025

1.2 WALLS:

1.2.1 CLADDINGS:

90 Series Brick veneer

Vertical Kahu Profile

Forte Envello Vertical Shadow Line+ System, **Codemark #**: CMNZ70204

1.3 BUILDING WRAP:

Watergate-Plus 295, **Branz Appraisal #**: 695 (2023), **Codemark #:** CMNZ10002 (2026)

Ecoply Barrier RAB, **Branz Appraisal #**: 827 (2025)

1.4 SILL TAPE:

Ecoply Barrier Sill Tape

1.5 WALL INSULATION:

Tasman Insulation New Zealand, Pink Batts **Branz Appraisal #**:238 (2023) & 767 (2023)

1.6 EXTERNAL WINDOWS & DOORS:

Aluminium windows & doors Altus Aluminium

1.7 WET AREAS

Bathroom/Ensuite Floor:Tiles

Bathroom/Ensuite Walls: Paint finished, Tiles

Kitchen/ Laundry Floor: Engineered Timber Flooring as per manufacturer Installation

Kitchen/ Laundry Walls: Paint finished, Tiles

1.8 LININGS

General: GIB Standard

Bracing: GIB Standard, GIB Braceline, GIB EzyBrace **Branz Appraisal #**: 928 (2021)

Wet areas: GIB Aqualine **Branz Appraisal #**: 427 (2021)

2 GENERAL REQUIREMENTS

2.1 THE WORKS

The works are as described in this specification and shown on the drawings.

2.2 PERSONNEL

Owner: The person defined as "owner" in the New Zealand Building Code.

Contractor: The person contracted by the owner to carry out the contract.

2.3 THE SITE

The site of the works, the site address and the legal description are listed under PROJECT INFORMATION. Confine access and work to the area of site indicated on the drawings.

2.4 SPECIFICATION SECTIONS

Sections are for reference and convenience only and do not constitute individual trade sections or work elements. Read all sections together and read GENERAL REQUIREMENTS with all other sections.

2.5 INTERPRETATIONS

Required: Required by the documents, or by a statutory authority.

Proprietary: Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.

Approval: Approval in writing.

Direction: Direction in writing.

Notified: Notified in writing.

2.6 ABBREVIATIONS

The following abbreviations are commonly used throughout the specification:

AS	Australian Standard
AS/NZS	Joint Australian/New Zealand Standard
BCA	Building Consent Authority
BRANZ	Building Research Association of New Zealand

NZBC	New Zealand Building Code
NZS	New Zealand Standard
NZS/AS	Joint New Zealand/Australian Standard
NUO	Network Utility Operator
OSH	Occupational Safety and Health
TA	Territorial Authority

2.7 INCONSISTENCIES

If there are any inconsistencies, errors or omissions in or between documents, the contractor must seek direction in resolving it. Figured dimensions take precedence over scaled dimensions; drawings to a larger scale take precedence over drawings to a smaller scale and drawings take precedence over specification.

2.8 SUBSTITUTIONS

A substitution may be proposed where specified products are not available, or if substitute products are brought to the attention of and are considered by the owner as equivalent or superior to those specified. Except where a specified product is not available, the owner is not bound to accept any substitutions.

Notify proposed substitution of specified products. Include sufficient information to allow the owner to confirm that the substitution is equivalent or superior to that specified. Advise the owner whether an amendment will or may be required to the Building Consent and the expected costs of such amendment.

2.9 THE WORDS "PROVIDE" OR "FIX"

The words "provide" (or "supply") or "fix" if used separately mean "provide and fix" unless explicitly stated otherwise.

2.10 MANUFACTURERS AND SUPPLIERS

Manufacturers and suppliers' requirements, instructions, specifications or details are those issued by them for their particular material, product or component and are the latest edition.

2.11 REFERENCED DOCUMENTS

Reference is made to various New Zealand Building Code (NZBC) acceptable solutions (AS) and verification methods (VM) for criteria and/or methods used to establish compliance with the Building Act 2004. Reference is also made to various Standards produced by Standards New Zealand (NZS, AS/NZS) and to listed Acts,

Regulations and various industry codes of practice and practice guides. The latest edition (including amendments and provisional editions) at the date of this specification applies unless stated otherwise. Documents cited both directly and within other cited publications are part of this specification.

2.12 PRECEDENCE OF REFERENCED DOCUMENTS

This specification takes precedence in the event of it being at variance with and requiring a higher standard than, the cited documents. Resolution of any variance must be confirmed in writing and where Building Consent is affected, the change notified to the Building Consent Authority.

2.13 BUILDING CONSENT COMPLIANCE

It is an offence under the Building Act 2004 to carry out any work not in accordance with the Building Consent. Refer the resolution of matters concerning compliance to the owner for a direction. Where Building Consent is affected refer any change to the BCA.

2.14 STATUTORY OBLIGATIONS

Comply with all statutory obligations and regulations of regulatory bodies controlling execution of the works.

2.15 BUILDING CONSENT

Obtain the original or copies of the Building Consent form and documents from the owner and keep on site. Liaise with the BCA and/or the building certifier for all required notices and all inspections required during construction to ensure compliance. Return the consent form and documents to the owner on completion.

2.16 INSPECTIONS

Do not proceed with work noted on the Building Consent for inspection until it has been inspected and passed by the BCA inspector.

2.17 KEY PERSONNEL

Provide names and contact detail of key personnel. Provide names, registrations numbers (where appropriate) and contact detail of key personnel that are required by the Building Consent Authority as part of the application for the Code Compliance Certificate.

Include the following as applicable:

Registered drainlayer

Registered plumber

Registered electrician

Roofer

Bricklayer

External window manufacturer

Waterproof membrane applicator

2.18 PRODUCER STATEMENTS & LBP DOCUMENTAION

When Record of Works or producer statements verifying construction are required, for the application of Code Compliance Certificate, provide copies to both the BCA and the owner. Provide LBP documents and producer statements in the form required by the BCA.

2.19 TRADE GUARANTEES AND WARRANTIES

Where specific trade guarantees/warranties are offered covering materials and/or execution of proprietary products or complete installations, or are required as a condition of Building Consent, provide guarantees/warranties to the owner.

2.20 CODE COMPLIANCE CERTIFICATE

Provide documentation that the Owner requires in order to obtain a Code Compliance Certificate for the consented work. Provide Certificates of Compliance for electrical and gas work carried out.

2.21 SITE ACCOMMODATION

Provide, erect and maintain scaffolding, sheds, toilets, water, power and hoardings. Allow for cartage, craneage, plant hire and storage. Arrange for temporary works and services necessary for the completion of the works.

2.22 HEALTH AND SAFETY

Comply with all of the requirements of the New Zealand Building Code, and in particular with Approved Documents F1 - F5 inclusive. Comply with all relevant Worksafe NZ Approved Codes of Practice and Information and Guidance requirements, particularly those for construction and building maintenance. Comply with any other relevant safety legislation and/or regulations.

Take all practical steps to make the site and the contract works safe and to provide and maintain a safe working environment. Ensure that all those working on or visiting the site are aware of the site safety rules and are not unnecessarily exposed to hazards.

In compliance with the Health and Safety in Employment Act 1992 and Health & Safety at Work Act 2015 the Contractor shall have:
a). A safety programme that shall include selection and training standards, monitoring of compliance, safety performance measures and safety rules.
b). A safety register to record accidents, injuries, operational safety, ACC claims, and so forth.
c). A health and safety plan specific to the contract works, which will address methods of identifying and controlling hazards, protective clothing and equipment to be used, staff training and supervisory requirements, management of subcontractors and their staff, and restricted areas and site security.
Notify the Ministry of Business, Innovation and Employment in writing of the Certified Safety Supervisor responsible for safety aspects of the works.

Scaffolding shall comply with all Statutory and Local Authority Regulations, with the Ministry of Business, Innovation and Employment's 'Best Practice Guidelines for Scaffolding', with AS/NZS 1576 (Scaffolding equipment), AS/NZS 4576 (Guidelines for Scaffolding), and AS/NZS 4994 (Roof edge scaffolding), shall be maintained for the duration, and shall be removed on completion.

The use of ballistic fixings must absolutely comply with all relevant safety recommendations at all times. No rubbish fires are allowed on site. Portable/personal disc/tape players, radios and iPods must not be used anywhere on the site. No smoking on site, except in the designated location in accordance with the Smoke Free Environments Act 1990, the location of which will be determined by the Contractor, with the approval of the Principal.

2.23 PROTECT THE WORKS

Protect parts of the work liable to damage until completion of the works. Take all precautions necessary to protect the works from damage by unauthorised entry or inclement weather. Brace and support all parts of the works against damage during construction.

2.24 STORAGE AND PROTECTION

Provide temporary storage areas and protective covers and screens. Fillet stack and protect all framing and structural members from moisture and contamination. Completely protect finishing materials from the weather and damage and store in accordance with the manufacturer’s requirements. Protect fabricated elements from the weather and damage, and store in accordance with suppliers requirements.

2.25 ANTIQUITIES AND ITEMS OF VALUE AND INTEREST

Report immediately the finding of any fossils, antiquities, or objects of value. Ensure they remain undisturbed until approval is given for their removal.

2.26 MEANS OF COMMUNICATION

All directions and approvals in writing.

2.27 PROGRAMME

Provide a programme for the contract works, including the work of separate contractors being carried out concurrently with this contract. Form of programme: A dated bar chart, identifying the contract work's critical path and all key dates for the provision of labour, materials and elements. Supply a copy of the programme, and any updates to the owner.

2.28 WORKING HOURS

Work on site is restricted to between 0800 to 1800, Monday to Friday, excluding statutory holidays. Work outside these hours may be permitted, with prior approval in writing by the owner.

2.29 RESTRICTIONS

Do not:

- smoke on site
- light rubbish fires on the site
- bring dogs on to or near the site
- bring radios/audio players on to the site.

2.30 QUALITY ASSURANCE

Carry out and record regular checks of material quality and accuracy. Provide all necessary materials, equipment, plant, attendances, supervision, inspections and programming to ensure required standards are met.

2.31 DAMAGE AND NUISANCE

Prevent damage and nuisance from water, fire, smoke, vehicles, dust, rubbish, noise and other causes resulting from the contract works. Comply with the requirements of the TA and relevant Acts and Standards.

2.32 SET-OUT AND DATUM

Set out the works to conform with the drawings. Establish a permanent site datum to confirm the existing ground floor level and its relationship to other existing and new building levels.

2.33 EXECUTION OF THE WORK

Conform to the requirements of this specification. Ensure work is level, plumb, and true to line and face. Employ only experienced workers familiar with the materials and techniques specified.

2.34 MATERIALS AND PRODUCTS

Use only new materials and products, unless stated otherwise, of the specified quality and complying with cited documents.

2.35 COMPATIBILITY

Ensure all parts of a construction or finish are compatible and their individual use approved by the manufacturers and suppliers of other parts of the system. Source all parts of a system from a single manufacturer or supplier.

2.36 COMPLETE ALL SERVICES

Ensure completed building services are operational, with temporary labelling removed, required labelling fixed and service instructions provided.

2.37 CLEAR AWAY

Regularly clear away trade debris, unused materials and elements from the site. On completion of the work leave the building clean and ready for occupancy, with all services operating and mechanical parts in good working order. Remove temporary markings, coverings and protective wrappings.

2.38 CLEAN

Clean and wash down external surfaces to remove dirt, debris and marking. Clean interior surfaces including floors, glass, cabinetwork, joinery, sanitary and hardware items.

3 EXCAVATION

3.1 PRELIMINARY

The extent of excavation & associated work shall be as shown on the drawings, including all excavation work for the building.

3.2 SITE SAFETY

All excavation work shall meet all safety requirements. Provide proper support for excavations. Cover holes and fence off open trenches and banks. All precautions shall be taken to avoid damage to all public & private property.

3.3 SURFACE PREPERATION

Conforming with NZS 3604:2011, 3.5 Site preparation, remove all turf, vegetation, trees, topsoil, stumps and rubbish from the area being built on.

3.4 STOCKPILE TOPSOIL

Stockpile excavated topsoil on site where directed. Keep separate from other excavated materials. Spread and level where directed before completion of the works.

3.5 EXCAVATION

Take foundation excavations to depths shown on drawings. Keep trenches plumb and straight, bottoms level and solid, stepped as detailed and clean and free of water.

3.6 FILLING MATERIALS

Granular fill material shall be composed of crushed rock, scoria or approved material.

a) Not more that 5% shall pass through a 2.2mm sieve
b) 100% shall pass either
    i) A 19mm sieve for any fill thickness; or
    ii) A 37.5mm sieve for a fill thickness exceeding 100mm

3.7 GRANULAR BASE FOR SLABS

To NZS 3604:2011, 7.5.3 Granular base. Consolidate with a vibrating roller. Blind the surface with coarse sand or sand/cement and roll ready to receive a damp proof membrane.

3.8 BACKFILLING

Compact backfilling in 150 mm layers, with the last 200 mm in clean topsoil, lightly compacted and neatly finished off.

4 CONCRETE & REINFORCING (SED)

(Please refer to Engineer's foundation design and specifications for details)

5 BRICKLAYER

5.1 PRELIMINARY

5.1.1 SCOPE

Supply and lay brickwork to areas shown on plans and elevations.

5.1.2 STANDARD

All work shall be in accordance with NZS 3604:2011 and NZS 4229:1999.

5.2 MATERIALS

5.2.1 BRICKS

Bricks for external veneers shall be 90 series Bricks, colour & type of be selected by owner. All fair face brickwork shall be laid with the best face outward.

5.2.2 CEMENT

Shall be ordinary Portland cement and at the time of use shall comply with NZS 3122 Portland Cement.

5.2.3 WATER

Water shall be potable

5.2.4 SAND FOR MORTAR

Sand used shall be No.1 grade and/or shall comply with the relevant clauses of NZS 3103:1991.

5.2.5 TIES

Shall be galvanized or stainless steel if in a sea spray zone as per NZS3604, section 4.5. Design to conform to with AS/NZS 2699:2001 part 1, as modified by NZBC B1/AS1, 3.1 (NZS 3604:2011).

5.3 MORTAR

Composed of Portland Cement, sand, and mortar with an admixture to the provisions of NZS 4210:2001. Mortar shall be discarded if not used within 90 minutes of mixing.

For Mortar colour add mineral oxide pigment to the requirements of NZS 4210. Colour to be suitable with brick veneer.

5.4 BRICK VENEER

All work to comply with NZBC Clause E2, section 9.2, NZS 4210:2001, section 2.9. Lay bricks in stretcher bond to a true level line and plumb face, with consistent joints not more than 9.5mm wide. A cavity not less that 40mm or more than 55mm shall be maintained between frame and veneer. Keep cavity clean and free of mortar droppings and protrusions and free of all pipe work or electrical wirings.

Wall ties to be screw fixed to face of studs (without damaging the building wrap) approved brick ties at 600mm horizontally and 400mm max vertically. Form weep holes in bottom course and vent holes in top course by raking out every 3rd perpend in each of those courses.

Veneer Lintels to support masonry veneer above window & door openings. Angle lintel dimensions shall be shown on drawings. Refer NZBC Table 18E: E2/AS1 for lintel sizes.

5.5 CLEAN UP

Clean down brickwork to remove stains. Remove efflorescence with a stiff bristle broom, blot with a damp sponge and wash walls with a plentiful supply of clean water during fine weather.

6 ALUMINIUM JOINERY

6.1 STANDARDS

All work & materials to comply with NZBC B1/AS1, NZS 4211:2022, NZS 4223: Part 1 & 4 2008 and NZS 4223 Part 2 & 3 2016.

6.2 WINDOW AND DOOR REVEALS

Reveals to be graded materials suitable for paint finish, treated to H3.1.

6.3 FLASHINGS

Fit flashings as per drawings.

6.4 ORGANIC POWDER COATING FINISH

To the Window Association of New Zealand's "Specification for powder coatings on architectural aluminium products". All finished surfaces to show uniformity of gloss and colour (to match sample) free of all coating defects.

6.5 SEALANT, GLAZING TAPE AND GASKETS

To be selected as per the window manufacturer's requirements.

6.6 FIXINGS

Ensure fixings and bracketing are compatible with aluminium. Do not use electroplated zinc fasteners or brass fastenings.

6.7 OPENING PREPARATION

Confirm framing openings on site for dimension, plumb and straightness prior to fabrication or ordering of aluminium joinery. Prepare and trim opening to Window & Glass Association NZ 'Guide to Window Installation'

6.8 EXECUTION GENERALLY

To NZBC E2/AS1 Amendment 10 & Window & Glass Association NZ 'Guide to Window Installation'.

6.9 HANDLING

Avoid distortion of elements during transit, handling and storage. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement. Do not deliver to site any elements which cannot be immediately unloaded into suitable conditions of storage.

6.10 CORROSION PROTECTION

Seal or suitably coat cut ends and holes drilled in aluminium before the frames are installed. Before fixing, apply bituminous coatings, slips or underlays between dissimilar metals in contact, or aluminium in contact with concrete.

6.11 FIX FRAMES

Fix frames rigidly in place without distortion, to the window manufacturers and the Window & Glass Association NZ 'Guide to Window Installation', plumb, true to line and face, weathertight and with all openings operating freely.

6.12 DRAINAGE

Anti-condensation channels to sills. All sills to sashes and fixed lights to incorporate positive drainage to the exterior.

6.13 GLAZING INSTALLATION

All glass held in aluminium beads and black PVC gaskets.

6.14 SAFETY GLASS INSTALLATION

Ensure use of grade A safety glass to doors, sidelight panels, low level windows and all other locations to comply with NZS Part 1,2 & 4 2008 and NZS 4223 Part 3 2016, as modified by NZBC F2/AS1, 1.0 Glazing.

6.15 INSTALL FLASHINGS

Install flashings to heads, jambs and sills of frames as supplied and required by the window manufacturer and as detailed on the drawings. Finish on head flashings to match window finish.

6.16 SEAL FRAMES ON SITE

Seal frames to each other and to adjoining structure and finishes, all as required by the window manufacturer and to make the installation weathertight.

6.17 SAFETY

Indicate the presence of transparent glasses for the remainder of the contract period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface. Permanent manifestations to comply with NZS 4223: Part 1,2 & 4 2008 and NZS 4223 Part 3 2016.

6.18 CLEAN GLASS AND FRAMES

Clean off or remove glass indicators at completion of the building. Clean glass inside and out to a shining finish. Clean down both sides of window and door frames using the methods required by the window and door manufacturer.

7 CARPENTRY

7.1 PRELIMINARY

7.1.1 STANDARDS

Workmanship and materials shall comply with NZS 3604:2011, the NZBC and all relevant N.Z. Standards.

7.1.2 PROTECTION

All finished or partly finished work shall be protected from surface injury or damage from exposure to the weather or any other cause.

7.2 MATERIALS

7.2.1 TIMBER

All timber shall comply with NZS 3602, tables 1 to 3. Moisture content to be between 12% and 18% before fixings linings.

7.2.2 FASTENERS

Nails, screws and other fixings shall be galvanised for exterior work or stainless steel where required by NZS 3604:2011.

7.3 DAMP PROOF COURSE

Where timber is in contact with concrete the timber shall be separated from the concrete with “Thermakraft Supercourse 500” hi-impact polyethylene DPC.

7.4 SCHEDULE OF TIMBERS

Location	Timber	Grade	Treatment
Wall framing	Pinus Radiata	LVL	H 1.2 Boron
Trusses	Pinus Radiata	SG8	H 1.2 Boron
Purlins	Pinus Radiata	SG8	H 1.2 Boron
Cavity Battens	Pinus Radiata	FJ	H 3.1 LOSP
Verandah Beam	Pinus Radiata	SG8	H 3.2 CCA
Verandah Rafters	Pinus Radiata	SG8	H 1.2 Boron

7.5 WALL FRAMING

7.5.1 EXTERIOR FRAMING

All External framing shall be LVL studs, refer to framing plan for centres & dwangs. Double top plate shall be min 140x35 LVL and top and bottom plates shall be 140x45 LVL. Fix bottom plates to concrete floors as per framing plan

7.5.2 INTERNAL FRAMING

Shall be min 90x45 LVL studs at 600crs with dwangs at 800crs. Fix bottom plates to concrete floors as per framing plan

7.6 BRACING

Shall be Winstones Gib Board fixed in accordance with the Bracing Plan and to satisfy all requirements in the NZ3604:2011. Fix bracing to manufacturers recommendations at the wall position.

7.7 MANHOLE

Frame a 600X600 clear opening in the hallway or in a wardrobe for the manhole. Form ledge to support cover.

7.8 ROOF FRAMING

7.8.1 TRUSSES

All trusses to be H1.2 SG8 90x45 timber unless specified otherwise by manufacturer. Trusses shall be spaced at 900mm crs and fabricated as shown on the drawing by registered truss manufacturer.

7.9 PURLINS

All purlins to be H1.2 SG8 70x45 timber unless specified otherwise by manufacturer. Purlins shall be 70x45 SG8 @ 900crs fixed over trusses as per purlin fixing details.

7.10 SOFFIT

Fix 90x45 sprockets to side of truss overhang to form soffits. Fix 6mm Hardie Flex soffit (cedar soffit to porch area)

7.11 BRACING

Shall be Lumberlok galv steel strap brace (27 x 0.6mm) fixed as per Truss layout.

7.12 FASCIA

Shall be Metalcraft 185mm Colorsteel Fascia system. Fix fascia brackets with galv. clouts to end of truss overhang.

Additional Snow strap gutter brackets to be fitted @600mm crs max

7.13 ROOFING

7.13.1 ROOF UNDERLAY

Lay Thermakraft Covertek 215 self supporting roof underlay in accordance with NZBC Clause E2, section 8.15

Underlay shall be breather type to & run parallel to ridge and lapped 150mm over lower sheet. Provide adequate lap of roof underlay into gutters.

Underlay shall be provided under all metal roofs & be adequately supported unless self-supporting type.

7.13.2 GUTTER

Shall be Colorsteel 'D' shape Fascia & Gutter system.

Fix end brackets 300mm from corners intermediate bracket at 900mm crs maximum spacing. Fit prefabricated ends to gutters, seal joints with RTV sealant and rivet fix. Cut hole for down pipe dropper. Rivet dropper and seal with R.T.V. Lap lengths of gutter to form joints with overlap running down the fall of the gutter. Seal between laps and rivet fix. Fix gutter roll to bracket ends then fold gutter up into position. Secure gutter by clipping bottom into bracket and front rolled edge over gutter bracket.

7.13.3 FLASHINGS

Provide all flashings as required, Fix all flashings & cappings in accordance with NZBC Table 11 E2/AS1.

7.13.4 ROOF PENETRATIONS

Flash and over flash penetrations through the roof with 'Dektite' flashings to manufactures recommendations and as per NZBC E2/AS1 8.1.7.

7.13.5 ROOFING IRON

a) Material: Shall be Colorsteel Kahu profile: 0.4 B.M.T., G.550, ZM275 NZ Colorsteel MAXAM, fixed with 65mm tek screws with colour matched heads with neoprene seals.

b) Installation: Lay sheets with laps away from the prevailing wind. Lap bottom edge of sheet 50mm over gutter.

Fix end of sheets through every rib or every second crest (corrugate) to gutter purlin and ridge. Screw through sheet laps to every purlin. Fix intermediate purlins as shown on the plans. All cutting of roofing shall be by shears or nibblers. Cutting discs will not be permitted.

Installers should wear clean, soft soled shoes when walking on roof and should take all reasonable care to ensure the surface film of the roofing

is not scratched. After completion of the roof wash down the entire surface with hose and soft bristled broom to remove all fixing debris and swarf. Ensure all fixing debris and swarf is washed out of gutters.

c) Limitations and Maintenance: Colorsteel roofing will perform to the requirements of New Zealand Building Code, Clause B.2 Durability if installed and maintained as herein specified and in accordance with the recommendations of NZ Steels Environmental Categories Guide.

7.13.6 RIDGING

Shall be coloured steel alu-edged ridging with 100mm laps between sections. Lap lengths away from prevailing wind and fix with 65mm tek screws through every second roof rib into top purlin. Dress alu-edge down into tray of roofing. Colour to match roofing iron.

7.14 BUILDING WRAP

Cover all exterior wall framing with Ecoply Barrier (Branz Appraisal No.827) complying with NZBC E2/AS1 Securely fix to top and bottom plates and studs.

Watergate plus applied over Ecoply Barrier

7.15 INSULATION

7.15.1 GENERAL

Refer to drawings for extent of insulation & building envelope. Install insulation in accordance with NZBC acceptable solution H1/AS1 & to the manufacturer's recommendations.

7.15.2 CEILING INSULATION

Insulate all interior roof cavity framing with the following minimums to form a complete insulated diaphragm.

- Ceiling Insulation: R-2.6 + R4.5 Superbatts, R-7.4 Skillion Superbatt, R-4.5 Superbatt, R-3.6 Batts
- Ceiling Perimeter: R-4.5 Batts Compressed

7.15.3 WALL INSULATION

Insulate all exterior framing with the following friction fit insulation to form a complete envelope.

- 90mm Wall Insulation: R-2.8 Batts
- 140mm/190 Wall Insulation: R-4.3 Batts

7.16 INTERIOR LININGS

7.16.1 GENERAL

All linings shall be carried to floor level and behind all fittings. The moisture content of the framing shall be as specified by the manufacturer before fixing any lining & to NZS 3602:2003, Table 4 Allowable Moisture Content.

Note: See specific stud heights to note on drawings.

7.16.2 GIBRALTAR BOARD

Line all walls (except wet areas) with 10mm Gibraltar board and all ceilings with 13mm Gibraltar board, stopped to a level 4 paint grade finish.

Line all walls in wet areas with 10mm Gibraltar 'Aqualine' board and all ceilings with 13mm Gibraltar 'Aqualine' board, stopped to a level 4 paint grade finish. To be constructed to the requirements of 'Gib board Aqualine Wet Area Systems'.

Fix sheets to manufacturers recommendations with Gib screws just below the surface of the board (without rupturing the face paper or core). Fix ceiling sheets across ceiling battens in a staggered pattern. Fix wall sheets horizontally. Fix wall sheets to stud in internal corners and at junctions with other walls.

Gib must be stored dry under cover, staked flat and clear off the floor with sufficient support to avoid sagging and damage to board edges and ends. Gib must be handled as finishing material.

Protect joinery, fittings and finishes already in place from water straining or damage from lining insulation. Ensure building is weather proof before lining work commences.

Plasterboard Accessories:

External angles:	Slim type 0.5mm galvanized steel.
Casing bead:	Slim type 0.5mm galvanized steel or PVC.
Cornice:	Plasterboard scotia type.
Nails:	Galvanized clouts 40mm x 2.5mm.
Screws:	40 mm x 6 gauge zinc electro-plated bugle head gypsum drywall screws
Jointing compound & paper tape:	To the board manufacturer's requirements.
Adhesive:	Multi-purpose water based wallboard adhesive.

7.16.3 JOINTING

Only use clean mixing containers & potable water. Discard compound that has started to harden, do not over mix. Refer to 'GIB Board Stopping & Finishing Systems' for details.

- Joints: Fill Joint recesses with Gib jointing compound, centre the reinforcing tape, apply second coat of GIB jointing compound & follow with coat of Gib finishing compound. Allow to dry/set before applying finishing coat & lightly sand off.
- Stopping nails/screws: Apply two successive coats of Gib jointing compound and a coat of finishing compound.
- Boxed corners: Fill Gib jointing compound, centre reinforcing tape into internal angle & apply a coat of Gib finishing compound to complete.
- External Corners: Apply 2 coats of Gib Jointing compound followed by a coat of finishing compound.
- End Butt Joints: Fill tape and coat as for tapered edge joints, with each strip double width.

7.17 LEVELS OF FINISH

Provide levels of finish to standards AS/NZS 2589:2017 to:

Level 4: Surfaces receiving light texture or wall covering finishes, suitable for paint finish.

Level 5: Surfaces receiving think coating finishes, suitable for critical lighting, semi-gloss or gloss type paint finishes.

7.18 CERAMIC TILES

Line walls around bath and any other selected place within wet area's with ceramic tiles over waterproof membrane on 10mm Gibraltar Aqualine. Tiles shall have 300mm minimum up stand around a bath and 150mm minimum up stand around tub, vanity or sink.

7.19 SKIRTINGS

Shall be customwood 60 x 12mm skirting to all wall and floor junctions including the inside of all built-in cupboards and wardrobes.

7.20 CUPBOARDS AND WARDROBES

7.20.1 WARDROBES

Shall be fully lined and stopped. Fit 20mm full length customwood or particle board shelf at 1.7m above floor, with 20mm galv-pipe hanging rail 75mm below shelf.

7.20.2 CYLINDER CUPBOARD

Fit four shelves beside cylinder as required. Each shelf to be ex 75 x 25 slats spaced 15mm apart.

7.21 INTERIOR DOORS

Shall be hollow core, paint grade flush panel doors hung. Frames shall be grooved or flat (suitable for architraves). Wedge and rigidly fix in place without distortion, plumb, and true to line and face. Fit hardware selected and provided, all in accordance with the hardware manufacturer's requirements.

7.22 KITCHEN JOINERY

7.22.1 EXECUTION GENERALLY

To include those methods, practices and processes contained in the current syllabus for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).

7.22.2 FABRICATION QUALITY

Check site dimensions. Carry out machining within the practices required for the particular timber or wood product being used. Machine drill and cut holes and recesses and form joints to the componentry manufacturer's requirements. Work accurate, square and true to line and face.

7.22.3 MATERIALS/COMPONENTS

Door & drawer front style	Melteca 16mm MDF with 2mm colour PVC edge
End Panels	Melteca 16mm MDF with 2mm colour PVC edge
Handles	A choice of 10 handle types in brushed nickel or matt chrome finish
Toe kick, cornice	Melteca 16mm MDF with 2mm colour PVC edge
Carcass Interior Finish	Satin White 16mmPB with 2mm white PVC edge
Hinges	Hafele or equivalent
Runners	Hafele draw set white metal sided or equivalent
Bench Top	38mm high pressure laminate with 38mm rolled edges (top mounted sink). Allocation of joints on benchtop to be at the discretion of benchtop supplier
Sink	1 x stainless steel sink with 1 bowl
Trays	1 x standard cutlery tray
Appliances	Dishwasher Underbench oven Ceramic hob
Cooker splashbacks	Option 1: 5mm Ceramic Tiles over 10mm gib

	Option 2: 5mm Toughened Glass over 10mm gib Option 3: 0.4mm Sheet metal over 6mm fibre cement & 10mm gib

7.22.4 FACTORY JOINERY FITTINGS

Carry out jointing, dowelling and other operations necessary for the proper assembly of the fittings as detailed, with fixings concealed unless otherwise detailed. Use glue joints where provision for shrinkage is not required, with contact surfaces, gluing and pressure all applied to the glue manufacturer's requirements. Locate and drive connectors and fasteners to the bolt manufacturer's requirements. Scribe fit adjustable shelves with 4 shelf pins and locate force fit pin holes at 50 mm maximum centres in solid cheeks. Hang doors on concealed hinges.

7.22.5 TRANSIT & DELIVERY

Load, transport and unload fittings without distortion or damage and keep covered to protect from the weather. Do not deliver fittings until floor, wall and ceiling surfaces are in place and the fittings can be placed in their final location.

7.22.6 INSTALLATION

Scribe fit on site and install level, square, plumb and true to line and face.

8 WATER SYSTEM

8.1 QUALIFICATIONS

All work shall be carried out in accordance with Drainage & plumbing regulations, Local Authority requirements & good trade practice. Work carried out shall comply with NZBC G10/AS1, G12/AS1 & G13/AS1

Work to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

8.2 POLYETHYLENE SUPPLY WATER PIPE

From water metre box to house use 20mm high-density cross-linked polyethylene composite pipe and fittings to AS/NZS 4130:2018. Run pipes in straight runs, firmly fixed to falls, with long radius bends and jointed by brazing or with crox fittings, all to NZBC G12/AS1, 5.0 Water supply.

8.3 POLYBUTYLENE WATER PIPE

Polybutylene tubing complete with fittings and accessories brand-matched to AS/NZS 2642:2008.

8.4 INSULATION FOR HOT WATER PIPES

All hot water pipes outside the building thermal envelope shall be thermally insulated. Once within the building thermal envelope, the pipes shall meet the requirements of NZS 4305:1996 3.7.1

8.5 EXPOSED PIPES

- white polyethylene composite pipe with white nuts and accessories

- pipework finish to include escutcheon plates and bends and elbows protruding from walls or fittings.

8.6 EXECUTION GENERALLY

Generally carry out the whole of this work and tests to NZBC G12/AS1.

8.7 INSTALL POLYBUTYLENE WATER SUPPLY

Run 20mm pipe from entry point direct to hot water cylinder via stop cock, filter, pressure reducing valve, non-return valve and final stop cock. Tee of supply pipe before H.W.C. and run 15mm dia pipe (sized from Table 5 below) with 15mm dia,

branches and risers to sink, vanity, bath, shower, toilet, tub and hose taps. Run pipes complete with all fittings, support and fixing, and jointed to the pipe manufacturer's specifications, all to NZBC G12/AS1, 5.0 Water supply. Conceal piping, insulate hot & cold water pipework outside of the building thermal envelope and pressure test before the wall linings are fixed.

NZS 4305-1996 Table 5 – Acceptable maximum pipe lengths

Nominal pipe size (mm)	10	15	20
Length (m)	25	12	7

8.8 OUTLET LOCATIONS

Ensure wall outlets for exposed pipes are level and centred on the fixture to ensure the neat installation of exposed pipework.

8.9 INSTALL HOT WATER PIPE INSULATION

For piping outside of the building thermal envelope Insulate hot water pipes with closed cell foam polymer insulation 13mm nominal thickness.

8.10 INSTALL HOT WATER HEATER

Install & restrain Rheem 250L & 300L mains pressure cylinder where shown on drawings, complete with all the necessary fittings to the heater manufacturer's requirements and NZBC G12/AS1, 6.10 Water heater installation or NZS 5601.

For cylinder(s) supply & fit TACO 52-600-25 30-70 tempering valve, inline set at max 50 degrees and take 18mm hot supply with appropriate ties to fittings. Supply & install necessary relief values isolating taps, drains, pipes etc. All cisterns, hot water cylinders etc with overflow pipes must be piped away to the outside.

(Note: With the use of plastic type piping, plumber to discuss & provide means of electrical earthing with the electrician.)

8.11 BACKFLOW PREVENTION

Fit back flow prevention devices to all outlets where it is possible for water or contaminants to backflow in the potable water supply.

8.12 PENETRATIONS

Provide and fit collars and escutcheon plates to match pipework at penetrations through constructions.

8.13 COMPLETION

Pressure test water supply system to ensure watertightness and leave in proper working order.

Testing Method

- Subject the hot and cold system to a pressure of 1500kPa for a period of not less than 15mins and
- Inspect the system to ensure there are no leaks.

Clean tapware and fittings

9 PLUMBING

9.1 QUALIFICATIONS

Carry out work by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

9.2 UPVC WASTE, SOIL AND VENT PIPES

uPVC pipe, complete with fittings brand-matched to the pipe manufacturer's requirements.

9.3 EXPOSED PIPES AND TRAPS

As selected and to the following details:

- chrome plate on copper pipes and associated copper and brass fittings

- white polybutylene or PVC, including all associated fittings.

9.4 EXECUTION GENERALLY

Carry out this work and complete all tests to NZBC G13/AS1.

9.5 ELECTROLYTIC ACTION

Avoid electrolytic action by eliminating actual contact or continuity of water between dissimilar metals.

9.6 INSTALL TRAPS, WASTE AND VENT PIPES

Connect waste outlets to traps and run waste pipes and back vents concealed, sized and fixed to NZBC G13/AS1. Discharge wastes into the drainage system stack, soil pipe, or gully trap as shown. Bird proof mesh to roof vents and vermin proof mesh to untrapped waste pipes.

9.7 PENETRATIONS

At penetrations through constructions provide and fit collars and escutcheon plates to match pipework.

9.8 TEST

Test soil and waste disposal systems to ensure no leakage exists and leave in working order.

9.9 ENSURE

Ensure all sanitary plumbing fittings and pipework are complete and operational.

10 SANITARYWARE, TAPWARE

10.1 QUALIFICATIONS

Carry out work by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

10.2 EXECUTION GENERALLY

Carry out this work and complete all tests to NZBC G13/AS1.

10.3 INSTALL SANITARYWARE

Fit and install sanitaryware and associated screens, elements and hardware, plumb, true to line and rigid, to the fixture manufacturer's requirements. Supply standard chrome plated brass wastes and plastic plugs on chrome plated chains with all basins, tubs and baths.

10.4 INSTALL TAPWARE

Install tapware in accordance with the tap manufacturer’s requirements. Flush out on completion. Check that washers or ceramic discs are operating correctly.

10.5 TEST

Test soil and waste disposal systems to ensure no leakage exists and leave in working order.

10.6 ENSURE

Ensure all sanitary plumbing fittings and pipework are complete and operational.

11 DRAINAGE

11.1 QUALIFICATIONS

All drainage work to be carried out in accordance with Local Authority requirements and bylaws & to the requirements of NZBC. All work to be carried out by or under the direct supervision of a person registered under the Plumbers, Gasfitters and Drainlayers Act 2006.

11.2 MATERIALS

Concrete:	17.5 MPa prescribed grade.
Reinforcement:	Grade 300 deformed bars.
uPVC pipes:	uPVC pipes bends, junctions, fittings and joints.
Field drains:	Plastic pipes for field drains perforated and coiled with filter fabric over.
Drainage/filling materials	
Granular fill:	Clean gravel or crushed stone or a blend of these. Particle size from minimum 7 mm to maximum 20 mm.
Selected fill:	Fine grain soil or granular material suitable for bedding, excluding topsoil.
Ordinary fill:	Topsoil or other excavated materials.

11.3 FITTINGS

Gully traps:	To NZBC G13/AS2, 3.3 Gully traps, complete with grating.
Strip drain channel:	Proprietary, modular, variable invert, uPVC or precast concrete drainage channel sections and drainage sump, embedded in site concrete and fitted with selected metal gratings.

11.4 EXCAVATE

The excavation of trenches for drains shall be accurately made with base clean & true grade so threat no unnecessary filling is required. Adequate width shall be allowed in accordance with depth of drain to enable laying & jointing to be properly carried out, trenches to be kept firm & dry & shall be opened up only in lengths that they can be protected, utilised & filled within a reasonable timeframe. Excavate for drains to a firm even base with correct gradients set in straight runs.

11.5 MANUFACTURER'S REQUIREMENTS

All drainage installations to the pipe and fitting manufacturer's requirements.

11.6 EXCAVATION GENERALLY

Carry out drainage work to NZBC G13/AS1 (sanitary plumbing) and NZBC G13/AS2 (drainage).

11.7 LAY WASTEWATER DRAINS

Lay drains in straight runs to correct gradients, to discharge into the network utility operator's sewer. Set inspection fittings on a concrete base.

11.8 INSTALL GULLY TRAPS

Set on concrete 100 mm above surrounding ground or paving and brought up to protect the top of the fitting. Trowel off.

11.9 LAY STORMWATER DRAINS

Confirm the required location of downpipes and finished ground levels before commencing pipework. Set downpipe bends in concrete brought up to protect the top of the bend from damage. Lay drains in straight runs to correct gradients to discharge outlet shown on drainage plan.

11.10 LAY GROUNDWATER DRAINS

Lay perforated coil piping firmly in a granular bed in straight runs to correct gradients, discharging into a sump. Carry the granular bed up over the pipes without disturbing them, to a total depth of 300 mm and cover with geotextile fabric; all to the pipe manufacturer's requirements.

11.11 INSTALL STRIP DRAIN CHANNEL

Excavate trench and form site concrete base to fall. Set interlocking channel sections, sumps and accessories in place, all in accordance with the channel manufacturer's requirements. Check falls and install gratings and covers.

11.12 INSTALL SURFACE WATER SUMP

To NZBC E1/AS1, 3.6 Surface water inlets to drains. Ceramic half-siphon pipe. Cast iron frame with a lift out grating.

11.13 CONCRETE ENCASEMENT

Concrete encase shallow drains and drains under driveways, on a 100 mm deep 17.5 MPa concrete bed reinforced with three 10 mm mild steel bars. Surround pipes with a polythene membrane to allow movement and encase in 100 mm 17.5 MPa concrete.

11.14 FIELD TEST

Field test drains for watertightness to the satisfaction of the Building Consent Authority inspector.

11.15 BACKFILL

Backfill drain lines in 150 mm layers, well tamped but without disturbing the drains. Finish off with 150 mm of topsoil, slightly mounded above the finished ground line.

12 ELECTRICAL

12.1 COMPLY

All electrical work carried out to comply with the Electricity (Safety) Regulations 2010, AS/NZS 3000:2018, NZBC G8/AS1&G9/AS1 and the New Zealand Electrical Codes of practice for listed & prescribed work & with the Network Utility operations requirements. Apply for the service connection. Arrange for the required inspections of listed work. The owner is responsible to pay all fees & charges.

12.2 QUALIFICATIONS

Carry out work by or under the direct supervision of a holder of a practising certificate under the Electricity (Safety) Regulations 2010.

12.3 CERTIFICATE OF COMPLIANCE

Supply a certificate of compliance to the owner, as required by the Electricity (Safety) Regulations 2010. Allow the network utility operator to view before the meter installation, listed work inspection, polarity check and livening of supply.

12.4 METER BOARD / DISTRIBUTION BOARD / SUB BOARD

Proprietary manufactured meter board complete with flashing kit. Proprietary manufactured distribution board, zinc plated powder coated, or heavy-duty plastic, fire resistant enclosed construction, complete with neutral and earth busbars, MCB's, RCD's and main switch. All protective devices: 6kA MCB's of the appropriate rating. Fit to board manufacturer's requirements where detailed. Recess into wall and ensure fire containment properties of the enclosure is maintained.

12.5 CABLES

Tough plastic sheathed copper conductors. Minimum sizes are indicated below. Increase these as necessary due to method of installation, cable length or load.

Lighting circuits: 1.5 mm² on 10 amp MCBs for domestic construction

Power circuits: 1.5 mm² on 16 amp MCBs for domestic construction

12.6 ELECTRICAL ACCESSORIES

As selected and to the following details:

Switch units:	Minimum 16 amp, 230 volt flush polycarbonate units. For number of switches per unit, dimmer units, neon (indicator or toggle) units, locator units and 2-way units refer to the electrical drawings.
Switched socket units:	10 amp, 230 volt flush polycarbonate 3 pin combined switch units.
Hot water system switch:	One way 20 amp switch complete with clamp for flexible PVC conduit.
Stove/range socket outlet and switch:	32 amp, 230 volt flush polycarbonate 3 pin combined switch unit, with remote isolating switch.

12.7 CABLING

Install with a maximum of 10 light outlet units or 6 switched socket units on any circuit. Separate circuits for all electric heating appliances. All cabling run concealed. No TPS cable laid directly in concrete. Locate holes in timber framing for the passage of cables at the centre line of the timber member.

12.8 INSTALL SWITCH AND SOCKET UNITS

Fit single and double switch units and socket units level and plumb where shown on the drawings. Install at the following heights (to the centre of the unit) unless shown otherwise on the drawings or to match existing.

Switch Units: 1000 mm.

Socket Units: 150 mm above work benches.

400 mm elsewhere.

Mount switches vertically and socket units horizontally. Label switch units which control electrical equipment by engraving on the rocker switch.

12.9 INSTALL LIGHT FITTINGS

Install selected light fittings in the locations and heights shown on the drawings and in accordance with the fitting manufacturer's requirements.

12.10 ELECTRIC HOT WATER SYSTEM

Wire as a separate circuit through a wall-mounted isolating switch, with the cable from switch to element encased in flexible PVC conduit, clamp fixed at each end.

12.11 WIRE FOR PLUMBING FITTINGS

Wire for fittings to the Electricity (Safety) Regulations 2010 to the fitting manufacturer's requirements.

12.12 INSTALL SMOKE ALARMS

Smoke alarms with hush buttons to be installed to NZBC F7/AS1, Part 2. Means of Warning, and to manufacturer's requirements, fitted neatly and without damage to the surrounding finish.

12.13 ELECTRIC POWERED FITTINGS AND EQUIPMENT

Install and wire selected fittings and equipment to the Electricity (Safety) Regulations 2010 and the individual fittings and equipment manufacturer's requirements. Refer to the drawings for required layouts and locations for equipment.

12.14 HEATPUMP

Make provisions for heat pump to areas as specified on drawings. Install to manufacturers specification.

12.15 COMPLETION

Leave all fittings, lamps and tubes operational, with equipment and diffusers clean.

13 PAINTING

13.1 QUALIFICATIONS

Carry out work using competent and experienced painters.

13.2 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety Work Act 2015 and if elimination or isolation is not possible, then minimise the hazards in this work.

13.3 PAINT

All interior walls & ceilings except wet areas to be one coat sealer and two coats low sheen interior paint.

Wet areas to be one coat sealer and two coats of acrylic enamel paint.

All trims, architraves, skirtings and joinery reveals to be one coat primer, two coats gloss water based enamel paint.

13.4 GAP FILLERS

Linseed oil, putty, plastic wood, wood filler or plastic filler, to suit and to match the surface being prepared.

13.5 INSPECT SURFACES

It is the painter's responsibility to Inspect surfaces being painted and report to the owner any that will not, after the preparatory work laid down by the paint manufacturer, allow work of the required standard. Confirm that all areas have adequate lighting and are sufficiently free of other construction activities to enable painting work to proceed.

13.6 PROTECT

Cover up adjoining surfaces and areas liable to damage or over-painting.

13.7 REMOVE HARDWARE

Remove hardware and door/window furniture and replace on completion. Do not paint over permanently attached hinges, or any hardware items which cannot be removed.

13.8 PRIMING AND SEALING

Ensure that priming and sealing work needed before or during construction is carried out when required.

13.9 ENVIRONMENTAL CONDITIONS

Carry out work within acceptable temperature and humidity limits, with timber dry, all to the requirements of the paint manufacturer.

13.10 SELECTIONS

Confirm all selections, colours, and finishes for both paint and wallpaper with the owner.

13.11 SHARP EDGES, CRACKS AND HOLES

Repair as required by the paint manufacturer.

13.12 PREPARE SURFACES

Prepare surfaces as required by the paint manufacturer. Make good all damage and defects.

13.13 PAINT APPLICATION

Apply paint by brush and/or roller to suit the location of the coating and to the paint manufacturer's requirements. Do not spray on site without express permission.

13.14 MANUFACTURER'S MANUALS

Refer to the paint manufacturers' manuals and follow their preparation, sequence and application requirements applying to each system. Ensure all paint coats in any system are supplied by the same manufacturer.

13.15 SCUFF BETWEEN COATS

Scuff between all coats to remove any dust pick-up, protruding fibres and coarse particles.

13.16 FINISHED PAINT SURFACES

Finished paint surfaces to show uniformity of gloss and colour, with the correct thickness for each coat, and freedom from painting defects. Ensure finished work is clean and free of any disfigurement.

13.17 CLEAN

Clean adjoining surfaces, glass, and fittings of any paint contamination.

13.18 REPLACE

Replace hardware without damage to the hardware or the adjoining surfaces.

14 FLOOR COVERINGS

14.1 SELECTIONS

Confirm all selections, colours, and finishes for carpet, vinyl or tiles with the owner.

14.2 QUALIFICATIONS

Carry out work using competent and experienced installers.