

HUT PROCUREMENT MANUAL

PART G

SPECIFICATIONS

FOR BACKCOUNTRY HUTS

QD code VC1414

March 2009 Version 4.0



Department of Conservation
Te Papa Atawhai

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Section G1: Specifications

G1.1 Purpose

This section contains the base specifications and instructions for the preparation of specifications specific to each backcountry hut. These specifications are located in three separate appendices, related to the hut size:

- Appendix G2.1: 4 and 6 bunk hut Base Developed Design Specification
- Appendix G2.2: 10 and 12 bunk hut Base Developed Design Specification
- Appendix G3: 4 – 12 bunk hut Base Tender and Building Consent Specification

For the preparation of a Developed Design Specification for 4 and 6 bunk huts or 10 and 12 bunk huts it is expected that usually, other than completing the hut specific information at the start of the specification, the rest of the specification will be completed by deleting clauses that do not apply, and there will be no need to add hut specific clauses.

For the preparation of a Tender and Building Consent Specification for 4 and 6 bunk huts or 10 and 12 bunk huts it is expected that usually, other than completing the hut specific information at the start of the specification (which should be the same as that included in the Developed Design Specification from Appendix G1), the rest of the specification will be completed by deleting clauses that do not apply, and/or following instructions in the hidden text, and there will be no need to add hut specific clauses.

No specific information is included in this section for the preparation of a specification for larger huts. Refer to the guidance notes in Part C of this manual, which commence with the base tender and building consent specification in Appendix G2.

If the hut is in an Alpine or harsh environment refer also to Parts E4 and E5 for additional annotations and amendments.

If a pit toilet or a grey water disposal system is required refer to either Part F1 or F2 for additional annotations and amendments.

Section G2: 4 – 12 bunk hut

Base Developed Design Specification

G2.1. Contents

This section contains the Base Developed Design Specifications from which the Developed Design Specification is derived in accordance with Part B2.3.3.

G2.2. Specification creation process

- Refer to the information provided by the Project Manager under section B1.
- If the hut is in an Alpine or harsh environment refer also to Parts E4 and E5 for additional annotations and amendments.
- If a pit toilet or a grey water disposal system is required refer to either Part F1 or F2 for additional annotations and amendments.
- Ensure all hidden (non-printable) text is turned on so that comments and directions for selection can be read.
- Those items not highlighted are basic details for the hut, will apply to all huts and shall not be altered. The exception is where the highlighted paragraphs under a heading (e.g. Exterior Wall Cladding) are the alternatives to the un-highlighted paragraph. Select the appropriate paragraph and delete the others.
- The highlighted items are information items to be completed, or selections to be made based on either information provided by the Project Manager or the design criteria applicable to the hut. Delete all irrelevant items.
- Check each heading within section against information provided by DOC Project Manager to see if it is relevant to project
If 'No', delete heading and related text
If 'Yes', leave 'non-highlighted' bullet points alone, check all highlighted bullet points and select one as appropriate. Delete all irrelevant items. Remove remaining highlights using 'Highlight' button on 'Formatting' toolbar.
- Add Hut name, project number, hut location, Area Office name, and date of issue to front cover and hut specific information to first section. Add Hut name, project number, and date of issue to footer of text.
- When completed read the completed specification to ensure it is hut specific. While it is expected that additional paragraphs and/or alterations to provided paragraphs are not required, if the project requires it for certainty or clarity such additions and alterations should be made.
- When printing specification turn off hidden (non-printable) text.
- If any project specific additions or amendments have been made, they should be reviewed to determine if they should be incorporated into the base document.

Appendix G2.1: 4 and 6 bunk hut

Base Developed Design Specification

CURRENT SPECIFICATION REGISTER

	Title	Version	Date issued
	Developed Design	4.0	March 2009

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

OUTLINE SPECIFICATION

of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

Name Hut

Project No. DOC ?????

Location1 – River, Range, etc

Location2 – Forest, Nat Park, etc

Department of Conservation

Name Area Office

Name Conservancy

Issue A Date of issue

Developed Design

V4.0 Base Developed Design Specification 4/6 bunk hut March 2009



Department of Conservation
Te Papa Atawhai

HUT INFORMATION

Service Standard

- Serviced Standard Basic hut
- 4 6 visitor bunk hut
- BCC BCA RS Visitor Group

Design Criteria (by NZS 3604)

- ???m altitude, location E ?????????? N ??????????
- Corrosion zone = zone Sea Spray 1 2 3 4? (figure 4.1)
- Wind zone = Low Medium High Very High
- Specific Design wind loads/speeds = ?????????? (note specific loads and speeds)
- Earthquake zone = A B C (figure 5.4)
- Snow load = N/A 0.5kPa 1kPa (figure 15.1, zone 0 1 2 3 4 5, ???m altitude)
- Specific Design snow load = ?????????? Note specific loads, including drift on verandah roof
- Floor load = 1.5kPa
- Deck load = 2.0kPa

Project Structure

- DOC Project Manager: name
Name Area/Conservancy Office
Town/City
- Architect: Ron Pynenburg
Pynenburg and Collins Architects Ltd
Wellington
- Structural Engineer: name
Name Area/Conservancy Office
Company Name
Town/City?
N/A (NZS 3604 parameters)
- Foundation Engineer: Lapish Enterprises Ltd
Auckland
- Truss Engineer: MiTek New Zealand Ltd
Christchurch
- Contract Administrator: name
Name Area/Conservancy Office
Company Name
Town/City

1. PRELIMINARY AND GENERAL

1. DoC supplied items to be fitted/installed by the contractor

- Multifuel burner, complete with flue kit
- Mattresses (1900 x 750 Autex Fibrefoam core, Sure-Chek44 covering)

- Candle holders
- Drying Rack
- Ticket box, notices and signage

2. Separate Contract works organised by DoC

- None
- Vegetation clearance and tree cutting
- Hut platform excavation
- Toilet supply & installation
- Wood shed
- Track work
- Existing hut removal

3. Additional Contract works by Contractor:

- None
- Vegetation clearance and tree cutting
- Hut platform excavation
- Toilet supply & installation
- Wood shed
- Track work
- Existing hut removal

4. Accommodation:

- To be provided by Contractor.
- The existing hut will be available to the contractor for accommodation for the duration of the contract.
- Other (note what).

2. SITE PREPARATION

1. Site levelling/benching:

- Not required
- Bench site to level ??m, to 1m clear of hut outline, with cut face battered to 1:2 slope. Slope new ground to fall 50mm away from hut to base of cut face.
- Extend existing bench at same level? to 1m clear of hut outline, with cut face at 2:1 batter. Slope new ground to fall 50mm away from hut to base of cut face.

2. Setout and level

- Facing due north (identify orientation) (refer site plan)
- Floor level established from setting out top of shortest pile (???? corner) to be 300mm above ground level.

3. BUILDING FRAMING

1. Timber treatment

- The species, grade and treatment shall be (1):

Purlins and roof framing other than trusses	Pinus Radiata	No 1 Framing	H3.2 CCA
Roof trusses	Pinus Radiata	as per Mitek design	H1.2 CCA
Exposed exterior roof and wall framing, including isolated posts & beams, but not in contact with ground (2)	Pinus Radiata	Kiln dried MSG 8 / VSG 8 / No 1 Framing gauged	H3.2 CCA
Enclosed external walls framing timbers	Pinus Radiata	Kiln dried No 1 Framing gauged	H3.2 CCA
Bearers and joists	Pinus Radiata	No 1 Framing / MSG 6	H3.2 CCA
Stair and step framing, barriers, perimeter battens and other sub-floor framing	Pinus Radiata	No 1 Framing	H3.2 CCA
Timber in contact with ground, piles, plates etc	Pinus Radiata	No 1 Framing	H5

Notes:

(1) for specific design snow or wind loads the timber grades may be changed by the Structural Engineer during compilation of the Tender & Building Consent documents

(2) refer to the drawings and specification clauses below for timber grade requirements

2. Foundation system

- Radiata 125 x 125 H5 sawn piles, minimum 300mm above ground level
- Congra Ezi-Yaka foundation system, specific design by Lapish Enterprises Ltd, supplied complete with Ezi Yaka Lightfoot pads, spikes and Timberlink PB2 and BJ2 high corrosion connector packs.
- ?NZS3604 anchor, braced and ordinary pile system, specific design only to be used where it is determined that Ezi-Yaka will not be suitable due to ground conditions? *If braced piles are proposed, note that the minimum height of a braced pile is 600mm – it may be that anchor piles are the only practical solution*

3. Sub floor/deck/steps

- All timber CCA treated, no LOSP shall be accepted.
- 2/140 x 45 H3.2 bearers
- 140 x 45 H3.2 joists @ 600mm c/c to hut and 600mm c/c to deck, and double joists where shown on plans

4. Wall framing

- All timber Radiata H3.2 kiln dried CCA treated, no LOSP shall be accepted.

- Side wall studs 90 x 45 @ 400mm c/c *for very high wind zone*
 - Side wall studs 90 x 45 @ 600mm c/c *for other wind zone*
 - Gable wall studs 2/90 x 45 @ 400mm c/c
 - Top and bottom plate 90 x 45
 - Two rows of dwangs to side walls, three rows to end walls *for Colorsteel cladding*
 - Dwangs @ 480c/c to take batten fixings. *for fixing of battens with plywood cladding*
 - 2/140 x 45 MSG 8 / VSG 8 lintel for spans up to 1800mm. *for 1 kPa snow loading*
 - 2/140 x 45 MSG 8 / VSG 8 lintel for spans up to 1200mm and 2/190 x 45 MSG 8 / VSG 8 lintel for spans up to 1800mm (size to be confirmed or specifically designed for snow load over 1kPa)
 - Top plate/stud fixing 2/100 x 3.75 skewed nail plus 1 wire dog *low/medium/high wind*
 - Top plate/stud fixing 2/100 x 3.75 skewed nail plus 2 wire dogs *very high wind*
 - Top plate/stud fixing 2/100 x 3.75 skewed nail plus 2 wire dogs (fixing to be confirmed or specifically designed for wind load).
5. Isolated posts and beams
- Veranda posts Prowood PLP Prolam Post GL8 H5 88 x 88mm, fixed to bearer with 2/M12 bolts.
 - Veranda beam Radiata H3.2 CCA MSG 8 / VSG 8 2/140 x 45, fixed to posts with 2/M12 bolts
6. Roof framing
- All timber CCA treated, no LOSP shall be accepted.
 - MiTek New Zealand Ltd specific designed covered trusses at 900mm c/c maximum, with all timbers H1.2 treated. Provide full trusses to Entry deck area. Note no trusses to gable walls - full height framed walls to be provided.
 - Truss fixings provided as follows:

Connection	Fixing
Truss to top plate	2/100 x 3.75 skewed nail plus 2 wire dogs <i>for up to Very High wind load</i> 2/100 x 3.75 skewed nail plus 2 wire dogs (fixing to be confirmed or specifically designed for wind load).

- Purlins to be 70 x 45 H3.2 @ 800c/c max., fixed to trusses with 2/100 x 3.75 skewed nail plus 1 wire dog *for snow load up to 1kPa and wind load up to VH/1.5kPa.*
- Purlins to be 70 x 45 H3.2 MSG/VSG 8 @ 800c/c max. (grade and spacing to be confirmed or specifically designed for snow load), fixed to trusses and rafters with 2/100 x 3.75 skewed nail plus 1 wire dog (fixing to be confirmed or specifically designed for wind load).

7. Miscellaneous framing

- Gables, eaves, support framing and the like.
- Treatment of timber and fixings as per associated main framing.

8. Bracing

- Wall bracing – Ecoply SP2 and SP12 bracing elements where shown on bracing plan. Fixings at 150mm c/c to sheet edges and 300mm c/c to intermediate framing. *for all huts*
- Wall bracing – Ecoply SP2 and SP12 bracing elements where shown on bracing plan. Fixings at 150mm c/c to sheet edges and 300mm c/c to intermediate framing. (bracing panels and fixings to be confirmed or specifically designed for wind load over VH/1.5kPa).
- Roof bracing – roof plane opposed diagonal galvanised steel straps with 8kN tensioners to each side of roof and to veranda.
- Ceiling ply diaphragm not required.
- Wind bracing utilising tie-downs *where wind zone/load over VH/1.5kPa and engineers advises tie-downs required.*

9. Nail fixings

- Size, number and location of nails as per the nailing schedules in NZS 3604 unless otherwise noted on the drawings.
- In accordance with Table 4.3 of NZS 3604, unless specifically noted otherwise, nail material and/or treatment shall be as follows:

	Nail use			
Corrosion zone	Cladding acting as bracing	Non-structural cladding	“closed” areas, including roof space	“sheltered” and “exposed” areas
Zone ?1 sea spray?	Stainless steel or silicon bronze or protected galvanised steel	Galvanised steel	Mild steel	Galvanised steel
Zone ?2 3 4?	Galvanised steel	Galvanised steel	Mild steel	Galvanised steel

Note: If cladding is not acting as bracing, the first column will be redundant, so delete it.

10. Bolts and Proprietary Fixings

- Unless noted otherwise, bolts shall be 12mm engineers bolts fitted with either 50 x 50mm square x 5mm or 55mm diameter x 5mm washers both ends.
- Galvanised bolts in contact with treated timber protected using a liberal coating of multipurpose grease prior to use.
- In accordance with Table 4.1 of NZS 3604, unless specifically noted otherwise, bolt, nut and washer material and/or treatment shall be as follows:

	Bolt and proprietary fixing use				
Corrosion zone	Sub-floor - piles	Sub-floor – other timbers	Enclosed framing	Roof space	Exterior “sheltered” or “exposed”
Zone ?1	Type 304	Type 304	Mild steel	Hot-dipped	Type 304

sea spray?	stainless steel	stainless steel		galvanised steel	stainless steel
Zone ?2 3 4?	Type 304 stainless steel	Hot-dipped galvanised steel	Mild steel	Hot-dipped galvanised steel	Type 304 stainless steel

4. FLOORING AND STAIRS/STEPS

1. Under floor Insulation

- 55mm EXPOL expanded polystyrene with tight fit between joists

2. Flooring

- CHH 19mm Ecoply CD grade H3.2 'Longspan' F8 sheets set in stretcher bond pattern, fixed to joists with grade 304 stainless steel screws.

3. Decking/Stairs/Steps

- 100 x 40mm H3.2 Radiata No. 1 grade grip tread decking, laid grip side up, fixed with decking nails.
- Webforge 1200 x 900 A405MSG galvanised steel grating with serrated top edge in front of entry door.
- Webforge 1200mm T4/A405MSG galvanised steel treads with type T4 floor plate nosings for stairs.
- Set steps to suit maximum 180mm riser and 300mm tread.
- Standard handrail to sides of stairs.
- Standard barrier to deck where shown on the drawings. *Include if required*

5. WALL CLADDING

1. Wall Insulation

- Tasman Insulation R2.8 Ultra Wall Pink Batts

2. Building Paper

- Tasman Insulation "Bitumac 860" building paper with Tasman Insulation "Protecto Sill System" flexible flashing tape at door window openings.

3. Exterior Wall Cladding

- COLORSTEEL Endura corrugated profile vertical, screw fixed through pan. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for 1m in from each corner and 'fix 1, miss 2, fix 1, miss 3, repeat' (4 fixings per metre per dwang) for other areas of the wall. *Fixing to be confirmed or specifically designed for wind load if above VH/1.5kPa.*
- COLORCOTE ARX aluminium corrugated profile vertical, screw fixed through pan. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for 1m in from each corner and 'fix 1, miss 2, fix 1, miss 3, repeat' (4 fixings per sheet per dwang) for other areas of the wall. *for Sea spray zone*

- CHH 12mm 'Shadowclad Texture Natural', H3 LOSP clear treated, AD grade plywood cladding, with ex 75 x 25 H3.1 LOSP sawn battens at 300mm c/c. Battens over sheet joints to have 6 x 6mm weather grooves behind. Back flashings to all sheet joints. *If ply selected*

4. Baseboards

- H3.2 CCA treated 100x25mm rough sawn with 20mm gap between.
- 800mm wide access hatch, complete with stainless steel hinges and stainless steel clasp and staple, constructed from baseboards.

5. Fascia, barges and soffit

- Radiata H3.1 boxed 2/150 x 25 dressed fascia, soffit and barge.
- 4.5 Hardiflex soffit lining over Entry deck

6. Passive Ventilation

- 300 x 300 vents set into gables with insect mesh and weathershield

6. ROOFING

1. Roof Insulation

- Tasman Insulation "R3.6 Ultra Ceiling Pink Batts"

2. Building Paper

- Tasman Insulation Flamestop 660 self supporting roof underlay.

3. Profiled Metal Roofing

- COLORSTEEL Endura, corrugated profile, screw fixed through crest. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for all of roof. *fixing to be confirmed or specifically designed for wind loads over VH/1.5kPa*
- COLORCOTE ARX aluminium corrugated profile, screw fixed through crest. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for all of roof. *for Sea spray zone*

4. Roof Flashings

- Colorsteel Endura flashings with Al-edge soft edging.
- Aquaseal unit to wood burner flue.
- Colorsteel Endura flashings with Kea-proof detailing – no soft edge used. Folded edge formed to roof profile OR compriband foam seal 50mm back from leading edge? *Keas will destroy any soft-edged flashings.*

7. INTERIOR LINING

1. Walls and Ceilings

- 9mm Ecoply sheets, BD grade (untreated), butt jointed with arrised sheet edges.
- Utility Clad H3 CCA plywood lining to wood store area as shown on drawings.

2. Mouldings and Finishing

- Skirtings 40 x 12 single bevel, untreated Radiata
- Architraves 40 x 12 single bevel, untreated Radiata
- Cornice 40x12 single bevel, untreated Radiata. Plane top edge as required for tight fit to ceiling.

3. Ceiling Access

- 800 x 600 opening formed into ceiling space. 9mm Ecoply panel hinged to open.

4. Passive Ventilation

- Holyoake 300 x 300 EC-125 grille set into ceiling.

8. JOINERY

1. Windows

- Powdercoated Aluminium joinery – selected colour from Duralloy range
- First' Aluminium Light Commercial suite, with condensation channels all round, Radiata H3.2 reveals suitable for architraves for window W1. Fixed sashes.
- First' Aluminium Slidemaster suite, with condensation channels all round, Radiata H3.2 reveals suitable for architraves for windows W2 – W3. All opening sashes to be sliding, with proprietary screw-fixed flyscreens to the exterior. *Delete flyscreens if insects not an issue*
- Single glazed windows
- Double-glazed windows *Where temperatures, comfort or potential condensation warrants it*

2. Exterior Door

- Powdercoated Aluminium joinery – selected colour from Duralloy range
- 'First' Aluminium Magnum suite with single glazed light to top panel and aluminium faced 12mm polystyrene core insulated panel to bottom panel. Aluminium frame, with radiata H3.2 reveals suitable for architraves. *Note: amend to double-glazed light where windows are double glazed and temperature, comfort or potential condensation warrants it*
- No sill on door frame, frame jambs and door rebated into floor with purpose made aluminium sill plate. Door opens out and closes tight against sill plate. *For insect proof finish where flyscreens are used on windows*
- No sill on door frame, frame jambs finish against floor and door stops 10mm clear of floor. Purpose made aluminium sill plate rebated into floor. Door opens in. *Where flyscreens are not necessary and/or for in areas where there is the possibility of snow piling up in front of the door*
- Holyoake powdercoated aluminium louvre model OHL-F34, 300mm high, fitted into bottom panel with insect screen and weathershield.
- Lockwood commercial grade latch with lever handle.

9. FITTINGS AND FIXTURES

1. Bunks

- Individual bunks: Built-in double level slat base individual bunks, with ladder and side rail. Framing to be Radiata H1.2 Boric framing

2. Cooking Bench

- Benchtop shall be grade 304 stainless steel, 500mm deep with 300mm upstand to walls, and anti-spill finish to front and open side edges. Substrate shall be two layers 19mm plywood. Support framing of Radiata H1.2 Boric framing.
- 19mm H3 Ecoply shelf full length under.

3. Built-in interior Seating

- Seat surface to be 9mm Ecoply with 40 x 12 single bevelled untreated Radiata moulding to front edge, over 75 x 50 Radiata H1.2 Boric framing, at 420mm above floor level.

4. Table and Forms

- Table of untreated dressed Radiata, with 70 x 70 legs and 90 x 45 supports, all well housed and soundly fixed together. Top to be 19mm untreated Ecoply. Arris top edges of ply and all edges of timbers and sand with fine sand paper to smooth and rounded finish. Finish with 4 coats of Resene Polythane moisture-cured polyurethane.
- Forms of untreated dressed Radiata, of 2 / ex 190 x 19 legs, 140 x 19mm centre support and 90 x 19mm side supports, and 290 x 19mm top, all well housed and soundly fixed together. Arris top edges of top and all edges of timbers and sand with fine sand paper to smooth and rounded finish. Finish with 4 coats of Resene Polythane moisture-cured polyurethane.
- Provide table and forms of the following size and number:

6 bunk huts – note none for 4 bunk hut.

Item	Size	Number
Table	900 x 900mm	1x
Forms	900 x 300	2x

5. Hookrails

- Timber rail: to be made from 140 x 45 H3.2 rail with timber dowels glued into rail, fixed to the face of lining, cladding or exterior posts. Finish with 4 coats Resene moisture-cured polyurethane.
- Galvanised steel rail to be made from 100 x 6mm galvanised sheet metal with 10mm galvanised steel rods welded.

6. Multi-fuel burner, hearth and wall protection

- 'Extra small' Pioneer Multiburner stove with side panels, supplied complete with 24 gauge grade 304 stainless steel 4.2m flue, outer shield, standard cowl with weather protector and accessories, from G&G Engineering Holdings Ltd, Christchurch (ph 03 347 8808).

- Wall protection of horizontal zincalume baby corrugated cladding over one layer 12mm Supalux insulating board over 2 layers 12 x 50mm wide Supalux battens fixed to the wall lining. Supply and fit zincalume cap flashing to all four sides of wall protection.
 - Hearth: Lay DPM over plywood flooring in area of hearth. Pour 60mm thick concrete with 665 reinforcing mesh set centrally. Finish exposed edges of concrete with ex 70 x 45 H3.2 Radiata surround with bevelled front edge.
7. Water Tank Stand
- Radiata H3.2 timber framing, with earthquake restraints for tank as per standard details.
8. Exterior sink to water tank
- Benchtop shall be Mercer C5-500 Classic Line stainless steel with 150mm upstand to tank stand framing, and anti-spill finish to open edges, set at height to suit tank stand height above ground level. Substrate shall be two layers 19mm H3 treated plywood. Support framing of Radiata H3.2 framing.
 - Refer to plumbing and drainage section for water supply and tap details.
9. Miscellaneous
- Install candle holders, ticket box, signage and the like provided by DOC.

10. PLUMBING AND DRAINAGE

1. Water supply

- Water stored in Wilson TS1000 1000 litre (890mm high x 1420mm diameter) water tank, complete with screw lid, leaf strainer, 20mm outlet 50mm overflow, and 32mm wash-out valve to base of water tank.
- 50mm overflow from water tank to start at base of tank with slots at end of pipe, and 20mm anti-siphon hole to top of overflow pipe. Overflow to be taken down leg of water tank stand and discharge to adjacent ground with 400mm elbow.

2. Taps and valves

- 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, fitted to tank. Provide support block under tap.
- 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, fitted to tank. Pipework to tap over sink to be polybutylene/polyethylene complete with all compatible fixings. Provide support block under tap.

3. Gutters and downpipes

- No gutters or downpipes *when water is not collected from the roof or no concern with run-off on to ground/people*
- PVC Marley Stormcloud spouting and brackets to collect water from ????? roof only. *note collection area, for 0 – 0.5 kPa snow load*

- Colorsteel Endura 125mm half round spouting with external brackets to collect water from ????? roof only. *note collection area, for snow load greater than 0.5kPa*
- Fit Colorsteel 40mm wide 0.55 BMT snow straps from the crests of the corrugate roofing to the Colorsteel spouting. *for snow load greater than 1.0kPa*
- PVC Marley 65mm round downpipe, with Marley Leafslide, from guttering discharging into water tank. Downpipe to finish on base of water tank with capped end and 65mm T-junction located 500mm from base of water tank. *leafslide not necessary if not in bush area*

4. Drainage

- Waste pipes from sink to discharge over gully trap, below level of grate. All waste pipes with even falls, concealed as far as possible. Gully trap to drain into sullage pit.
- Connect gully trap to sullage pit located where shown on the site plan. Sullage pit to be formed as per drawings.

11. FINISHING AND PAINTING

1. 4 coats Resene Polythane moisture-cured polyurethane

- Flooring, including edging to hearth
- Bunks and ladders
- Tables and forms
- Toilet – floor and seat

2. 2 coats Watty! Forestwood Deck & Furniture Oil, colour 'Natural Pine'.

- Flooring
- Timber framing for bunks including horizontal sleeping surfaces, and ladders

3. First Coat Resene Quick Dry, with two coats of Resene Zylone Spacecoat.

- Interior ply ceilings and cornice
- Toilet – interior ply walls and ceiling

4. 4 coats Resene Aquaclear water-based clear finish

- Interior ply walls
- window and door reveals and architraves
- Mouldings and interior finishes generally
- Cooking bench and Interior seating

5. 3 coats of Resene Woodsman, First coat to all surfaces prior to installation, second coat after fixing, and third coat applied after 3 months. *For ply cladding only*

- Exterior ply and batten cladding

6. Resene Hi-Glo acrylic paint

- fascias/barge boards and soffits
- Toilet - vent

7. Other buildings *Note as required*

- Woodshed: none required.
- Toilet: refer notes above for requirements.

8. Exclusions

- Veranda posts and beams, exposed veranda framing
- Decking, steps, stairs, baseboards
- Hook rails *If galvanised*
- Water tank stand

Miscellaneous:

Any material or element which does not have a specified finish, but obviously needs finishing to complete the Contract, shall be considered a part of the Contract, and in general shall have the same finish as similar elements or materials. Confirm with Contract Administrator prior to doing this work.

12 OTHER BUILDINGS

To be advised by DoC

- Woodshed
- Pit toilet

Appendix G2.2: 10 and 12 bunk hut

Base Developed Design Specification

CURRENT SPECIFICATION REGISTER

	Title	Version	Date issued
	Developed Design	4.0	March 2009

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

OUTLINE SPECIFICATION

of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

Name Hut

Project No. DOC ?????

Location1 – River, Range, etc

Location2 – Forest, Nat Park, etc

Department of Conservation

Name Area Office

Name Conservancy

Issue A Date of issue

Developed Design

V4.0 Base Developed Design Specification 10/12 bunk hut March 2009



Department of Conservation
Te Papa Atawhai

HUT INFORMATION

Service Standard

- Serviced Standard Basic hut
- 10 12 visitor bunk hut
- BCC BCA RS Visitor Group

Design Criteria (by NZS 3604)

- ???m altitude, location E ?????????? N ???????????
- Corrosion zone = zone Sea Spray 1 2 3 4? (figure 4.1)
- Wind zone = Low Medium High Very High
- Specific Design wind loads/speeds = ?????????? (note specific loads and speeds)
- Earthquake zone = A B C (figure 5.4)
- Snow load = N/A 0.5kPa 1kPa (figure 15.1, zone 0 1 2 3 4 5)
- Specific Design snow load = ?????????? Note specific loads, including drift on verandah roof
- Floor load = 1.5kPa
- Deck load = 2.0kPa

Project Structure

- DOC Project Manager: name
Name Area/Conservancy Office
Town/City
- Architect: Ron Pynenburg
Pynenburg and Collins Architects Ltd
Wellington
- Structural Engineer: name
Name Area/Conservancy Office
Company Name
Town/City?
N/A (NZS 3604 parameters)
- Foundation Engineer: Lapish Enterprises Ltd
Auckland
- Truss Engineer: MiTek New Zealand Ltd
Christchurch
- Contract Administrator: name
Name Area/Conservancy Office
Company Name
Town/City

1. PRELIMINARY AND GENERAL

1. DoC supplied items to be fitted/installed by the contractor

- Multifuel burner, complete with flue kit
- Mattresses (1900 x 750 Autex Fibrefoam core, Sure-Chek44 covering)

- Candle holders
- Drying Rack
- Ticket box, notices and signage

2. Separate Contract works organised by DoC

- None
- Vegetation clearance and tree cutting
- Hut platform excavation
- Toilet supply & installation
- Wood shed
- Track work
- Existing hut removal

3. Additional Contract works by Contractor:

- None
- Vegetation clearance and tree cutting
- Hut platform excavation
- Toilet supply & installation
- Wood shed
- Track work
- Existing hut removal

4. Accommodation:

- To be provided by Contractor.
- The existing hut will be available to the contractor for accommodation for the duration of the contract.
- Other (note what).

2. SITE PREPARATION

1. Site levelling/benching:

- Not required
- Bench site to levels as shown on the drawings, to 1m clear of hut outline, with cut face at 2:1 batter. Ground to fall 50mm away from hut to base of cut face.
- Extend existing bench at same level? to 1m clear of hut outline, with cut face at 2:1 batter. Ground to fall 50mm away from hut to base of cut face.

2. Setout and level

- Facing due north (identify orientation) (refer site plan)
- Floor level established from setting out top of shortest pile (???? corner) to be 300mm above ground level.

3. BUILDING FRAMING

1. Timber treatment

- The species, grade and treatment shall be (1):

Purlins and roof framing other than trusses	Pinus Radiata	No 1 Framing	H3.2 CCA
Roof trusses	Pinus Radiata	as per Mitek design	H1.2 CCA
Exposed exterior roof and wall framing, including isolated posts & beams, but not in contact with ground (2)	Pinus Radiata	Kiln dried MSG 8 / VSG 8 / No 1 Framing gauged	H3.2 CCA
Enclosed external walls framing timbers	Pinus Radiata	Kiln dried No 1 Framing gauged	H3.2 CCA
Bearers and joists	Pinus Radiata	No 1 Framing / MSG 6	H3.2 CCA
Stair and step framing, barriers, perimeter battens and other sub-floor framing	Pinus Radiata	No 1 Framing	H3.2 CCA
Timber in contact with ground, piles, plates etc	Pinus Radiata	No 1 Framing	H5

Notes:

(1) for specific design snow or wind loads the timber grades may be changed by the Structural Engineer during compilation of the Tender & Building Consent documents

(2) refer to the drawings and specification clauses below for timber grade requirements

2. Foundation system

- Radiata 125 x 125 H5 sawn piles, minimum 300mm above ground level
- Conqra Ezi-Yaka foundation system, specific design by Lapish Enterprises Ltd, supplied complete with Ezi Yaka Lightfoot pads, spikes and Timberlink PB2 and BJ2 high corrosion connector packs.
- ?NZS3604 anchor, braced and ordinary pile system, specific design only to be used where it is determined that Ezi-Yaka will not be suitable due to ground conditions? *If braced piles are proposed, note that the minimum height of a braced pile is 600mm – it may be that anchor piles are the only practical solution*

3. Sub floor/deck/steps

- All timber CCA treated, no LOSP shall be accepted.
- 2/140 x 45 H3.2 bearers.
- 190 x 45 stringer for deck joist support.
- 145 x 45 H3.2 joists @ 400mm c/c to hut and deck, and double joists where shown on plans. *12 bunk huts*
- 145 x 45 H3.2 joists @ 600mm c/c to hut and 400mm c/c to deck, and double joists where shown on plans *10 bunk huts*

4. Wall framing

- All timber Radiata H3.2 kiln dried CCA treated, no LOSP shall be accepted.
- Side wall studs 90 x 45 @ 600mm c/c
- Gable wall studs 2/90 x 45 @ 400mm c/c
- Top and bottom plate 90 x 45
- Two rows of dwangs to side walls, three rows to end walls *for Colorsteel cladding*
- Dwangs @ 480c/c to take batten fixings. *for fixing of battens with plywood cladding*
- 2/140 x 45 MSG 8 / VSG 8 lintel for spans up to 1800mm. *for 1 kPa snow loading*
- 2/140 x 45 MSG 8 / VSG 8 lintel for spans up to 1200mm and 2/190 x 45 MSG 8 / VSG 8 lintel for spans up to 1800mm (size to be confirmed or specifically designed for snow load over 1kPa)
- Top plate/stud fixing 2/100 x 3.75 skewed nail plus 1 wire dog *low/medium/high wind*
- Top plate/stud fixing 2/100 x 3.75 skewed nail plus 2 wire dogs *very high wind*
- Top plate/stud fixing 2/100 x 3.75 skewed nail plus 2 wire dogs (fixing to be confirmed or specifically designed for wind load).

5. Isolated posts and beams

- Veranda posts Prowood PLP Prolam Post GL8 H5 88 x 88mm, fixed to bearer with 2/M12 bolts.
- Veranda beam Radiata H3.2 CCA MSG 8 / VSG 8 2 / 140 x 45, fixed to posts with 2/M12 bolts
- Veranda beam Radiata H3.2 CCA MSG 8 / VSG 8 2 / 140 x 45 (size to be confirmed or specifically designed for snow load over 1kPa), fixed to posts with 2/M12 bolts

6. Roof framing

- All timber CCA treated, no LOSP shall be accepted.
- MiTek New Zealand Ltd specific designed double ridge truss with coved half trusses at 900mm c/c maximum, with all timbers H1.2 treated. Note no trusses to gable walls - full height framed walls to be provided.
- Truss fixings provided as follows:
- Truss fixings provided as follows (fixing to be confirmed or specifically designed for wind load):

Connection	Fixing
Ridge Truss to end walls	90 x 45 stud full height either side with 2/90 x 45 studs under bottom chord. Fix through side studs and ridge truss end member with minimum 2 x 12mm galvanised bolts complete with 50 x 50 x 5mm galvanised washers under head and nut.
Top chord of coved half truss to ridge truss	2/100 x 3.75 skewed nail plus 2 wire dogs, PLUS 53mm x 0.91mm x 400mm Lumberlok multibrace over apex, with 5 nails minimum each end.

Bottom chord of covered half truss to ridge truss	90mm x 47mm joist hangers.
Truss to top plate	2/100 x 3.75 skewed nail plus 2 wire dogs <i>for up to Very High wind load</i> 2/100 x 3.75 skewed nail plus 2 wire dogs (<i>fixing to be confirmed or specifically designed for wind load</i>).

- Wall plate for fixing of verandah rafters to be ex 240 x 45 H3.2 fixed to studs / ends of trusses / rafters @ 1.2m c/c max with M12 coach screws. Shape top of wall plate to suit flashing over.
- Veranda rafters 145 x 45 H3.2 MSG 8 / VSG 8 rafters @ 600c/c max, fixed to wall plate with stainless steel Lumberlok 'multigrip' and veranda beam with 2/100 x 3.75 skewed nail plus 1 wire dog. Veranda rafters to be notched over veranda beam with 90mm min. throat remaining. *for up to 1kPa snow load*
- Veranda rafters 145 x 45 H3.2 MSG 8 / VSG 8 rafters @ 600c/c max (grade and spacing to be confirmed or specifically designed for snow load), fixed to wall plate with stainless steel Lumberlok 'multigrip' and veranda beam with 2/100 x 3.75 skewed nail plus 1 wire dog (fixing to be confirmed or specifically designed for wind load). *Specific design for snow load over 1kPa and/or wind load over VH/1.5kPa*
- Roof purlins to be 70 x 45 H3.2 @ 800c/c max. fixed to trusses with 2/100 x 3.75 skewed nail plus 1 wire dog. *for up to VH wind load and 0.5kPa snow load*
- Roof purlins to be 70 x 45 H3.2 MSG 8 / VSG 8 @ 800c/c max. (grade and spacing to be confirmed or specifically designed for snow load). *Specific design for snow load over 1kPa and/or wind load over VH/1.5kPa*
- Veranda purlins to be 140 x 45 H3.2 @ 600c/c cut between rafters and fixed with 4/100 x 3.75 skewed nails. *for up to VH wind load and 1kPa snow load*
- Veranda purlins to be 140 x 45 H3.2 MSG 8 / VSG 8 @ 600c/c (grading and spacing to be confirmed or specifically designed for snow load) cut between rafters and fixed with 4/100 x 3.75 skewed nails (fixing to be confirmed or specifically designed for wind load). *Specific design for snow load over 1kPa and/or wind load over VH/1.5kPa*

7. Miscellaneous framing

- Gables, eaves, support framing and the like.
- Treatment of timber and fixings as per associated main framing.

8. Bracing

- Wall bracing – Ecoply SP2 and SP12 bracing elements where shown on bracing plan. Fixings at 150mm c/c to sheet edges and 300mm c/c to intermediate framing. *for all huts except 10 bunk in VH wind zone*
- Wall bracing – Ecoply SP2, SP10 and SP12 bracing elements where shown on bracing plan. Fixings for SP2 and SP12 elements at 150mm c/c to sheet edges and 300mm c/c to intermediate framing. Fixings for SP10 elements at 75mm c/c to sheet edges and 150mm c/c to intermediate framing. *for 10 bunk hut in VH wind zone*
- Wall bracing – Ecoply SP2, SP10 and SP12 bracing elements where shown on bracing plan. Fixings at 150mm c/c to sheet edges and 300mm c/c to intermediate

framing. Fixings for SP10 elements at 75mm c/c to sheet edges and 150mm c/c to intermediate framing. (bracing panels and fixings to be confirmed or specifically designed for wind load). Amend for 10 or 12 bunk hut as relevant for wind zone/load over VH/1.5kPa have engineer check bracing provided

- Roof bracing – roof plane opposed diagonal galvanised steel straps with 8kN tensioners to each side of roof and to veranda.
- Ceiling ply diaphragm not required.
- Wind bracing utilising tie-downs where wind zone/load over VH/1.5kPa and engineers advises tie-downs required.

9. Nail fixings

- Size, number and location of nails as per the nailing schedules in NZS 3604 unless otherwise noted on the drawings.
- In accordance with Table 4.3 of NZS 3604, unless specifically noted otherwise, nail material and/or treatment shall be as follows:

	Nail use			
Corrosion zone	Cladding acting as bracing	Non-structural cladding	“closed” areas, including roof space	“sheltered” and “exposed” areas
Zone ?1 sea spray?	Stainless steel or silicon bronze or protected galvanised steel	Galvanised steel	Mild steel	Galvanised steel
Zone ?2 3 4?	Galvanised steel	Galvanised steel	Mild steel	Galvanised steel

Note: If cladding is not acting as bracing, the first column will be redundant, so delete it.

10. Bolts and Proprietary Fixings

- Unless noted otherwise, bolts shall be 12mm engineers bolts fitted with either 50 x 50mm square x 5mm or 55mm diameter x 5mm washers both ends.
- Galvanised bolts in contact with treated timber protected using a liberal coating of multipurpose grease prior to use.
- In accordance with Table 4.1 of NZS 3604, unless specifically noted otherwise, bolt, nut and washer material and/or treatment shall be as follows:

	Bolt and proprietary fixing use				
Corrosion zone	Sub-floor - piles	Sub-floor – other timbers	Enclosed framing	Roof space	Exterior “sheltered” or “exposed”
Zone ?1 sea spray?	Type 304 stainless steel	Type 304 stainless steel	Mild steel	Hot-dipped galvanised steel	Type 304 stainless steel
Zone ?2 3 4?	Type 304 stainless steel	Hot-dipped galvanised steel	Mild steel	Hot-dipped galvanised steel	Type 304 stainless steel

4. FLOORING AND STAIRS/STEPS

1. Under floor Insulation

- 55mm EXPOL expanded polystyrene with tight fit between joists
2. Flooring
 - CHH 19mm Ecoply CD grade H3.2 'Longspan' F8 sheets set in stretcher bond pattern, fixed to joists with grade 304 stainless steel screws.
 3. Decking/Stairs/Steps
 - 100 x 40mm H3.2 Radiata No. 1 grade grip tread decking, laid grip side up, fixed with decking nails.
 - Webforge 1200 x 900 A405MSG galvanised steel grating with serrated top edge in front of entry door.
 - Webforge 1500mm T4/A405MSG galvanised steel treads with type T4 floor plate nosings for stairs.
 - Set steps to suit maximum 180mm riser and 310mm tread.
 - Standard handrail to sides of stairs.
 - Standard barrier to deck where shown on the drawings. *Include if required*

5. WALL CLADDING

1. Wall Insulation
 - Tasman Insulation R2.8 Ultra Wall Pink Batts
2. Building Paper
 - Tasman Insulation "Bitumac 860" building paper with Tasman Insulation "Protecto Sill System" flexible flashing tape at door window openings.
3. Exterior Wall Cladding
 - COLORSTEEL Endura corrugated profile vertical, screw fixed through pan. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for 1m in from each corner and 'fix 1, miss 2, fix 1, miss 3, repeat' (4 fixings per metre per dwang) for other areas of the wall. *Fixing to be confirmed or specifically designed for wind load if above VH/1.5kPa.*
 - COLORCOTE ARX aluminium corrugated profile vertical, screw fixed through pan. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for 1m in from each corner and 'fix 1, miss 2, fix 1, miss 3, repeat' (4 fixings per sheet per dwang) for other areas of the wall. *for Sea spray zone*
 - CHH 12mm 'Shadowclad Texture Natural', H3 LOSP clear treated, AD grade plywood cladding, with ex 75 x 25 H3.1 LOSP sawn battens at 300mm c/c. Battens over sheet joints to have 6 x 6mm weather grooves behind. Back flashings to all sheet joints. *If ply selected*
4. Baseboards
 - H3.2 CCA treated 100x25mm rough sawn with 20mm gap between.
 - 800mm wide access hatch, complete with stainless steel hinges and stainless steel clasp and staple, constructed from baseboards.

5. Fascia, barges and soffit
 - Radiata H3.1 boxed 2/150 x 25 dressed fascia, soffit and barge.
6. Passive Ventilation
 - 400 x 400 vents set into gables with insect mesh and weathershield.

6. ROOFING

1. Roof Insulation
 - Tasman Insulation "R3.6 Ultra Ceiling Pink Batts"
2. Building Paper
 - Tasman Insulation Flamestop 660 self supporting roof underlay.
3. Profiled Metal Roofing
 - COLORSTEEL Endura, corrugated profile, screw fixed through crest. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for all of roof. *fixing to be confirmed or specifically designed for wind loads over VH/1.5kPa*
 - COLORCOTE ARX aluminium corrugated profile, screw fixed through crest. Fixing pattern to be 'fix 1, miss 1, fix 1, miss 1, repeat' (6.5 fixings per metre per dwang) for all of roof. *for Sea spray zone*
4. Translucent roofing (for part veranda)
 - Alsynite Laserlite 2000 Roma profile, screw fixed through every second crest.
5. Roof Flashings
 - Colorsteel Endura flashings with Al-edge soft edging.
 - Aquaseal unit to wood burner flue.
 - Colorsteel Endura flashings with Kea-proof detailing – no soft edge used. Folded edge formed to roof profile OR compriband foam seal 50mm back from leading edge? *Keas will destroy any soft-edged flashings.*

7. INTERIOR LINING

1. Walls and Ceilings
 - 9mm Ecoply sheets, BD grade (untreated), butt jointed with arrised sheet edges.
2. Mouldings and Finishing
 - Skirtings 40 x 12 single bevel, untreated Radiata
 - Architraves 40 x 12 single bevel, untreated Radiata
 - Sill architrave to windows above interior fixed seating 100 x 25 double bevel, untreated Radiata
 - Cornice 40x12 single bevel, untreated Radiata. Plane top edge as required for tight fit to ceiling.

3. Ceiling Access

- 800 x 600 opening formed into ceiling space. 9mm Ecoply panel hinged to open.

4. Passive Ventilation

- Holyoake 400 x 400 EC-125 grille set into ceiling.

8. JOINERY

1. Windows

- Powdercoated Aluminium joinery – selected colour from Duralloy range
- First' Aluminium Light Commercial suite, with condensation channels all round, Radiata H3.2 reveals suitable for architraves for window W1. Fixed sashes.
- First' Aluminium Slidemaster suite, with condensation channels all round, Radiata H3.2 reveals suitable for architraves for windows W2 – W8. All opening sashes to be sliding, with proprietary screw-fixed flyscreens to the exterior. *Delete flyscreens if insects not an issue*
- Single glazed windows
- Double-glazed windows *Where temperatures, comfort or potential condensation warrants it*
- Windows above sleeping platforms to be glazed with 'Bondlite'.

2. Exterior Door

- Powdercoated Aluminium joinery – selected colour from Duralloy range
- 'First' Aluminium Magnum suite with single glazed light to top panel and aluminium faced 12mm polystyrene core insulated panel to bottom panel. Aluminium frame, with radiata H3.2 reveals suitable for architraves. *amend to double-glazed light where windows are double glazed and temperature, comfort or potential condensation warrants it*
- No sill on door frame, frame jambs and door rebated into floor with purpose made aluminium sill plate. Door opens out and closes tight against sill plate. *For insect proof finish where flyscreens are used on windows*
- No sill on door frame, frame jambs finish against floor and door stops 10mm clear of floor. Purpose made aluminium sill plate rebated into floor. Door opens in. *Where flyscreens are not necessary and/or for in areas where there is the possibility of snow piling up in front of the door*
- Holyoake powdercoated aluminium louvre model OHL-F34, 300mm high, fitted into bottom panel with insect screen and weathershield.
- Lockwood commercial grade latch with lever handle.

9. FITTINGS AND FIXTURES

1. Bunks

- Platform bunks: Built-in platform bunks with 19mm Ecoply base, with one ladder. 750mm deep recess under for pack storage. Framing to be Radiata H1.2 Boric framing.

2. Cooking Bench

- Benchtop shall be grade 304 stainless steel, 600mm deep with 300mm upstand to walls, and anti-spill finish to front and open side edges. Substrate shall be two layers 19mm plywood. Support framing of Radiata H1.2 Boric framing.
- 19mm Ecoply shelf full length under.

3. Built-in interior Seating

- Seat surface to be 9mm Ecoply with 40 x 12 single bevelled untreated Radiata moulding to front edge, over 75 x 50 Radiata H1.2 Boric framing, at 420mm above floor level.

4. Table and Forms

- Table constructed from untreated dressed Radiata, of 70 x 70 legs and 90 x 45 supports, all well housed and soundly fixed together. Top to be 19mm untreated Ecoply. Arris top edges of ply and all edges of timbers and sand with fine sand paper to smooth and rounded finish. Finish with 4 coats of Resene Polythane moisture-cured polyurethane.
- Forms constructed from untreated dressed Radiata, of 2 / ex 290 x 19 legs, 140 x 19mm centre support and 90 x 19mm side supports, and 290 x 19mm top, all well housed and soundly fixed together. Arris top edges of top and all edges of timbers and sand with fine sand paper to smooth and rounded finish. Finish with 4 coats of Resene Polythane moisture-cured polyurethane.
- Provide table and forms of the following size and number:

10 bunk huts.

Table	1800 x 800mm	1x
Form	1800 x 300	1x
Form	900 x 300	1x

12 bunk huts.

Table	2100 x 800mm	1x
Form	2100 x 300	1x
Form	900 x 300	1x

5. Hookrails

- Timber rail: to be made from 140 x 45 H3.2 rail with timber dowels glued into rail, fixed to the face of lining, cladding or exterior posts. Finish with 4 coats Resene Polythane moisture-cured polyurethane.
- Galvanised steel rail to be made from 100 x 6mm galvanised sheet metal with 10mm galvanised steel rods welded.

6. Multi-fuel burner, hearth and wall protection

- 'Extra small' Pioneer Multiburner stove with side panels, supplied complete with 24 gauge grade 304 stainless steel 4.2m flue, outer shield, standard cowl with weather protector and accessories, from G&G Engineering Holdings Ltd, Christchurch (ph 03 347 8808).
- Wall protection of horizontal zincalume baby corrugated cladding over one layer 12mm Supalux insulating board over 2 layers 12 x 50mm wide Supalux battens fixed to the wall lining. Supply and fit zincalume cap flashing to all four sides of wall protection.

- Hearth: Lay DPM over plywood flooring in area of hearth. Pour 60mm thick concrete with 665 reinforcing mesh set centrally. Finish exposed edges of concrete with ex 70 x 45 H3.2 Radiata surround with bevelled front edge.
7. Water Tank Stand
 - Radiata H3.2 timber framing, with earthquake restraints for tank as per standard details.
 8. Exterior sink to deck
 - Benchtop shall be Mercer C5-500 Classic Line stainless steel with 150mm upstand to two walls, and anti-spill finish to front and side edge, set at 900mm above deck level. Substrate shall be two layers 19mm H3 treated plywood. Support framing of Radiata H3 framing.
 - Refer to plumbing and drainage section for water supply and tap details.
 9. Exterior sink to water tank
 - Benchtop shall be Mercer C5-500 Classic Line stainless steel with 150mm upstand to tank stand framing, and anti-spill finish to open edges, set at height to suit tank stand height above ground level. Substrate shall be two layers 19mm H3 treated plywood. Support framing of Radiata H3.2 framing.
 - Refer to plumbing and drainage section for water supply and tap details.
 10. Miscellaneous
 - Install candle holders, ticket box, signage and the like provided by DOC.

10. PLUMBING AND DRAINAGE

1. Water supply
 - Water stored in Wilson TS2000 2000 litre (1260mm high x 1615mm diameter) water tank, complete with screw lid, leaf strainer, 20mm outlet, 50mm overflow, and 32mm wash-out valve to base of water tank.
 - 50mm overflow from water tank to start at base of tank with slots at end of pipe, and 20mm anti-siphon hole to top of overflow pipe. Overflow to be taken down leg of water tank stand and discharge to adjacent ground with 400mm elbow.
 - Form pipework from water tank to supply taps at exterior sink from polybutylene/polyethylene piping, complete with all compatible fixings. All pipework exposed with none inside wall cavities.
2. Taps
 - 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, fitted to tank. Provide support block under tap.
 - 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, over sinks. Provide support block under tap.
3. Gutters and downpipes

- No gutters or downpipes *when water is not collected from the roof or no concern with run-off on to ground/people*
 - PVC Marley Stormcloud spouting and brackets to collect water from ?????? roof only. *note collection areas, for 0 – 0.5 kPa snow load*
 - Colorsteel Endura 125mm half round spouting with external brackets to collect water from ?????? roof only. *note collection area, for snow load greater than 0.5kPa*
 - Fit Colorsteel 40mm wide 0.55 BMT snow straps from the crests of the corrugate roofing to the Colorsteel spouting. *for snow load greater than 1.0kPa*
 - PVC Marley 65mm round downpipe, with Marley Leafslide, from guttering discharging into water tank. Downpipe to finish on base of water tank with capped end and 65mm T-junction located 500mm from base of water tank. *leafslide not necessary if not in bush area*
4. Drainage
- Waste pipes from sink to discharge over gully trap, below level of grate. All waste pipes with even falls, concealed as far as possible. Gully trap to drain into sullage pit.
 - Connect gully trap to sullage pit located where shown on the site plan. Sullage pit to be formed as per drawings.

11. FINISHING AND PAINTING

1. 4 coats Resene Polythane moisture-cured polyurethane

- Flooring, including edging to hearth
- Bunks and ladders
- Tables and forms
- Toilet – floor and seat

2. 2 coats Wattyl Forestwood Deck & Furniture Oil, colour ‘Natural Pine’.

- Flooring
- Timber framing for bunks including horizontal sleeping surfaces, and ladders

3. First Coat Resene Quick Dry, with two coats of Resene Zylone Spacecoat.

- Interior ply ceilings and cornice
- Toilet – interior ply walls and ceiling

4. 4 coats Resene Aquaclear water-based clear finish

- Interior ply walls
- window and door reveals and architraves
- Mouldings and interior finishes generally
- Cooking bench and Interior seating

5. **3 coats of Resene Woodsman, First coat to all surfaces prior to installation, second coat after fixing, and third coat applied after 3 months. For ply cladding only**

- Exterior ply and batten cladding

6. **Resene Hi-Glo acrylic paint**

- fascias/barge boards and soffits
- Toilet - vent

7. **Other buildings *Note as required***

- Woodshed: none required.
- Toilet: refer notes above for requirements.

8. **Exclusions**

- Veranda posts and beams, exposed veranda framing
- Decking, steps, stairs, baseboards
- Hook rails *If galvanised*
- Water tank stand

Miscellaneous:

Any material or element which does not have a specified finish, but obviously needs finishing to complete the Contract, shall be considered a part of the Contract, and in general shall have the same finish as similar elements or materials. Confirm with Contract Administrator prior to doing this work.

12 OTHER BUILDINGS

To be advised by DoC

- Woodshed
- Pit toilet

Section G3: 4 – 12 bunk huts

Base Tender and Building Consent Specification

G3.1. Contents

Appendix G3 contains the Base Tender and Building Consent Specification from which the Tender and Building Consent Specification is derived in accordance with section B2.4.3.

G3.2. Specification creation process

- Refer to the Developed Design Specification
- If the hut is in an Alpine or harsh environment refer also to Parts E4 and E5 for additional annotations and amendments.
- If a pit toilet or a grey water disposal system is required refer to either Part F1 or F2 for additional annotations and amendments.
- Ensure all hidden (non-printable) text is turned on so that comments and directions for selection can be read.
- Those items not highlighted are basic details for the hut, will apply to all huts and shall not be altered. The exception is where the highlighted paragraphs under a heading (e.g. Exterior Wall Cladding) are the options available to the un-highlighted paragraph. Select the appropriate paragraph and delete the others.
- Those items that are highlighted are information items to be completed, or selections to be made based on the information contained in the Developed Design Specification.
- Check each heading within section against Developed Design Specification to see if it is relevant to project
 - If 'No', delete heading and related text
 - If 'Yes', leave 'non-highlighted' bullet points alone, check all highlighted bullet points and select one as appropriate. Delete all irrelevant items. Remove remaining highlights using 'Highlight' button on 'Formatting' toolbar.
- Include the necessary information in the Appendices of the Tender and Building Consent Specification as follows:
 - Appendix B – roof truss design information received from MiTek
 - Appendix C – foundation design information
 - Appendix D – Structural Engineer (if required), otherwise delete Appendix D

- When completed read the completed specification to ensure it is hut specific. While it is expected that additional paragraphs and/or alterations to provided paragraphs are not required, if the project requires it for certainty or clarity such additions and alterations should be made.
- When printing specification turn off hidden (non-printable) text.
- If any project specific additions or amendments have been made, they should be reviewed to determine if they should be incorporated into the base document.

Appendix G3: 4 – 12 bunk hut

Base Tender and Building Consent Specification

CURRENT SPECIFICATION REGISTER

	Title	Version	Date issued
	Tender and Building Consent	4.0	March 2009

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

SPECIFICATION

of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

?Name? Hut

Project No. DOC ?????

?Location1 – River, Range, etc?

?Location2 – Forest, Nat Park, etc?

Department of Conservation

?Name? Area Office

?Name? Conservancy

Issue A ?Date of issue?

Tender and Building Consent

V4.0 Base Tender and Building Consent Specification March 2009



Department of Conservation
Te Papa Atawhai

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APPENDIX A: STANDARD BRACING INFORMATION

APPENDIX B: ROOF TRUSS INFORMATION

APPENDIX C: FOUNDATION DESIGN

APPENDIX D: STRUCTURAL ENGINEER

HUT INFORMATION:

Service Standard

- Serviced Standard Basic hut
- 4 6 10 12 visitor bunk hut
- BCC BCA RS Visitor Group

Design Criteria (by NZS 3604)

- ???m altitude
- Corrosion zone = zone Sea Spray 1 2 3 4? (figure 4.1)
- Wind zone = Low Medium High Very High Specific Design
Specific Design wind loads/speeds = ???????? (note specific loads and speeds)
- Earthquake zone = A B C (figure 5.4)
- Snow load = N/A 0.5kPa 1kPa Specific Design (figure 15.1, zone 0 1 2 3 4 5, ???m altitude)
Specific Design snow load = ???????? Note specific loads, including drift on verandah roof
- Floor load (hut) = 1.5kPa (up to 12 bunks), 3.0kPa (larger than 12 bunks),
- Floor load (deck) = 2kPa

Project Structure

- DOC Project Manager: name
Name Area/Conservancy Office
Town/City
- Architect: Ron Pynenburg
Pynenburg and Collins Architects Ltd
Wellington
- Structural Engineer: name N/A (NZS 3604 parameters)
Name Area/Conservancy Office
Company Name
Town/City?
- Foundation Engineer: Lapish Enterprises Ltd
Auckland
- Truss Engineer: MiTek New Zealand Ltd
Christchurch
- Contract Administrator: name
Name Area/Conservancy Office
Company Name
Town/City

1.0 PRELIMINARY AND GENERAL

1.1 FORM OF CONTRACT

The form of Contract shall be the Department of Conservation's General Conditions of Contract documents (wgnho-119531) together with any Special Conditions and/or Schedules provided.

For the purposes of this project, where this specification refers to the Contract Administrator, the Contract refers to the Supervisor.

1.2 REQUIREMENTS OF AUTHORITIES

The Department of Conservation shall apply for and uplift the Resource Consent (if required), Project Information Memorandum and the Building Consent.

The Contractor shall ascertain and familiarise himself with the requirements of any consents prior to commencing work, and shall employ methods and work practices which comply. The Contractor shall establish which inspections are required by these consents, and shall pay and arrange for the inspections to take place including give all notices and arrange for inspections and the like required by the Building Consent, and

At the completion of the works the Contractor shall apply for and obtain the Code Compliance Certificate from the Territorial Authority, which shall be provided to the Contract Administrator.

1.3 INSPECTIONS

Where consultation with or inspection by the Contract Administrator or other consultants is required a minimum of 48 hours notice shall be given by the Contractor.

1.4 NZS 3604

Work shall generally be carried out according to NZS 3604 and to best trade practice unless specified, detailed or otherwise required to meet the design criteria noted for this project that fall outside the scope of NZS 3604. Details not shown on the drawings shall be formed according to the principles of NZS 3604.

A copy of NZS 3604 shall be kept on site.

1.5 USE OF DOCUMENTS

The Contractor shall read the specification, the drawings and the Conditions of Contract together and as referring to each other. What is omitted in one and included in the other shall be read as included in all. Bring any ambiguity or contradiction to the Contract Administrator's notice for an Instruction before carrying out the affected work.

- Figure dimensions on drawings take precedence over drawings to a smaller scale.
- Drawings to a larger scale take precedence over drawings to a smaller scale.
- Drawings take precedence over the specifications

Do not scale dimensions from the drawings. Due to the variable nature of site conditions, the Contractor shall site verify all dimensions prior to commencing fabrication or undertaking any pre-fabrication. Any ambiguity or conflict in dimensions must be referred to the Contract Administrator for an Instruction.

1.6 CONTRACTOR'S ESTABLISHMENT AND WORK AREA

The Contractor shall liaise with the Local Area Office of the Department of Conservation to determine suitable areas for the Contractor's site sheds/tents and other working areas, and to make arrangements regarding the use of existing toilets, huts, and other facilities.

Accommodation is to be provided by Contractor.

The existing hut will be available to the contractor for accommodation for the duration of the contract.

It shall be the Contractor's responsibility to arrange for any additional sanitary facilities, power and communication facilities required, including all permits and approvals from the relevant service authority.

The Contractor shall reinstate all areas affected by the contract, including the establishment and working areas to the reasonable satisfaction of the Contract Administrator.

The Contractor's site areas and sheds/tents shall be made available for use by the Contract Administrator and the Principal and free access to the Contractor's records and documents shall be allowed.

1.7 DOC SUPPLIED ITEMS

The Contractor shall take delivery of supplied items and immediately check them to ensure they are the correct items, undamaged and complete, suitable for incorporation into the Works. Any damage, missing or incompatible units and the like shall be reported immediately to the Contract Administrator for Instructions. From when the items are delivered, the Contractor shall be totally responsible for the items and shall fix them as required under the Contract.

The following items will be supplied by DOC for installation by the Contractor:

Note: amend list, including additions and deletions to match Developed Design spec. If none, then delete this section

- Multifuel burner, complete with flue kit, etc
- Mattresses (1900 x 750 Autex Fibrefoam core, Sure-Chek44 covering)
- Drying rack
- Candle holders
- Ticket box, notices and signage

1.8 SEPARATE DOC WORK ON SITE

The following work will be carried out by DOC either during or in preparation for the construction work:

Note: amend list, including additions and deletions to match Developed Design spec. If none, then delete this section

- Vegetation clearance and tree cutting
- Hut platform excavation
- Toilet supply & installation
- Wood store
- Track work

- Existing hut removal

1.9 ADDITIONAL CONTRACT WORKS BY CONTRACTOR

The following work will be carried out by the Contractor either during or in preparation for the construction work, by reference to other documentation:

Note: amend list, including additions and deletions to match Developed Design spec. If none, then delete this section

- Vegetation clearance and tree cutting
- Hut platform excavation
- Toilet supply & installation
- Wood store
- Track work
- Existing hut removal

1.10 MATERIAL SUPPLY

Upon signing the Contract, the Contractor shall ascertain the lead-time for all critical materials and items. They shall advise the Contract Administrator prior to commencing work on site if there are any lead time issues, advise of options and await further instructions.

1.11 COMPLETION OF WORKS

Although it may not be expressly mentioned or shown on each and every item, or detailed in the Specification, all equipment, joinery fittings and services shall be left in first class condition and proper working order. All visible work, surfaces, materials and finishes shall be left in first class condition without damage or blemish.

Remove all rubbish arising from this Contract from the Site and Works. Leave all floors swept clean, clean all glass inside and out, remove all paint, concrete and plaster marks, clean all prefinished or decorated woodwork, fittings, and all items generally to leave the building and site clean and fit for immediate occupation and use by DOC.

2.0 EXCAVATIONS AND SITEWORK

2.1 BUILDING SETOUT

Refer to the site plan for building locations, relative levels and areas for excavation. Floor level established from setting out top of shortest pile to be 300mm above ground level.

?There are setout pegs positioned on site locating the indicative position for the hut.?

The location of all buildings and finished levels shall be confirmed on site by the Contract Administrator.

2.2 SITE PREPARATION

Remove all leaf-litter or other material from the area to be built upon.

Excavate for ground levels and contours as necessary and for foundations to be built to the dimensions and details shown allowing for working room as necessary. Batters and cut faces shall be a minimum of 1m clear of the hut outline. Ground surrounding the hut shall fall a minimum of 50mm towards any batter or cut face. Ensure that falls underneath and surrounding hut are formed to provide a well-drained sub-floor area without ponding.

2.3 OBSTRUCTIONS

Excavate and remove any obstruction that is encountered that may interfere with the specified ground levels and contours and shape and size of the foundations as detailed.

2.4 OVER EXCAVATIONS

The pile depths shown are indicative, based on site investigations, and bearing depth may occur at lower levels. Any additional excavation caused solely by encountering poor ground conditions or other natural weakness shall be treated as a variation provided such work has been authorised by the Contract Administrator.

2.5 INSPECTION

The Administrator shall be given 48 hours notice to enable inspection of the foundation excavations. Approval shall be obtained before installation of piles commences.

2.6 BACKFILLING AND DISPOSAL

All material removed from the excavation, and which is approved as suitable by the Contract Administrator, shall be used as far as practicable in backfilling foundations in accordance with the directions noted in the Foundation System section of this specification and on the drawings. Surplus or unsuitable excavated material shall be disposed of as directed by the Contract Administrator in a safe and legal manner.

3.0 BUILDING FRAMING

3.1 WORKMANSHIP

Set out, erect and fix all material and work accurately, level, square and plumb to produce an even finish, flush across joints and suitable for any subsequent work. All timbers shall be straight and have as long lengths as possible with joints only over solid supports. Any wet timber shall be propped or held straight and true until it has dried to the required moisture content.

Execute all cuts, mitres and scribes true to line to produce a first class job and tight junctions. Make all joints in the strongest possible manner, tight and secure. Stagger laps and joints where possible. All exposed surfaces shall have all machine marks removed and left fit for specified finishes.

Attend on other trades to provide cut outs, penetrations, blocks, fillets etc. required by them.

Adequate protection must be given to all materials to keep them in first class condition and suitable for their intended use and finish. All timber for exposed work shall be free from defects that would prevent a good dressed surface and satisfactory finishing.

3.2 TIMBER

Sizes and spacing of timber shall generally be as shown or implied by the drawings unless specifically noted otherwise.

All timber shall be new, and the best of its respective kinds and grades as specified.

Where not specified as kiln dried, moisture content of enclosed framing at time of enclosure and exposed isolated posts and beams at time of erection must be below 16%. Other framing shall be below 20% at the time of erection.

Treatment shall comply with the current requirements of the Timber Preservation Council. All treated timber shall be branded with the appropriate woodmark. It is preferred that timbers be treated at least 2 months prior to treatment.

H1.1 or H3.1 LOSP framing shall not be used. Provide documentation confirming H1.2 and H3.2 grade timber supplied.

The species, grade and treatment shall comply with the relevant standards, and the following:

Note: amend list, to match structural and Engineer's requirements

Purlins and roof framing other than trusses	Pinus Radiata	No 1 Framing	H3.2 CCA
Roof trusses	Pinus Radiata	as per Mitek design	H1.2 CCA
Exposed exterior roof and wall framing, including isolated posts & beams, but not in contact with ground (1)	Pinus Radiata	Kiln dried MSG 8 / VSG 8 / No 1 Framing gauged	H3.2 CCA
Enclosed external walls framing timbers	Pinus Radiata	Kiln dried No 1 Framing gauged	H3.2 CCA

Bearers and joists	Pinus Radiata	No 1 Framing / MSG 6	H3.2 CCA
Stair and step framing, barriers, perimeter battens and other sub-floor framing	Pinus Radiata	No 1 Framing	H3.2 CCA
Timber in contact with ground, piles, plates etc	Pinus Radiata	No 1 Framing	H5

Notes:

(1) refer to the drawings and clauses below for timber grade requirements

3.3 NAIL FIXINGS

Neither power driven nails nor zinc-plated nails shall be used on site. Power-driven nails are permitted only for use in fabrication by accredited pre-frame and truss manufacturers.

Refer to the nailing schedules in NZS 3604 for size, number and location of nails unless otherwise noted on the drawings. Nails generally shall penetrate the second or holding timber at least half their length, except that where the second timber is Radiata Pine the length of nail shall be increased 25%.

All nailing shall be skew nailed wherever practicable. Securely spike together all laps and built up members. Well drive all nails in framing until head is flush. Leave flush with surface all nails in exposed work. Exercise care in nailing exposed work to avoid damage to surface.

Refer to Table 4.3 of NZS 3604. Unless specifically noted otherwise, nail material and/or treatment shall be as follows:

Corrosion zone	Nail use			
	Cladding acting as bracing	Non-structural cladding	"closed" areas, including roof space	"sheltered" and "exposed" areas
Zone ?1 sea spray?	Stainless steel or silicon bronze or protected galvanized steel	Galvanised steel	Mild steel	Galvanised steel
Zone ?2 3 4?	Galvanised steel	Galvanised steel	Mild steel	Galvanised steel

Note: If cladding is not acting as bracing, the first column will be redundant, so delete it.

Except that in all situations where the nail is in contact with H3.2 framing nails shall be hot-dipped galvanised steel.

3.4 BOLTS AND PROPRIETARY FIXINGS

Unless noted otherwise, bolts shall be 12mm engineers bolts fitted with either 50 x 50mm square x 5mm or 55mm diameter x 5mm washers both ends. Thread protrusion past the nut shall be a minimum of two thread pitches after tightening. No cut ends permitted.

All galvanised bolts in contact with treated timber shall be protected using a liberal coating of multipurpose grease prior to use. Place grease into the hole prior to fitting bolt and coat the contact faces of washers with grease.

Structural brackets, nail plates, joist hangers and the like shall be either as specified or noted on the drawings, or if not specified, correctly sized for the timber members connected. Supply and fix using the appropriate nails, bolts etc. according to the drawings or manufacturer's manual. "Knuckle" nailplates shall not be used.

Refer to Table 4.1 of NZS 3604. Unless specifically noted otherwise, bolt, nut and washer material and/or treatment shall be as follows:

Corrosion zone	Bolt and proprietary fixing use				
	Sub-floor - piles	Sub-floor – other timbers	Enclosed framing	Roof space	Exterior "sheltered" or "exposed"
Zone 1 and sea spray zone	Type 304 stainless steel	Type 304 stainless steel	Mild steel	Hot-dipped galvanised steel	Type 304 stainless steel
Zone 2 3 4	Type 304 stainless steel	Hot-dipped galvanised steel	Mild steel	Hot-dipped galvanised steel	Type 304 stainless steel

Except that, where joist hangers are used to connect deck joists to bearer or rafters to wall plates, they shall be Type 304 stainless steel in all situations, and for enclosed framing, in all situations where the bolt is in contact with H3.2 framing, bolts, washers and nuts shall be hot-dipped galvanised steel.

Galvanising protection shall be as required by table 4.2 of NZS 3604.

3.5 FOUNDATION SYSTEM

??Conqra Lightfoot foundations comprising Ezi-Yaka lightfoot pad set at base of pile with 125 x 125 H5 sawn piles installed and with connections to sub-floor framing as per the details and specifications as shown on the drawings and in Appendix C. Piles to be accurately positioned and set plumb and vertical, 300mm minimum out of ground.

For supply of proprietary products for the CONQRA Lightfoot foundation system (being the Lightfoot pad, stainless steel and galvanised Lightfoot spikes and Timberlink connectors), contact CONQRA Foundations, phone 0800 266 172 or e-mail grant@conqra.co.nz

??Anchor and ordinary pile system, utilising 125 x 125 treated H5 Radiata piles, complying with the requirements of Section 6 of NZS 3604 and to the layout and details as per the drawings. Piles to be accurately positioned and set plumb and vertical, 300mm minimum out of ground, cast into concrete footings. Well compact concrete around piles. *If braced piles are proposed, note that the minimum height of a braced pile is 600mm – it may be that anchor piles are the only practical solution*

The pile depths shown are indicative, based on site investigations, and bearing depth may occur at lower levels. Any additional excavation caused solely by encountering poor ground conditions or other natural weakness shall be treated as a variation provided such work has been authorised by the Contract Administrator.

Provide all temporary bracing necessary to the piles until such time as the piles can support the structure without distress to either element. All piles to be accurately cut to levels for floor framing.

Provide bracing as noted in the foundation plan on the drawings.

3.6 SUB-FLOOR AND FLOOR FRAMING

Bearer and joist sizes and spacings to be as shown on the drawings.

Timberlink PB2 high corrosion packs and 304 stainless steel pile connections for subfloor. Refer to Conqra lightfoot foundation details and specifications in Appendix C.

?Bearers fixed to piles and joists with Lumberlok 12kN sub floor fixings as per NZS 3604 clause 6.9. For Anchor pile foundation system only – delete if Conqra is used

Elsewhere nail fixing provided in accordance with Tables 6.8 and 7.5 of NZS 3604.

3.7 WALL FRAMING

Unless otherwise specified or required by Codes etc, plates shall generally be 50mm deep of the width shown on the Drawings and laid in long lengths. All joints butt joined and securely fixed with nail plates over solid support. Bottom plates securely nailed to timber floors. Top plates shall be a single plate, connected at all joints and at all intersections with 6kN capacity plates with 6 x 30 x 3.15mm nails per side.

Unless otherwise specified or required by Codes, etc. studs shall generally be 90mm x 45mm deep at numbers and spacings noted. Studs shall be neatly cut to lengths and fixed to plates with not less than two nails. Corners shall have three studs to ensure solid fixings for all linings. Allow additional studding where necessary for fixing fittings, etc. Trimming studs shall be 2 x 45mm thick studs with one stud full height to top plate and the other stud fully supporting the lintel.

Note: Retain this paragraph if cladding is corrugated Colorsteel

Dwangs generally shall be 45mm deep of the full width of walls, provided in two rows evenly spaced to side walls, and three rows to end walls to align with the dwangs and top plate to the side walls, provided at 800mm c/c.

Note: Retain this paragraph if cladding is ply and batten

Dwangs generally shall be 45mm deep of the full width of partitions, provided at 480mm c/c.

Provide in addition all special dwaning, blocking and support timbers of appropriate grades as indicated in the Drawings or as necessary for the proper installation and fixing of all Joinery, fixtures, fittings, linings, hardware and services.

Note: Retain this paragraph if wind zone is L, M, or H

Top plate to stud fixing shall be 2/100 x 3.75 skewed nail plus 1 wire dog.

Note: Retain this paragraph if wind zone is VH.

Top plate to stud fixing shall be 2/100 x 3.75 skewed nail plus 2 wire dogs.

Note: If wind zone is specific design, have structural engineer advise on top plate/stud fixings

Otherwise nail fixing provided in accordance with Table 8.19 of NZS 3604.

3.8 LINTELS

Note: Refer to Developed Design Specification and check lintel sizes.

Max span 1.0m –2/90 x 45 lintel

Max span up to 1.8m –2/140 x 45 MSG 8 / VSG 8 lintel

Lintels secured against uplift with 25 x 1mm strap with 6/30 x 2.5mm nails on one side only into both the lintel and trimming stud. Where the framing and/or lintel is CCA treated, strap shall be 25 x 1mm stainless steel 304-2B fixed with 6/30 x 3.15mm flat head stainless steel nails on one side only into both lintel and trimming stud. Trimming stud continuous to bottom plate and fixed to floor joist or floor blocking with 25 x 1mm stainless steel 304-2B strap with 6/30 x 3.15mm flat head stainless steel nails on one side only. 25 x 1mm strap taken over top plate and fixed minimum 150mm onto lintel both sides with 6/30 x 2.5mm nails at 600mm c/c.

3.9 POSTS

All exterior posts to be Prowood PLP Prolam Post GL8 H5 88 x 88mm bolted to bearers, joists and veranda beams as per the drawings. All visible edges arrised and smoothed off.

Veranda posts shall be fixed to sub-floor framing with 2/M12 bolts.

3.10 BEAMS

The sizes, spacing and fixings of structural timber beams shall be as indicated on the drawings. All exterior beams to be gauged, H3.2 treated bolted to framing and posts as per the drawings. All visible edges arrised and smoothed off. If gauged timber not available, allow to plane and/or sand posts to provide surface finish suitable for painting.

Veranda beam shall be fixed to veranda posts with 2/M12 bolts.

3.11 ROOF FRAMING

Retain the following paragraphs for 4 and 6 bunk huts only

MiTek New Zealand Ltd specific designed covered trusses at 900mm c/c maximum, with all timbers H1.2 treated, as per details in Appendix B. Provide full trusses to Entry deck area. Note no trusses to gable walls - full height framed walls to be provided.

Truss fixings provided as follows:

Connection	Fixing
Truss to top plate	2/100 x 3.75 skewed nail plus 2 wire dogs <i>for up to Very High wind load</i> ???/100 x 3.75 skewed nail plus ??? wire dogs <i>for specific design wind loads</i>

Purlins to be 70 x 45 H3.2 @ 800c/c maximum, fixed to trusses with 2/100 x 3.75 skewed nail plus 1 wire dog.

Purlins to be 70 x 45 H3.2 MSG?VSG 8 @ ???c/c, fixed to trusses with ???/100 x 3.75 skewed nail plus ??? wire dog. *Specific design for grade, size and spacing for snow load over 1kPa and/or wind load over VH/1.5kPa*

Retain the following paragraphs for 10 or 12 bunk hut only

MiTek New Zealand Ltd specific designed double ridge truss with covered half trusses at 900mm c/c maximum, with all timbers H1.2 treated, as per details in Appendix B. Note no trusses to gable walls - full height framed walls to be provided.

Truss fixings provided as follows:

Connection	Fixing
Ridge Truss to end walls	90 x 45 VSG 8 stud full height either side with 2/90 x 45 studs under bottom chord. Fix through side studs and ridge truss end member with minimum 2 x 12mm galvanised bolts complete with 50 x 50 x 5mm galvanised washers under head and nut.
Top chord of covered half truss to ridge truss	2/100 x 3.75 skewed nail plus 2 wire dogs, PLUS 53mm x 0.91mm x 400mm Lumberlok multibrace over apex, with 5 nails minimum each end.
Bottom chord of covered half truss to ridge truss	90mm x 47mm joist hangers.
Truss to top plate	2/100 x 3.75 skewed nail plus 2 wire dogs <i>for up to Very High wind load</i> ???/100 x 3.75 skewed nail plus ??? wire dogs <i>for specific design wind loads</i>

Wall plate for fixing of veranda rafters to be ex 240 x 45 H3.2 fixed to studs / ends of trusses / rafters @ 1.2m c/c max with M12 coach screws. Shape top of wall plate to suit flashing over.

Veranda rafters 140 x 45 H3.2 MSG 8 / VSG 8 rafters @ 900c/c max, fixed to wall plate with Lumberlok stainless steel multigrips each side, fully nailed with 45mm x 3.3 annular groove nails and veranda beam with 2/100 x 3.75 skewed nail plus 1 wire dog. Veranda rafters to be notched over veranda beam with 90mm min. throat remaining. *for up to 0.5kPa snow load*

Veranda rafters 140 x 45 H3.2 MSG 8 / VSG 8 rafters @ 600c/c max, fixed to wall plate with Lumberlok stainless steel multigrips each side, fully nailed with 45mm x 3.3 annular groove nails and veranda beam with 2/100 x 3.75 skewed nail plus 1 wire dog. Veranda rafters to be notched over veranda beam with 90mm min. throat remaining. *for 1kPa snow load*

Veranda rafters 140 x 45 H3.2 MSG 8 / VSG 8 rafters @ 600c/c max, fixed to wall plate with ??? and veranda beam with ??/100 x 3.75 skewed nail plus ?? wire dog. *Specific design for size, grade and spacing for snow load over 1kPa and/or wind load over VH/1.5kPa*

Roof purlins to be 70 x 45 H3.2 @ 800c/c, fixed to trusses with 2/100 x 3.75 skewed nail plus 1 wire dog. *for snow load up to 1kPa snow load and wind load up to VH/1.5kPa*

Roof purlins to be 70 x 45 H3.2 MSG 8 / VSG 8 @ 800c/c, fixed to trusses with ???/100 x 3.75 skewed nail plus ??? wire dog. *Specific design for size, grade and spacing for snow load over 1kPa and/or wind load over VH/1.5kPa*

Veranda purlins to be 140 x 45 H3.2 @ 600c/c cut between rafters and fixed with 4/100 x 3.75 skewed nails. *for snow load up to 1kPa snow load and wind load up to VH/1.5kPa*

Verandah purlins to be 140 x 45 H3.2 MSG/VSG 8 @ 600c/c cut between rafters and fixed with ??/100 x 3.75 skewed nails. *Specific design size, grade and spacing for snow load over 1kPa and/or wind load over VH/1.5kPa*

3.12 MISCELLANEOUS FRAMING

Frame up for soffits, eaves, gables and other miscellaneous framing generally with 70mm x 45mm timber or as shown on the drawings, and as necessary for support of cladding or lining.

3.13 BRACING

Include and modify comments below as per the Developed Design specification or specific design requirements.

Refer to the drawings and the Appendix A Ecoply information for the types, lengths and locations of braces required. All bracing elements to be fixed in accordance with manufacturers specifications.

- (a) Type SP1, SP2 and SP12 bracing to walls shall be 9.0mm Ecoply lined walls fixed with 40 x 2.5mm galvanised clouts at 150mm c/c to edges of sheets and 300mm c/c to within the sheet. At each end of bracing panel provide a single 25mm x 1.0mm stainless steel 304-2B sheet brace strap fixed with minimum 6 x 30 x 3.15mm flat head stainless steel nails to studs and to sub-floor framing.
- (b) Type SP10 bracing to walls shall be 9.0mm Ecoply lined walls fixed with 40 x 2.5mm galvanised clouts at 75mm c/c to edges of sheets and 150mm c/c to within the sheet. At each end of bracing panel provide a single 25mm x 1.0mm stainless steel 304-2B sheet brace strap fixed with minimum 6 x 30 x 3.15mm flat head stainless steel nails to studs and to sub-floor framing.
- (c) Roof bracing shall be Lumberlok Strip Brace with tensioners to 8kN. Ends to be fixed over the top plate, ridge truss and and/or beam with five 75 x 3.15mm dia. Lumberlok product nails (2 to top and 3 down side of timber member) and three 30 x 3.15mm dia Lumberlok product nails to every rafter crossed.
- (d) Ceiling ply diaphragm not required.

3.14 WIND TIE-DOWN SYSTEM

Wind tie-down system provided to the details as shown on the drawings.

Prior to Anchor blocks being buried and hut connection brackets being enclosed, these items shall be inspected by DOC's engineer. Provide at least five working days notice of when the inspection is to be required.

4.0 FLOORING AND STAIRS

4.1 TIMBER AND FIXINGS

Refer to section 3 for requirements on timber treatment, and nails, bolts and proprietary fixing treatment and use where not otherwise noted.

4.2 INSULATION

Under ply flooring 55mm “EXPOL” expanded polystyrene under floor insulation laid tight fit between floor joists and supported on nylon bracket flush with top of joist fixed with stainless steel nails.

4.3 PLYWOOD FLOORING

Lay CHH 19mm Ecoply CD grade H3.2 ‘Longspan’ F8 sheets in stretcher bond pattern, ensuring all end joints land on joists. Butt join all edges.

Fix sheets with 45mm x 10 gauge grade 304 stainless steel screws, driven flush with sheet surface. Fixings 7 - 15mm behind tongues or from sheet edges, spaced at 150mm centres on all edges, and 300mm centres in the body of the sheet

4.4 TIMBER DECKING

Lay H3.2 treated 100 x 40mm No. 1 grade grip tread decking laid grip side up to decking joists and steps in accordance with the drawings. Boards laid in straight and parallel lines, with joints in board lengths to be neatly butted over joists and joints staggered over the deck and steps. Use nails to space boards apart and fix with 2 x 75 x 2.8mm dia hot dipped galvanised decking nails to each joist, driven flush with surface of decking. Nails in straight lines along joists.

4.5 WEBFORGE DECKING

Supply and fit 1200 x 900mm section of Webforge flooring Pattern type A405MSG galvanised steel grating with serrated top edge into the deck outside exterior door, in lieu of timber decking, where shown on the drawings, fixed to joists with type M1 fixing. Provide solid framing for support to all edges of flooring.

Webgrate available from Webforge NZ Ltd, PO Box 1506 Palmerston North.

4.6 STAIRS

Supply and fit Webforge T4/A405MSG galvanised stair treads with type T4 floor plate nosings of 1200mm maximum length to ex 290 x 45 Radiata H3.2 stringers to form stairs in accordance with the details and where shown on the drawings. Treads set out for equal risers, but maximum 180mm, and equal 310mm treads, ensuring they are horizontal in both directions. Treads bolted securely to stringers of stairs.

Note: amend to match Developed Design spec. If none, then delete this section

4.7 HANDRAILS

Handrails to stairs constructed to the details and in the locations shown on the drawings and set to be 900mm above nosing of stairs. Top rail to be 140 x 45 on edge checked into balusters and securely fixed to veranda posts. Maximum spacing of balusters 1.2m c/c. 90 x 45 bottom rail on edge at 200mm above nosing level. All work neatly finished and all edges arrised and sanded to round so no sharp edges exist.

All exterior balusters to be gauged 90 x 45mm, bolted to stringer as per the drawings. All visible edges arrised and smoothed off. If gauged timber not available, allow to plane and/or sand posts so no sharp edges exist.

Note: amend to match Developed Design spec. If none, then delete this section

4.8 BARRIERS

Barriers to decks constructed to the details and in the locations shown on the drawings and set to be 1100mm above deck level. Top rail to be 140 x 45 on edge between veranda posts with 90 x 45 rail under notched into posts. Where maximum span of top rail exceeds 1.2m, use 90 x 45 balusters between veranda posts. 90 x 45 intermediate and bottom rails on edge notched into veranda posts / balusters. Top of bottom rail set 200mm above deck level , underside of intermediate rail set 450mm above top of bottom rail.

All work neatly finished and all edges arrised and sanded to round so no sharp edges exist.

Note: amend to match Developed Design spec. If none, then delete this section

5.0 EXTERIOR CLADDING AND FINISHING

5.1 WORKMANSHIP

All work shall be carried out by experienced competent Tradesmen familiar with the products being used, in accordance with the best trade practice and current manufacturers installation specifications. The whole of the cladding shall be installed and left sound and weathertight.

5.2 INSULATION

All exterior walls are to be insulated with Tasman Insulation "R2.8 Ultra Wall Pink Batts", neatly cut, friction fitting between studs and dwangs. No uninsulated spaces shall be left and all obstructions, pipes, etc shall have insulation behind them. Batts fitted with inside face flush with inside surface of studs.

5.3 BUILDING PAPER

Tasman Insulation "Bitumac 860" building paper shall be fixed to outside of exterior walls. Lay horizontally, with minimum of 150mm laps, starting at lowest point always. Building paper to be secured to plates, studs and bearers by 8-12mm staples at 300mm centres or galvanised clouts at 600mm centres. Fixings to be fixed through Danband polypropylene strapping. No rips or tears or damage to paper. Building paper to lap over flashing, etc. as required to allow the removal of moisture, and to prevent moisture getting into the framing. Seal into window and door openings with Tasman Insulation "Protecto Sill System" flashing tape, 150mm wide

Cladding as selected in outline specification

5.4 PROFILED METAL CLADDING

Clad exterior walls where shown vertically in full length sheets of 0.40 BMT COLORSTEEL Endura corrugated profile with strippable film, laid towards prevailing weather. Ensure lines remain vertical and parallel across width of building, and tops and bottoms horizontal and parallel.

Handling and fixing of cladding and accessories shall be strictly as per Manufacturer's instructions. Damaged cladding and accessories shall be rejected.

Fasteners shall be Class 4 65mm x 12 gauge type 17 screws, complete with metal and sealing washer, spaced as per the table below. Washer shall be either EPDM or Neoprene containing no more than 15% carbon black filler by volume or 25% by weight. Set out fasteners in straight and parallel lines and do not over tighten or skew.

Refer to Metal Roof and Wall Cladding Code of Practice Section 7.9 Fixing Patterns for required fixing patterns if wind speed/load is greater than VH/1.5kPa

Fixing Style	Location	Fixing Pattern
Pan	1m width in from corners	Fix, miss one, fix, miss one, etc (6.5 fixings per m)
	Two dwangs down from top of sheet on gables	Fix, miss one, fix, miss one, etc (6.5 fixings per m)
	Other locations	Fix, miss two, fix, miss three, etc (4 fixings per m)

Stainless steel or monel fasteners shall not be used with Colorsteel Endura products.

5.5 H3 PLYWOOD AND BATTEN CLADDING

Clad exterior walls where shown in CHH 12mm 'Shadowclad Texture Natural', H3 LOSP clear treated, AD grade plywood cladding. Sheet edges to be shiplap with weather groove. Place laps facing away from prevailing wind. Ensure sheets remain vertical and parallel across width of building, and tops and bottoms horizontal and parallel.

LOSP treated plywood shall be left to ventilate to allow any residual solvent vapours in the inner boards to evaporate for at least 7 days. The plywood should be stored in a well ventilated, under cover area with any protective wrapping removed. In periods of cold or wet weather or where ventilation is poor, a longer period may be required.

Handling and fixing of cladding and accessories shall be strictly as per Manufacturer's instructions. Seal all cut edges with Metalex Clear, Napthex, Ensele or Protim XJ Clear.

Any horizontal joints to have Shadowclad extruded aluminium 'Z' flashings, anodised for exposed applications. Full height back flashings behind vertical corners. Damaged cladding and accessories shall be rejected.

Sheet fasteners shall be 40 x 2.8mm diameter galvanised flat head nails, fixed at 150mm c/c to sheet edges and 300mm c/c to intermediate framing.

Provide H3.1 LOSP ex 75 x 25 sawn timber battens vertically @ 300c/c and at vertical sheet joints. To exterior corners fix pair of ex 75 x 25/100 x 25 battens in opposite order to cladding sheets. Timber battens shall have 6mm x 6mm weather rebates to back face. Fix battens with 2 x 75 x 3.15mm galvanised jolt head nails to every dwang.

Utility cladding –4/6 bunk huts only

5.6 UTILITY PLYWOOD CLADDING

Clad exterior walls to sink area where shown in CHH 12mm 'Utility Clad Texture', H3.2 CCA treated plywood cladding. Sheet edges to be shiplap with weather groove. Place laps facing away from prevailing wind. Ensure sheets remain vertical and parallel across width of building, and tops and bottoms horizontal and parallel.

Handling and fixing of cladding and accessories shall be strictly as per Manufacturer's instructions. Seal all cut edges with Metalex Clear, Napthex, Ensele or Protim XJ Clear.

Any horizontal joints to have Shadowclad extruded aluminium 'Z' flashings. Full height back flashings behind vertical internal and external corners. To vertical end of wall to sink area, provide capping flashing. Provide layer of separation between plywood cladding and any aluminium flashing or cladding (adhesive flashing tape or similar) to protect dissimilar materials. Damaged cladding and accessories shall be rejected.

Sheet fasteners shall be 40 x 2.8mm diameter galvanised flat head nails, fixed at 150mm c/c to sheet edges and 300mm c/c to intermediate framing.

5.7 FLASHINGS

Allow for all flashings and accessories, made from 0.55 BMT COLORSTEEL Endura, colour to match cladding, in as long lengths as possible, as required to complete and make the building weathertight. All joints in flashings made with blind aluminium rivets and a neutral cure silicone rubber sealant. Note that flashings around the windows and doors should not be pre-measured and cut as they may need to take into account variation in peaks and troughs in the exterior claddings.

Where soft edged flashings are required, Flashguard, Al-edge or similar edging shall be used. Lead-edged flashings shall **not** be used with Colorsteel.

Any pipe flashings shall be made with standard Aquaseal units or approved equivalents.

5.8 BASE BOARDS AND ACCESS HATCH

All base boards to be H3.2 CCA treated 100 x 25mm rough sawn with 20mm gaps between, and scribed to remain a minimum of 25mm clear of the ground. Form support frames fixed to underside of floor joists / bearers from H3.2 90 x 50mm to provide fixing points for base boards. Maximum span of base boards 800mm. Nail base boards to piles / support frames with 2 fixings per pile / support frame. Joints tight butted at piles. Allow for miscellaneous framing as required between piles to support rear of 100 x 25mm rough sawn baseboards to perimeter of hut / deck.

Allow for one 800mm wide access hatches to subfloor where shown on the drawings. Construct hatch from 100x25mm rough sawn baseboards and install complete with stainless steel hinges and a stainless steel clasp and staple.

5.9 FASCIA/SOFFIT & BARGE

Fascia and Barge to be radiata H3.1 boxed 2/140 x 19 dressed fascia, soffit and barge. All Fascias and barges primed on all surfaces and to all joints prior to fixing, fixed with galvanised nails and finished smooth across all edges, joints and junctions suitable for a first class paint finish. Scribe fascia to veranda rafters.

Line soffit over Entry deck as shown on drawings and details with 4.5 Hardiflex soffit lining with PVC jointers. *4 / 6 bunk hut only*

6.0 ROOFING

6.1 WORKMANSHIP

All work shall be carried out by experienced competent Tradesmen familiar with the products being used in accordance with the best trade practice and current manufacturer's installation specifications. The whole of the roof shall be installed and left sound, weathertight and in a condition suitable for the collection of rainwater for hut water supply.

On completion of work the roof area and gutters shall be cleaned of debris by soft brushing and hosing.

6.2 INSULATION

All roof spaces insulated with Tasman Insulation "R3.6 Ultra Ceiling Pink Batts" neatly cut between all ceiling joists or rafters and any dwangs and fitted against ceiling lining. No un-insulated spaces shall be left and all obstructions, pipes, etc. shall have insulation behind them.

6.3 BUILDING PAPER

Roofing underlay shall be Tasman Insulation "Flamestop 660" laid vertically over purlins, with minimum of 150mm laps, and laid towards weather always. No rips or tears or damage to paper. Building paper to lap over flashing, etc. as required to allow the removal of moisture, and to prevent moisture getting into the framing.

6.4 PROFILED METAL ROOFING

Clad roofs where shown in 0.40 BMT COLORSTEEL Endura corrugated profile, with strippable film, laid in full lengths from ridge to eave towards prevailing weather. Ensure lines remain vertical and parallel across width of building, and tops and bottoms horizontal and parallel. Edge of roofing to finish 50mm beyond edge of fascia.

Handling and fixing of roofing and accessories shall be strictly as per Manufacturer's instructions. All workman to wear soft-soled shoes. All metal offcuts, filings, fasteners and other material shall be removed from the work area as work progresses. Damaged roofing and accessories will be rejected.

Fasteners shall be Class 4 65mm x 12 gauge type 17 screws, complete with sealing washer, spaced as per the table below. Washer shall be either EPDM or Neoprene containing no more than 15% carbon black filler by volume or 25% by weight. Set out fasteners in straight and parallel lines and do not over tighten or skew.

Refer to Metal Roof and Wall Cladding Code of Practice Section 7.9 Fixing Patterns for required fixing styles according to wind loading and span.

Fixing Style	Purlin location	Fixing Pattern
Crest	All purlins	Fix, miss one, fix, miss one, etc (6.5 fixings per m)

Stainless steel or monel fasteners shall not be used with Colorsteel Endura products.

6.5 TRANSLUSCENT ROOFING

(10/12 bunk huts only)

Sections of veranda roof as indicated to be clad in Alsynite Laserlite 2000, colour translucent, profile Roma, installed as per manufacturer's installation instructions. Edge of roofing to finish 50mm beyond edge of fascia.

Fasteners shall be Class 4 65mm x 12 gauge type 17 screws, spaced and fixed as per the table below. Fasteners to be fixed over 0.95 gauge zincalume load-spreading corrugate washers inserted over a 36mm EPDM sealing washer correctly seated. Washer shall be either EPDM or Neoprene containing no more than 15% carbon black filler by volume or 25% by weight. Insert PVC spacers between the underside of the crest being fixed and the top of the purlin – refer detail. Tops of PVC spacers are to be shaped to suit underside of crest. Pre-drill fixing holes with a 10mm drill to create an oversize hole. Set out fasteners in straight and parallel lines and do not over tighten or skew.

Modify table according to cladding style and wind zone. Specific design for fixings for wind zones VH and specific design

Cladding	Fixing style	Wind zone	Fastener spacing
Roma	Crest fixing	High	Every second corrugation

6.6 FLASHINGS

Allow for all Flashings and accessories, made from 0.55 BMT COLORSTEEL Endura, colour to match cladding, in as long lengths as possible, as required to complete and make the building weathertight. Any joints in flashings made with blind aluminium rivets and a neutral cure silicone rubber sealant.

Where soft edged flashings are required, Flashguard, Al-edge or similar edging shall be used. Lead-edged flashings shall **not** be used with Colorsteel.

For Laserlite roofing use the appropriate Laserlite flashings and infill strips.

Any pipe flashings shall be made with standard Aquaseal units or approved equivalents.

For kea-proof flashings fabricate to the details shown in the drawings and install, including compriband of the appropriate profile.

7.0 INTERIOR LINING AND FINISHING

7.1 PLYWOOD WALLS AND CEILING

Fix 70 x 35 ceiling battens at 600mm c/c to bottom chord of trusses with 2 75 x 3.15mm nails. Provide additional battens as required for solid support to edges of sheets.

9mm CD grade untreated Ecoply, with sheets square, horizontal and parallel fixed to wall and ceiling framing. Butt joint sheets together, arris all visible edges. Provide solid fixing for all sheet edges. Note that wall sheets shall be full height from floor to ceiling – sheets to be ordered at time contract is signed due to lead-time on supply.

Fix all sheets with 40mm x 2.8dia dia hot dip galvanised flathead nails. Refer to section 3.13 Bracing for specific nailing and hold-down straps for bracing panels, otherwise nail at spacings as noted below:

Area	Edge fixing	Intermediate fixing
Wall	150mm c/c	300mm c/c
Ceiling	150mm c/c	200mm c/c

7.2 MOULDINGS

Joints in lengths of runs shall be neatly and accurately mitred. External corners to be mitred and internal corners scribed. In dressed timber punch nails below surface. If necessary, drill nail holes prior to fixing as no split timbers will be accepted.

- Skirtings - 40 x 12 single bevel, untreated Radiata
- Cornice - 40 x 12 single bevel, untreated Radiata. Plane top edge as required for tight fit to ceiling.
- Architraves - 40 x 12 single bevel, untreated Radiata
- Sill architrave to windows above interior fixed seating – 90 x 19mm double bevel, untreated Radiata

Allow for other miscellaneous mouldings and finishing work as required to complete the job.

7.3 AIR SEALS

Apply 12mm deep bead of Fosroc foamtak SB Air seal on “Fix All” PEF backing rod to all four sides of trimmed opening between timber reveals of joinery units (i.e. windows, door, passive ventilation grilles and the like) and timber framing. Sealant to be flush with internal side of framing as shown on the drawings.

7.4 CEILING ACCESS

Provide 800 x 600 9mm CD grade Ecoply ceiling access panels where indicated on floor plan, fitting between trusses, complete with concealed galvanised steel butt hinges to open up into roof space. Trim opening with 40 x 12 H1.2 Boric Radiata double bevel moulding. Moulding to double as the access hatch stop.

8.0 JOINERY

8.1 MATERIALS AND LABOUR

First doors and windows by Aluminium Profiles Ltd are specified as the preferred joinery suite. If 'First' doors and windows are not locally available and an alternative supplier is proposed, they are to be nominated at time of tender and sufficient information provided to demonstrate equivalence in performance.

The Contractor shall supply the whole of the materials, plant and labour necessary for the contract. Work shall be carried out according to best trade practice, by skilled and experienced workers to the standards hereinafter specified. Work shall include the supply and fixing of all units and all associated flashings, hardware, furniture and fixings. Include stays, catches, latches, door stops, cabin hooks etc. as required.

All aluminium windows and doors shall be manufactured in an approved workshop using labour skilled in the trade. Mechanically butt joint corners or all frames and assemble with screws into integral screw traces in the sections. Mitre cut sash corners and assemble with screws into aluminium corner angles mechanically crimped within the section, giving a neat tight fitting joint. Caulk all joints with a thin joint sealant. All opening elements shall be complete with weatherstripping to form a continuous seal between them and the frame. All units shall be assembled square and true to line and level. All fixed glass panels shall be bead glazed into frames.

Ensure that all aluminium is separated from contact with incompatible metals.

8.2 ALUMINIUM WINDOWS

Supply and fix window W1 to the size and shape as shown on the drawings, fabricated from 'First' Aluminium 40mm Light Commercial suite with a selected Duralloy colour powder-coated finish.

Sliding windows –4/6 bunk huts

Supply and fix windows W2 and W3 to the sizes and shapes as shown on the drawings, fabricated from 'First' Slidemaster Sliding Window suite with a selected Duralloy colour powder-coated finish. All opening sliding sashes shall be fitted with proprietary screw-fixed removable fine mesh flyscreens to the exterior.

Sliding windows –10/12 bunk huts

Supply and fix windows W2 to W8 to the sizes and shapes as shown on the drawings, fabricated from 'First' Slidemaster Sliding Window suite with a selected Duralloy colour powder-coated finish. All opening sliding sashes shall be fitted with proprietary screw-fixed removable fine mesh flyscreens to the exterior.

Frames supplied with condensation channels all round with drainage path from the sill channel to the exterior of the building. Frames fitted with ex 20mm Radiata H3.2 reveals suitable for architraves and fully primed to all non-visible surfaces prior to fixing to the frame.

4/6 bunk huts – select one of the following.

All windows shall be glazed in the factory with single glazed units.

All windows shall be glazed in the factory with double-glazed units.

10/12 bunk huts – select one of the following.

All windows shall be glazed in the factory with single glazed units. 6mm (minimum) Bondlite laminated glass shall be the pane to windows W5, W6, W7 and W8.

All windows shall be glazed in the factory with double-glazed units. 6mm (minimum) Bondlite laminated glass shall be the interior pane to windows W5, W6, W7 and W8.

8.3 ALUMINIUM EXTERIOR DOOR

Supply and fix door to the size and shape as shown on the drawings, fabricated from 'First' Magnum Commercial door suite with a selected Duralloy colour powder-coated finish.

Outward opening door

Frames fitted with ex 20mm Radiata H3.2 reveals suitable for architraves and fully primed to all non-visible surfaces prior to fixing to the frame. **No sill section is required for the frame** – refer to the drawings for the rebated sill detail. Doors hung on broad leaf butts and cabin hooks fitted.

Inward opening door

Frames fitted with ex 20mm Radiata H3.2 reveals suitable for architraves and fully primed to all non-visible surfaces prior to fixing to the frame. **No sill section is required for the frame** – refer to the drawings for the purpose-made aluminium sill plate detail. Doors hung on broad leaf butts and cabin hooks fitted.

Glazing same as windows

Door shall be glazed in the factory with single glazed unit to top panel and aluminium faced 12mm polystyrene core insulated panel to bottom panel.

Glazing same as windows

Door shall be glazed in the factory with double glazed unit to top panel and aluminium faced 12mm polystyrene core insulated panel to bottom panel. 6mm (minimum) Bondlite laminated glass shall be the exterior pane.

Holyoake powdercoated aluminium louvres Model OHL-F34 into door fitted into the bottom panels with insect proof mesh behind and powdercoated aluminium weathershield over as shown on drawings.

8.4 GLAZING

Refer to the door and window sections above for the glass types required for joinery units. Glazing shall be designed and installed to include all fixings, sealants, weatherstrips, beads and the like to suit timber or aluminium joinery as appropriate and as required to render the completed system secure, draughtproof and waterproof.

Glazing shall meet with design wind zone or wind pressures identified on the drawings, all SANZ standards, and be of weights to suit size of window and door units.

In aluminium joinery neoprene gaskets shall be mitre jointed at corners and not bent around corner of frames and beads and no bowing or bubbling shall be permitted in the Neoprene. Allow for the expansion and contraction of the glass.

8.5 HARDWARE SCHEDULE

Provide and install door hardware as per the following schedule:

Door type	Product Code	Description
Door D1	LW3574SC LATCH	Lockwood passage latch
	LWA1905/83SC	Lockwood lever
	LWA1805/83SC	Lockwood lever
	LW350SC	L/wood door stop

8.6 VENTILATION LOUVRES

Provide and install passive ventilation louvres, complete with fine mesh insect mesh, in the locations shown on the drawings, and with weathershield as required as per the following table:

4/6 bunk huts.

Type	Location	No.	Size	Weathershield
Holyoake OHL-F124	Gables	2x	300 x 300mm	Yes
Holyoake EC-125	Ceiling	1x	300 x 300mm	No
Holyoake OHL-F34	Exterior Doors	1x	300mm high	Yes

10/12 bunk huts.

Type	Location	No.	Size	Weathershield
Holyoake OHL-F124	Gables	2x	400 x 400mm	Yes
Holyoake EC-125	Ceiling	1x	400x400mm	No
Holyoake OHL-F34	Exterior Doors	1x	300mm high	Yes

Exterior louvres in gables installed to the details as shown on the drawings, with the installation left weathertight. 2mm powdercoated aluminium weathershields fabricated as shown on the drawings and fixed over louvres installed in gables with pop rivets.

Interior ceiling louvres fitted with insect proof mesh to the roof space side of the grilles.

9.0 FITTINGS AND FIXTURES

9.1 TIMBER AND FIXINGS

Refer to section 3 for requirements on timber treatment, and nails, bolts and proprietary fixing treatment and use where not otherwise noted.

9.2 MATERIALS AND LABOUR

All materials shall be of first class quality and conform to the standard grading requirements for strength, classification, tolerances, cutting and mill dressing as specified in the relevant SANZ standards.

Verify all dimensions on site prior to fabrication. Timber joinery work shall be of the quality called for on the drawings or in the Specification and shall be kiln dried to a moisture content of between 12% and 15%.

All joinery shall be manufactured in accordance with best trade practice by competent craftsmen using tools and machines appropriate for the job, following profiles, methods of assembly, drawings and instructions as shown on the drawings.

Work when assembled shall have all joints as closed as practical. All joinery timbers shall be machine dressed on four faces, and all exposed faces shall be planed and fine sandpapered to a smooth finish.

All scribing, mitring, scarfing and joining shall be accurately done and close fitting.

No interior fittings and fixtures shall be fitted until walls and floors are thoroughly dried out. All timber joinery to be sealed against weather and damage within two days of fixing. Ensure all fixtures and fittings are fixed into solid framing.

Retain 9.3 for 10/12 bunk huts only.

9.3 PLATFORM BUNKS

Construct and fit bunks in the locations and to the details shown in the drawings.

Generally all timber framing to bunks shall be untreated Radiata framing to dimensions shown on drawings. Provide proprietary galvanised joist hangers to suitable size and pattern for intended use. Provide all mouldings as required to finish bunks neatly.

Fix CHH 19mm Ecoply CD grade H3.2 'Longspan' F8 as specified for floor fixing. Ladder to be formed from 90 x 90 posts with 70 x 45 rungs. Arris top edges of ply and all edges of ladder and sand with fine sand paper to smooth and rounded finish.

Provide 750mm deep recess under for pack storage.

Retain 9.4 for 4/6 bunk huts only.

9.4 INDIVIDUAL BUNKS

Construct and fit bunks in the locations and to the details shown in the drawings.

Generally all timber framing to bunks shall be untreated Radiata framing to dimensions shown on drawings. Provide proprietary galvanised joist hangers to suitable size and pattern for intended use. Provide all mouldings as required to finish bunks neatly.

Built-in double level slat base individual bunk. Fix 90 x 19 untreated dressed slats evenly spaced to bunk joists. Ladder to be formed from 90 x 90 posts with 70 x 45 rungs. Arris top edges of ply and all edges of ladder and sand with fine sand paper to smooth and rounded finish.

Fabricate and install galvanised safety rail for bunk as shown on the drawings

9.5 INTERNAL COOKING BENCH

Construct and fit internal cooking bench in the location and to the details shown in the drawings.

Generally constructed from untreated 70 x 45 Radiata framing, except for wall stringer of bevelled 90 x 45. Fix 70 x 45 diagonal brace at each end of benchtop and evenly spaced throughout the length. Braces to align with studs. Provide solid fixing for cooking bench. Fabricate and install cooking bench at 900mm above floor level.

Benchtop shall be grade 304 18/10 stainless steel of minimum 0.9mm gauge, with anti-spill front and side edges. Substrate shall be two layers of 19mm ply fixed together to form a solid top. Bench to have 300mm upstand to back of benchtop. Fix and seal edge of upstand to ply wall lining with 40 x 12 single bevel untreated Radiata moulding.

Provide 19mm H3 Ecoply shelf full length under bench and to details as shown on the drawings.

9.6 INTERIOR FIXED SEATING

Construct and fit built-in interior fixed seating in the locations and to the details shown in the drawings. Seating to be set at 420mm above the floor level.

Generally constructed from untreated 70 x 45 Radiata framing, except for floor stringer of bevelled 90 x 45. Provide solid fixing for all sheet edges. Seat surface to be 9mm CD grade untreated Ecoply fixed to framing with 40 x 2.8mm dia hot dip galvanised flathead nails at 150mm c/c to edges and 300mm c/c to intermediate framing. Butt joint sheets together and arris all visible edges. Finish front edge with 40 x 12 single bevel untreated Radiata moulding.

9.7 TABLE AND FORMS

Construct and provide forms and table to the details shown in the drawings.

Table constructed from untreated dressed Radiata, of 70 x 70 legs and 90 x 45 supports, all well housed and soundly fixed together. Top to be 19mm untreated Ecoply. Arris top edges of ply and all edges of timbers and sand with fine sand paper to smooth and rounded finish. Refer to Finishing and Painting for details of finishing.

Forms constructed from untreated dressed Radiata, of 2 / ex 190 x 19mm legs glued and dowelled together, 140 x 19mm centre support and 90 x 19mm side supports, and 290 x 19mm top, all well housed and soundly fixed together. Arris top edges of top and all edges of timbers and sand with fine sand paper to smooth and rounded finish. Refer to Finishing and Painting for details of finishing.

Provide table and forms of the following size and number:

6 bunk huts.

Item	Size	Number
Table	900 x 900mm	1x
Forms	900 x 300	2x

10 bunk huts.

Table	1800 x 800mm	1x
Form	1800 x 300	1x
Form	900 x 300	1x

12 bunk huts.

Table	2100 x 800mm	1x
Form	2100 x 300	1x
Form	900 x 300	1x

9.8 TIMBER HOOK RAIL

Select either timber or galvanised as per Developed Design specification.

Construct and fit hook rails in the locations, of lengths and to the details shown in the drawings.

Generally constructed from untreated 140 x 45 Radiata framing with 20mm dowel glued into rail. All work neatly finished and all edges arrised and sanded to round so no sharp edges exist. Refer to Finishing and Painting for details of finishing.

Hook rail screw fixed to every stud with 2 x 10 gauge screws

9.9 GALVANISED HOOK RAIL

Select either timber or galvanised as per Developed Design specification.

Construct and fit hook rails in the locations, of lengths and to the details shown in the drawings.

Generally constructed from 100x6mm galvanised steel flat with 10dia galvanised steel rods welded to flat finished to the lengths shown on the drawings. The whole finished with no sharp edges and hot-dipped galvanised after fabrication.

Hook rail screw fixed to every stud with 2 x 10 gauge screws

9.10 DRYING RAIL

Retain 9.10 only if drying rail required as per Developed Design specification.

Construct and fit drying rails in the locations, of lengths and to the details shown in the drawings.

Generally constructed from 30x30x1.6mm SHS aluminium rail. Weld 500x30x6mm aluminium cleats @ 1200 c/c max. to suit every second rafter. All welds to be ground smooth and all aluminium to be anodised finish to match windows. Fix to rafters with 2/M8 stainless steel coach screws.

9.11 WATER TANK STAND

Retain 9.11 only if water supply required as per Developed Design specification.

Fabricate and install the water tank stand in the location and to the details shown in the drawings.

Check on-site levels to ensure proper drainage from spouting to the water tanks allowing for a Marley Leafslide in the downpipe, where required, and determine expected levels for water tank deck level. If this setout will create a final tank deck level less than 900mm or more than 1800mm above ground level DO NOT proceed with construction of the tank stand. Advise the Contract Administrator and await Instructions.

Generally framing shall be rough sawn H3.2 CCA Radiata. Posts shall be 125x125 H5 rough sawn Radiata into Congra Ezi-Yaka foundations. All piles to be accurately cut to levels for platform framing. Securely fix all bearers, blocking and decking as noted on the drawings. Where bolts or other fixings are not noted, nails shall be used.

Fix 90 x 90 H3.2 blocks after tanks installed as seismic restraint blocks.

9.12 EXTERNAL SINK TO DECK

Retain 9.12 only if water supply required as per Developed Design specification.

Construct and fit external sink to deck in the location and to the details shown in the drawings.

Provide Radiata H3.2 90 x 90 post with 140 x 45 framing and 190 x 45 stringer to create screen wall framing for cladding and sink bracing support. Bench support framing generally constructed from Radiata H3.2 framing 70 x 45, with 4 x 70 x 45 braces at each end of benchtop and evenly spaced throughout the length. Provide solid fixing to wall framing. Wall cladding installed and fixed in accordance with relevant sections of this specification.

Install sink bench at 900mm above floor level. Sink bench shall be Mercer C5-500 Classic Line stainless steel sink unit with anti-spill edge to two edges and 150mm upstand to two walls. Substrate shall be two layers of 19mm ply fixed together to form a solid top. Fix and seal edge of upstand to wall framing with 40 x 12 single bevel H3.2 Radiata moulding.

Refer to plumbing and drainage section for water supply and tap details.

9.13 EXTERNAL SINK TO WATER TANK STAND

Retain 9.13 only if water supply required as per Developed Design specification.

Construct and fit external sink to water tank stand in the location and to the details shown in the drawings. Confirm height of sink bench with Contract Administrator prior to installation.

Provide Radiata H3.2 140 x 45 stringer to water tank stand legs. Bench support framing generally constructed from Radiata H3.2 framing 70 x 45, with 4 x 70 x 45 braces at each end of benchtop and evenly spaced throughout the length.

Sink bench shall be Mercer C5-500 Classic Line stainless steel sink unit with anti-spill edge to three edges and 150mm upstand to tank stand. Substrate shall be two layers of 19mm H3 treated ply fixed together to form a solid top. Fix and seal edge of upstand to tank stand with 40 x 12 single bevel H3.2 Radiata moulding.

Refer to plumbing and drainage section for water supply and tap details.

9.14 MULTI FUEL BURNER

Retain 9.14 only if multifuel burner required as per Developed Design specification.

Multi-fuel burner to be 'Extra small' Pioneer Multiburner stove with side panels, supplied complete with 24 gauge grade 304 stainless steel 4.2m flue, outer shield and standard cowl with weather protector and accessories, from G&G Engineering Holdings Ltd, 0808 Jones Rd, Rolleston, Christchurch, PO Box 23109, Templeton, ph 03 347 8808, fax 03 347 9112, Mobile: 027 2555318.

Contractor to install woodburner strictly in accordance with manufacturer's instructions, fully complying with all required clearances.

Corrugated wall protection: Protect the ply wall lining with zincalume baby corrugated cladding screw fixed over one layer 12mm Supalux insulating board spaced 24mm from the wall with 2 layers 12mm x 50mm wide Supalux spacers @ 600 c/c max. Supalux board fixed to spacers and spacers fixed to wall with no. 8 countersunk self-tapping or drywall screws at 300mm c/c. Supply and fit zincalume cap flashing to top and sides of wall protection. Refer to details.

Hearth: Lay DPM over plywood flooring in area of hearth. Pour 60mm thick concrete with 665 reinforcing mesh set centrally. Finish exposed edges of concrete with ex 70 x 45 H3.2 Radiata surround to suit height of hearth, with bevelled front edge.

9.15 DOC SUPPLIED ITEMS

Take delivery of the DOC supplied items noted in the preliminary and general section and install them where directed by the Contract Administrator or in accordance with the drawings and specification elsewhere.

10.0 PLUMBING AND DRAINAGE

10.1 WATER TANK

*Retain 10.1 only if water supply required as per Developed Design specification.
4/6 bunk hut*

Water tank to be standard water grade Wilson TS1000 1000 litre (890mm high x 1420mm diameter) available from Wilson plastics. Tank to be supplied and installed complete with the following:

- screw lid,
- leaf strainer,
- 20mm outlet,
- 50mm overflow outlet, and
- 32mm wash-out valve to base of water tank

Install tank on tank stand ensuring that the 32mm wash-out valve to the base of the tank is clear of tank stand framing and readily accessible, holding in place with seismic restraint blocks and no.8 gauge wire through hold down lugs fixed with galvanised staples to stand joists.

Fit 50mm uPVC pipe as an overflow. Set the bottom of the overflow on the base of the tank and cut 50mm high x 20mm wide slots to the base of the pipe to allow for water and settled sediment to be drawn from the base of the tank. Drill a 20mm diameter hole on the top of the horizontal portion of the overflow pipe at the top of the tank, so the hole is within the tank. This will prevent the overflow from emptying the tank by siphoning. Run overflow down leg of tank stand and discharge to ground through 400mm elbow at bottom.

All holes in tanks are to be cut to the correct minimum clearances with a hole saw, fittings are not to be over tightened and any pipes that are exposed to loads shall be supported.

Fit 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, connected to water tank outlet with polyethylene piping, complete with compatible fittings and connections. Provide support block under tap and strap over the top to securely fix tap in place.

10.2 WATER TANK

*Retain 10.2 only if water supply required as per Developed Design specification.
10/12 bunk hut*

Water tank to be standard water grade Wilson TS2000 2000 litre (1260mm high x 1615mm diameter) available from Wilson plastics. Tank to be supplied and installed complete with the following:

- screw lid,
- leaf strainer,
- 20mm outlet,
- 50mm overflow outlet, and
- 32mm wash-out valve to base of water tank

Install tank on tank stand, ensuring that tap discharges past the edge of the tank stand and that the 32mm wash-out valve to the base of the tank is clear of tank stand framing and is readily accessible. Hold tank in place with seismic restraint blocks and no.8 gauge wire through hold down lugs fixed with galvanised staples to stand joists.

Fit 50mm uPVC pipe as an overflow. Set the bottom of the overflow on the base of the tank and cut 50mm high x 20mm wide slots to the base of the pipe to allow for water and settled sediment to be drawn from the base of the tank. Drill a 20mm diameter hole on the top of the horizontal portion of the overflow pipe at the top of the tank, so the hole is within the tank. This will prevent the overflow from emptying the tank by siphoning. Run overflow down leg of tank stand and discharge to ground through 400mm elbow at bottom.

All holes in tanks are to be cut to the correct minimum clearances with a hole saw, fittings are not to be over tightened and any pipes that are exposed to loads shall be supported.

Fit 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, connected to water tank outlet with polyethylene piping, complete with compatible fittings and connections. Provide support block under tap and strap over the top to securely fix tap in place.

10.3 EXTERNAL SINK TO DECK

Retain 10.3 only if external sink to deck is required as per Developed Design specification.

Fit 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, complete with 90 degree elbow to form spout, connected to water tank outlet with polyethylene piping, complete with compatible fittings and connections. Provide 20mm diaphragm valve, either Saunders part no. ASCIWOQ or Acuflo DV250/20, as isolation valve to branch feed. Provide support block under tap and strap over the top to securely fix tap in place.

10.4 GUTTERS AND DOWNPIPES

Delete if no guttering/water supply.

Supply and fit Marley PVC Stormcloud spouting where shown on the drawings. Fix spouting brackets at 600mm c/c to timber fascias to provide 1:100 fall to downpipes – water shall not lie in the spouting. Fit 65mm uPVC droppers to spouting in locations shown on the drawings for down pipes. *for 0 – 0.5 kPa snow load*

Supply and fit **Dimond Quad NI or Calder Stewart 125mm half round** Colorsteel Endura spouting where shown on the drawings. Fix Colorsteel Endura external spouting brackets at 400mm c/c to timber fascias to provide 1:100 fall to downpipes – water shall not lie in the spouting. Fit snow straps at 300mm c/c max. Fit 65mm uPVC droppers to gutters in locations shown on the drawings for down pipes. *for snow load greater than 0.5 kPa check, select guttering dependent on location*

Fit 65mm diameter uPVC downpipe system in the locations shown on the drawings to supply water to water tank. Downpipe is to finish on base of water tank with capped end. Fit 65mm diameter uPVC T-section in the downpipe, invert of T-section located 500mm from base of water tank so water can exit the drop inlet pipe horizontally, 500mm above the tank base. Install Marley Leafslide where required at gutter outlet and seal connection into water tank. Leave the whole with runs and lines straight and true, fully supported and leaving no water lying in the system.

10.5 SNOW STRAPS

Delete if snow load less than 0.5kPa.

Supply and fit pre-painted Colorsteel Endura 40mm wide x 300mm 0.55mm BMT snow straps, in a colour to match the gutter. Fit straps at 300mm c/c max through the crests of the corrugate roofing / Alsynite roofing using the last roof fixing. Roof fixing through the Alsynite roofing to be fixed through a PVC spacer with the top shaped to match the underside of the crest. Fix snow straps to front edge of gutter with 2 / 4.8mm diameter aluminium rivets.

10.6 DRAINAGE AND SOAKAGE PIT

Retain 10.6 only if external sinks are required and a septic tank is not required under Part F2 as per Developed Design specification.

Waste pipes from sinks to discharge over gully trap, below level of grate. Wastes and vents shall be a PVC waste pipe system with Polypropylene traps, complete with all coupling, seals, clips and other fittings. All waste pipes with even falls, concealed as far as possible.

Sewer drain from gully trap to soakage pit to be 100mm uPVC system complete with compatible fittings and laid in straight lines and easy bends to even gradients. Confirm falls to all drains are adequate prior to commencing laying. Provide all venting, gully traps with grates, cleaning eyes and inspection points, etc. as required. Drains laid with minimum 450mm cover in trench. Ensure bedding material is firmly bedded around drains to prevent movement. Backfill the trench to leave finished ground surface as close as possible to condition before excavation.

Soakage pit to be formed as per drawings. Soakage pit to be 2000mm dia with stones in base and filter fabric at above level of effluent pipe outlet, backfilled above.

Amend soakage pit note as required to comply with Part F2 of the manual

10.7 DRAINAGE, SEPTIC TANK AND SOAKAGE PIT

Retain 10.7 only if external sinks are required and a septic tank is required under Part F2 as per Developed Design specification.

Waste pipes from sinks to discharge over gully trap, below level of grate. Wastes and vents shall be a PVC waste pipe system with Polypropylene traps, complete with all coupling, seals, clips and other fittings. All waste pipes with even falls, concealed as far as possible.

Sewer drain from gully trap to septic tank to be 100mm uPVC system complete with compatible fittings and laid in straight lines and easy bends to even gradients. Confirm falls to all drains are adequate prior to commencing laying. Provide all venting, gully traps with grates, cleaning eyes and inspection points, etc. as required. Drains laid with minimum 450mm cover in trench. Ensure bedding material is firmly bedded around drains to prevent movement. Backfill the trench to leave finished ground surface as close as possible to condition before excavation.

Septic tank to be RX Plastics IBKB-200LB 200 litre 'Bulkie barrel' complete with screw lid. To the centre of the tank fit a Zoeller 'Residential Septic tank Filter' with direct connection to the 100mm uPVC drain to the sump. The inlet of the sewer drain from gully trap is to be 100mm higher than outlet drain to the sump.

Amend septic tank size and description as required to comply with Part F2 of the manual

Soakage pit to be formed as per drawings. Soakage pit to be 700mm dia with stones in base and filter fabric to base and sides to finish 100mm from the existing ground level, backfilled above. Fit 100mm uPVC perforated pipe with inspection cap to centre of soakage pit.

Amend soakage pit note as required to comply with Part F2 of the manual

11.0 FINISHING AND PAINTING

11.1 WORKMANSHIP AND MATERIALS

All work shall be of a first class standard performed by skilled tradesmen in accordance with sound trade practice. In all situations the finish shall be first class, and matching over any one area in terms of appearance, finish and colour.

Ensure that all surfaces including surfaces of all preceding undercoats are in a suitable condition to enable a first class finish to be obtained. Locks, bolts, fittings, etc. will be removed as necessary to prevent damage or marking and be replaced at completion of work.

All materials shall be applied strictly in accordance with the manufacturers instructions for all coating, stopping and other treatment. Application shall not be by spraying.

Provide all necessary protection, masking, covering, guards, etc. necessary to protect painting work, other work on-site, adjacent property and any persons in the vicinity. Provide warning signs and remove on completion. No painting shall be carried out under unsuitable conditions. Work damaged by weather, dust or the activities of other trades shall be rubbed down and recoated.

All materials including paints, enamels, varnishes, primer, linseed oil, pure and mineral turps, etc. shall be of the best quality of their respective kinds and shall be brought onto the job in their original containers with seals unbroken.

Putty shall consist of whiting thoroughly ground in linseed oil to form a smooth readily workable paste, tinted or stained as necessary to suit the finished colour in all materials. Primer shall be suitable both for the surface to be painted and for following coats. Paint for finishing coats shall be mechanically mixed to B.S. or other specified colours. On no account will paint be accepted on the job which has not been mixed by the Manufacturer or his authorised Agent.

11.2 COLOUR SCHEME

A colour scheme for both internal and external work shall be obtained from the Contract Administrator before the application of any undercoats. Give Contract Administrator ten working days notice of date by which colour scheme is required.

For interior painting allow for the walls within each room where painted to be of the same colour/finish, ceilings to be another colour/finish, doors to be another colour/finish and the skirting, architrave, mouldings to be a fourth different colour/finish. All edges of doors, sashes, architraves, etc. shall be finished similar to visible surfaces.

11.3 PREPARATION

Prime all exterior timber to be painted. The priming coat shall be thoroughly brushed on to fill all pores and shall not be flowed on. Priming exposed to weather more than one month shall be rubbed down and receive a further priming coat. After priming neatly fill in and stop all cracks, nail holes, etc. with putty.

For interior work neatly fill in and stop all cracks, nail holes, etc. with putty after first coat has been applied. Where varnish finish is required putty to be colour matched to final colour.

Prepare all surfaces, fill, repair and make good imperfections as required for the system to be applied to a first quality finish. Surfaces must be completely dust free, dry and without oil, grease or foreign matter.

11.4 SYSTEMS

include and modify as per outline specification

1. **4 coats Resene Polythane moisture-cured polyurethane**
 - Flooring, including edging to hearth,
 - Bunks and ladders
 - Tables and forms
 - Toilet – floor and seat

2. **2 coats Wattyl Forestwood Deck & Furniture Oil, colour ‘Natural Pine’.**
 - Flooring
 - Timber framing for bunks including horizontal sleeping surfaces, and ladders

3. **First Coat Resene Quick Dry, with two coats of Resene Zylone Spacecoat.**
 - Interior ply ceilings and cornice
 - Toilet – interior ply walls and ceiling

4. **4 coats Resene Aquaclear water-based clear finish**
 - Interior ply walls
 - window and door reveals and architraves
 - Mouldings and interior finishes generally
 - Cooking bench and Interior seating

5. **3 coats of Resene Woodsman, First coat to all surfaces prior to installation, second coat after fixing, and third coat applied after 3 months. For ply cladding only**
 - Exterior ply and batten cladding

6. **Resene Hi-Glo acrylic paint**
 - fascias/barge boards and soffits
 - Toilet - vent

7. **Other buildings *Note as required***
 - Woodshed: none required.
 - Toilet: refer notes above for requirements.

8. **Exclusions**
 - Veranda posts and beams, exposed veranda framing
 - Decking, steps, stairs, baseboards

- Hook rails *If galvanised*
- Water tank stand

Miscellaneous:

Any material or element which does not have a specified finish, but obviously needs finishing to complete the Contract, shall be considered a part of the Contract, and in general shall have the same finish as similar elements or materials. Confirm with Contract Administrator prior to doing this work.

11.5 COMPLETION

At the completion, make good at own expense any patchy work, incorrect material, colours or patterns, and imperfections to work, and shall eliminate all runs, bubbles, etc. Repaint or recover complete sections while rectifying work. Leave job clean and tidy to the satisfaction of the Contract Administrator, with all trade debris removed and all surfaces free from paint splashes and decoration marks.

12.0 OTHER BUILDINGS AND WORK ON SITE

Include and modify as per outline specification

12.1 MATERIALS AND WORKMANSHIP

This section of the work consists of the provision of other buildings on the site that form part of the contract. Generally, unless otherwise noted, the scope of work is identified on the drawings while specification information is found in the other sections of this specification.

12.2 PIT TOILET

Dig pit of size noted on the drawings Provide and install new pit toilet in accordance with the provided drawings.

Confirm location on site with Contract Administrator.

Refer to section 11 for extent of painting work.

If in accordance with part F2 of the manual, a pit toilet is not appropriate, amend notes as required.

12.3 WOOD STORE

Provide and install wood store in accordance with the provided drawings.

Confirm location on site with Contract Administrator.

APPENDIX A: STANDARD BRACING INFORMATION

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APPENDIX B: ROOF TRUSS INFORMATION

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APPENDIX C: FOUNDATION DESIGN

Inclusions: Producer Statement

calculations and drawings

proprietary system specifications

Consultation Copy

APPENDIX D: STRUCTURAL ENGINEER

Inclusions: Producer Statement

calculations and drawings

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