BUILDING SPECIFICATION

Address of

2 Rapera Street, Rolleston

For

Harry and Jessica Lo

1. PRELIMINARY & GENERAL

Check all dimensions on site before commencing any work on site. All work shall be strictly in accordance with the best trade practises and shall comply with the relevant NZ standards and the NZ Building Code. All work shall comply with the Building Act 2004 and the Territorial Authorities requirements. Should there be any doubt, omission or ambiguity, consult the designer. The Specification shall be read in conjunction with Architectural Drawings and Engineer's Documentation.

The contractor and the clients are to agree in writing to a time frame for each stage of the contract and for a final code of compliance date. The code of compliance date shall be full completion of the project to the satisfaction of the client and the Territorial authority. A list of Subcontractors is to be submitted with the Tender. The client reserves the right to object to any name on the list. The main contractor is responsible for all general attendance upon subcontractors and is responsible for all work carried out by the subcontractor.

All materials of every kind shall comply with all relevant New Zealand standard Specifications. The contractor shall have reasonable insurance in place to cover any liabilities for works over the period of site possession until practical completion. Liability for damage to property and persons along with public liability insurance will be undertaken by the contractor. A general maintenance period of 180 days after practical completion is expected with defects liability period as set out in the NZBC. All contractors and subcontractors are to provide producer statements to cover all trades involved in works. Contract Variations shall only be carried out if in writing by the client.

The contractor is responsible for site safety and security to ensure that all works, site access comply, in all respects, with The Health and safety in Employment Act 1992. Where the company considers it is necessary to fully exclude the public from the site, temporary fencing in the form of 2m high galvanised chain link netting shall be erected (as per F5/AS1).

2. EXCAVATION AND FILL

This work includes, but is not limited to:

- Excavation for foundations
- Excavate all topsoil under the building platform.
- Levelling of site
- Back filling for floor slabs and foundations
- Excavate for footings, pads and foundations as shown on drawings and in Drawings and Documents.
- Compacted hardfill will be AP40/65 complying with NZS3604 7.5.3.2 and shall be placed and compacted in layers of 150mm max thickness, with a total thickness of not less than 75mm and not more than 600mm.

3. FOUNDATIONS AND SLAB

Standard NZS3604 foundations: Refer to plans for foundation excavation depth and width. The Builder shall supply and place compacted hardfill and blinding sand to suit the required finished floor level.

- Underslab DPM is 250-micron Black Heavy Duty Polythene.
- Finished Floor Level above Finished Ground Level shall comply with NZBC E2/AS1. (subject to cladding selection and the provisions of the NZ Building Code).
    - For Brick cladding (150mm if ground is unpaved, 125mm if ground is paved)
    - For Linea Oblique cladding (225mm if ground if unpaved, 150mm if ground is paved)
- Finished Ground Level 190mm maximum below Finished Floor Level at all access points. Otherwise step(s) required to comply to D1/AS1 and F4/AS1 1.0

4. DRAINLAYER

This section of the contract includes the installation of complete wastewater and stormwater drainage systems for the buildings and siteworks, including:

- Supply and installation of all pipework, junctions and connections.
- Supply and installation of sumps and heavy-duty grates to NZBC requirements.
- Excavation of trenches
- Backfill and compaction to trenches
- Supply and installation of PVC gully traps set in neatly benched concrete.
- Sewerage installation to be in accordance with Territorial Authority Approved Plan and allowed to be connected to existing lateral located at boundary.
- Stormwater allowed it to be connected to an existing lateral located at the boundary.

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PRELIMINARY AND GENERAL: Read and note all clauses under Preliminary and General of this contract where they apply to this trade. All drainage work to comply with the requirements of the NZBC, refer to sections G10-G13.

- NZBC E1/AS1 Surface water
- NZBC B1/AS1 Structure – general, 6.0 drains
- G13/AS2 Drainage alternatively AS/NZS 3500 Plumbing and Drainage
- AS/NZ1260 PVC pipes and fittings for drains, waste and vent applications
- NZS7641 Unplasticised PVC waste and ventilation pipes, fitting and accessories 32-50mm
- NZS7643 Installation of unplasticised PVC pipe systems
- NZS7649 Unplasticised PVC sewer and drain pipe fittings

- Plumbers, Gasfitters and Drainlayers Act 2006

EXTENT OF WORK: Work in this section of the contract comprises all surface and foul water drainage up to above ground level to connect to plumbers work. Include all pipes and specials, inspection points, fittings, construction of manholes, all gully traps and connections for terminal vents, soil and waste pipes. The drainlayer shall confer with the plumber and shall arrange with the contractor before the foundations are laid to fix the exact position of all connections of wastes and drains.

STANDARD OF WORK: Experienced and licensed tradesmen to the satisfaction of GJ Gardner Homes shall carry out the whole of the work. The drainage contractor shall allow and arrange for all tests.

MATERIALS: All materials shall be in accordance with relevant NZ Standards and manufacturers' requirements

CONNECTION TO EXISTING DRAINAGE: The drainlayer is responsible for verifying the position and depth of the connection and commence laying his drains to this point.

DRAIN TRENCHES: The excavation of trenches shall be accurately made with base clean and true grade so that no unnecessary filling is required. Adequate width shall be allowed in accordance with depth of drain to enable laying and jointing to be properly carried out. Trenches shall be kept firm and dry and shall be opened up only in lengths that can be protected, utilised and refilled within a reasonable time. See NZBC G13/2 fig. 8 for proximity to buildings. Trenches are to be backfilled with excavated material.

LAYING OF DRAINS: All drains are to be adequately supported in the bottom of the trench. The pipes are to be laid to straight lines and even grades in accordance with NZBC G13/AS2 table 2 for sizes and gradients. Drains shall be tested to be completely tight in accordance with NZS7643: section 11 and NZS4452: section 11. Backfill drain lines in 150mm layers, without disturbing or damaging drains. Finish off with 150mm of excavated material slightly mounted above the finished ground line to allow for natural settling.

FITTINGS: The site plan shows the proposed layout of the system, please note, this is diagrammatical and may change at the discretion of the drainlayer due to site conditions. Additional fittings that are normally required, such as inspection points and inspection bends, etc, which may be required but are not specifically shown, must be allowed for by the drainlayer to comply with normal practice under the regulations.

JOINTING OF PIPES: The pipes are to be joined in a proper manner and provided with adequate maintenance and inspection points as per NZBC G13/AS2.

FALL IN DRAINS: The whole of the soil and stormwater drain system is to be laid at a regular and even fall.

GULLY TRAPS: Supply and install all gully traps where shown in accordance with NZBC G13/AS2, 100mm min. above finished ground level. All gully traps are to be fitted with plastic gratings and also a grating or perforated plate above the wastes discharging into it. At least one gully trap (ORG) has its overflow rim at least 150mm below the overflow level of the lowest fixture served by the system.

SEWER AND STORMWATER MAIN CONNECTIONS: If there is no supplied laterals to the site then the drainlayer shall arrange for the council to provide connections to main public lines where provided and the owner shall pay all charges in connection therewith after first being advised at an early stage by the drainlayer of the need to pay any charges.

COMPLETION: Supply a 1:100 scale as-built drawing of drains and fittings to the Territorial Authority on completion. On completion of all work ensure that the site is left in a tidy state.

5. CARPENTER

All timber used in this dwelling is to comply with NZS3602 – Timber and Wood Based Products for use in Building (SG8), Treatments to NZS 3640 and Moisture contents to NZBC E2/AS1 Section 10.2 or to manufacturer's specification. (Winstone Wallboard – a lower than 18%) Ply used for structural purposes will comply to AS/NZS 2269 Plywood - Structural. (No produced substitution is permitted where Ecoply is used as a bracing element).

Structural design is to comply with NZBC B1 Structure with all components meeting the requirements NZBC B2 Durability.

The truss designs and lintels beyond the scope of NZS 3604 for this job will comply with the following standard:

- NZS 1170 Structural Design Actions - as an Acceptable Solution for B1/VM1
- NZS 3603 Timber Structures Standard

Timber framed construction will be as NZS 3604 Timber Framed Buildings except where component selection is varied by Producer Statements. All framing connections and roof connections are as specified in the Drawings or Truss Design and will be subject to the Durability requirements of NZS 3604.

- External framing is generally H1.2 treated, 90mm x 45mm SG 8 Radiata at 600 mm crs, except as noted otherwise on plans.
- Internal framing is generally H1.2 treated, 90mm x 45mm SG 8 Radiata at 600mm crs, except as noted otherwise on plans.
- Building wrap is Uni Building Wrap, except as noted otherwise on plans.
- Sill / Opening tape is Uni 40 Below Platinum flashing tape.
- DPC between framing & slab is Plascourse DPC, high impact low density polyethylene film embossed on both sides, or equivalent.
- Roof trusses to be to the manufacturer's design and treatment as specified above.
- Timber ceiling battens at 600 centres to all ceilings.

- Ceiling height is 2.40 m unless otherwise stated.

6. FASCIA/GUTTER AND DOWNPIPES

This area will comply with NZ Metal Roof and Wall Cladding Code of Practice from the Metal Roofing Manufacturers Association of New Zealand and NZBC E1/AS1 - Surface Water.

- Fascia to be Colorsteel Concept profile or equivalent.
- Gutter to be Colorsteel 'D' gutter or equivalent.
- Downpipes to be Colorsteel or equivalent.
- Down-pipes to discharge into the stormwater drainage system.

7. ROOF COVERING

All roofing work shall be made in accordance with best trade practice of sound repute in suitably fitted up workshops by craftsmen using tools, machines and equipment appropriate for the job, following details, drawings and instructions to the approval of the engineer to meet the requirements of:

- NZBC E2/AS1 External Moisture
- NZBC B2 Durability

Metal roofs (where used) will comply with the NZ Metal Roof and Wall Cladding Code of Practice.

- Roof is Pressed Metal shake tile from Builder's selection and fixed to Manufacturer's specifications.
- Flashings to be 0.55mm BMT, colour to match the roofing.
- Roofing underlay to be Thermakraft 215, except as noted otherwise on plans.

8. SOFFIT LININGS

Soffits to be 4.5mm Fibre Cement sheeting with PVC jointers.

9. GARAGE DOOR

Garage Door is to be a 4.8m colorsteel metal sectional door, colour selected by client and supplied by contractor.

10. EXTERIOR WINDOWS & DOORS

Install all items required to complete the following:

- Supply of selected powder coated aluminium windows and door frames comply with NZS4211:2008.
- Supply of all 25mm H3.1 rebated timber reveals, fitted to frames and factory sanded.

- Supply and fitting of all exterior joinery hardware, including recessed flush bolts to top and bottom of exterior doors.
- Neoprene gaskets and weatherproof strips
- Supplied and fitted with double glazing to comply with NZS4223 Parts 1,2,4:1999, Part 3:2016
- Proprietary sill supports supplied by joinery manufacturer
- All necessary weatherproofing and cover flashings powder coated to match units.
- Flashings are provided where required by NZBC E2/AS1
- Glass to be clear, except to bathroom(s), WC(s) and ensuite(s) which will be obscure.
- Bathroom(s) and ensuite(s) to be toughened on inside pane of double glazing.
- Openable windows to comply with F4/AS1 2.0
- Thermally broken windows and doors including garage.

11. EXTERIOR CLADDING

BRICK

All brick work shall be made in accordance with best trade practice of sound repute by craftsmen using tools, machines and equipment appropriate for the job, following details, drawings and instructions to the approval of the engineer. All work is to be carried out in strict accordance with NZS3604 and

- SNZ HB 4236 NZ Handbook for Masonry Veneer Wall Cladding
- NZS 4210 Masonry Construction: Material and Workmanship
- NZS 3604 Timber Framed Construction
- NZBC B1/AS1 Structure general, 2.0 Masonry
- NZBC E2/AS1 External Moisture

JAMES HARDIE LINEA OBLIQUE WEATHERBOARDS

All James Hardie Linea Oblique wall claddings are to be supplied and fixed by a James Hardie approved applicator in accordance with James Hardie recommendations and documentation. James Hardie Technical Specifications are to be referred to in conjunction with the architectural drawings.

12. ELECTRICAL

Provide and install all items required to complete the following:

- Meterboards and Distribution boards
- Electrical Cooktop.
- Connect Main to the new meterbox.
- Supply and install all electrical fittings as indicated on the Electrical plan. Allow to erect, fix and fit and install complete and leave in complete working order. Lights shall be 13W LED downlight as per in the supporting documents.
- Install mechanical vents/ lights.
- Heated towel rail

- Install and wire for garage door opener.
- Install and wire for all fixed wired connections.
- All telephone sockets and wiring as per the electrical drawings
- Television Aerial outlets
- Allow to wire to Air conditioning unit

Client to provide schedule of fittings and shall supply all fittings to contractor for installation. A full schedule and layout are to be confirmed with the principal prior to commencing work.

All electrical work shall comply with the New Zealand Electrical Wiring Regulations 1997, the local Electrical Supply Authorities by-laws, and all other relevant regulations, including the NZ Building Code including standards AS/NZS 3000:2000

The whole of the work shall be carried out by skilled tradesmen using adequate and proper equipment and methods in accordance with best trade practice and shall be of best description.

13. PLUMBING / HARDWARE

Hot water cylinder to be A-grade 300 Litre Mains Pressure complete with tempering valve. Note: Mains pressure cylinders incorporate a pressure relief pipe which protrudes from foundation, location to be determined by plumber. In-line filter and strainer fitted to exterior water entry point.

PRELIMINARY AND GENERAL

As specified on the plans the plumbing will comply with G13/AS1 – Sanitary Plumbing, G13/AS2 Drainage or alternatively AS/NZS 3500 Plumbing and Drainage

All plumbing work to comply with the requirements of the NZBC, refer to sections E3, G10-G15.

- AS/NZS1260 PVC pipes and fittings for drain, waste and vent applications
- NZS7641 Unplasticised PVC waste and ventilating pipes, fittings and accessories 32-50mm
- AS/NZ4858 Wet Area Membranes
- E3/AS1 Internal Moisture
- Plumbers, Gasfitters and Drainlayers Act 2006

EXTENT OF WORK: Provide for all materials and execution of all works necessary for the proper completion of the plumbing work. All work is to be carried out by tradesmen registered as required by the plumbing and drainage regulations and relevant standards and in accordance with the NZBC and Territorial Authority requirements. All pipe work is to be concealed where possible within wall spaces, or as indicated on the drawings. The carpenter is responsible for provision of all framing, blocking etc for the support of fittings. Cooperate with all other trades for the provision of ducts, trenches, cut-outs in foundation and slab and the laying of pipe work. Holes for pipes through framing members shall be of minimum size and shall be positioned to ensure structural integrity of framing members are not compromised. Note requirements for any penetrations in wall framing & floor joists from NZS3604 sections 8.5.1.6, 8.7.5 & 7.1.7.

PERMIT, FEES: Give all notices, and arrange for the inspection of the work and materials.

MATERIALS: Provide all the materials, labour and plant necessary to complete work in accordance with the drawings and provide specifications, NZBC approved documents as specified in B1/1, E1, G1, G2, G13/1 & G13/2. All internal pipes shall be polybutylene to DIN8077 and DIN8078 complete with fittings and accessories brand matched. Pressure test all fittings and pipe work and ensure there are no leaks and all fittings are in good working order.

FLASHINGS: Generally provide all flashings required by all other trades to make the building weather tight. Flash and counter flash all pipes, vents and exhausts with 1.0mm min Butynol or EPDM (or 0.7mm aluminium / 0.55mm BMT galvanised or Aluminium zinc coated flashings or 1.0mm min Butynol for zincalume roofing) neatly capped to roofing or flash with approved paint-on membrane system and paint to match roofing colour.

WATER SUPPLY: Water is from a municipal supply.

- Cold water can be obtained from the existing site connection via a mains pressure system providing adequate water pressure and volume; so avoiding the need for a cold water supply tank in or on the roof. Provide a high pressure mains system.
- Water heating is to be by means of a high pressure system; with cold water feed through a pressure reducing valve and separate non-return valve and complete with tempering valve set to maximum delivery temperature of 55° C.

The installation will comply with:

- NZBC G12/AS1 Water Supplies
- AS2642 Polybutylene pipe fittings
- Plumbers, Gasfitters and Drainlayers Act 2006

COLD WATER SUPPLY

Tap off from mains service lateral with 25mm ID polybutylene pipe and rubber ring compression fittings unless otherwise specified. Excavate trench, lay pipe and backfill to appropriate NZBC and NZS standards. Connect to the building reticulation system. Provide a gate valve at the building.

Pipe laid in a trench a minimum of 500mm below finished ground level marker tape laid above backfill. Provide pipe to two hose taps, in positions at front and rear of building and to all fittings including hot water cylinder and washing machine. All branches to be short, straight and at as even gradient as possible with easybends used throughout. Use only approved connections throughout. All pipes are to be adequately supported, well secured and where possible concealed. Plumber to discuss with electricians and provide means of electrical earthing, when using any form of metal piping.

HOT WATER SUPPLY

Provide polybutylene pipe for hot water supply pipes and branches to all fittings. Drain from HWC to be copper to drain to the outside of the building above ground over gardens or a gully trap. Installation shall be complete with seismic restraints and anti-scald device as per NZBC G12/AS1.

All hot water pipes to be insulated along with their length with 22mm wall thickness Insultube in roof space. The hot water pipe to the kitchen sink shall be insulated from the hot water heater to the sink (NZS4607:1989 601.2 & NZS4305:1996 3.7.2).

Maximum pipe length and nominal pipe size is:

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

PIPE SUPPORTS

Pipe and their supports shall be electrochemically compatible.

Except where anchor points are necessary, the pipes shall be supported in a way that permits free movement of the pipe along its length. Acceptable methods include lagging the pipe at the support with Insultube.

Support spacing: Above ground water supply shall be securely supported at centres of no greater than those in Table 7 of NZBC G12/AS1 7.0.

Movement in concrete or masonry: Pipes penetrating or installed in concrete or masonry walls or floors shall pass through a sleeve, to permit free movement for expansion and contraction.

Anchor points: Anchor points shall be provided where:

- Seal ring joints are used and
- The joint is not able to resist the thrust imposed by water pressure.

Protection from frosts: Water supply pipework shall be insulated where water is likely to become frozen, to appropriate levels for this frost prone area.

Comment: Locations where the water supply pipe work is likely to become frozen includes pipes concealed in exterior walls, ceiling spaces above ceiling insulation, or basements fixed to the outside of buildings.

SANITARY FITTINGS: Allow to fix fittings as indicated on the plans for the following. Builder via the plumber to provide fittings. Carefully note dimensions and install where shown.

TAPS, FAUCETS AND VALVES: Fix all taps, faucets and mixing valves, as supplied by the Builder via the plumber. Fix all other water supply fittings as necessary.

VENTS, SOIL STACKS: To comply with NZBC G13/AS1 and G13/AS2

The above shall be PVC extended up through the roof and flashed with approved flashing material. Terminal vent is to be of an approved size to pass up exterior wall, through eave if required and through roof.

14. INTERNAL LININGS

All Walls are sheeted with 10mm standard GIB plaster board except wet areas with 10mm Gib Aqualine.

All ceilings are sheeted with 13mm GIB plaster board except wet areas with 13mm Gib Aqualine.

To meet wind and earthquake loading some internal wall linings form bracing elements, alternatively they may form part of a fire rated wall system. In these instances, no product substitution is permitted.

15. INSULATION

Insulation to external perimeter walls (including garage) and internal garage-house walls, and to ceilings (including garage):

- External perimeter walls: R2.6 Pink Batts
- Ceiling: R3.6 Pink Batts

16. INTERNAL FINISHING TIMBER

Internal finishing timber shall be:

- Skirtings: 85 x 12mm MDF customwood bevel top and 85 x 12mm Pine to wet areas.
- Door jambs: MDF square dressed customwood.
- Window reveals: H3 treated pine.
- Any other mouldings: MDF custom-wood.

17. JOINERY

Seal all bench top-wall junctions to prevent moisture ingress as NZBC E3/AS1. Food preparation surfaces and wall linings adjacent to appliances and facilities shall have surfaces that can be easily maintained in a hygienic condition.

18. PAINTING

This section includes the painting and decorating of all interior surfaces and the painting of exterior surfaces to match existing. Refer to the painting schedule. The designer is to select all colours off a

white base. All materials shall be of New Zealand manufacturers approved brand, delivered in unbroken packages, bearing brand and manufacturers name complete.

All paints, enamels, distempers, varnishes, knotting, priming, linseed oil, pure and mineral

turpentine, etc shall be of the best quality of their respective kinds. All work shall be of the highest standard, performed by skilled tradesmen in accordance with AS/NZS 2311 :2000, using tools and equipment suitable for ensuring a first class job. Paint shall impinge on the glass for weather protection.

No external work shall be done during frosty or inclement weather. Any work damaged by dust, rain or any other cause shall be rubbed down and recoated. The top and bottom edges of all doors, sashes, facings, etc shall be painted the same number of coats as the exposed faces.

Undercoats and sealants shall be approved by the Manufacturer as part of a system. No coat of paint, varnish or polish shall be applied until the undercoat is perfectly dry and hard. All finished surfaces shall be left smooth, even and free from brush marks, lap marks, corner dribbles or other trades.

All metal fittings, fixings and hardware shall be removed before preparatory processes are commenced and shall be refixed on completion of the painting. Adequately protect all finished work, including glass, from paint splashes. Take adequate precautions to protect all work from dust, dirt or other disfigurement by other trades.

INTERIOR

Area	Substrate		Product - top coat
Walls generally	GIB standard	3 coats	Interior washable wall board satin paint
Ceiling generally	GIB standard	3 coats	Interior washable wall board flat paint
Walls, ceilings (wet area)	GIB aqualine	3 coats	Acrylic enamel
Skirting, architraves and trip	Timber	3 coats	Acrylic enamel
Doors and windows	Timber	3 coats	Acrylic enamel

EXTERIOR

Area	Substrate		Product - top coat
Joinery, trim and details	Timber	3 coats	Exterior acrylic enamel
Hardie soffit and cladding	Cement board	3 coats	Exterior acrylic enamel
Linea Oblique	Cement board	3 coats	Exterior acrylic enamel

This specification should be read in conjunction with the manufacturer's recommendations contained in the relevant technical data sheets. All products are to be applied to manufacturer's specifications.

19. GAS SERVICE

Gas service is not included.

20. CERAMIC TILING

NOTE: Ensure up-stands, wall junctions are sealed against moisture penetration as NZBC E3/AS1. Workmanship and installation to BRANZ Good Tiling Guide: Tiling

When tiling over waterproof membranes in showers or bath areas, the tile adhesive must be compatible with the membrane manufacturer's specifications, or the product's BRANZ Appraisal.

All tiles to be finished with grout.

21. WATERPROOFING MEMBRANE

Tiled Bath Surround on Timber Framing

- Selected tiles on waterproof membrane over 4.5mm Hardies board on H1.2 Timber framing.
- Ardex Superflex WPM 001 with Ardex Deckweb to reinforce any junctions as required in the manufacturer's specification.
- Selected tiles to be laid on tile adhesive over waterproof membrane to manufacturer's specification which must be compatible with the waterproof membrane manufacturer's specification.
- All tiles to be finished with grout.

22. HEATING

Multiple room heat pump installed as per manufacturer's specification.