

Property File Request



Property File Request

PFR/2026/4182

ISSUED UNDER SECTION 44A OF THE LOCAL GOVERNMENT
OFFICIAL INFORMATION AND MEETINGS ACT 1987

APPLICANT DETAILS	
Applicant:	Nicky Vallender
Mailing Address:	7 Caulfield Place Palmerston North 4412
Phone:	021 033 5605
Email Address:	nicky.v@arizto.co.nz
LOCATION OF PROPERTY	
Site Address:	17 Waka Tete Place Waitarere Beach 5510
Legal Description:	Lot: 16 DP: 403623
Current Owner:	Elizabeth Louise Haley Valentine & Public Trust
Valuation No:	1479004371
Area:	8042 square metres more or less
R/T/Identifier:	411934
R/T/Date Issued:	6 March 2009

BUILDING CONSENTS/PERMITS PREVIOUSLY ISSUED AND HELD IN HOROWHENUA DISTRICT COUNCIL RECORDS

Building Consent and/or Permit	Purpose of Works	Date Approved	Code Compliance Certificate Issued
Building Consent 20081589	Construction of a Single Storey 3 Bedroom Dwelling and Installation of an Enviro Evolution Pallet Stove	29/04/2009	04/05/2010

QV indicates a dwelling was built circa 2009. Please refer to the attached plans from Quotable Value New Zealand. Please Note: Horowhenua District Council accepts no responsibility for floor plans not held at Council.

Note:

Code Compliance Certificate are not required for building permits issued prior to the Building Act 1991. Under the Act the owner is responsible for requesting final inspections and the issue of completed Code Compliance Certificates.

*the attached Report has been accepted by Horowhenua District Council (Council) as a record only. The contents of the report has not been validated or endorsed by Council. Receipt of the report by Council does not authorise or certify any building works undertaken without a building consent and Council is not obliged to make any decision or determination in relation to any unauthorised building work as a result of having received the report. Council does not accept any liability whatsoever for the content or accuracy of the report. No responsibility is accepted on behalf of any third party for the whole or any part of the contents of the report.

DISCLAIMER - The information supplied in a Property File Report represents information held by Horowhenua District Council (Council) and where supplied to Council by a third party, it may not have been independently verified.

Council does not warrant the accuracy of the information and shall not be held liable whatsoever for any error, inaccuracy or incompleteness of the information provided whether supplied by a third party or otherwise.

In the event that Council is held liable, liability shall be restricted to the cost of obtaining the Property File Report, if any. The applicant should not rely on any information without personally seeking appropriate independent and professional advice.

The information provided in this report does not constitute a Land Information Memorandum (LIM) or any similar document.

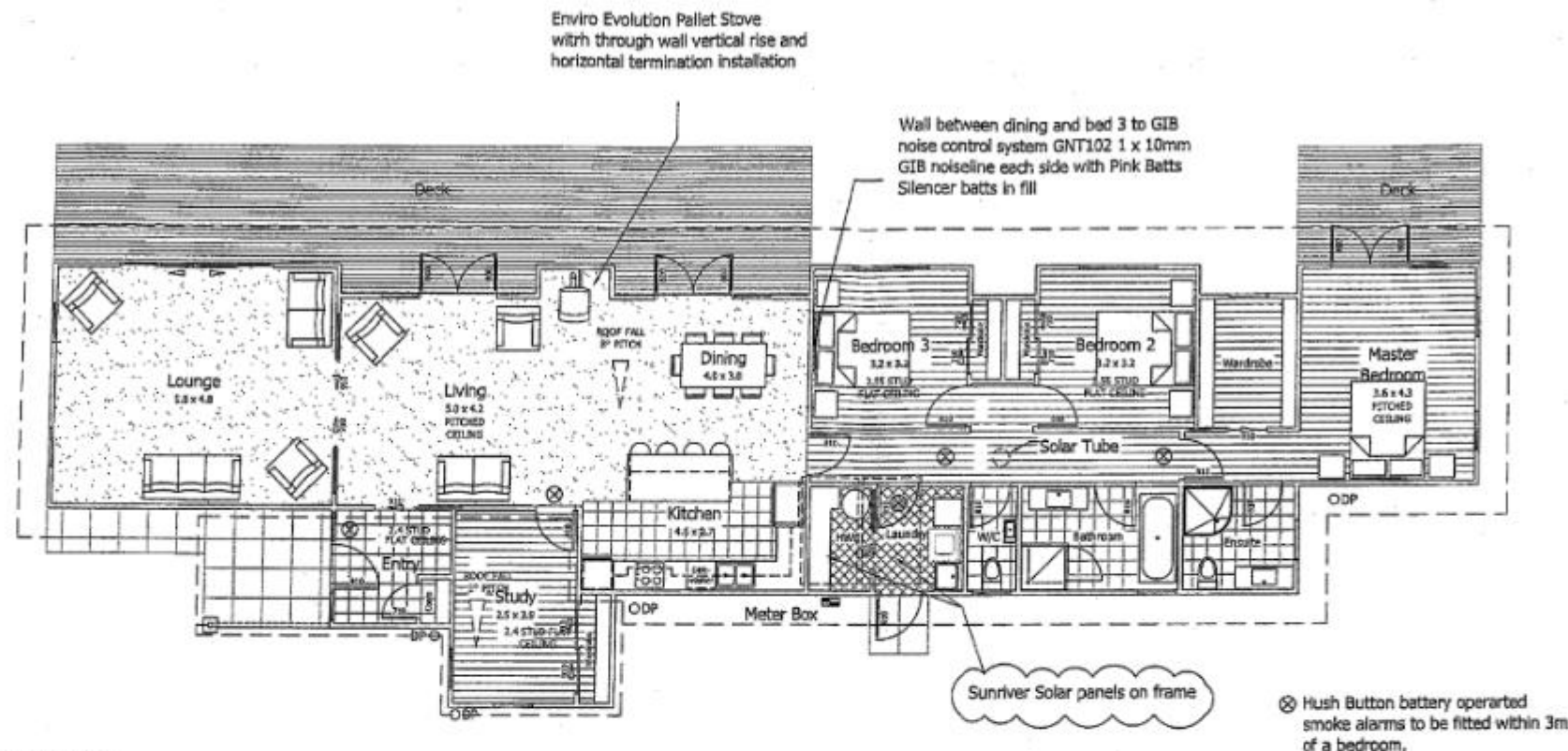
If you consider purchasing a property in the Horowhenua District, it is recommended that you obtain a LIM before finalising the purchase. You'll find a LIM useful in helping you decide whether the land is worth purchasing, free from any restrictions, and whether the intended use of the land is feasible.

<http://www.horowhenua.govt.nz/Services/Building-Planning/Land-Information-Memorandum-LIM#Information-included-in-a-LIM-Report-2>

Signed: _____



Jhardia Hemi
Information Specialist
25 August 2026



Floor Coverings

	Polished concrete	68.44 sq. m.
	LSI strip flooring	67.51 sq. m.
	Ceramic tiles	21.75 sq. m.
	Linoleum	6.78 sq. m.
	Timber deck	
	concrete paving	

Exterior Colours

Refer to 'Colour Schedule' in the Specifications

⊗ Hush Button battery operated smoke alarms to be fitted within 3m of a bedroom.

Floor area: 182.90 sq. m.
Covered area: 13.09 sq. m.
Deck area: 51.66 sq. m.
Paved area: 10.57 sq. m.

APPROVED
11 MAR 2009
CONSENT



Elevation key



Amended

Date: 20/2
Revision: A

These drawings were prepared in conjunction with the specifications and construction details for the project. Where drawings are omitted the details are considered and made available. If you are not the intended recipient you may not rely, directly or indirectly, on the contents of this drawing.

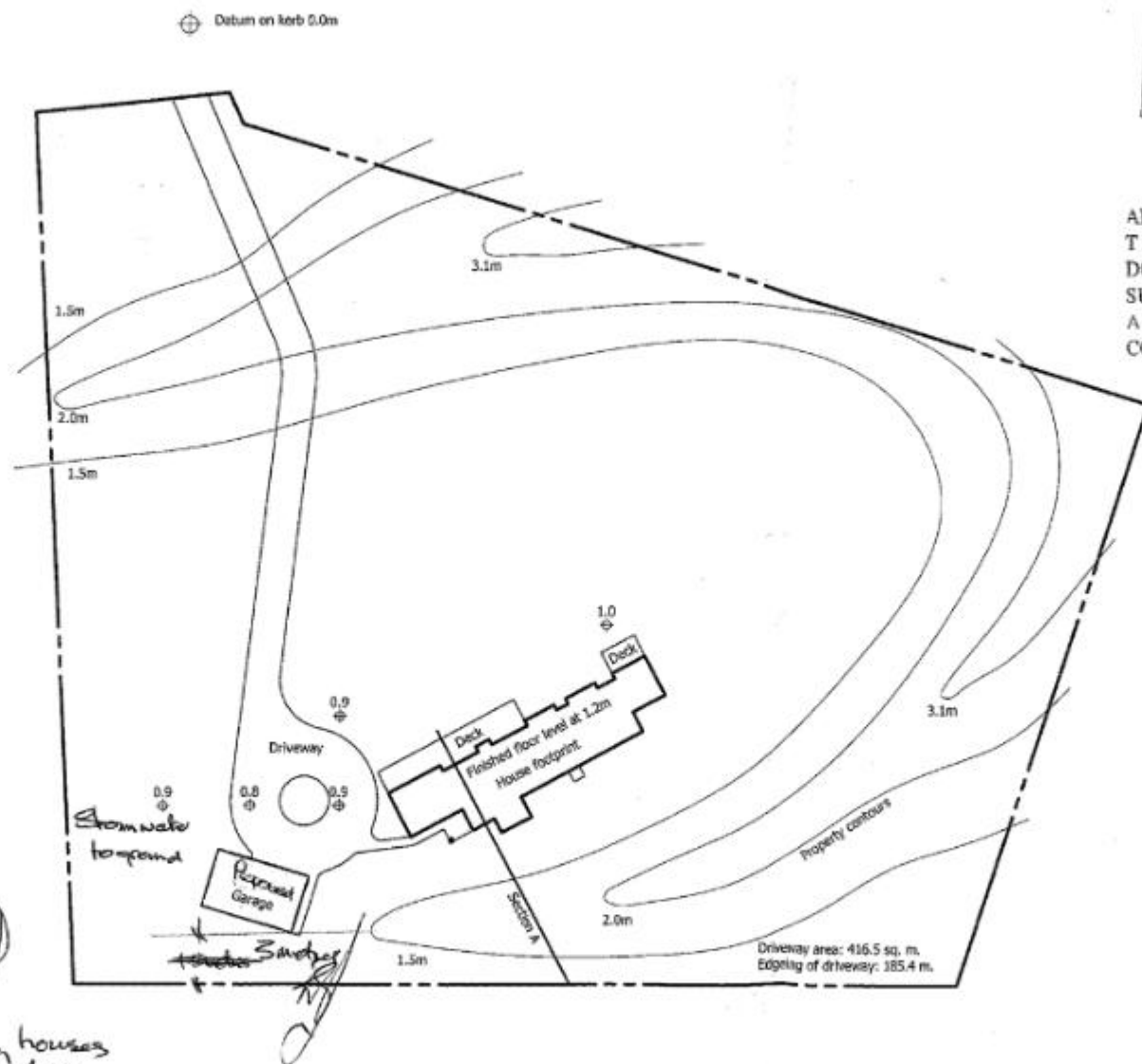
These drawings have been prepared on the understanding that the building contractor has a valid license to build. The main contractor, Sub-Contractor or Authorized Agent of the Council or other relevant authority must be satisfied with these drawings before construction commences. The Council or other relevant authority must be satisfied with these drawings before construction commences. The Council or other relevant authority must be satisfied with these drawings before construction commences.

Signature HOMES
YOUR HOME. YOUR WAY.

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WAITAREBE BEACH

FLOOR PLAN

DATE: 22 FEB 09 DRAWN: ASB 1:100 A4
CHECKED: SP SHEET NO: 08-078
LVL: 16 REV: A



HOROWHENUA DISTRICT COUNCIL
APPROVED
SUBJECT TO COMPLIANCE
WITH THE BUILDING
CONSENT DOCUMENTATION

Job Title:
**Proposed House for
Paul & Debbie Wing**

Drawing Title:
Contoured Site Plan

ALL WORK TO FULLY COMPLY WITH
THE BUILDING CONSENT
DOCUMENTS. ANY VARIATION TO BE
SUBMITTED FOR CONSIDERATION AS
AN AMENDMENT BEFORE
COMMENCEMENT.

Site Address:
Beach Road
Waitare Beach

Job	19745
Drawn	Graham Devey
Checked	-
Scale	1:500
Date	15/4/09
Page	1
Sheet Rev No.	-

APPROVED
26 JUN 2009
CONSENT
WLB

These drawings have been prepared on the understanding that the Building Contractor has a sound knowledge of the NZ Building Code and NZS 3604: 1999. The main Contractor, Sub Contractor or Authorized Agent of the owner or Builder shall ensure that all works comply with these codes in addition to any requirements of the Territorial Authority. Any work undertaken outside these requirements without prior written approval of the Designer, Engineer and/or the Territorial Authority hereby indemnifies the Designer or his Agent against any claims, or claims, in respect of the said work.

Notes:

These plans are copyright of Signature Homes

Signature
HOMES Est. 1983

YOUR HOME. YOUR WAY.



Building Consent File Content

Consent Number: 08/1589

	Description	✓ or x	Date Placed	Comment / Reference	Initials
1	Consent Application (including CT & any consent notices)(JM)	✓	19.12.08		JM
2	Pre-vet Checksheet (JM)	✓	19.12.08		JM
3	Costing Schedule (Time Based only)(JM)	✓	19.12.08	TIME BASED	JM
4	Plans & Specifications (JM)	✓	19.12.08		JM
5	BC Lodgement Acknowledgement Letter (JM)	✓	19.12.08		JM
6	Geotech				
7	Vet Processing Sheet (300 series)	✓	17.2.09	Forms 301 & 313	J.P.B.
8	PIM (JM)				
9	Regional Authority Consent				
10	Fire Design				
11	DRU				
12	Consultant Reports/Peer Review				
13	Producer Statements PS1, PS2, PS4	✓	17.2.09	HYDRAST RAPTERS & TRUSS	J.P.B.
14	Relocate : Condition Reports				
15	Photos				
16	FIR Letter	✓	17.2.09	Form 209	J.P.B.
17	FIR info received	✓	21.2.09	2nd FIR REQUIRED	J.P.B.
19	Invoice	✓	11.3.09		J.P.B.
20	Consent File Content Sheet and Document Checks	✓	11/3/09	Carried out by Senior BO at granting stage	J.P.B.
21	Building Consent & Memorandum (JM)	✓	29.4.09		J.P.B.
22	Amendment : Application & Approval	✓	11/2/09	Approved Amendment	J.P.B.
23	NTF				
24	DBH Notification (Warnings &)				
	FIR LETTER	✓	2.3.09	Form 209	J.P.B.
	FIR DOCUMENTATION-DUPLICATE	✓	4.3.09	COVERING LETTER	J.P.B.
	Form 227- INSPECTION SCHEDULE	✓	11.3.09	13 INSPECTIONS LISTED.	J.P.B.
	Form 204 - INVOICE LETTER	✓	11.3.09		J.P.B.
	amended foundation to allow pylon	✓	18/5/09		J.P.B.
	Abandonment Proposal	✓	15.5.09	Fault refer where entry	J.P.B.
	SLAB - PARTIAL		22.5.09	PASS.	J.P.B.
	Seting & Foundation Ings	✓	18/5/09	Pass.	J.P.B.
	Under slab Drainage	✓	9/6/09	Pass	J.P.B.
	Tramway Inspection	✓	15/08/09	Pass.	J.P.B.
	PRELIMINARY PLUMBING	✓	26.8.09	PASS	J.P.B.
	Party Wall	✓	9.9.09	Pass	J.P.B.
	Fire Line	✓	16.9.09	Pass	J.P.B.
	ROSE LINE: 2ND INSP.	✓	2-10-09	PASS	J.P.B.
	Drainage Exterior	✓	26-11-09	Fail to remove of timber	J.P.B.
	Exterior Services	✓	1-12-09	Pass	J.P.B.

Note: ✓ means documents on file
x means not applicable to this BC

[illegible]

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Note: ✓ means documents on file
x means not applicable to this BC

Form 119 – Building Consent File Content
Version 4 – 9 October 2008



**HOROWHENUA
DISTRICT
COUNCIL**

126-148 Oxford Street
Private Bag 4002
Levin
Telephone 06 366 0999
Facsimile 06 366 0977
Email enquiries@horowhenua.govt.nz
www.horowhenua.govt.nz

Building Consent No: **2008/1589/021**
Construction of a single storey 3 bedroom dwelling
and installation of an Enviro Evolution Pallet Stove
Lot 16, Waka Tete Place, Waitarere Beach

W/119682/Lot 16.

Code Compliance Certificate
Section 95, Building Act 2004

The Building:	The Owner:
Street Address:	Name: Waitarere Rise Limited
Lot 16, Waka Tete Place, Waitarere Beach	Contact Person: Waitarere Rise Limited
Legal Description: Lot 1 DP 50712 69506m2, Lot 23 DP 10780 809m2, Lot 3 DP 50712 1722580m2	Mailing Address: C/- Signature Homes 187 Broadway Avenue Palmerston North 5301
Current, lawfully established, use: Detached Dwelling	
Year first constructed: 2010	

First Point of Contact:

The first point of contact for communications with the building consent authority will be with the Owner

Code Compliance:

The building consent authority named above is satisfied, on reasonable grounds, that the building work complies with the building consent.

Bruce Harris
Building Advisory Officer

Date: 04 May 2010



Application for Code Compliance Certificate

Section 92, Building Act 2004

* denotes field must be completed

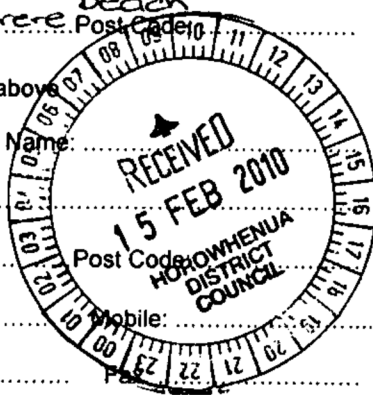
*Building Consent Number: 08-1589 issued by Horowhenua District Council
*Street Address of Building Work: Lot 16 Waka Tete Place
*Description of Building Work: New House & Garage
*Date Final Inspection was carried out and passed: 21-1-10 bc

Notes to applicants:

- A final inspection must have been completed and passed prior to this application being submitted
- A Code Compliance Certificate will be based on the approved building consent documents.
- A Code Compliance Certificate will not be issued until all the information is provided to the Council. This includes all Names, Certificates, Registration Numbers, Producer Statements, or any other required documents
- A Code Compliance Certificate will be issued within 20 working days of this application being submitted providing all required information is supplied and is correct and all the building work complies with the building consent. The application period of 20 days for the Code Compliance Certificate will be suspended if further information is required or there are outstanding fees.

The Owner (as defined by the Building Act)

*Full name(s): Paul & Debra Wing
*Contact Person: Paul Wing
*Address: No and Street Name: 358 Waka Tete Place
City: Waitare Beach
Postal: ☒ Same as above
PO Box/Street Name: _____
City: _____ Post Code: _____
*Phone: Day: _____ Mobile: _____
A/H: _____
Email: _____



The Agent (must be authorized by the owner to make this application)

Full name(s): KARACROMBIE ENTERPRISES LTD
Contact Person: STEVE CROMBIE
Address: No and Street Name: 187 BROADWAY AVE
City: Palmerston North Post Code: 4410
Postal: ☒ Same as above
PO Box/Street Name: _____
City: _____ Post Code: _____
Phone: Day: _____ Mobile: _____
A/H: 063993939 Fax: 063593949
Email: scrombie@signature-co.nz
Relationship to owner: BUILDER

*All building work carried out under the above building consent was completed on or about: _____ (Date)

I request that you issue a code compliance certificate for this work under section 95 of the Building Act 2004.

*The code compliance certificate should be sent to: Owner ☒ Agent ☐ (select one)

*Signature of owner / agent on behalf of and with the authority of the owner: 28.01.2010

*Name of person signing: Steve Crombie *Date: 03.02.2010

*The people who carried out the building work were:
(please complete all trades applicable to your building consent)

Designer/Architect:	Structural Engineer:
Business: Plans.CO.NZ	Business:
Name:	Name:
Address: 15 Wadding street Palmerston North	Address: N/A
Contact Phone: 06 359 2844	Contact Phone:
Registration / Qualification	Registration / Qualification
Registered Electrician:	Craftsman Plumber:
Business: LASER ELECTRICAL	Business: Henrys Plumbing
Name:	Name: Henry Hintz
Address:	Address:
Contact Phone:	Contact Phone:
Registration / Qualification	Registration / Qualification Craftsman, 18006
Builder:	Registered Drainlayer:
Business: DANSON & GERRARD LTD	Business: Delta Drainage
Name: JASON DANSON	Name: Barry Templeton
Address:	Address: 1/5 Chatham Lane PO Box 4239 Palmerston North 4442
Contact Phone:	Contact Phone: 06 357 0028
Registration / Qualification N/A	Registration / Qualification 06123
Craftsman Gasfitter:	Bricklayer:
Business:	Business:
Name:	Name:
Address: N/A	Address: N/A
Contact Phone:	Contact Phone:
Registration / Qualification	Registration / Qualification
Plasterer:	Other:
Business/name: P.N. Plastering	Business/name: DELTA
Address:	Address:
Contact Phone:	Contact Phone:
Registration / Qualification	Registration / Qualification

Technical Data Sheet

DAMPFIX PU



DESCRIPTION

Dampfix PU is a flexible, elastic one part polyurethane membrane used for waterproofing shower recesses, bathrooms, laundries, balconies, decks, roofs and planterboxes.

FEATURES & BENEFITS

- Pre-mixed
- Highly flexible
- Requires no re-inforcing
- Light grey
- Easy to apply
- Internal and external application

RECOMMENDED FOR

- Concrete
- Cement render
- Blockwork and brickwork
- Fibrous cement sheeting
- Water resistant plasterboard
- Plywood
- Particleboard



APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Surfaces must be firm, dry, sound and smooth. All grease, oil, wax, curing compounds, dust, plaster droppings, loose material, paint and any other contaminants must be removed. Building boards must be fixed in accordance with the manufacturer's directions. Allow concrete to cure for 28 days and cement render for 7 days prior to the application of Dampfix PU. Do not apply over concrete slabs that are damp or contain moisture unless the slab has been primed with ASA Dampfix Moisture Seal.

Priming: Generally surfaces do not require priming. In areas where the substrate is damp or water is likely to rise up below the membrane, then ASA Dampfix Moisture Seal must be used prior to the application of Dampfix PU.

ASA Dampfix Moisture Seal is a 2 part water based epoxy which dries to form a waterproof barrier. Dampfix Moisture Seal prevents rising damp and continual seepage, resists grease, oil, detergent and most mild chemicals. Ideal for retaining walls, concrete tanks, lift wells and troughs. This product should be used as a primer before the application of Dampfix membranes. ASA Dampfix Moisture Seal comes in 4 litres, 8 litres, 20 litres and 40 litres kits.

Crack Treatment: For static cracks greater than 1mm, clean thoroughly then fill with ASA Dampfix Seal 'n' Fillet. Allow to dry. Dampfix Seal 'n' Fillet is a white, low modulus, polyurethane sealant which cures from moisture in the air to form a soft, elastic and weatherproof sealant. ASA Dampfix Seal 'n' Fillet comes in 600ml (720 grams) sausages

Sheet Joints: Apply a bead of ASA Dampfix Seal 'n' Fillet at all wall/floor joints, wall/wall joints, all sheet joints and fixings and at any change of direction in the substrate.

APPLICATION

The application of Dampfix PU must comply with AS3740-2004 "Waterproofing of Internal Wet Areas in Residential Buildings". Dampfix PU can be applied with a brush or roller. Dampfix PU must be applied to achieve a dry film thickness of 1.3mm for optimum performance. To achieve the required dry film thickness of 1.3mm, apply the Dampfix PU at a rate of 0.75 litres/m² per coat. Two coats are required. Allow a minimum of 24 hours between coats.

Note: Protection boards must be used to protect the membrane before back filling or concreting.

CLEAN UP

Clean tools and equipment with Bostik Handi-Clean Wipes while the membrane is still wet.

PACKAGING

15 litre metal pails and 4 litre plastic pails.

TILING

Commence tiling after membrane has fully cured. It is recommended that the membrane be tiled, or a mortar bed applied within 72 hours of membrane application since this eliminates surface contamination. If tiling is carried out after this time, ensure that the surface is clean and dry.

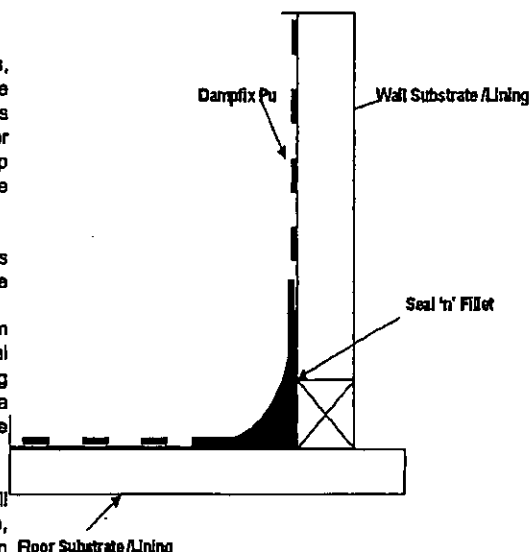
RECOMMENDED TILE ADHESIVE

Internal Wall Applications

ASA Polyflex, ASA Megaflex, ASA Conflex and ASA Asaflex

Internal Floors and External Applications:

Option 1: ASA Polyflex



Technical Data Sheet

DAMPFIX PU



Option 2: The membrane must be primed with ASA Epoxy Prime water based epoxy. Prime at a rate of 6 to 8m² per litre, ensuring the membrane is fully covered. Tiling must commence within 4 days of application of ASA Epoxy Prime using ASA Fixall mixed with undiluted ASA Megalastic, ASA Conflex or ASA Asaflex. Refer to ASA Epoxy Prime data sheet for full application details.

CURING TIME

Approximately 24 hours at 25°C.

COVERAGE

1.5 litres will cover approximately 1m² at 1.3mm dry film thickness.

SAFETY PRECAUTIONS

During application of Dampfix PU, avoid contact with skin and eyes. Wear eye protection and gloves. Use in a well ventilated area. If contact with skin occurs, wash affected area well. If contact with eyes occurs, flush eyes with copious quantities of clean water for at least 15 minutes and contact a physician. It is advisable to use good occupational health and safety practices to avoid personal contact. For more detailed information refer to product MSDS.

SHELF LIFE

Unopened pails can be stored for up to 12 months in a cool, dry and weatherproof environment.

LIMITATIONS

- Do not use as an exposed finish or top coat exterior membrane
- Dampfix PU should not be installed on damp, wet, contaminated or friable substrates
- Do not apply if temperature is below 5°C
- Do not use as a vapour barrier
- Do not apply the product in extreme temperatures of below 5°C and above 30°C

DISCLAIMER: It is the users responsibility to check and read the latest updated Data Sheet and related information before using the product. Users should also check and perform their own tests when assessing the suitability of a product for a particular application under certain conditions.

PHYSICAL PROPERTIES	
Appearance:	Thick grey paste
SG:	1.23 g/cm ³
Mixing ratio:	No mixing required
Re-inforcement:	Not required

MECHANICAL PROPERTIES	
As per AS/NZS 4858:2004	
Tensile strength:	2.14 Mpa
Elongation at break:	470%
Cyclic movement: 50 cycles	Complies
Moisture vapour transmission rate	7.678 grams/m ² /24 hour
ASTM E96	
Dessicant Method:	
Water Absorption AS 3558.1:	0.64%
Class 3	High extensability

TECHNICAL SERVICES TOLL FREE NUMBER

1800 813 890 Australia

0508 222 272 New Zealand (land lines only)

or visit www.asaltd.com.au

a member of the Bostik group of companies



GUARANTEE

ASA guarantees this product for 10 years provided application is in accordance with manufacturer's directions and the Australian Standards for Waterproofing. ASA's liability is limited to the cost of replacing effected ASA product only. ASA reserves the right to inspect. Contact ASA for full guarantee terms.

NSW HEAD OFFICE	VIC	QLD	SA	WA	NZ
Ph: (02) 9725 4666 Fax: (02) 9725 4427	Ph: (03) 9261 4733 Fax: (03) 9261 4744	Ph: (07) 3260 2422 Fax: (07) 3260 2411	Ph: (08) 8244 2853 Fax: (08) 8244 0522	Ph: (08) 9314 5200 Fax: (08) 9337 4377	Ph: +64 9 270 3168 Fax: +64 9 270 6170

issue2rev1060606



Horowhenua
(Territorial Authority)

PS 3
BC/2008/1589/021
BUILDING CONSENT NO:.....

**PRODUCER STATEMENT - CONSTRUCTION
(INSTALLATION)**

ISSUED BY: DAVE HEERAN
(NZHHA Solid Fuel Appliance Installation Technician)

Installer No: 1331

TO: SIGNATURE GOMES
(Owner)

IN RESPECT OF: Installation of Solid Fuel Heating Appliance

AT: 358 WAKA TETA PLACE, THE BEACH
FARM, WAITAREBE BEACH, HOROWHENUA.
(Address)

LOT: 16 DP: 403623 SO:

DAVE HEERAN has contracted to SIGNATURE GOMES
(Certified Installer) (Owner/Developer)

to perform the above work as described.

I DAVE HEERAN Certified Installer No. 1331 have
sighted Building Consent No. and believe on reasonable grounds that the
solid fuel heating appliance installation has been installed as per the above Building Consent and the
Manufacturers Instructions for the appliance.

SIGNATURE OF CERTIFIED INSTALLER: [Signature]

DATE: 2-12-09

EMPLOYMENT STATUS
(Complete as Applicable)

☐ SELF EMPLOYED

☐ EMPLOYEE

Trading Name:

M&W INSTALLATIONS
Employer Name: PH. 06 355 3473

Address:

DAVE
Address: PO BOX 12120 PALM NORTH

Ph No:

Ph. No:

SIXTH SCHEDULE

FORM OF PRODUCER STATEMENT - CONSTRUCTION

ISSUED BY: Delta Drainage & Water Services (2009) Ltd
(Contractor)

TO: SIGNATURE HOMES
(Principal)

IN RESPECT OF: Waste Water Tank, Sanitary Sewer and Storm Water Drainage Installation
(Description of Contract Works)

AT: Lot 16, The Beach Farm, Waitarere Beach
(Address)

Delta Drainage & Water Services (2009) Ltd has contracted to SIGNATURE HOMES
(Contractor) (Principal)

to carry out and complete certain building works in accordance with a contract, titled

New dwelling for Paul & Debbie Wing(" the contract")
(Project)

I Barry Ronald Templeton a duly authorized representative of Delta Drainage & Water Services (2009) Ltd
(Duly Authorized Agent) (Contractor)

believe on reasonable grounds that Delta Drainage & Water Services (2009) Ltd has carried out
and completed (Contractor)

☒ All ☐ Part only as specified in the attached particulars of the building works in accordance
with the contract.



(Signature of Authorized Agent on behalf of)

Date 4 December 2009

DRAINAGE & WATER SERVICES (2009) LTD
(Contractor)

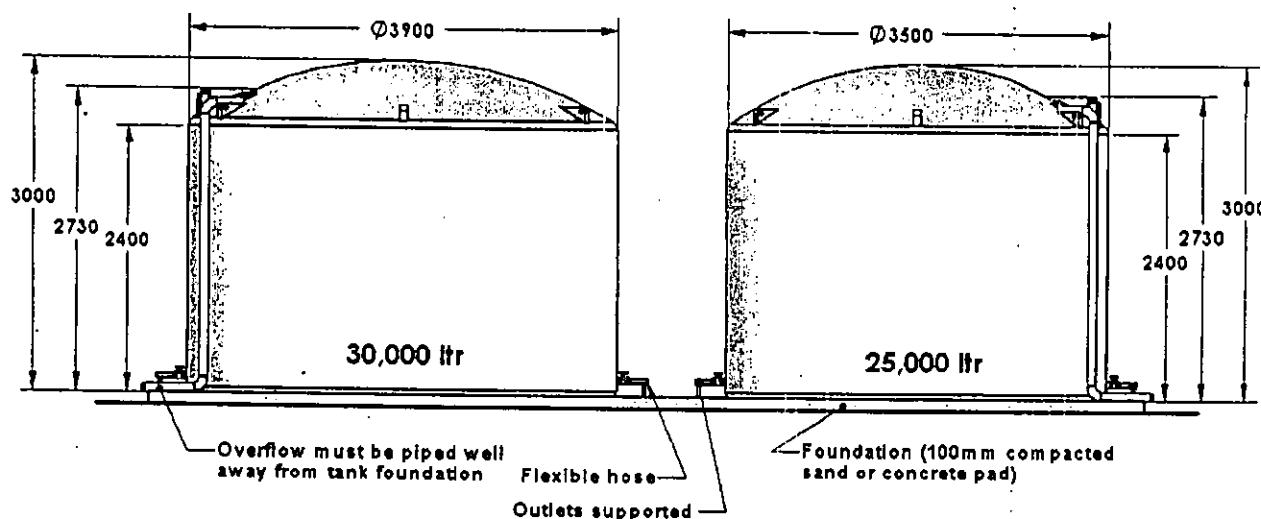
1/5 Chatham Lane,
PO Box 4239,
Palmerston North 4442
(Address)

1st September 2008

MAXTM TANK SITE PREPARATION AND INSTALLATION INSTRUCTIONS

Page 4 of 13

**PLEASE READ THESE GUIDELINES BEFORE INSTALLATION
FAILURE TO PREPARE AND INSTALL YOUR TANK
CORRECTLY WILL VOID YOUR WARRANTY**

**Correct method for siting & fitting a 30,000 or 25,000 litre MaxTM tank**

- Select a site that is flat, level and free of large or sharp protrusions.
- The tanks are not designed to be buried. If this is unavoidable, a maximum depth of 1/3 the wall height (800mm) must not be exceeded. Drainage must then be installed to drain any water from the base of the tank.
- On sloping ground ensure actual tank site and surrounding area are level and that the area will remain free from any possible erosion damage in the future.
- Ensure that the overflow does not erode the foundation. Overflow to be fitted at 2.7m from ground in one of the panels beside the manhole.
- Minimum volume is calculated from the bottom off the outlet to the bottom of the suggested overflow.
- Fill with approximately 1500 litres of water to secure tank and check the integrity of the fittings and pipe work.
- Ensure all pipe work from the tank is supported to reduce stress on the tank. Use flexible pipe or bellows on all pipe work to allow the tank to expand and contract (Up to 100mm).
- In windy conditions - use tank lugs to tie down tank securely (Do not over tighten or damage may occur).
- To avoid the possibility of internal pressure or vacuum an adequate vent must be installed. The vent must be at least the same size as the outlet or inlet.
- Ensure the plastic fittings that may be screwed into the tanks are not cross threaded.
- Any tank with an inlet or outlet that is over 50mm will not be AS/NZS4766 approved.
- Any fitting that exceeds 100mm will NOT be covered by the RX Plastics warranty.
- OSH regulations must be followed if entering the tank.

FREIGHT PAID FIS - GST NOT INCLUDEDTOLONG
HARVEY
ENGLAND

RX Plastics LTD, PO Box 360, Ashburton, New Zealand
Phone +64 3 307 9081 Fax +64 3 308 8483 Email sales@rxplastics.co.nz

**RX PLASTICS LTD**

Model Producer Statement PS3

Installation of Solar Water Heating System

Installer Signature: _____ Date: 6.12.09

APV PLUMBING LTD

22 Mulgrave Street Ashhurst 4810
 Phone 027-2413457~A/H 06-3269346~Fax 06-3269342
 Email apvplumbing@xnet.co.nz

Registered Craftsman Plumber-Gasfitter~Roofing~Solar Installations
 Central Heating Installations

Commissioning Data

Item	Details	Data
Tested for leaks	How	6 Bar Pressure test-20 minutes
System Bled	Yes/No	yes
Pump	Operation	Speed 1
Collector Sensor	Position & Tightness	RH side panel-ok
Top tank sensor	Position & Tightness	1-3 from top-ok
Bottom tank sensor	Position & Tightness	1-4 from bottom-ok
System values	Flow rate	Approx 2.4
	Operating pressure	Working Pressure of HWC
Controller Manual	Left with customer	Left with Customer
Operator instruction	Instructions given by installer	Instructions given to Owner

Controller Settings

Adjustable values	Range	Recommended	Set to
Pump off	1-20°C	8°C	8° C
Pump on	2-21°C	21°C	12° C
Hold off timer	1-23hrs	4hrs	4 hrs
Reheat lower	1-70°C	40°C	40° C
Reheat upper	2-90°C	55°C	60° C
Biosafe	50-70°C	60°C	60° C
Top out	1-120°C	As per cylinder spec	75° C
Frost	1-10°C	2	2° C

Solar Components

Item	Data/Serial No
Collectors	SR24
Pump	4047573/07w21
Safety Valve	N/A
Pump Setting	1
Storage Cylinder	CooperMP250 250 Ltr Mains Pressure
Solar Controller	0733072
Relay	0733266

	Installation Technician	Customer
Name	Kenny Allison	P&D Wing
Street		358 Wakatte Place
Town/city		Waitarere
Phone no		
Email	apvplumbing@xnet.co.nz	

Date of commissioning: _____

Signature of Installer: _____ Signature of customer: _____

Date: _____ Date: _____



PREFERRED PINK® BATTS® INSTALLERS

Home Insulation Installation Guarantee

This is to certify that

this home has been insulated with Pink® Batts® insulation

by a Tasman Insulation preferred Pink® Batts® installer.

The PinkFit® Licensee guarantees that, at the time of installation, the Pink® Batts®

have been properly installed in accordance with:

a) The durability requirements of the NZBC B2.3 1(a), not less than 50 years

b) New Zealand Standard Energy Efficiency –

Installing Insulation in Residential Buildings NZS 4246:2006

This guarantee is transferred to subsequent owners of the home.

Signed..... Date.....

Pink® Batts® Installer..... **Pinkfit Manawatu**.....

Compliance Number: 45819

Builder Details:
SIGNATURE HOMES

Site Details:
WING RESIDENCE
BEACH ROAD
WAITARERE,

Registration Details:

Date Printed: 01-Sep-2009
Install Date: 26-Aug-2009
Completion 26-Aug-2009

Product Details

Pink® Batts® Ceiling R3.6
Pink® Batts® Ultra® Wall R2.6
Pink® Batts® Silencer® 100mm



Comfortable living with



WARM · DRY · QUIET

Comfortable living begins with a comfortable home, and choosing products from the Pink® Batts® range is the first step. Other areas within your home to consider are:

Window ~ Open windows whenever possible, especially when using the kitchen, laundry and bathrooms, to allow the moisture to escape your home.

Curtains ~ Open curtains during sunny periods and close when the sun goes down.

Kitchen ~ Keep lids on pots and use an extractor fan or open windows when cooking to minimise condensation that can linger for hours.

Hot Water Cylinder Wrap ~ Install to keep your water hotter for longer while also helping to reduce your energy bill.

Remember your "home has to breathe..." therefore regularly ventilating your home will help avoid mouldy ceilings and walls, window condensation, musty smells and possible paint damage.



WARM



ULTRA THICK · ULTRA WARM



WIND RESISTANT



PREFERRED PINK BATT® INSTALLER



RX PLASTICS LTD
Ashburton & Hamilton
NEW ZEALAND

Cnr State Highway 1 and Horotiu Rd
PO Box 20249
Te Rapa, Hamilton
Phone 07 829 9350
Fax No 07 829 9066

WARRANTY TERMS AND CONDITIONS:

RX PLASTICS 25,000 and 30,000 LITRE PLASTIC TANK

20 YEAR PRODUCT WARRANTY:

Serial No. **25452**

The warranty for this product will be for a period of twenty (20) years from the date of purchase.
(Proof of purchase and proof of date of purchase may be required)

Warranty for the tank will provide coverage from freedom from defects, faulty workmanship or materials.
(Please read the following instructions carefully):

This WARRANTY is VOID under the following conditions:

In the event that the tank is installed other than strictly in accordance with the guidelines prepared by RX Plastics Ltd.

If used for any purpose than as a water tank.

Unauthorised repairs, modifications, alterations or relocation without prior written approval from RX Plastics Ltd.

Act of God.

If the defect arises from use that is other than fair wear and tear.

Damage sustained while in transit or on the Merchants premises.

If the Warranty Card is not completed and returned within one (1) month of purchase date.

The warranty does not cover consequential loss or damage howsoever arising.

Prompt notification shall be given to RX Plastics Ltd of any defect or failure. RX Plastics Ltd agrees to either repair or replace as its option under terms of this warranty and defective water tank.

With the return of the Warranty Card to RX Plastics Ltd, PO Box 20249, Te Rapa, Hamilton the purchaser accepts the terms and conditions of the purchase of their tank.

C

C

Name of purchaser:

Postal Address:

Location address of tank:

Serial No: Date of Purchase: Merchant:

Purchasers Signature:C:\WPWIN60\WPDOCS\ROTATION\TANK.WAR ISSUE:2

RESIDENTIAL WARRANTY & MAINTENANCE REQUIREMENTS

COLORSTEEL® Endura™

PROPERTY OWNER: Wing Residence
SITE ADDRESS: 358 Waka Tete Plc, Waitarere, Manawatu
DATE OF SUPPLY TO SITE: 10 July 2009
INSTALLATION DATE: 17 July 2009

SITE ENVIRONMENT
Moderate X
Severe

PHONE NO:

You have chosen high quality COLORSTEEL® Endura™ pre-painted steel products, which are designed to give you protection well into the future. The terms and conditions of this warranty are detailed below. To ensure you gain maximum value from your investment over time, the maintenance program under Maintenance specified below **MUST BE STRICTLY ADHERED TO-**
This warrants the following material: Veedek 0.40g Endura - Ironsand

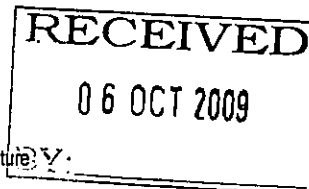
Lift No: P373262, P374468

	Roofing	Cladding	Fascia/Gutter
Will not perforate through corrosion:	30 Years	n/a Years	n/a Years
Will not flake, peel or excessively fade:	18 Years	n/a Years	n/a Years

The product manufactured from COLORSTEEL® Endura™ is subject to normal wear and tear, which may include uniform fading, chalking and dirt collection. Minor white corrosion, which may appear at unwashed tension bends or cut edges, is a natural weathering phenomenon of COLORSTEEL® Endura™ and does not constitute a failure of the coating system.

Please note this warranty is subject to the following terms and conditions:

- > That the COLORSTEEL® Endura™ pre-painted steel is processed, installed and maintained in accordance with the New Zealand Steel published literature, roofing manufacturers literature and accepted good trade practices.
- > The product must be manufactured from prime COLORSTEEL® Endura™ pre painted steel.
- > Garage Doors are not included in the warranty.
- > Damage or corrosion resulting from the following circumstances is not covered by the warranty:
 - a) Mechanical, chemical or other damage sustained during handling, storage, processing or installation.
 - b) Mechanical, chemical or other damage after installation.
 - c) Installations in very severe environments or special conditions as defined in the New Zealand Steel literature.
 - d) Ponding in gutters due to build up of debris or due to inadequate fall.
 - e) Storm, tempest or other causes beyond the control of the roofing manufacturer.



If COLORSTEEL® Endura™ pre-painted steel has failed to perform as warranted, the roofing manufacturer will at its sole option repair or replace (including labour) the affected material. A new warranty shall be issued to cover the balance of the original offer for both the paint coating and perforation protection. The roofing manufacturer shall not be liable for any consequential loss or damage except as may be required under any mandatory statutory provisions. This warranty does not in any way affect the rights of the consumer under the Consumer Guarantees Act.

MAINTENANCE

All roofing and cladding products are subject to the cumulative effects of weather, dust and other deposits. Normal rain-washing will remove accumulated atmospheric contaminants from roofs. Gutters must be regularly inspected to remove debris, which may cause ponding.

ENVIRONMENT

	Moderate ISO Category 3	Severe ISO Category 4	Very Severe ISO Category 5
Roof	Rain washing	Rain washing	Not recommended
Wall Cladding	Rain washing plus manual washing every year	Rain washing plus manual washing every 6 months	Not recommended
Unwashed and high risk areas	Manual washing every 6 months	Manual washing every 3 months	Not recommended

Regular washing of COLORSTEEL® Endura™ products increases the durability by reducing attack from airborne salts and pollutants. COLORSTEEL® Endura™ surfaces should be manually washed with water and a sponge or a soft nylon-bristled brush. For large areas it may be appropriate to use water blasting at pressures up to 20 Mpa.

Note:

1. Recommendations provided in this table are contained in the standard provisions of the New Zealand Building Code, Section B2 Durability.
2. High Risk areas include around flues and extractor vents, under television aerials and trees and sites prone to mould, lichen, bird droppings or debris.

This roof was installed by: Signature Homes aka Karacrombie Enterprises Ltd

Signature of Installer:

And carries a workmanship warranty for: Years
A copy of the current COLORSTEEL® Endura™ colour chart has been provided

Signature of property owner or agent:

DATE:

PLEASE RETURN A SIGNED COPY OF THE WARRANTY TO THE ROOFING MANUFACTURER

This Warranty is issued by (the roofing manufacturer):

Signed: Louise Herne

Position Sales Support

Date: 17 September 2009

COLORSTEEL® is a registered trademark of New Zealand Steel Limited.
Endura™ is a trademark of New Zealand Steel.

Dimond

NB: This page does not relate to domestic dwellings

***SPECIFIED SYSTEMS**

1. There are no specified systems in the building. ☒

OR

2. The specified systems for the building are as follows: (tick system present)

Tick applicable	
☒	SS 1- Automatic systems for fire suppression (for example. Sprinkler systems)
☒	SS 2- Automatic and manual emergency warning systems , Fire Alarm Type <u>BSC</u>
☐	SS 3- Electromagnetic or automatic doors or windows ☐ SS 3/1: Automatic doors ☐ SS 3/2: Access controlled doors ☐ SS 3/1: Interfaced fire or smoke doors or windows
☐	SS 4- Emergency lighting
☐	SS 5- Escape route pressurization systems
☐	SS 6- Riser mains
☐	SS 7- Automatic back-flow preventers
☐	SS 8- Lifts, escalators, or travellers or other systems for moving people or goods within a building
☐	SS 9- Mechanical ventilation or air conditioning systems
☐	SS 10- Building maintenance units
☐	SS 11- Laboratory fume cupboards
☐	SS 12- Audio loops or other assistive listening systems ☐ SS 12 / 1: Audio loops ☐ SS 12 / 2: FM radio frequency systems and infared beam transmission systems
☐	SS 13- Smoke control systems ☐ SS 13 / 1: Mechanical smoke control ☐ SS 13 / 2: Natural smoke control ☐ SS 13 / 1: Smoke curtains
☐	SS 14- Emergency power systems for, or signs related to, a system or feature specified in any clauses 1-13 ☐ SS 14 / 1: Emergency power systems ☐ SS 14 / 2 Signs
☐	SS 15- Other fire safety systems and features ☐ SS 15 / 1: Systems for communicating information to facilitate evacuation ☐ SS 15 / 2: Final exits ☐ SS 15 / 3: Fire separations ☐ SS 15 / 4: Signs for communicating information to facilitate evacuation ☐ SS 15 / 5: Smoke separations
Purpose Group: _____	
Maximum Occupants: _____	
Highest fire hazard category for building use: FHC _____	
New Compliance Schedule Required: YES ☐ NO ☒	
Existing Compliance Schedule requires amending YES ☐ NO ☐ if yes current CS NO: _____	

The following documents are attached to this application:

*Tick box to show documents you have attached to this application:		Council Use Only		
		✓ Accept	✗ Decline	N/A
☒	Roof Cladding / Gutter / Fascia Warranty - Project specific document, signed			
☐	Wall Cladding Warranty - Project specific document, signed			
☐	Exterior Joinery Warranty - Project specific document, signed			
☐	Exterior Cladding System Warranty - Project specific document, signed			
☒	Wet Area Membranes Warranty - Project specific document, signed			
☒	As-Built Drainage - Project specific document, dimensioned & signed <i>Supplied to inspector the day of inspection CCC.</i>			
☒	Waste Water Disposal System installers declaration and service contract - Project specific document, signed. <i>Supplied to inspector. CCC.</i>			
☐	Energy Works Certificate - Gas - Project specific document, signed			
☒	Energy Works Certificate - Electricity - Project specific document, signed <i>Supplied to inspector CCC.</i>			
☒	Installers Declaration - Self Certified Woodburners - Project specific document, signed by HDC approved installer		4 Sep 2011	
☐	PS3 - Construction - Project specific document, signed			
☐	PS4 - Construction Review / Site Notes - Project specific document, signed			
☐	SS2 Emergency Warning System - Commissioning Certificate - Project specific document, signed by accredited body			
☐	Photographs Project specific			
☒	Any other Installers declaration -- Project specific document, signed			
☐	Other (specify)			

COUNCIL USE ONLY

	Checked	Officers Comments	
Final Inspection Completed	15.2.10	BC Passed 26.01.10.	Decision: <u>Issue</u> / Refuse to issue Procedure Type: CCC Issue Reason: <i>Approved by council as per</i> Outcome: <u>Issue C.C.C.</u> DATE: <u>4-5-10.</u> BCO: <i>[Signature]</i>
Application Form Completed	15.2.10	All details completed.	
Development Contributions	15.2.10	No DC owing, checked register.	
Reconciliation of inspections	✓		
Reconciliation of fees	✓	Balance Paid	
Reconciliation of documents	✓		



**HOROWHENUA
DISTRICT
COUNCIL**

126-148 Oxford Street

Private Bag 4002

Levin

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

16 February 2010

COPY

Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

Application No: 2008/1589/021
Address: Lot 16, Waka Tete Place, Waitarere Beach
Description: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

Dear Sir/Madam

Thank you for your application for a Code Compliance Certificate for the above Building Consent.

In order for Horowhenua District Council to process your application, we require a copy of the following job specific documents:

- Wet Area Membranes Warranty
- Waste Water Disposal System installers declaration and service contract

Please ensure that any requested documents refer directly to the above Building Consent number and reference the specific property address.

A check of fees related to the above Building Consent shows that there are outstanding Building Consent fees of \$ 540.00

Once payment of the above amount has been received, we will continue processing this application. If the above fees have already been paid, please contact the writer upon receipt of this letter.

The processing of your Code Compliance Certificate application has been suspended pending receipt & consideration of the above requirements. Please be assured that your application will be given priority attention once this information is received.

If you have any queries please do not hesitate to contact me.

Regards

Bruce Harris
Building Advisory Officer



HOROWHENUA DISTRICT COUNCIL

126-148 Oxford Street

Private Bag 4002

Levin

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

BC/2008/1589/021

BUILDING ASSESSMENT REPORT

This report is to confirm progress inspections on your building project.

Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
27 January 2010 6682/2008	Final Inspection	Final inspection completed.	Pass

Outcome: all work completed as per the approved and consented plans.

Next Inspection: N/a ,consideration given to the issue of the CCC on application on the form 6 .

Inspector: Barry Cardiff

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

FINAL INSPECTION

ADDRESS: 358 6716 Naka Tete Place OWNER: P & D Wing
BC NUMBER: CS/1589 CONTRACTOR: Signature Homes
INSPECTOR: B. Barrett DATE: 21-1-10

INTERIOR	EXTERIOR	CERTIFICATES
☒ Layout as per plans	☒ Cladding type <u>UG (liner)</u>	☒ PSCR Received Structural
☒ Sinks drain properly without pulling traps/seals	☒ As per plans	☒ PSCR Received Effluent field
☒ Toilets flush properly with trap seal intact	☒ Roofing secure	☒ Certificates for exterior cladding
☒ Impervious floors to wet areas	☒ Roofing type	☒ Energy works certificate received
☒ Joinery installed and sealed to walls	☒ Barrier heights	☒ Gas
☒ Windows as per plans	☒ Overflows to enclosed decks	☒ Electric
☒ Ventilation adequate to rooms	☒ Windows flashed/sealed to soffit	☒ Drainage as built received
☒ Mechanical vents fitted and ducted to exterior	☒ Ground levels OK	☒ Street frontage OK
☒ Smoke detectors fitted	☒ Gas bottle location and hood over regulator	☒ Amended plans received if required
☒ Safety barriers are the correct height	☒ Subfloor insulation in place and protected	☒ Waterproofing certificate
☒ Safety glazing to shower doors and panels	☒ Subfloor ventilation	☒ Solar heating PS3
☒ Safety glazing to windows and doors as per plans	☒ Stucco sealed and painted	☒ Butynol certificate
☒ Handrails fitted to stairs	☒ Capillary break to stucco	FIRE-IN BUILT
☒ Restrictor stays on windows where required	☒ Gully heights OK	☒ Chamber cavity in good condition
☒ Waterproof seal to shower and basin	☒ Waste pipes sealed through foundations	☒ Lintel in good condition
☒ Water temperature checked <u>53</u> deg	☒ Waste pipes sealed into gullies	☒ Hearth correct clearance
☒ HWC secure 2 straps 180l 3 strap other	☒ Stormwater system completed	☒ Mantel clearance correct
☒ HWC relief pipe to outside if valve vented	☒ Retaining wall drainage connected to sump	☒ Chimney height over 4.6m
☒ HWC High or Low pressure	☒ Retaining walls as per plans	☒ Fire fan connected to socket
☒ HWC open or valve vented	☒ Terminal vents in place	☒ Seismic restraints fitted
☒ Tempering valve fitted	☒ Branch vents in place AAV must be 100mm	☒ Hush-type smoke detectors
☒ All valves accessible	☒ Weep holes to bricks and top venting	FIRE FREE-STANDING
☒ Gas hot water system	☒ Exterior weatherproof	☒ Hearth correct clearance
☒ Roof access available	☒ Sumps installed as per plans	☒ Seismic restraints fitted
☒ Insulation away from downlights	☒ Driveway completed as per plan	☒ Manufacturers tolerance correct
☒ Pipework lagged	☒ Secondary flow path for excess stormwater	☒ Ceiling penetration correct
☒ 1m of copper pipe from cylinder	☒ Landscaping completed Yes/No	☒ Chimney height over 4.6m
☒ Supply tank secure	☒ Gutter/downpipe sizes	☒ Wetback installed by plumber
☒ Cables clipped at access		☒ Flue shield fitted
☒ Firewall sheets stopped		☒ Inner flue secure in place and riveted SS
		☒ Framing in roof correct
		☒ Hush-type smoke detectors
	<u>Linear & Titan panels</u>	<u>Nature Flame</u>
		<u>pellet fire</u>
		<u>(EVOLUTION)</u>

NOTES:

Solar Heating
APV Plumbing Ltd
Henny Allison
22 Mulgrave St
Eschurst

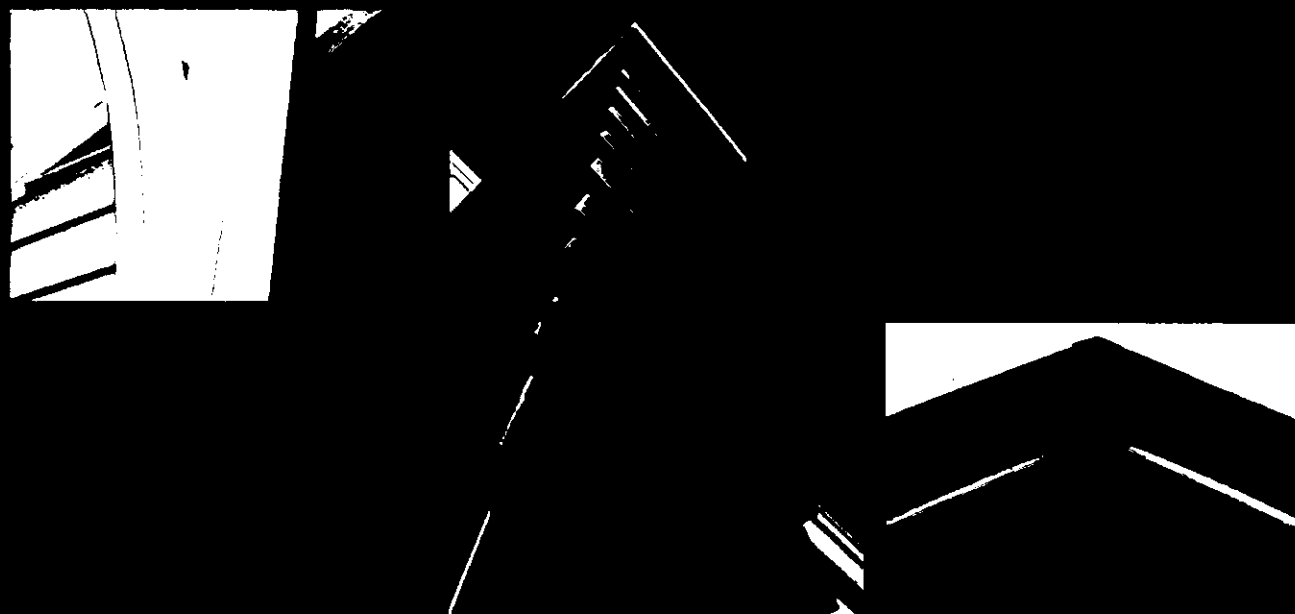
☐ Not Applicable
☒ Checked & Approved
☒ Failed

☒ Reinspection Required
☒ OK to issue CCC on receipt of Form 6
and reconciliation of file

LineaTM
WEATHERBOARD

NEW ZEALAND
SEPTEMBER 2008

TECHNICAL SPECIFICATION



James Hardie

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WE VALUE YOUR FEEDBACK

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

James Hardie
 Fax 0800 808 988
 literaturefeedback@jameshardie.co.nz

1 APPLICATION AND SCOPE

1.1 APPLICATION

Linea™ Weatherboard is a 16mm thick, pre-primed bevel back fibre cement weatherboard and is classified as lightweight wall cladding suitable for residential and light commercial construction using timber framed external walls. Linea Weatherboard is available in 135mm, 150mm and 180mm widths.

James Hardie also has available

- CLD® Fascia in two widths. CLD Fascia is a 16mm thick, pre-primed fibre cement product designed to accommodate James Hardie soffit linings.
- CLD® Trim comes in a variety of widths for use as decorative trims around openings and external corners. CLD Trim is a 16mm thick, pre-primed fibre cement product.

If you are a specifier

Or other responsible party for a project ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

If you are an installer

Ensure that you follow the design, moisture management and associated figures and material selection provided by the designer and this James Hardie Technical Specification. All the details provided in this document must be read in conjunction with the specifiers specification.

Make sure your information is up to date

When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or, if you need more information, visit www.jameshardie.co.nz or Ask James Hardie™ on 0800 808 868.

1.2 SCOPE

This specification covers the use of Linea Weatherboard for buildings that fall within the scope of limitations of NZBC Acceptable Solution 'E2/AS1', paragraph 1.1.

This specification includes the use of Linea Weatherboard in both direct to stud and cavity construction method and must be read in conjunction with the current BRANZ Appraisal for Linea Weatherboard.

1.3 DETAILS

Various Linea Weatherboard details are provided in the Details section of this document. This specification and details in CAD file are also available to download from our website at www.jameshardie.co.nz.

1.4 SPECIFIC DESIGN

For use of Linea Weatherboard outside this published scope, the architect, designer or engineer must undertake specific design. For advice on designs outside the scope of this specification, Ask James Hardie on 0800 808 868.

2 DESIGN

2.1 COMPLIANCE

Linea Weatherboard has been appraised by BRANZ.

Refer to Appraisal Certificate number 446 (2005) and 447 (2005) at www.branz.co.nz or www.jameshardie.co.nz

Note: the scope of the Appraisal Certificate takes precedence over the scope of this specification.

2.2 RESPONSIBILITY

The specifier or other party responsible for the project must ensure that the information and details in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope of this technical specification. For applications outside the scope of this literature and figures which are not provided herein, the architect, designer or engineer must undertake specific design and it should be ensured that the intent of their design meets the requirements of the NZBC.

All dimensions shown are in millimetres unless noted otherwise. All New Zealand Standards referenced in this manual are current edition and must be complied with.

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

2.3 SITE AND FOUNDATION

The site on which the building is situated must comply with the New Zealand Building Code (NZBC) Acceptable Solution E1/AS1 'Surface Water'. Foundation design must comply with the requirements of NZS 3604 'Timber Framed Buildings' or be as per specific engineering design. The grade of adjacent finished ground must slope away from the building to avoid any possibility of water accumulation in accordance with NZBC requirements.

2.4 GROUND CLEARANCES

The floor must have a minimum clearance to paved or unprotected ground as required by NZS 3604.

Linea Weatherboards must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604. The bottom of claddings must comply with NZBC Acceptable Solution, 'E2/AS1' section 9.1.3.

On the roofs and decks the minimum clearance must be 50mm. Do not install external cladding such that it may remain in contact with water or ground.

2.5 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.

Wall construction design must effectively manage moisture, considering both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled. Walls shall include those provisions as required by NZBC Acceptable Solution 'E2/AS1' 'External Moisture'. In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing for waterproofing. The other

materials, components and installation methods used to manage moisture in the walls, must comply with the requirements of relevant standards and the NZBC. For information in relation to designing for weathertightness, refer to the Building Research Association of New Zealand (BRANZ) and the Department of Building & Housing (DBH) updates on the following websites, respectively www.branz.co.nz and www.dbh.govt.nz.

2.6 STRUCTURE

Timber framed buildings must be designed in accordance with NZS 3604 (Timber Framed Buildings). When the framing is provided as per the specific engineering design, the framing stiffness must be equivalent to or more than the stiffness requirements of NZS 3604.

2.7 WIND LOADING

Linea Weatherboard cladding is suitable for use in all New Zealand wind zones up to and including VH as defined in NZS 3604. A specific design is required for all situations when a building falls in a specific engineering design (SED) wind zone.

2.8 STRUCTURAL BRACING

Linea Weatherboard installed as per Linea Weatherboard specific bracing details will provide bracings for buildings designed and constructed in accordance with NZS 3604. The Linea Weatherboard bracing systems have been independently tested and certified by BRANZ using both construction methods i.e. direct fixed and cavity construction. The following range of bracings can be achieved

- Wind 68 – 120BU'S
- Earthquake 60 – 105 BU'S

Refer to the James Hardie Bracing manual for details.

2.9 FIRE RATED WALLS

Walls clad with Linea Weatherboard using a direct fix or cavity construction method can achieve fire ratings of up to 90/90/90 when constructed in accordance with the James Hardie 'Fire and Acoustic' Technical Specification Manual.

Refer to Fire and Acoustic Technical Specification Manual for further information about fire rated systems.

2.10 ENERGY EFFICIENCY

External walls constructed using Linea Weatherboard, bulk insulation, where the area of glazing is 30% or less of the total wall area and constructed as per this technical specification complies with the requirements for walls in NZBC Acceptable Solution H1/AS1 (NZBC Clause H1 Energy Efficiency – Third Edition), Replacement Table 1. To meet thermal insulation requirements for the construction, the bulk insulation as specified in Table-1 must be used. This insulation may be substituted with insulations having higher R-values. The thermal insulation of a wall gets affected when the depth of the timber framing is increased or decreased. The calculation used in Table 1 is based on a timber framing size 90 x 45mm and using an internal lining material such as James Hardie Villaboard® Lining or a 10mm plasterboard.

TABLE 1

INSULATION CAPABILITY		
Climate Zone	Construction R-Value Requirement	Minimum R-Value of Insulation Required
1 & 2	1.9 m ² °C/W	#R2.0
3	2.0 m ² °C/W	#R2.2
Total construction R-Value depends on the insulation material used and the framing ratio. The insulation material R-Values specified in this table are for studs spaced at 600mm c/c and nogs spaced at 800mm c/c. # To achieve higher R-Values of construction the wall insulation must be replaced with an insulation material having higher R-Values to suit the requirements. For further guidance on insulation requirement refer to current edition of 'House Insulation Guide' published by BRANZ.		

3 FRAMING

3.1 GENERAL

This Linea Weatherboard technical specification is only suitable for timber-framed buildings. Other framing materials are outside the scope of this specification.

3.2 DIMENSIONS

A 35mm minimum stud width is required unless noted otherwise in this specification.

3.3 TIMBER GRADE

Minimum timber grade requirements are No.1 framing grade in accordance with NZS 3631 'New Zealand Timber Grading Rules' or equivalent.

3.4 DURABILITY

To comply with NZBC requirements the external framing must be treated to a minimum H1.2 treatment. Refer to NZBC Acceptable Solution 'B2/AS1' Durability for further information about the durability requirements. For timber treatment information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round and Sawn Timber) for minimum timber treatment selection and treatment requirements. Also refer to framing manufacturer's literature for further guidance on timber selection.

Framing must be protected from moisture at sites in accordance with the recommendations of framing manufacturers.

Note: refer to NZS 3602 for information about the allowable moisture content in timber.

3.5 FRAME CONSTRUCTION

All timber framing sizes and set-out must comply with NZS 3604 and stud, nogs / dwangs centres as required by this specification.

3.5.1 DIRECT FIXED CONSTRUCTION METHOD

The following framing must be provided for direct fixed construction method:

- Studs must be provided at 600mm centres maximum.
- Nogs must be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.5.2 CAVITY CONSTRUCTION METHOD

The following framing must be provided for cavity construction method:

- When studs are at 600mm centres the nogs must be provided at 800mm centres maximum.
- When studs are at 400mm centres the nogs may be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.6 TOLERANCES

In order to achieve an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the requirements of NZS 3604. All framing must be made flush.

4 PREPARATION

4.1 BUILDING WRAP

Building wrap must be provided as per the requirements of NZBC Acceptable Solution 'E2/AS1' 'External Moisture' and NZS 3604. The building wrap must comply with Table 23 of 'E2/AS1'. The building wrap must be fixed in accordance with 'E2/AS1', NZS 3604 and the wrap manufacturer's recommendations. Walls which are not lined on the inside face e.g. garage walls or gable ends must include a rigid sheathing or an air barrier behind the cladding which complies with the requirements of NZBC Acceptable Solution 'E2/AS1'.

4.2 FLASHING

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to weatherboard installation. Please refer to moisture management requirements in Clause 2.5. The building wrap must be appropriately incorporated with penetration and junction flashings. Materials must be lapped in such a way that water tracks down to the exterior on the face of building wrap. James Hardie will assume no responsibility for water infiltration within the wall due to poor installation of flashings or building wraps. The selected flashing materials must comply with the durability requirements of Table 20 of Acceptable Solution 'E2/AS1'.

4.3 VENT STRIP

The James Hardie uPVC cavity vent strip must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. James Hardie uPVC vent strip has an opening area of 1000mm²/m length. It is important that the openings in the vent strip are kept clear and unobstructed to allow free drainage and ventilation of cavities.

4.4 CAVITY BATTENS

Buildings with a risk score of 13-20 calculated in accordance with NZBC Acceptable Solution 'E2/AS1' Table 2 require Linea Weatherboards to be installed on a cavity.

The cavity battens provide airspace between the frame and cladding and are considered a "packer" only in this specification.

The timber battens must be minimum H3.1 treated in accordance with NZS 3640 (Chemical preservation of Round and sawn timber) to comply with the durability requirements of 'B2/AS1'.

Cavity battens must comply with 'E2/AS1' and:

- be minimum 18mm thick.
- be minimum as wide as the width of studs.
- be fixed by the cladding fixings to the main framing through the building wrap.
- until claddings are fixed the battens need only to be tacked to framing.

(Batten fixing is required temporarily to keep them straight on the wall during construction.)

The cavity battens are installed as described below:

- Fix cavity battens to studs.
- Battens should be fixed with 40 x 2.8mm nails at 800mm centres maximum.

4.5 INTERMEDIATE SUPPORT

Where studs are at 600mm centres an intermediate means of restraining the building wrap and insulation from bulging into the cavity shall be installed. An acceptable method to achieve this is using a:

- intermediate cavity batten between the studs.
- 75 mm galvanized mesh.
- polypropylene tape.

No intermediate supports are required:

- where studs are at 400mm centres. Or;
- when rigid sheathings instead of building wraps are used.

4.6 CORNERS

Anticipated joist shrinkage must be allowed for in the design process. Do not run trims or aluminium extrusions continuously across solid floor joists. There are a number of options to select from when detailing external corners:

- 90° corner soaker in aluminium, copper or stainless steel. Refer to Figures 7 and 32.
- Box corners using CLD® Trim. Refer to Figures 3, 4 and 29.
- Mitred corners to weatherboards. Refer to Figures 5 and 30.
- Aluminium boxed corners. Refer to Figures 6 and 31.

There are a number of options to select from when detailing internal corners:

- Scribed corner. Refer to Figures 8 and 33.
- 90° or 135° Aluminium W-mould. Refer to Figures 9, 10, 34 and 35.

4.7 JUNCTIONS AND PENETRATIONS

Refer to Clause 2.5 of this specification for moisture management requirements. All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for Linea Weatherboards which meet the requirements of E2 'External Moisture', an approved document of the NZBC. Refer to Figures 11 to 24 and 36 to 53.

5 FIXING LINEA WEATHERBOARD

5.1 GENERAL

The horizontal lap of Linea Weatherboards must be 30mm minimum. Linea Weatherboards must be kept dry whilst in storage prior to and during fixing. Cut ends which are exposed after installation or where sealant is applied to the boards such as slimline box corners, internal corners, mitred external corners etc, must be primed prior to installation. Dust and loose material must be removed before priming.

An H3.1 treated timber cant strip must be provided to support the bottom board on the wall. Refer to Figure 1 and Figure 26.

5.2 FASTENER DURABILITY

Fasteners must meet the minimum durability requirements of the NZBC. NZS 3604 specifies the requirements for fixings material to be used in relation to the exposure conditions and are summarised in Table 2.

TABLE 2:

EXPOSURE CONDITIONS AND NAIL SELECTION
PRESCRIBED BY NZS 3604

NAIL MATERIAL		
Sea Spray Zones *	Zone 1 outside sea spray zone and Zones 2 – 4 and Geothermal hot spots	Bracing – All zones
Grade 316 Stainless	Hot-dipped galvanised or 316 stainless	Grade 316 Stainless

* (Zone 1 areas where local knowledge dictates that increased durability is required, appropriate selection shall be made)

Also refer to NZBC Acceptable Solution 'E2/AS1' Table 20 and 21 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

5.3 NAIL SIZE AND FIXING METHOD

Linea Weatherboards and CLD Trim must be fixed to timber with the types of nails specified in Tables 3 and 4, in accordance with the following requirements:

- Linea Weatherboard can either be face/exposed fixed or concealed fixed.
- Linea Weatherboard must always be fixed into studs. Fixing centres to coincide with stud spacing. Refer to Figure 2 and 28.

- All concealed nails must be driven flush with the board surface.
- When concealed fixing Linea Weatherboards, nails must be driven under the lap of boards, except at all corners and vertical edges of openings where Linea Weatherboards must be face fixed. Refer to Figure 2 and Figure 28.
- Nails must be fixed 25mm from the end of the board when hand nailing. For gun nailing refer to Section 5.4.
- When using concealed fixing method any gaps that may appear under the lap due to site conditions can be minimised by fixing jolt head nails as per the face fixing method through every alternate stud. Weatherboards at every other alternate stud can be tied together by using 30mm brad nails, if required.

TABLE 3

NAIL REQUIREMENTS FOR LINEA WEATHERBOARDS

DIRECT TO STUD FIXING	
Concealed Nailing	
40 x 2.8mm HardiFlex® nails	Finish flush with the board surface
Face Nailing	
60 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling Stainless steel jolt heads will require pre-drilling* of the top weatherboard.
CAVITY FIXING	
Concealed Nailing	
60 x 3.15mm HardiFlex® nails	Finish flush with the board surface
Face Nailing	
75 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling Stainless steel jolt heads will require pre-drilling* of the top weatherboard.

TABLE 4:

NAIL REQUIREMENTS FOR TRIM

Single Thickness	60mm jolt head nails. If fixing over Linea Weatherboard use predrilled* 75 x 3.15mm jolt head nails.
Double Thickness	60mm jolt head nails.
Single plus packer	If fixing over Linea Weatherboard use 75 x 3.15mm jolt head nails through a pre-drilled* hole. When fixing to timber support use 60mm jolt head nails.

* Use a 3.0mm drill bit

Note: Special fixing arrangements are required for bracing and fire-resistance rated wall systems. For more information Ask James Hardie on 0800 808 868.

5.4 GUN NAILING

Linea Weatherboard can also be gun-nailed when concealed fixing method is used.

- Gun-nailing must not be used when Linea Weatherboard is used for bracing.
- Nails must be no closer than 50mm from the ends of boards when gun nailing is used — double studs will be required.
- Be minimum length and gauge as per Table 3.

6 JOINTING

The ends of Linea Weatherboards are jointed off-stud by means of a tongue and groove joint. Tongue and groove joints may be located centrally between studs but no closer than 100mm from the edge of a stud. The joints must be staggered by 600mm minimum. Sealant must be provided in the tongue and groove joint.

7 FINISHING

Note: Protective coating of Linea Weatherboard and CLD Trim is required in order to meet the durability requirements of the NZBC.

7.1 PREPARATION AND PRIMING

The Linea Weatherboard and CLD Trim must be dry before painting. Punch and fill all exposed nails a maximum of 2mm below the surface. Fill the hole with an exterior grade builders fill, allow to cure and sand smooth ready for priming. Prime the filled holes in accordance with paint manufacturer's specifications.

7.2 SEALANTS

All sealants must demonstrate the ability to meet the relevant requirements of the NZBC and hold a current BRANZ Appraisal certificate. Application and use of sealants must comply with manufacturer's instructions. Sealants, if coated, must be compatible with the paint system.

7.3 PAINTING

All Linea Weatherboards are pre-primed on their face and bottom edge with a factory applied acrylic base coat.

Linea Weatherboard must be painted within 90 days of installation. All exposed faces, including the top edges under the sills and bottom edges of Linea Weatherboard, Trim and accessories must be finished with latex exterior paint system complying with any of parts 7, 8, 9, and 10 of AS 3730.

Dark coloured paints can be used on Linea Weatherboard and Trim. The dark colours in certain environments may fade over a period of time. Special paints/coatings are required in certain harsh environments.

8 STORAGE AND HANDLING

Paint selection and the preparation required is dependant on paint chosen. Refer to the paint manufacturer for information before starting painting.

Linea Weatherboards and Trim must be laid flat on a smooth level surface. To ensure optimum performance, store weatherboards under cover and keep dry prior to fixing. If the weatherboards should become wet, allow to dry thoroughly before fixing. Do not carry weatherboards on the flat, carry in the vertical position to avoid excessive bending.

9 MAINTENANCE

It is the responsibility of the specifier to determine normal maintenance requirements to comply with NZBC Acceptable Solution 'B2/AS1'. The extent and nature of maintenance will depend on the geographical location and exposure of the building. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

- Washing down exterior surfaces every 6-12 months*,
- Re-applying exterior protective finishes**,
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants,
- Cleaning out gutters, blocked pipes and overflows as required,
- Pruning back vegetation close to or touching the building,
- The clearances between the bottom edge of Linea Weatherboard and the finished/unfinished ground must always be maintained.

**Do not use a water blaster to wash down the cladding.*

***Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.*

10 PRODUCT INFORMATION

10.1 MANUFACTURING AND CLASSIFICATION

James Hardie New Zealand is an ISO 9001(2000) Telarc certified manufacturer. Linea Weatherboard and CLD Trim are manufactured to meet the requirements of AS/NZS 2908.2: 2000 'Cellulose-Cement Products'. Linea Weatherboard has a classification of Type A Category 3 in accordance with this Standard. Linea Weatherboard is a reduced density cellulose cement formulation incorporating James Hardie patented CLD® (Ceramic Low Density) technology. Linea Weatherboard has a bevel back and tongue and groove at the ends for jointing. The bottom front edge of Linea Weatherboard is chamfered. The weatherboards are supplied pre-primed on their face and bottom edge with an acrylic primer.

Linea Weatherboards and CLD Trim are identified by the printing at regular intervals of the name LINEA on the back face.

10.2 JAMES HARDIE TRIM

The CLD Trim, used for box corners, around windows and doors as well as special architectural features, is also made with the CLD technology and is supplied pre-primed with an acrylic primer.

10.3 DURABILITY

Linea Weatherboard and Trim, when installed and maintained as per the technical specification, will meet the durability requirements for claddings as required in the NZBC Approved Document B2 'Durability'.

10.3.1 RESISTANCE TO MOISTURE/ROTTING

Linea Weatherboard and CLD Trim have demonstrated resistance to permanent moisture-induced deterioration (rotting) by passing the following tests in accordance with AS/NZS2908.2:

- Water Permeability (Clause 8.2.2)
- Warm Water (Clause 8.2.4)
- Heat Rain (Clause 6.5)
- Soak Dry (Clause 8.2.5).

10.3.2 RESISTANCE TO FIRE

Linea Weatherboard and CLD Trim has the following Early Fire Hazard Indices (tested to AS 1530 Part 3).

TABLE 5:

EARLY FIRE HAZARD INDICES	
Flammability (FI)	0
Spread of Flame Index (SFI)	0
Heat evolved index	0
Smoke developed index (SDI)	0 - 1

10.3.3 ALPINE REGIONS

In regions subject to freeze/thaw conditions, Linea Weatherboard must not be in direct contact with snow or ice build up for extended periods, e.g. external walls in alpine regions subject to snow drifts over winter.

The Linea Weatherboard has been tested in accordance with AS/NZS 2908.2 Clause 8.2.3.

10.4 PRODUCT SIZES AND MASS

Available sizes of Linea Weatherboard and CLD Trim and its weight are given in Table 6.

10.5 SIZE AND WEIGHT

Linea Weatherboard is categorised as a Light Weight Wall Cladding as described in NZS 3604. Physical properties of Linea Weatherboard and CLD Trim are provided in Table 6.

11 SAFE WORKING PRACTICES

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'Score and Snap' knife, fibre cement shears or, where not feasible, use a HardiBlade® Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheets available at www.jameshardie.co.nz. FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES

CUTTING OUTDOORS

- Position cutting station so that wind will blow dust away from user or others in working area.
- Use a dust reducing circular saw equipped with HardiBlade® Saw Blade and HEPA vacuum extraction.

DRILLING/OTHER MACHINING

When drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.

IMPORTANT NOTES:

1. NEVER use a power saw indoors
2. NEVER use a circular saw blade that does not carry the HardiBlade® logo
3. NEVER dry sweep – Use wet suppression or HEPA Vacuum
4. NEVER use grinders
5. ALWAYS follow tool manufacturer's safety recommendations

P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

WORKING INSTRUCTIONS

Refer to Recommended Safe Working Practices before starting any cutting or machining of product.

HARDIBLADE® SAW BLADE

The HardiBlade® Saw Blade used with a dust-reducing saw connected to a HEPA vacuum is ideal for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.



HOLE-FORMING

For smooth clean cut circular holes:

Mark the centre of the hole on the sheet.

Pre-drill a 'pilot' hole.

Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.

For irregular holes:

Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.



Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.

STORAGE AND HANDLING

All James Hardie building products should be stored to avoid damage, with edges and corners of the sheets protected from chipping.

James Hardie building products must be installed in a dry state and be protected from rain during transport and storage. The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water or moisture, etc.

QUALITY

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

12 PRODUCT SIZES

TABLE 6:

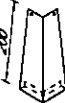
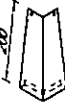
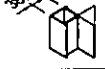
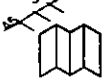
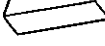
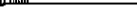
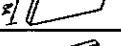
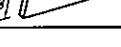
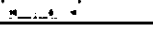
LINEA WEATHERBOARD AND TRIM SIZES									
						COVERAGE INFORMATION			
Product	Length (mm)	Width (mm)	Thickness (mm)	End Details	Effective Cover (mm)	No. of planks/ metre height (approx.)	Mass kg/lineal m (approx. at EMC)	Mass kg/m ² approx. at EMC)	weight/pack (60 units/ pack)
135 Linea Weatherboard	4200*	135	16	T & G	105	9.5	2.62	24.93	660.00
150 Linea Weatherboard	4200*	150	16	T & G	120	8.3	3.1	25.70	781.00
180 Linea Weatherboard	4200*	180	16	T & G	150	6.7	3.57	23.92	899.00
84mm CLD Trim	2600	84	16	Square	N/A	N/A	1.6	N/A	N/A
100mm CLD Trim	2600	100	16	Square	N/A	N/A	1.9	N/A	N/A
135mm CLD Trim	4200	135	16	T & G	N/A	N/A	2.6	N/A	N/A
180mm CLD Trim	4200	180	16	T & G	N/A	N/A	3.4	N/A	N/A

*Length is 4200mm plus 5mm for the tongue and groove making overall length 4205mm

*The effective thickness of finished Linea Weatherboard on the wall at the lap is approximately 33 to 35mm

13 ACCESSORIES

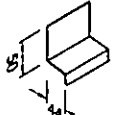
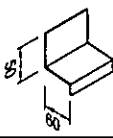
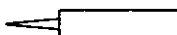
ACCESSORIES/TOOLS SUPPLIED BY JAMES HARDIE

	ACCESSORY AND MATERIAL NUMBER	SIZE (MM)	MATERIAL / APPEARANCE
	External corner soaker 90° for 180mm weatherboards • Aluminium 301186 • Copper 301188 • Stainless Steel 301197	200 long	Self colour
	External corner soaker 135° for 180mm Linea weatherboards 301178	200 long	Self colour
	External corner soaker 90° for 150mm weatherboards • Aluminium 302820 • Stainless Steel 302821	170 long	Self colour
	External corner soaker 90° for 135mm weatherboards • Aluminium 301185 • Copper 301187 • Stainless Steel 301196	155 long	Self colour
	External Slimline Box Corner Mould 301195	2700 long	Etch Primed Aluminium
	Box Corner 'Z' Flashing 301203	2700 long	uPVC Grey
	Internal 'W' Mould 90° 301184	2700 long	Etch Primed Aluminium
	Internal 'W' Mould 135° 301183	2700 long	Etch Primed Aluminium
	Vent Strip 302490	3000 long	uPVC White
	JH Corner Under Flashing 50 x 50 303745	3000 long	uPVC White
	Jolt Head Nail 316 Stainless Steel 301233	60 x 3.15mm	Self colour
	Jolt Head Nail 316 Stainless Steel 301234	75 x 3.15mm	Self colour
	Inseal 3109 Sealing Strip 302324	5 x 3 x 25	Black compressible foam
	CLD Trim 16mm 401943	84 x 2600 long	Fibre Cement primed
	CLD Trim 16mm 401930	100 x 2600 long	Fibre Cement primed
	HardiFlex nail - Jar - 5kg 302781 302782	60 x 3.15mm	316 Stainless Steel
	HardiFlex nail - Jar - 5kg 302783 302784	60 x 3.15mm	Hot Dip Galvanised
	HardiBlade® Saw Blade 300660	4 tooth - 184mm	Diamond Tipped
	CLD Fascia - 180mm - 230mm 401843 402230	4200 long	Fibre cement Primed

ACCESSORIES NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with its Linea Weatherboard and CLD Trim.

James Hardie does not supply these products. There may also be some other accessories required depending upon the application. Please contact component manufacturer for information on their warranties and further information on their products.

	ACCESSORY AND MATERIAL NUMBER	SIZE (MM)	MATERIAL / APPEARANCE
	Head Flashing for Direct Fixed without CLD Trim facings	To suit	Etch Primed Aluminium/ Powder Coated
	Head Flashing for Direct Fixed with CLD Trim facings	To suit	Etch Primed Aluminium/ Powder Coated
	HardiFlex nail	40 x 2.8mm	316 Stainless Steel
	HardiFlex nail	40 x 2.8mm	Hot Dip Galvanised
	Flexible Sealant or Expandable foam	Tube	Fosroc, Holdfast
	PEF Rod	Polyethylene foam	Fosroc or similar
	Flashing Tape	Proprietary tape to adhere to building wrap	Tyvek, Protecto wrap or similar
	Flashing material as per Table 20, 'E2/AS1'		Flashing Fabricator
	Jolt Head Nail - Hot Dip Galvanised or 316 Stainless Steel	50 x 2.8 St.Steel 50 x 2.8 Galvanised 60 x 3.15 Galvanised 75 x 3.15 Galvanised	Self colour
	Planted Sill	As shown	H3.1 Treated Timber Timber Merchant or cut on site
	Titanium Coated High Speed Drill Bit	3.0mm	
	Timber Scriber	As required	H3.1 Treated Timber Timber Merchant or cut on site
	Fibre Cement Cutting Blade	254mm	Diamond Tipped
	Fibre Cement Cutting Blade	305mm	Diamond Tipped
	Exzza Meter Box		
	Cant Strip Redway Developments 03 358 8775	To suit	uPVC

14 DETAILS

Various details outlined in the following table are available on Pages 13 to 38.

TABLE 7:

DETAILS				
DESCRIPTION	DIRECT FIXED		CAVITY CONSTRUCTION	
	FIGURE	PAGE	FIGURE	PAGE
Foundation Detail and Soffit Detail	Figure 1	13		
Weatherboard Fixing	Figure 2	13	Figure 28	24
Boxed Corner	Figure 3 & 4	14	Figure 29	25
Mitre Corner	Figure 5	15	Figure 30	25
Aluminium Box Corner	Figure 6	15	Figure 31	25
External Corner Soaker	Figure 7	16	Figure 32	26
Internal Corner	Figure 8	16	Figure 33	26
Internal 135° Aluminium 'W' Mould Corner	Figure 9	17	Figure 34	27
Internal 90° Aluminium 'W' Mould Corner	Figure 10	17	Figure 35	27
Window Sill with Facings	Figure 11	17	Figure 37	28
Window Head with Facings	Figure 12	18	Figure 38	29
Window Jamb with Facings	Figure 13	18	Figure 39	29
Window Sill without Facings	Figure 14	18	Figure 40	29
Window Head without Facings	Figure 15	19	Figure 41	30
Window Jamb without Facings	Figure 16	19	Figure 42	30
Head Flashing Termination	Figure 17	19	Figure 43	31
One Piece Apron Flashing Joint	Figure 18	20	Figure 44	32
Pipe Penetration	Figure 19	20	Figure 46	33
Meter Box at Head	Figure 20	21	Figure 47	34
Meter Box at Sill	Figure 21	21	Figure 48	34
Meter Box at Jamb	Figure 22	21	Figure 49	34
Cavity Fix Meter Box			Figure 50	35
Parapet Flashing	Figure 23	22		
Deck Junction	Figure 24	22		
Batten Fixing			Figure 25	23
Foundation Detail			Figure 26	23
Soffit Detail			Figure 27	24
Batten Layout at Window Opening			Figure 36	28
One Piece Gutter/Wall Junction			Figure 45	33
Drainage Joint			Figure 51	36
Enclosed Deck Balustrade to Wall			Figure 52	37
Enclosed Balustrade to Wall			Figure 53	37
Enclosed Deck	Figure 54	38	Figure 54	38

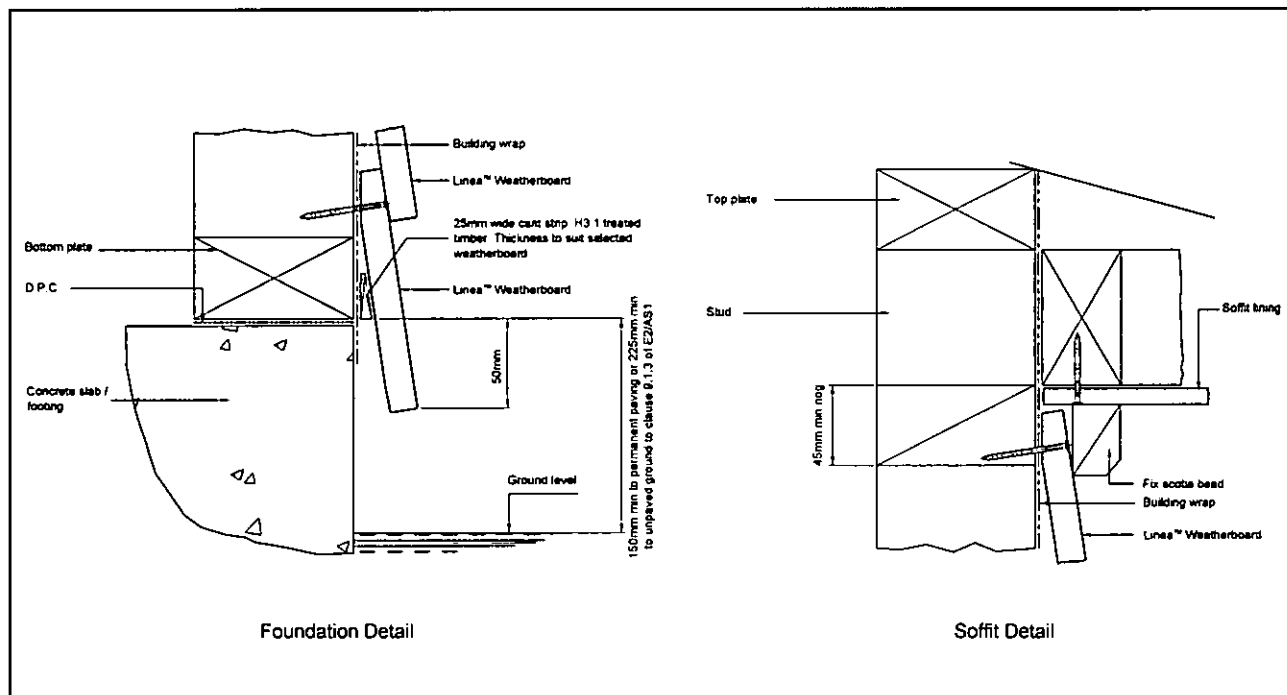


FIGURE 1: DIRECT FIX FOUNDATION DETAIL AND SOFFIT DETAIL

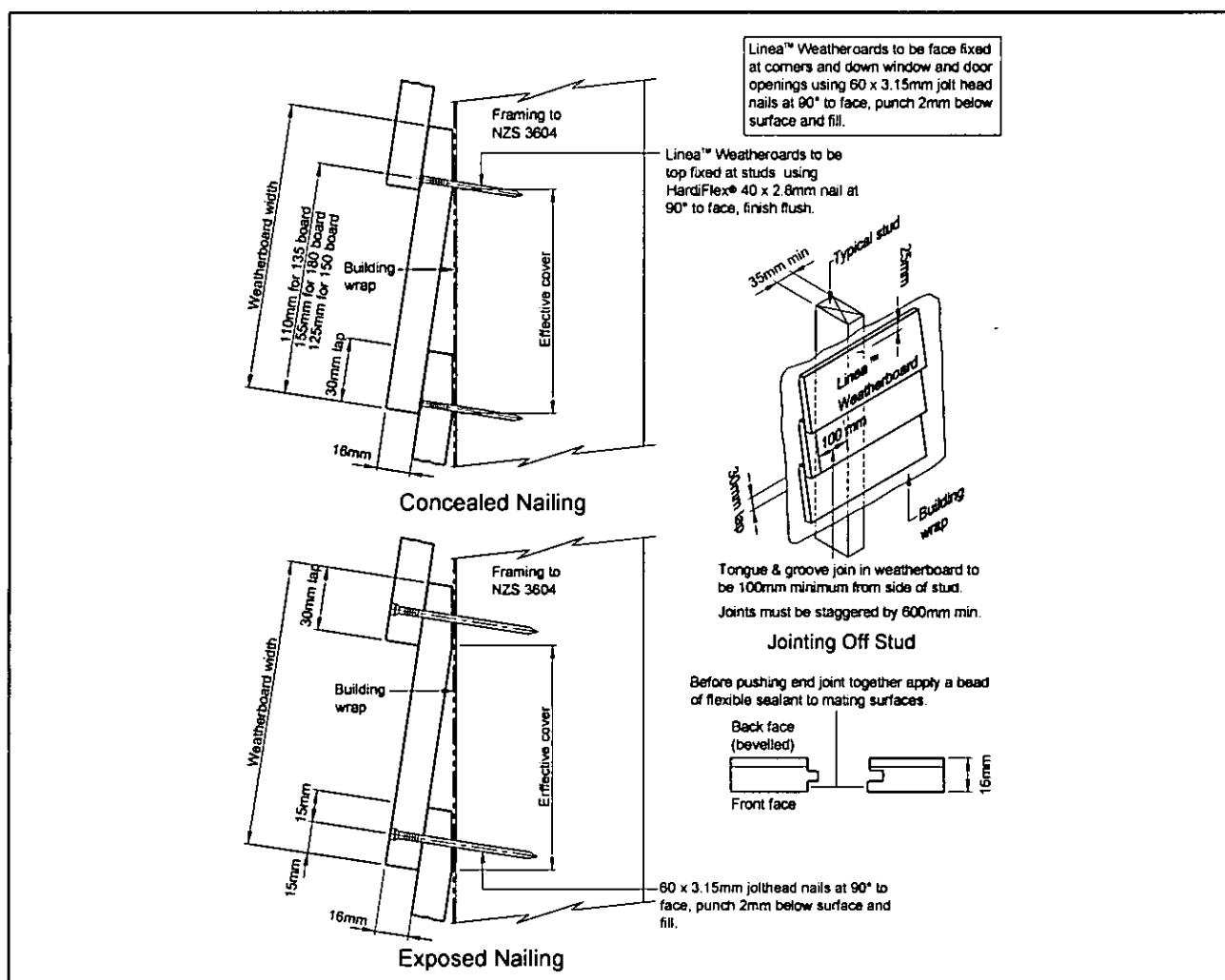


FIGURE 2: DIRECT FIX WEATHERBOARD FIXING

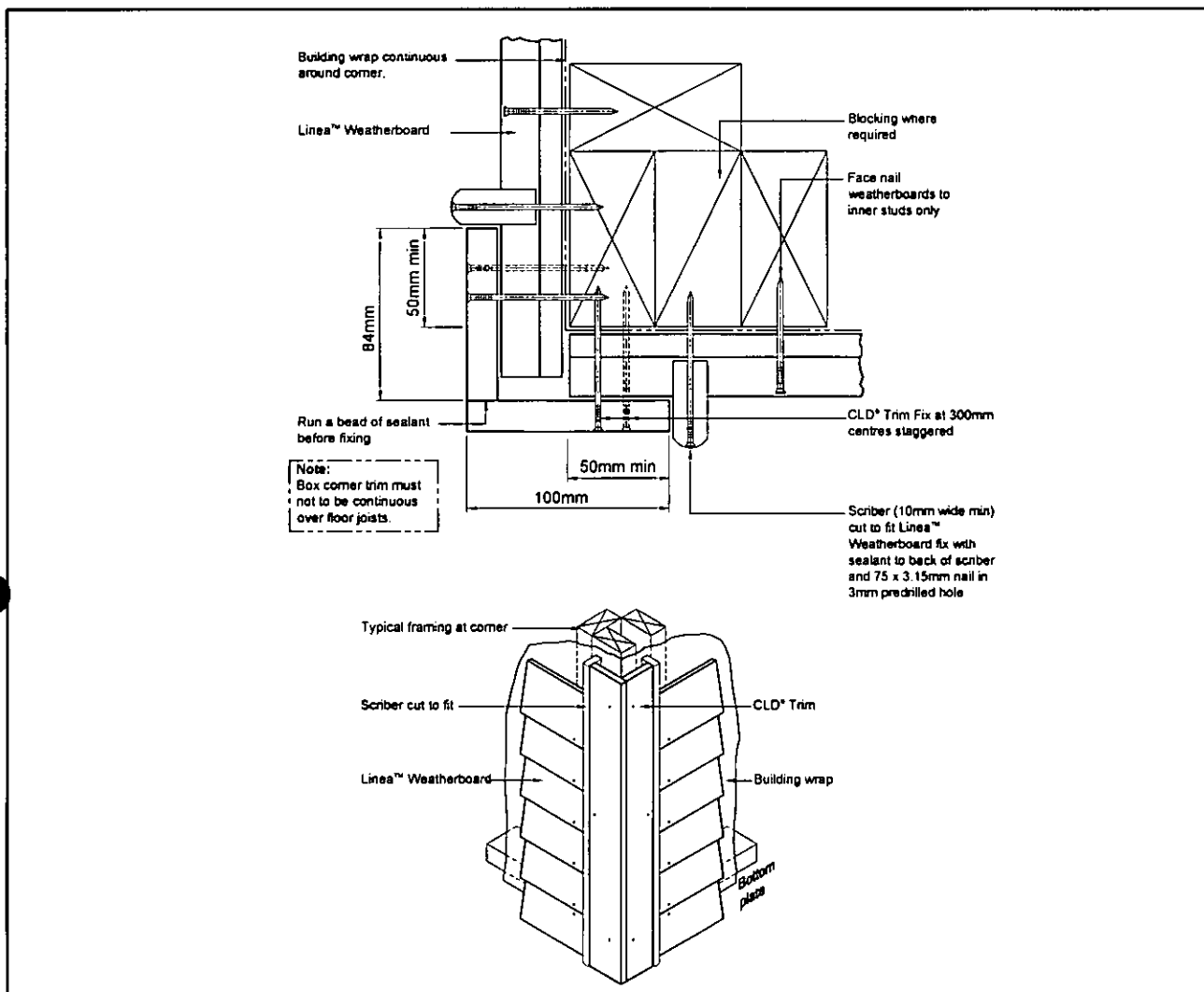


FIGURE 3: DIRECT FIX BOXED CORNER

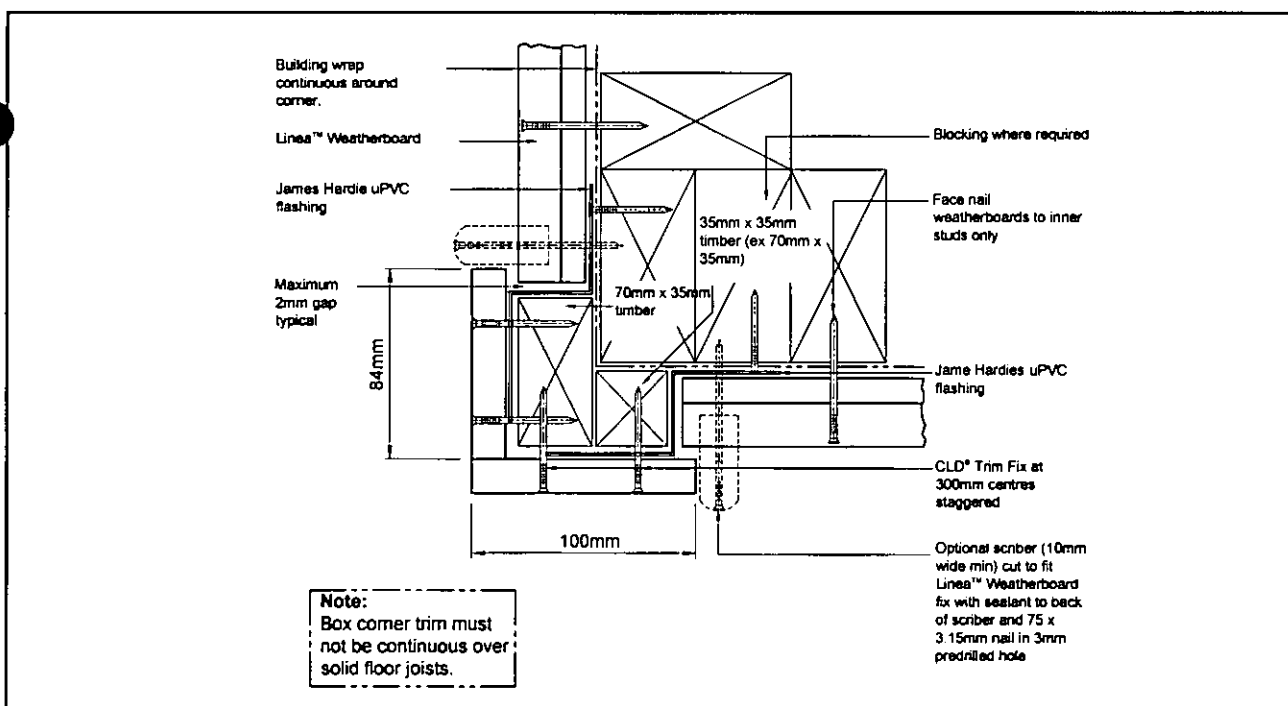


FIGURE 4: DIRECT FIX BOXED CORNERS

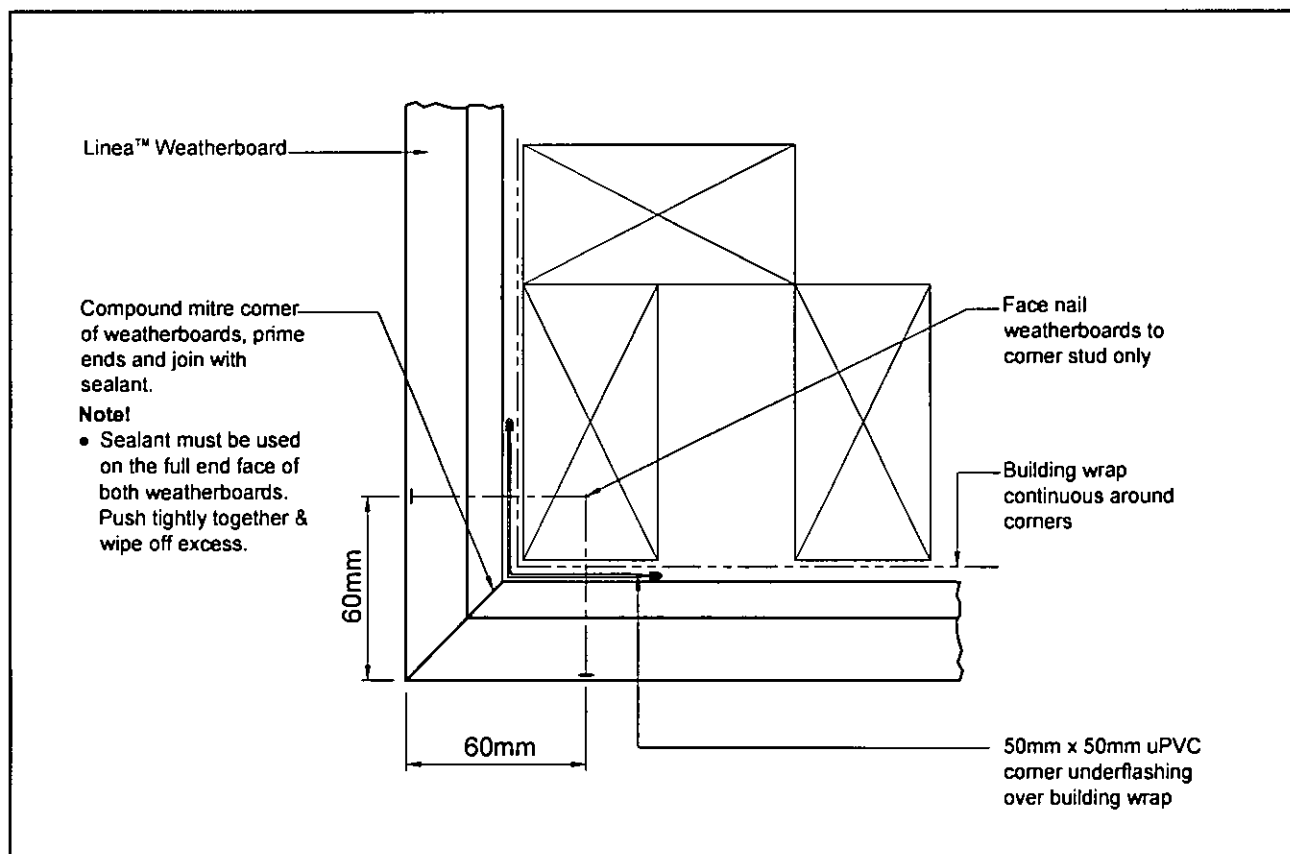


FIGURE 5: DIRECT FIX MITRE CORNER

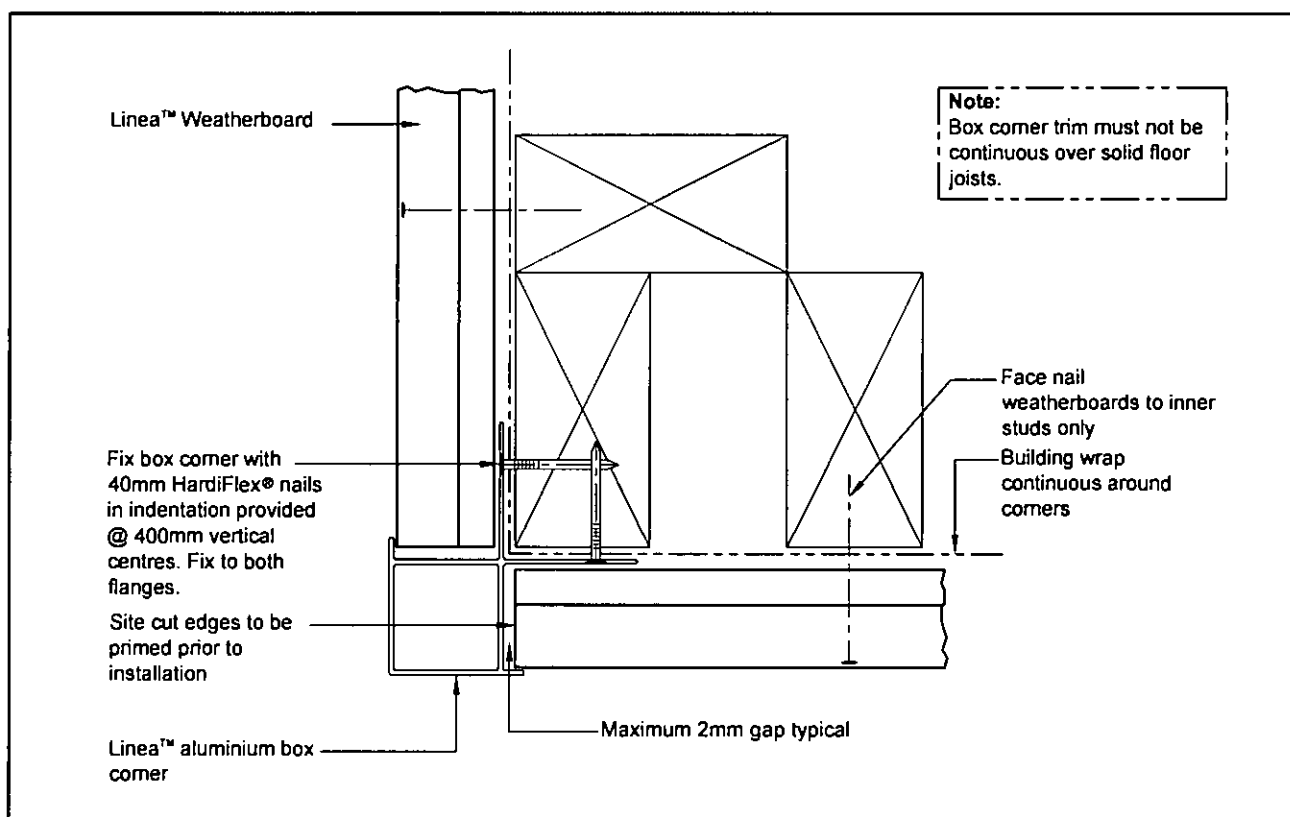


FIGURE 6: DIRECT FIX ALUMINIUM BOX CORNER

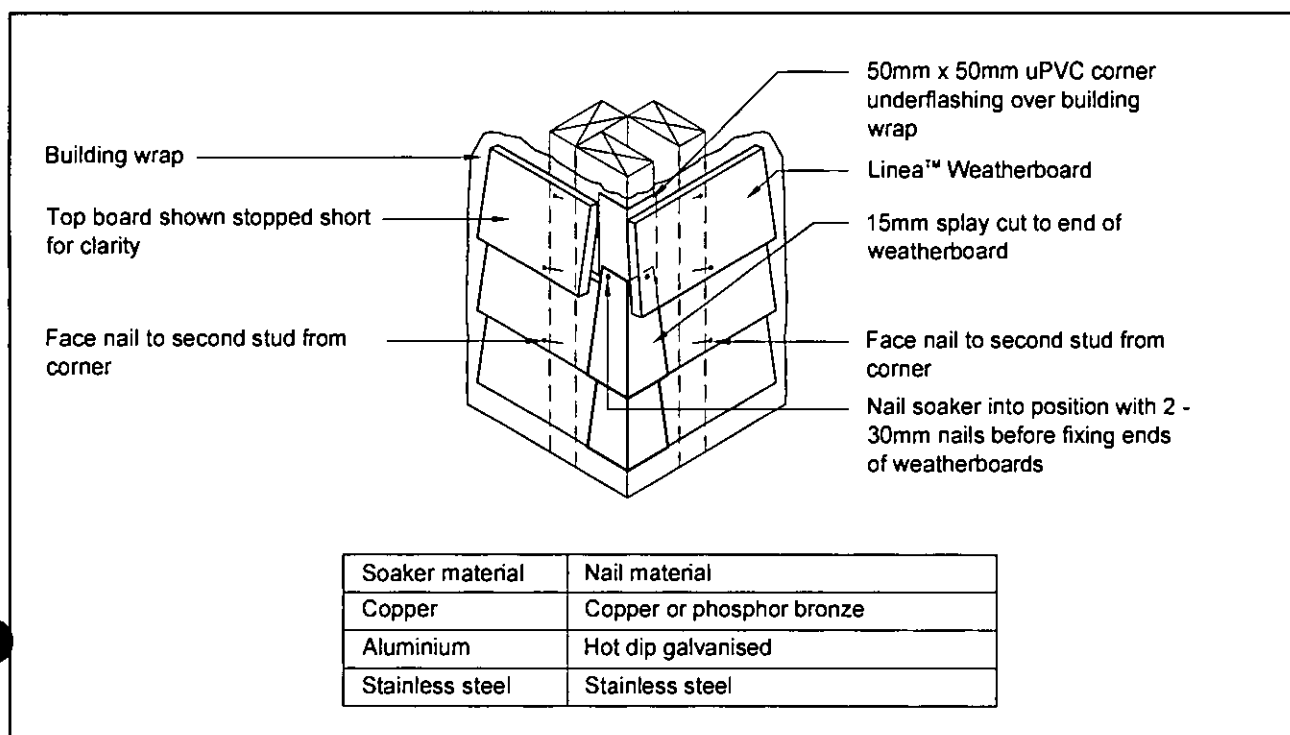


FIGURE 7: DIRECT FIX EXTERNAL CORNER SOAKER

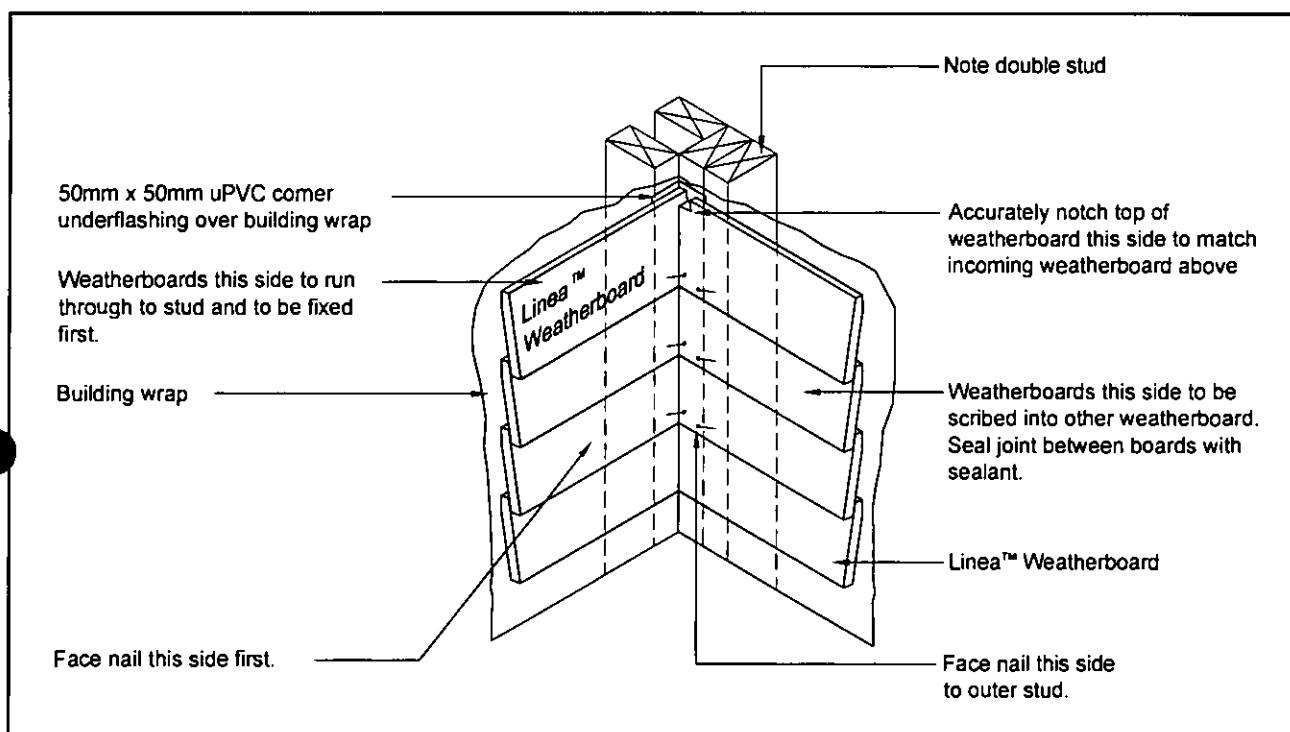


FIGURE 8: DIRECT FIX INTERNAL CORNER

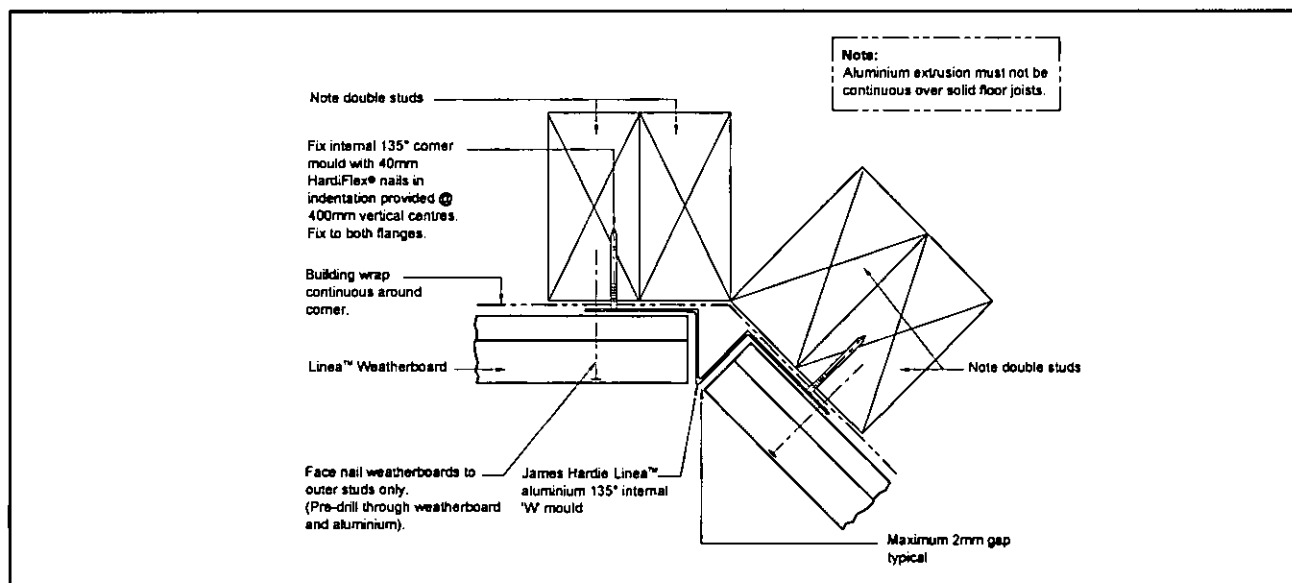


FIGURE 9: DIRECT FIX INTERNAL 135° ALUMINIUM 'W' MOULD CORNER

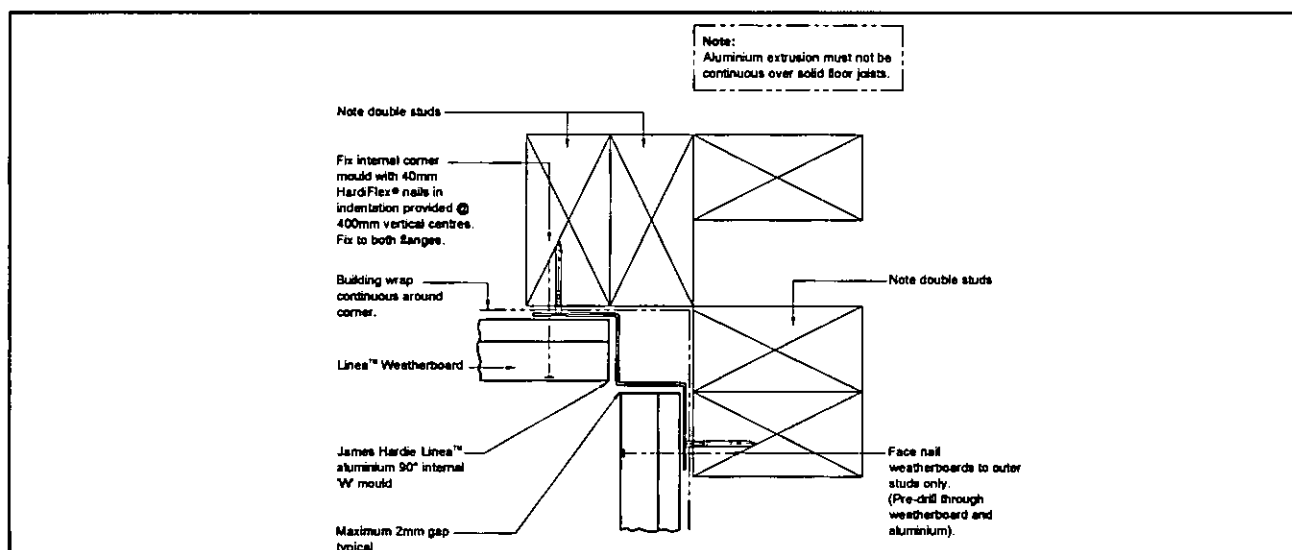


FIGURE 10: DIRECT FIX INTERNAL 90° ALUMINIUM 'W' MOULD CORNER

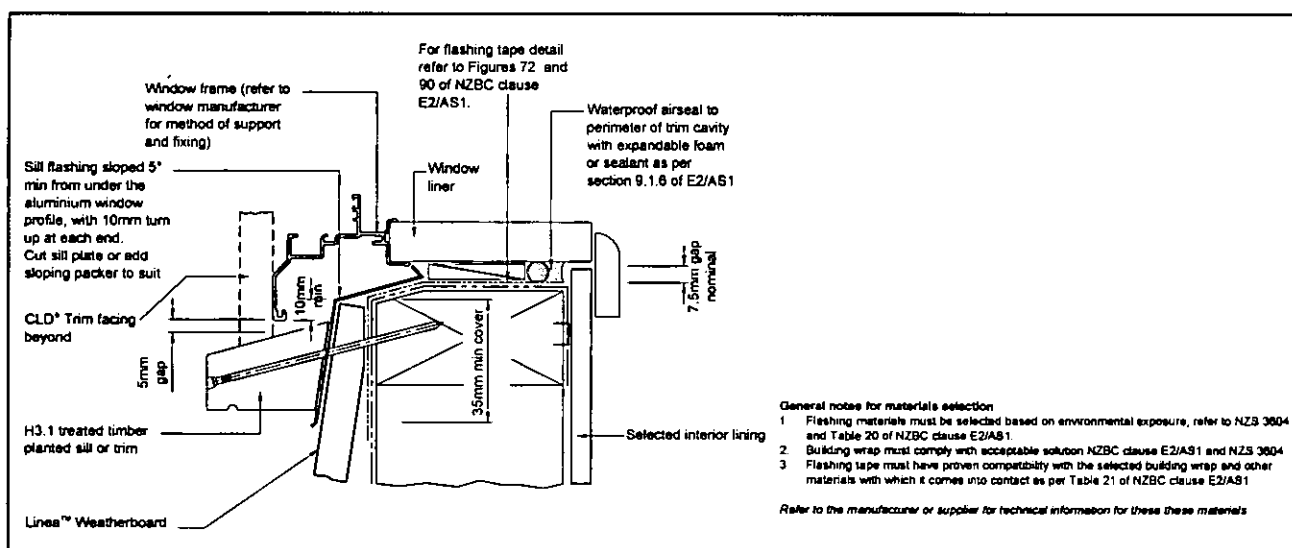


FIGURE 11: DIRECT FIX WINDOW SILL WITH FACINGS

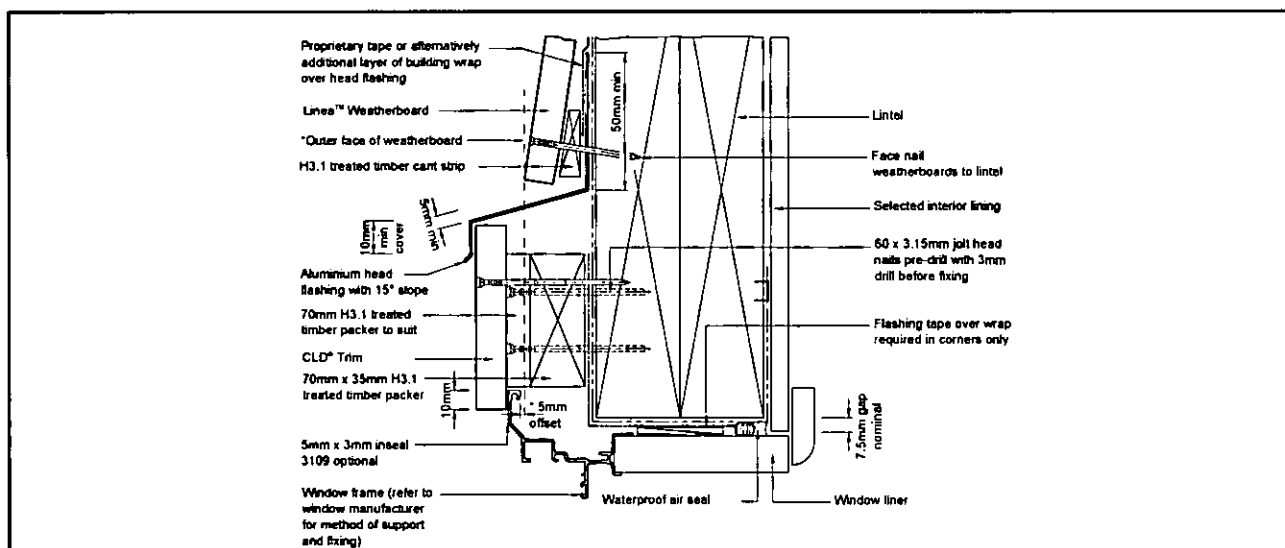


FIGURE 12: DIRECT FIX WINDOW HEAD WITH FACINGS

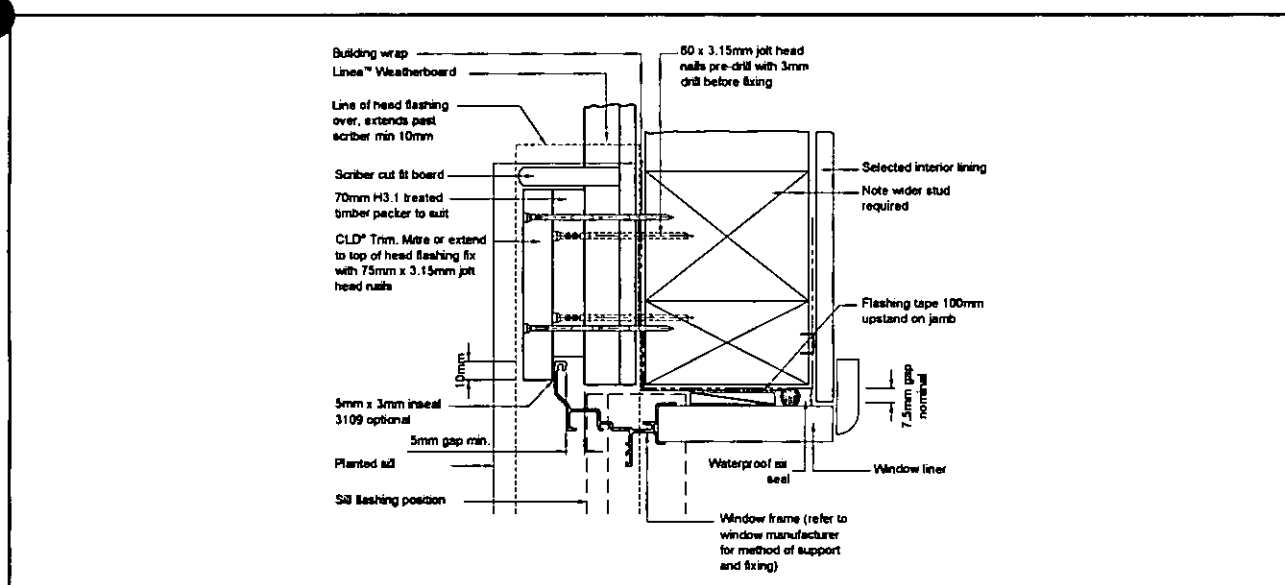


FIGURE 13: DIRECT FIX WINDOW JAMB WITH FACINGS

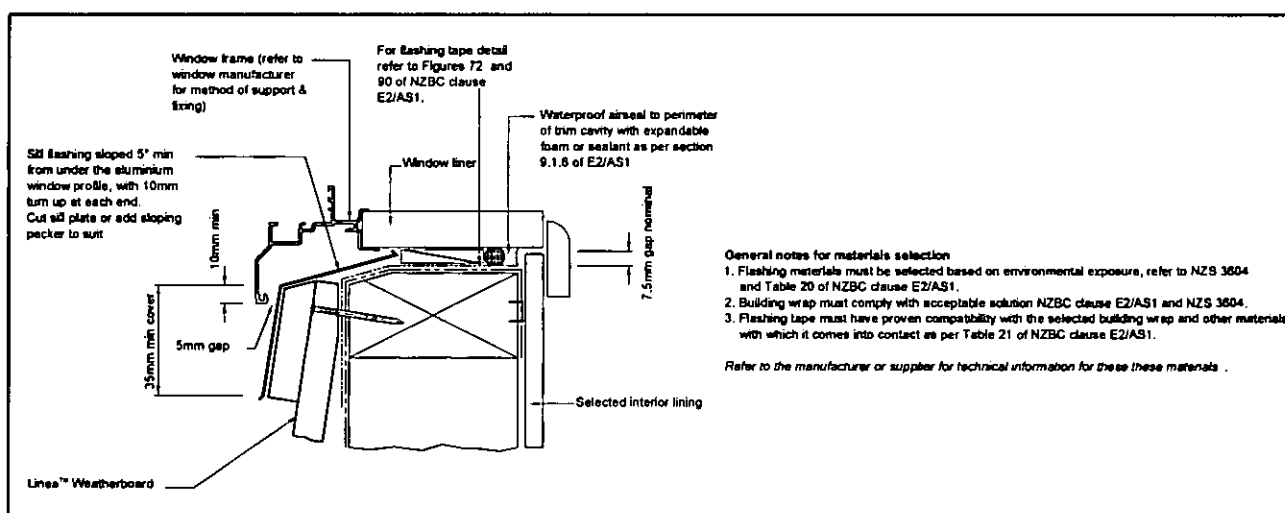


FIGURE 14: DIRECT FIX WINDOW SILL WITHOUT FACINGS

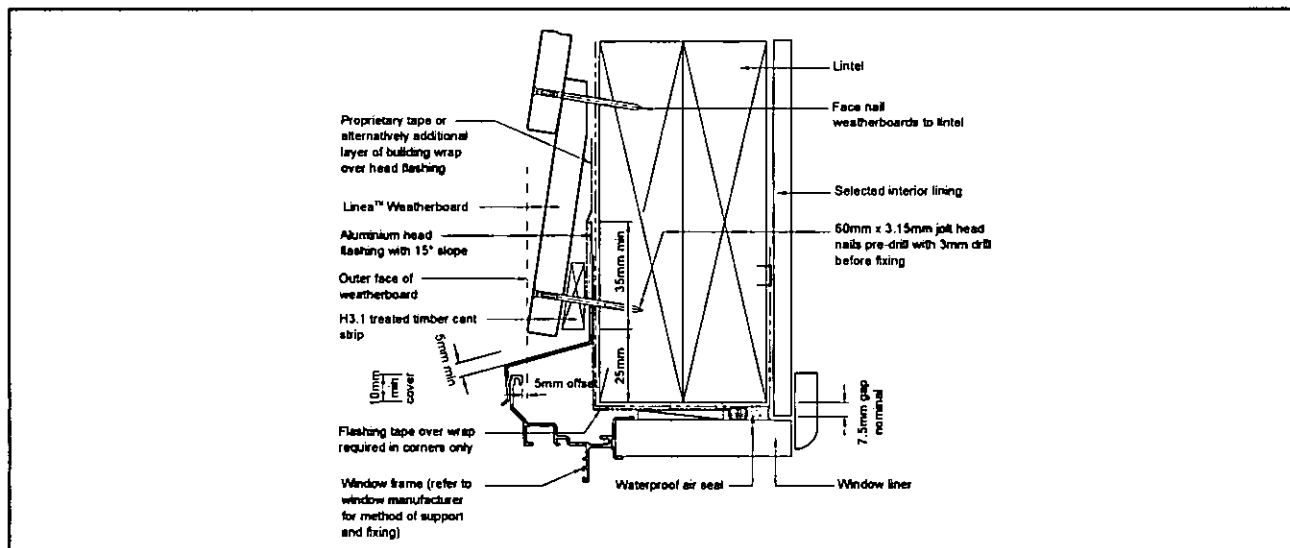


FIGURE 15: DIRECT FIX WINDOW HEAD WITHOUT FACINGS

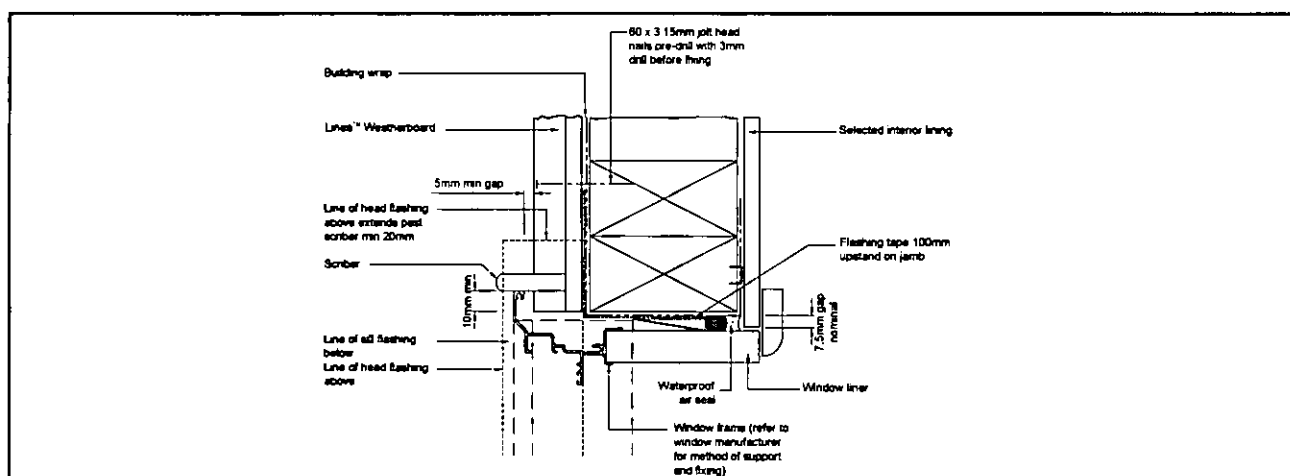


FIGURE 16: DIRECT FIX WINDOW JAMB WITHOUT FACINGS

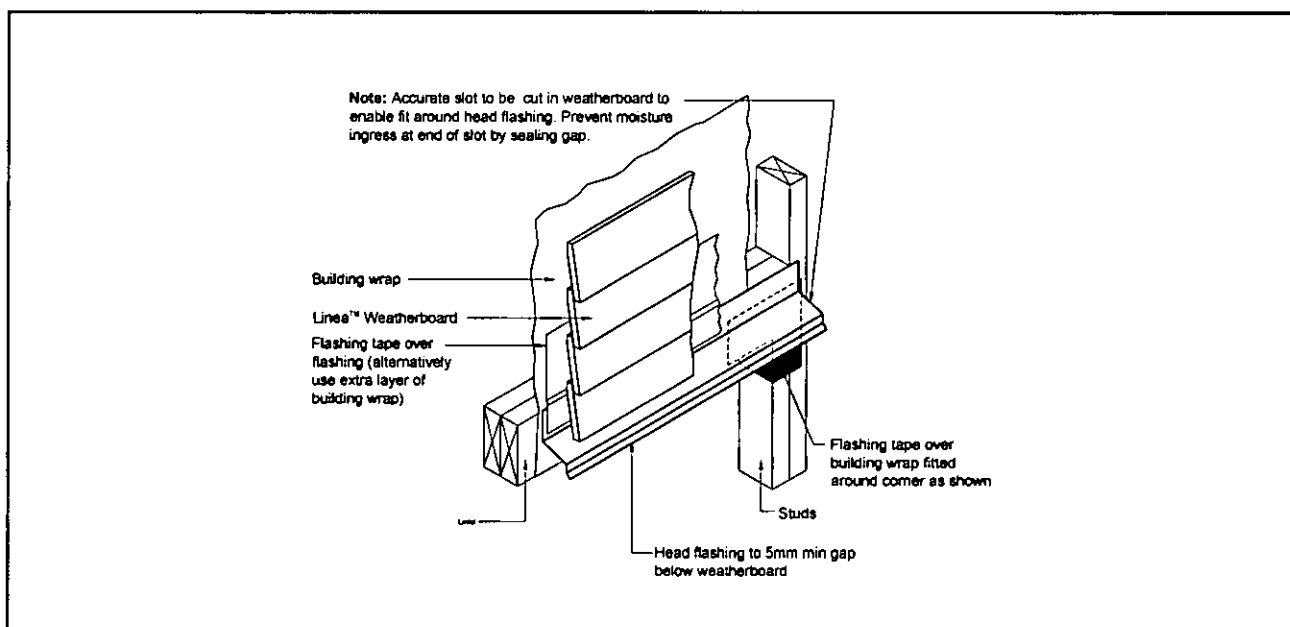


FIGURE 17: DIRECT FIX HEAD FLASHING TERMINATION

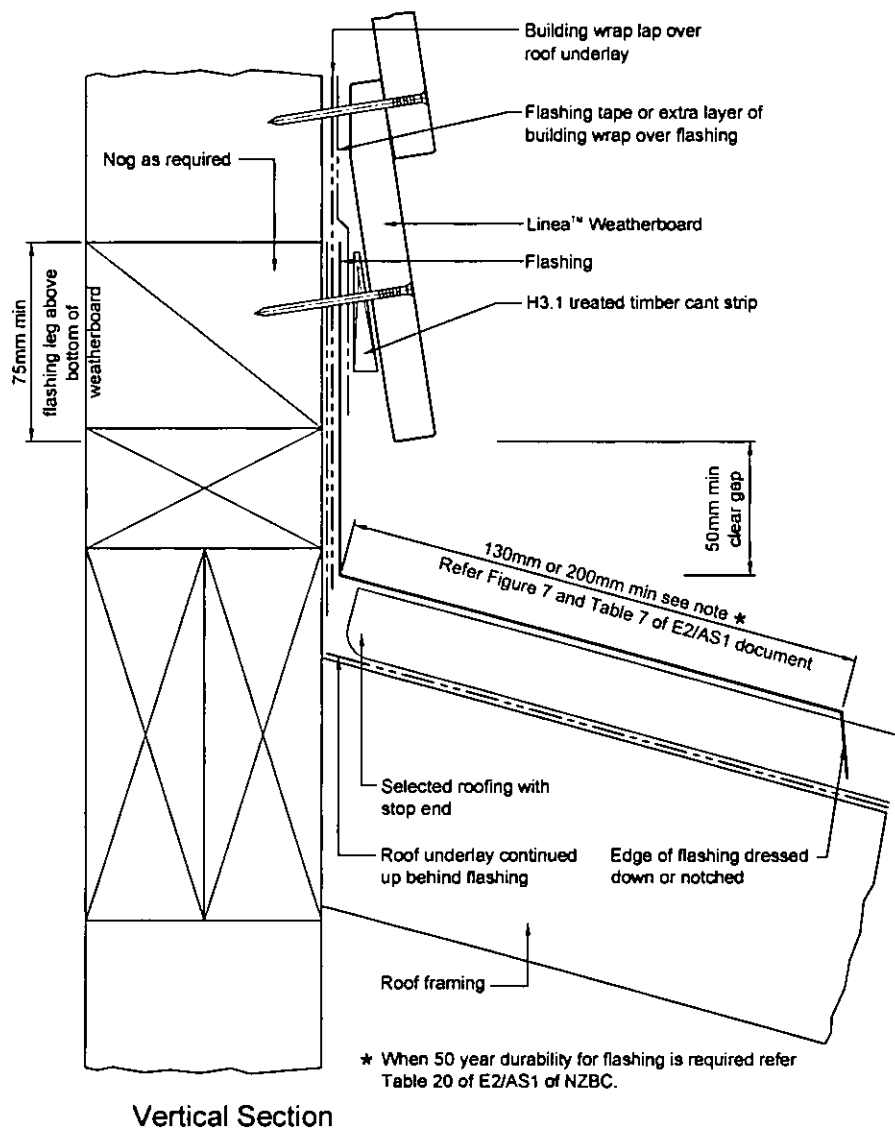


FIGURE 18: DIRECT FIX ONE PIECE APRON FLASHING JOINT

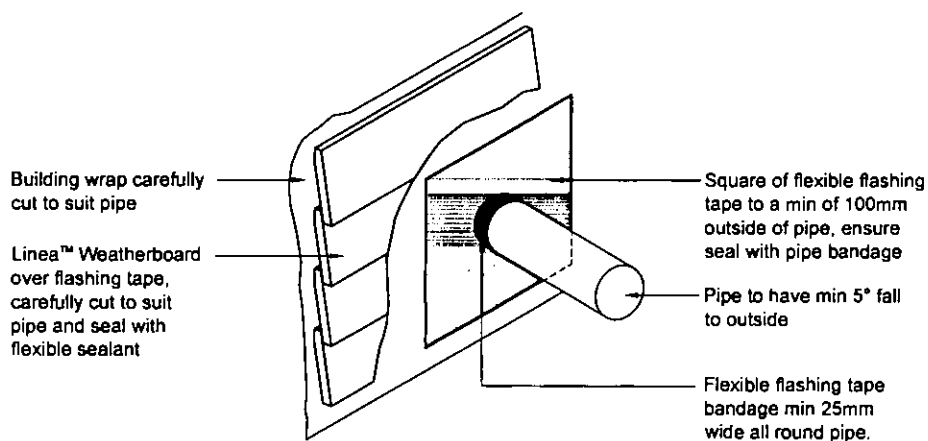


FIGURE 19: DIRECT FIX PIPE PENETRATION

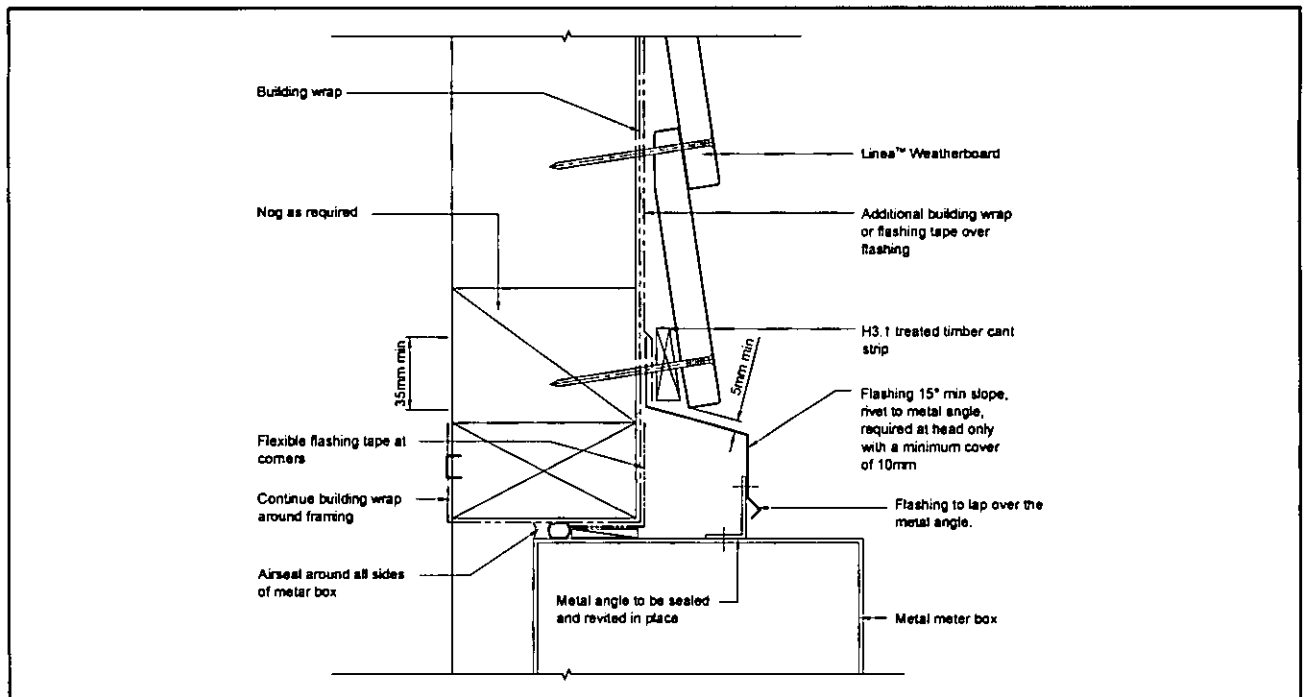


FIGURE 20: DIRECT FIX METER BOX AT HEAD

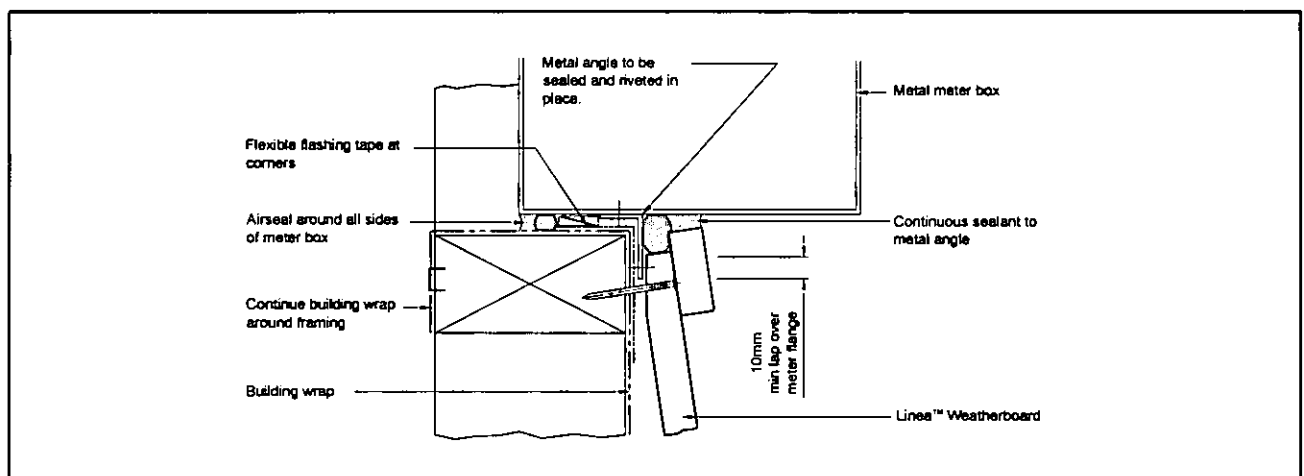


FIGURE 21: DIRECT FIX METER BOX AT SILL

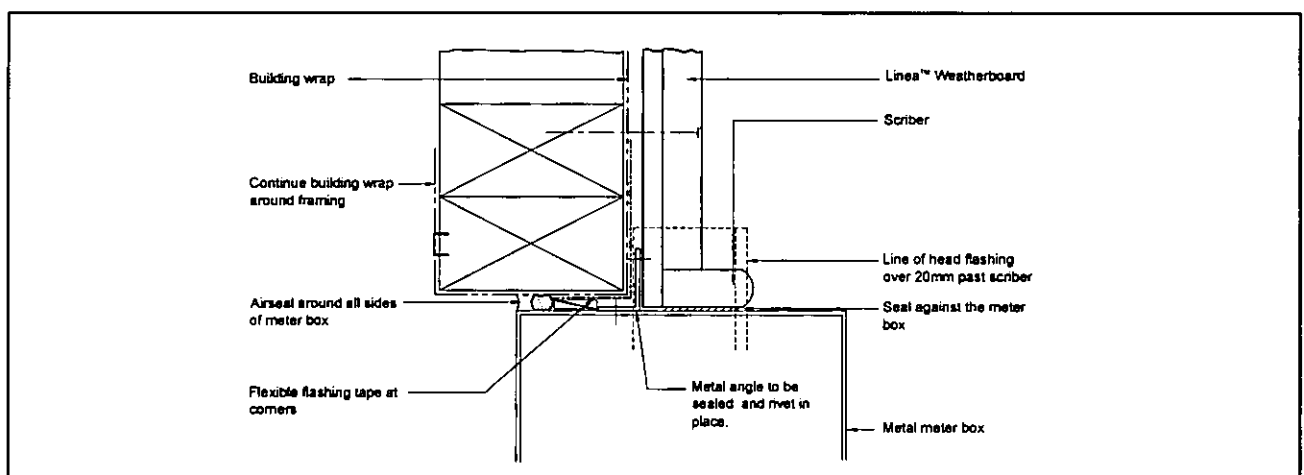


FIGURE 22: DIRECT FIX METER BOX AT JAMB

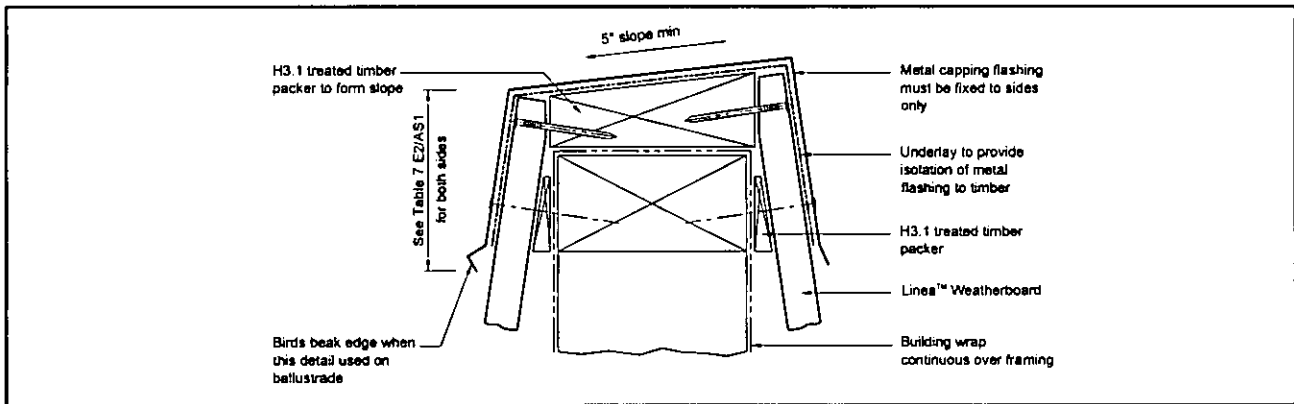


FIGURE 23: DIRECT FIX PARAPET FLASHING

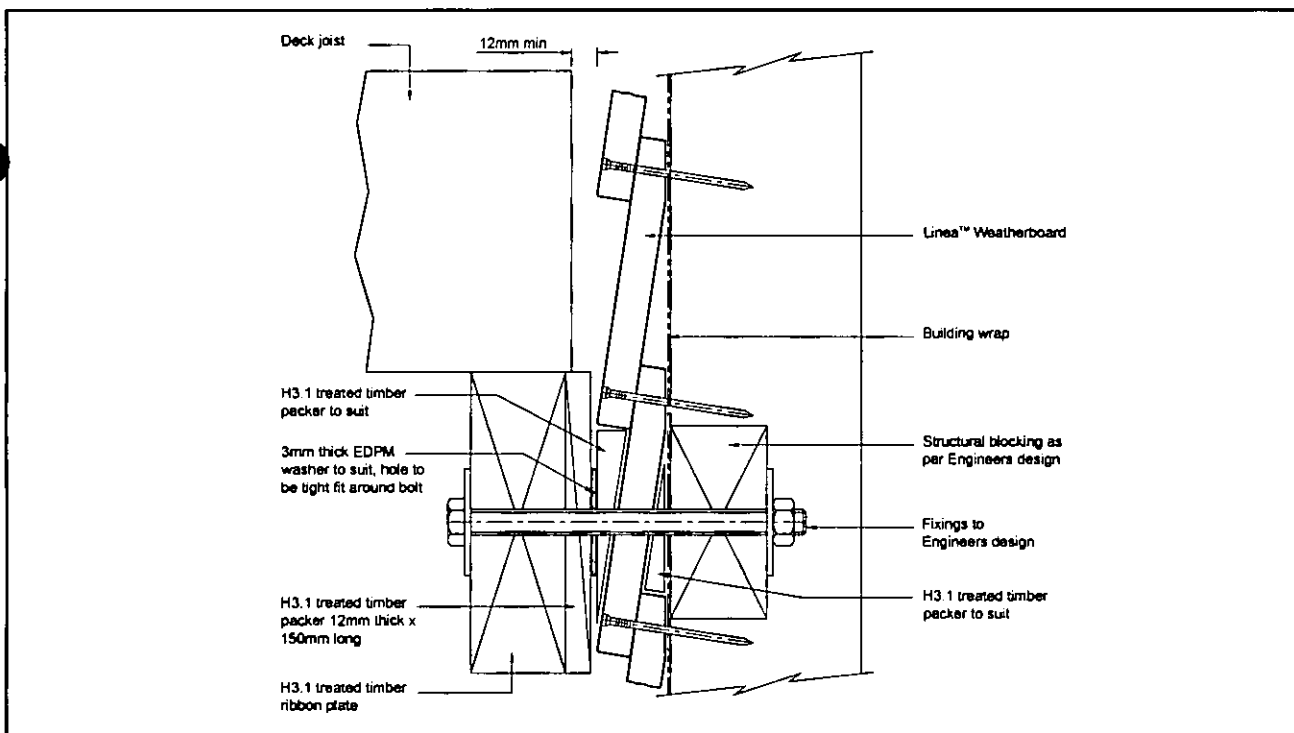


FIGURE 24: DIRECT FIX DECK JUNCTION

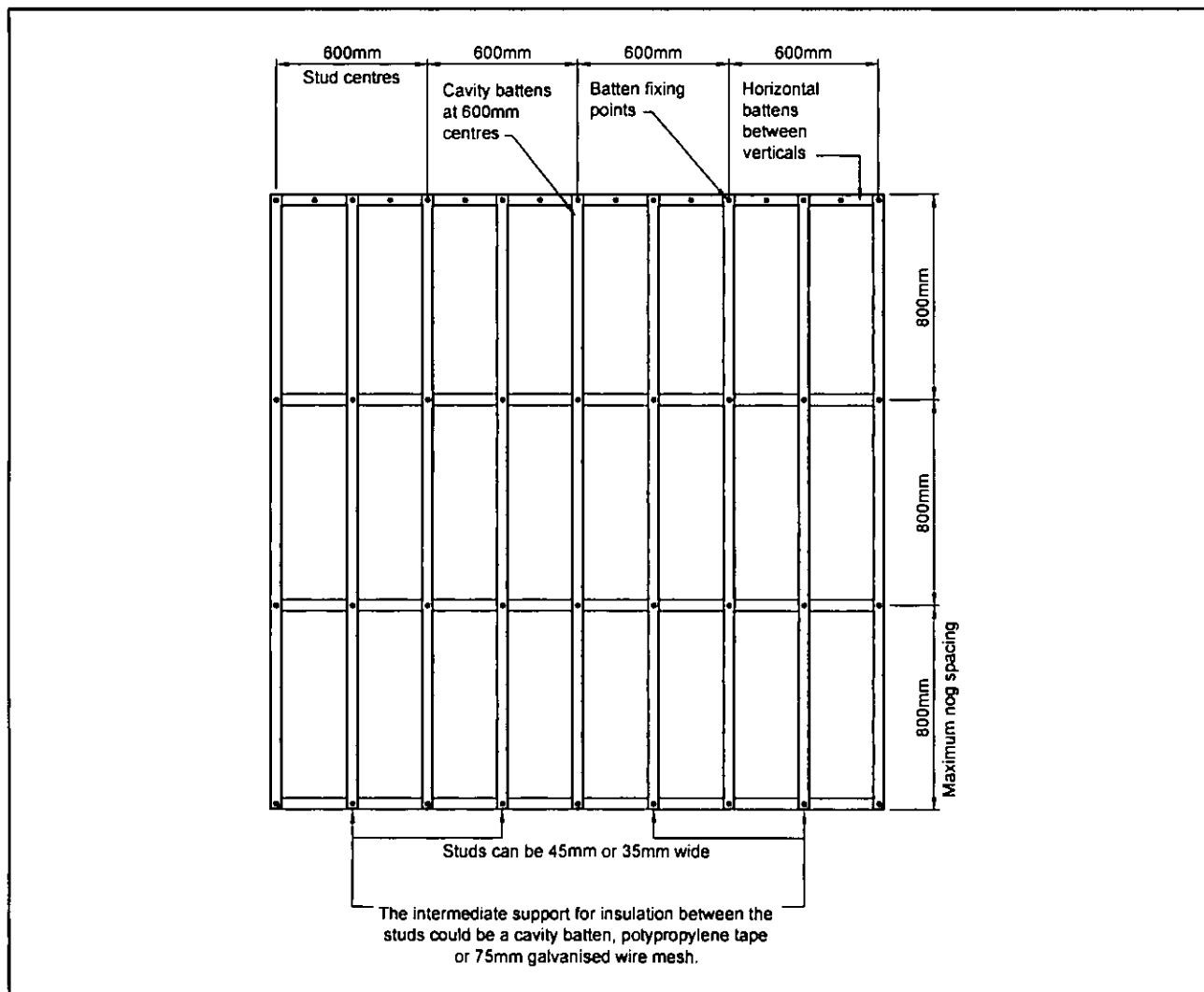


FIGURE 25: CAVITY BATTEN FIXING

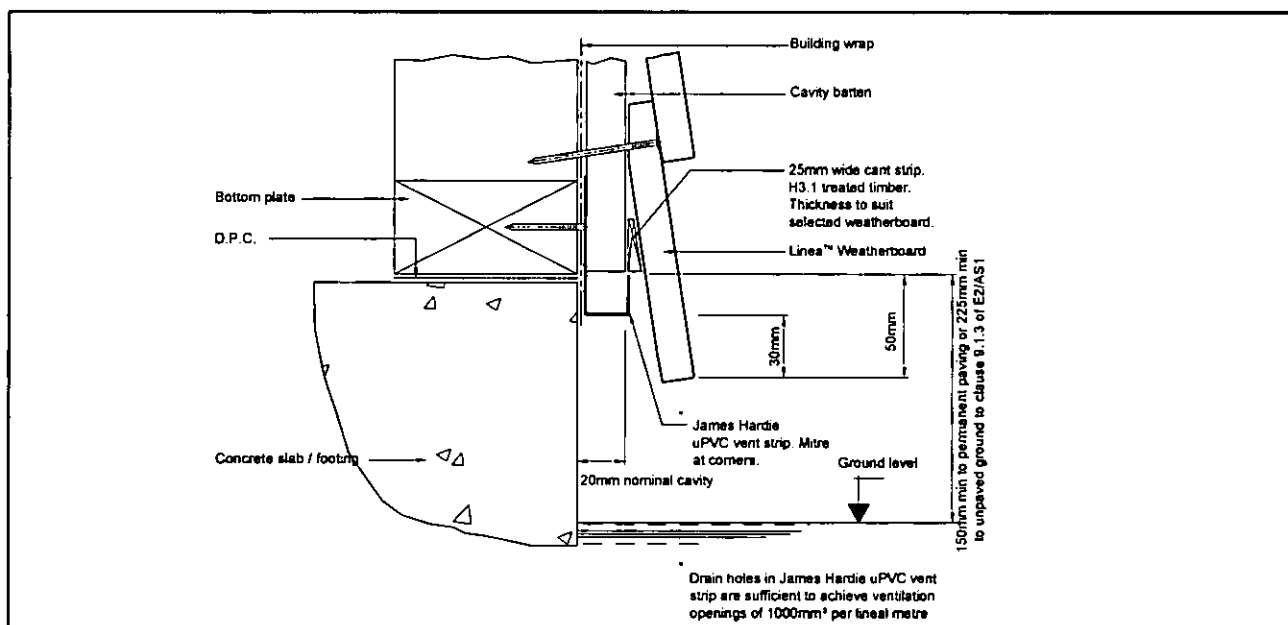


FIGURE 26: CAVITY FOUNDATION DETAIL

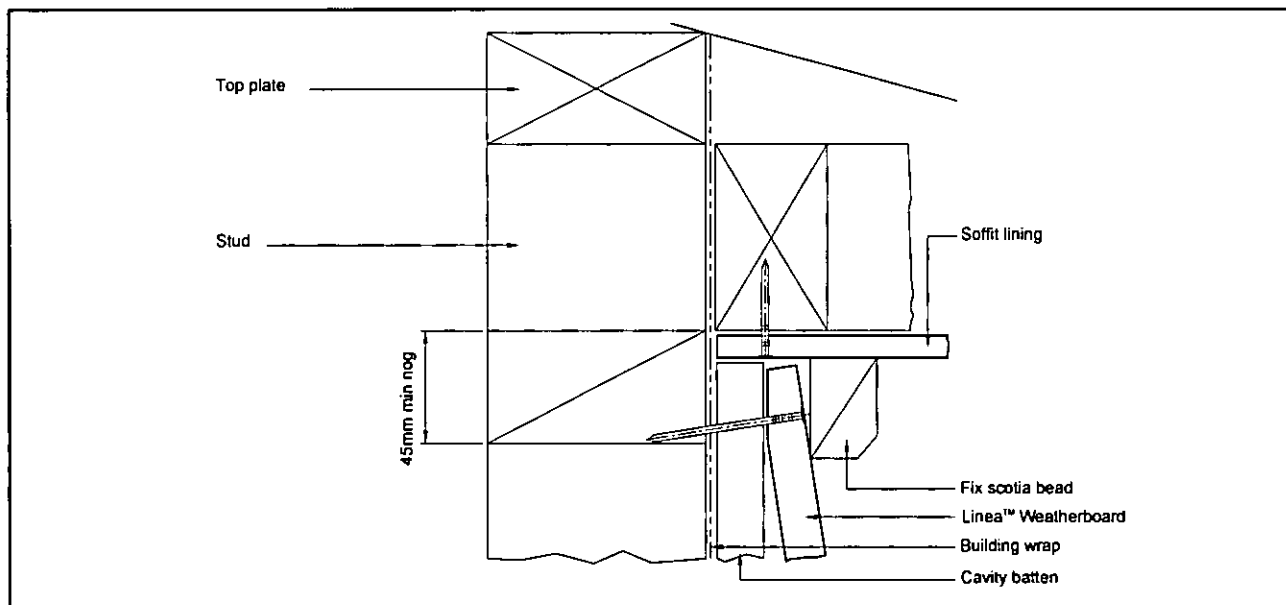


FIGURE 27: CAVITY SOFFIT DETAIL

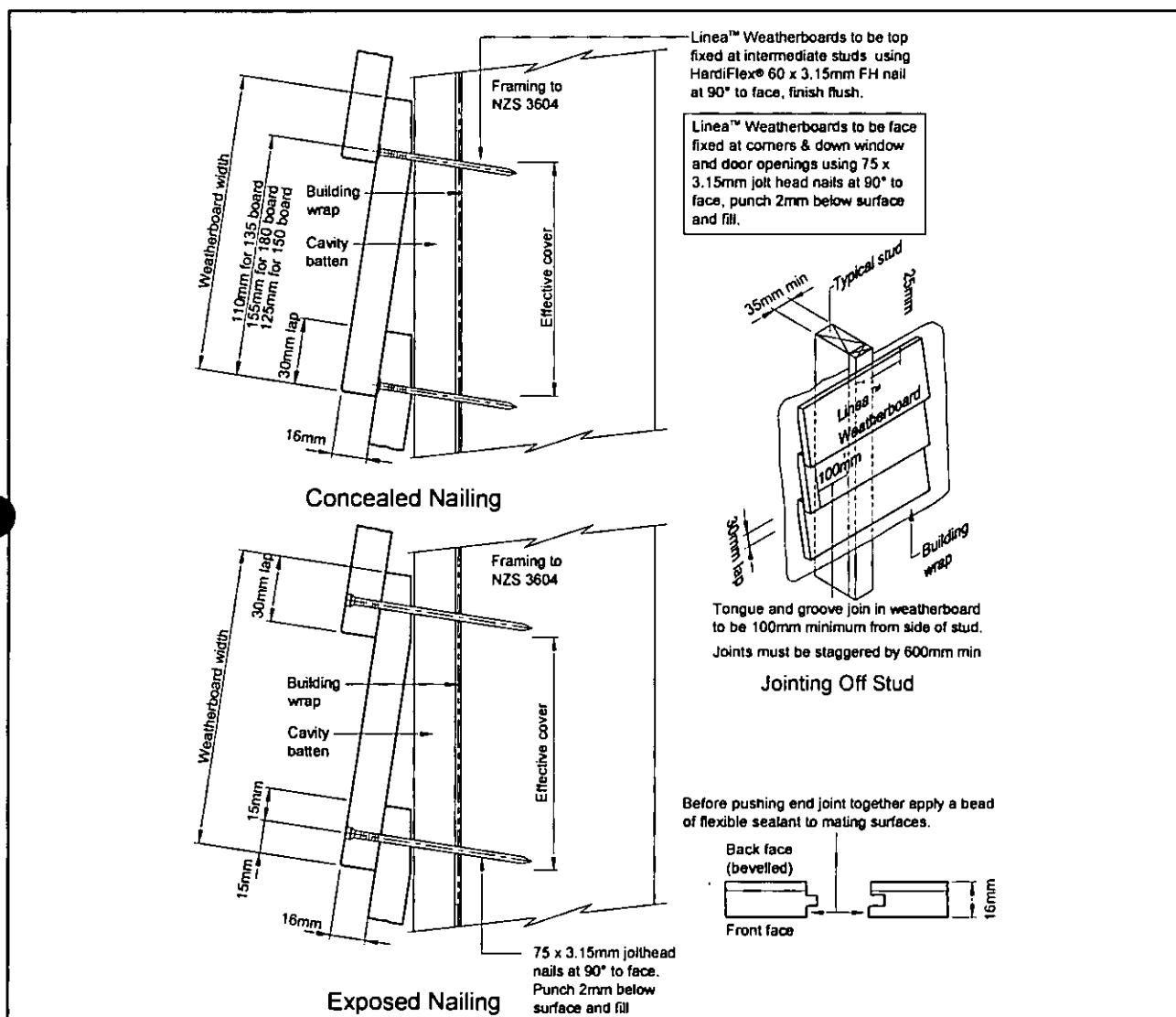


FIGURE 28: CAVITY WEATHERBOARD FIXING

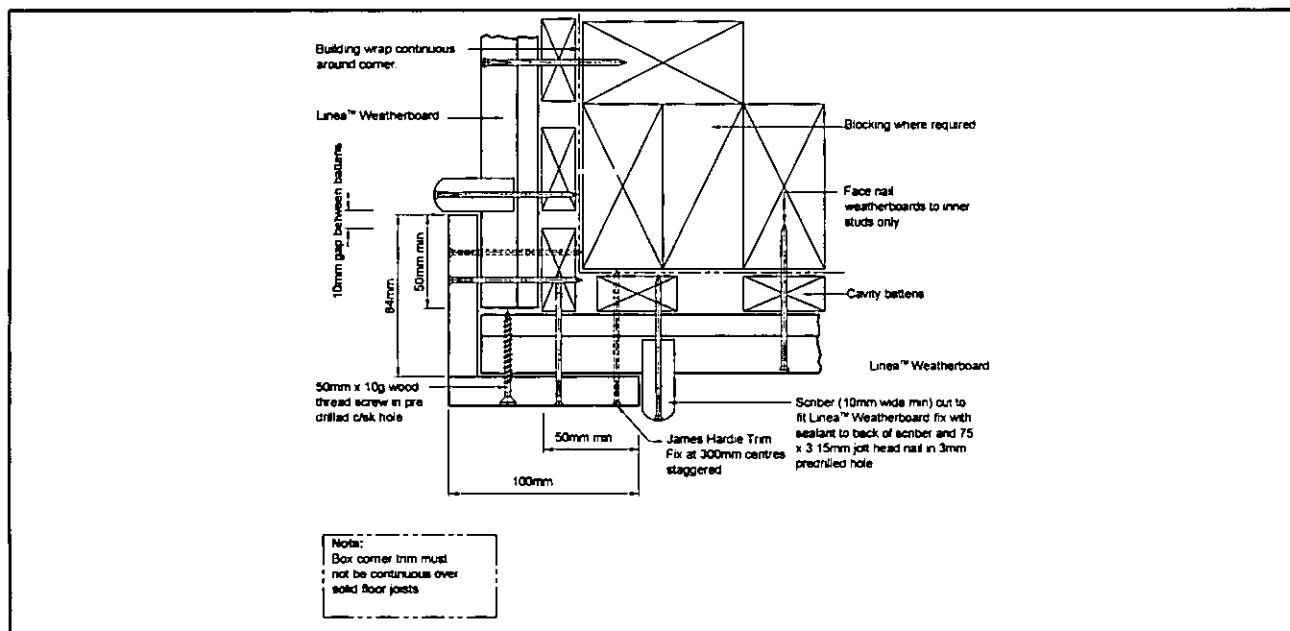


FIGURE 29: CAVITY BOXED CORNER

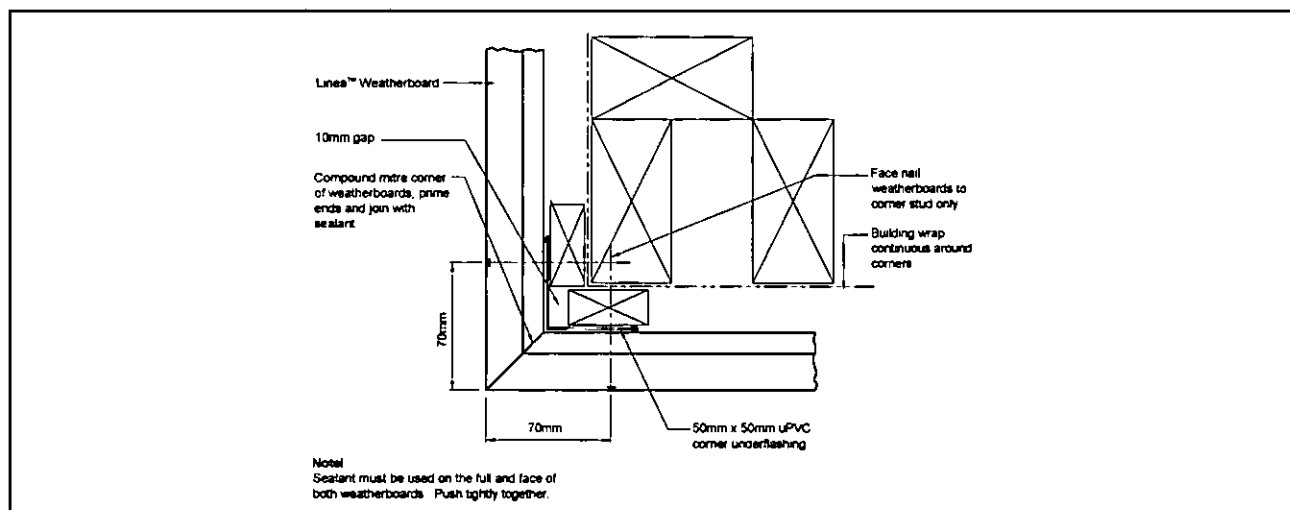


FIGURE 30: CAVITY MITRE CORNER

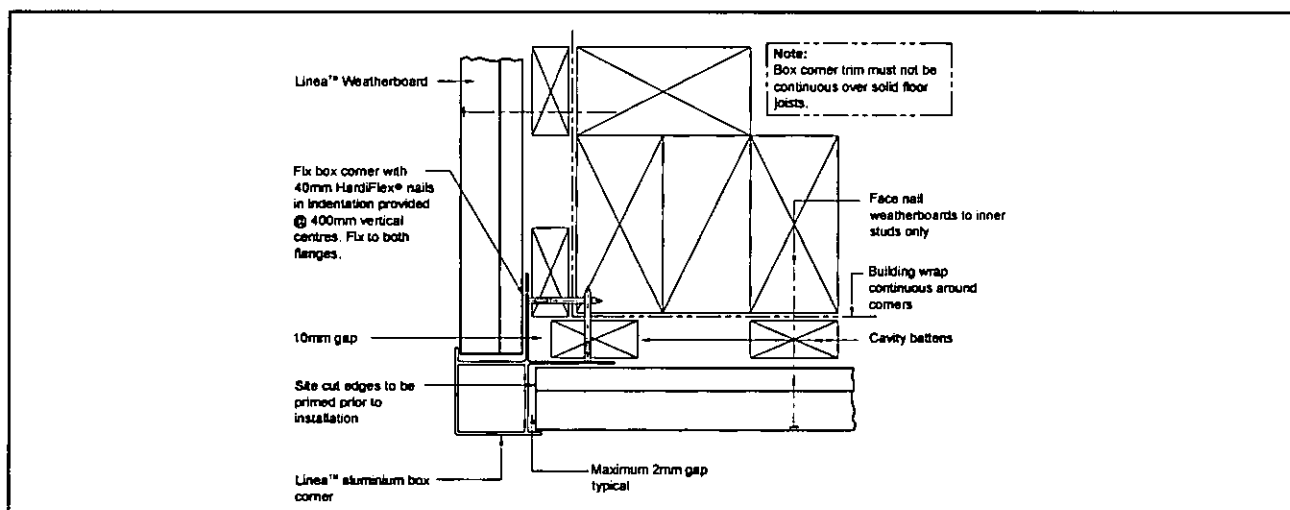
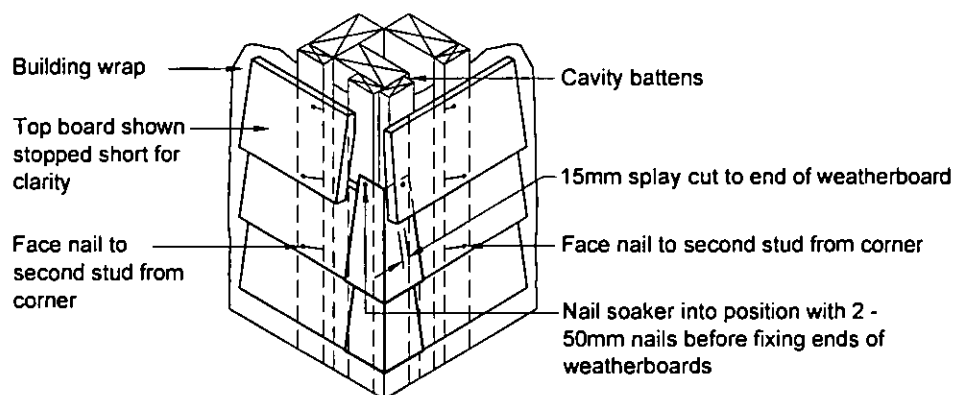


FIGURE 31: CAVITY ALUMINIUM BOX CORNER



Soaker material	Nail material
Copper	Copper or phosphor bronze
Aluminium	Hot dip galvanised
Stainless steel	Stainless steel

FIGURE 32: CAVITY EXTERNAL CORNER SOAKER

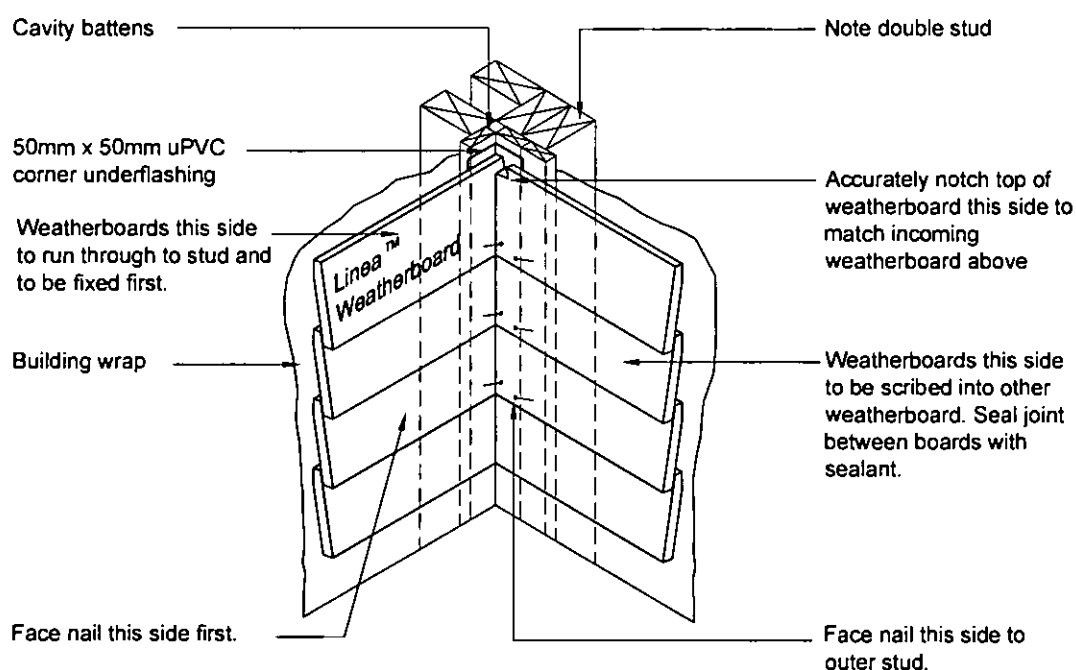


FIGURE 33: CAVITY INTERNAL CORNER

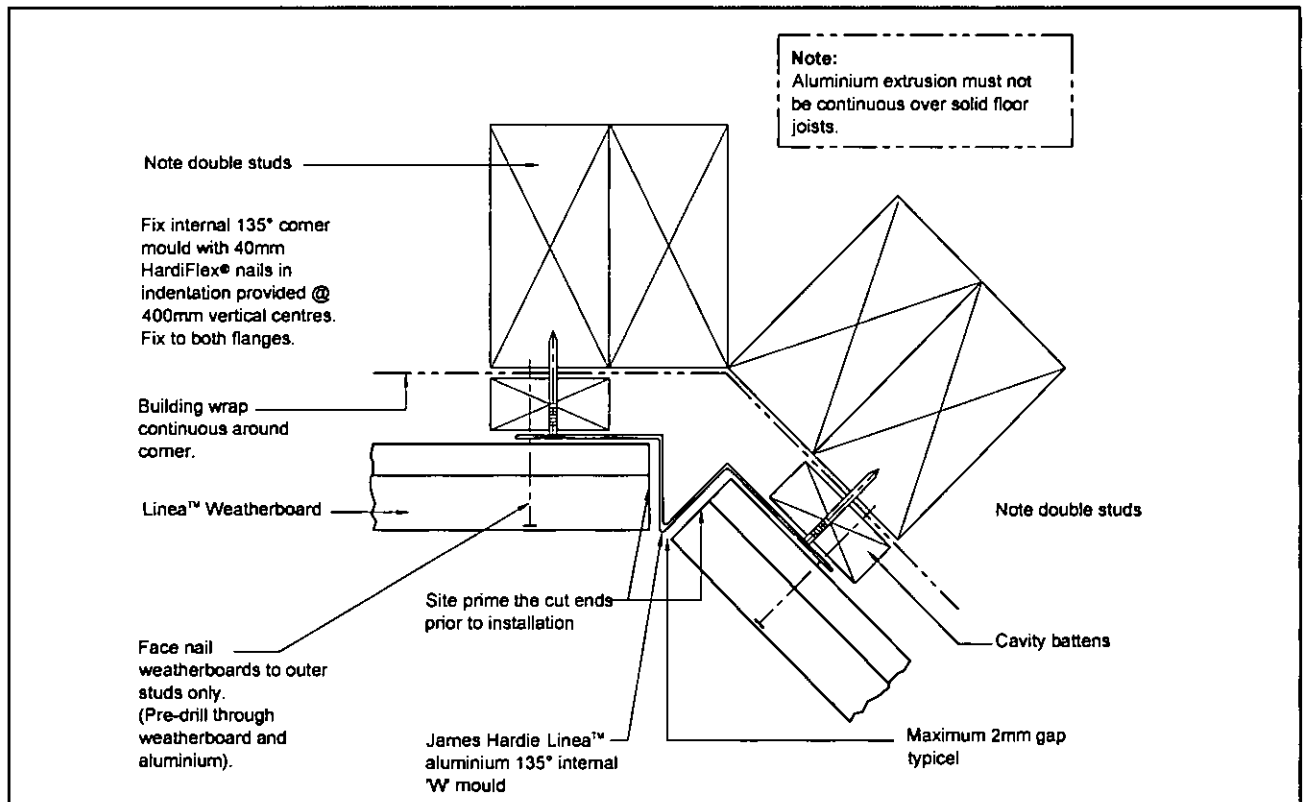


FIGURE 34: CAVITY INTERNAL 135° ALUMINIUM 'W' MOULD CORNER

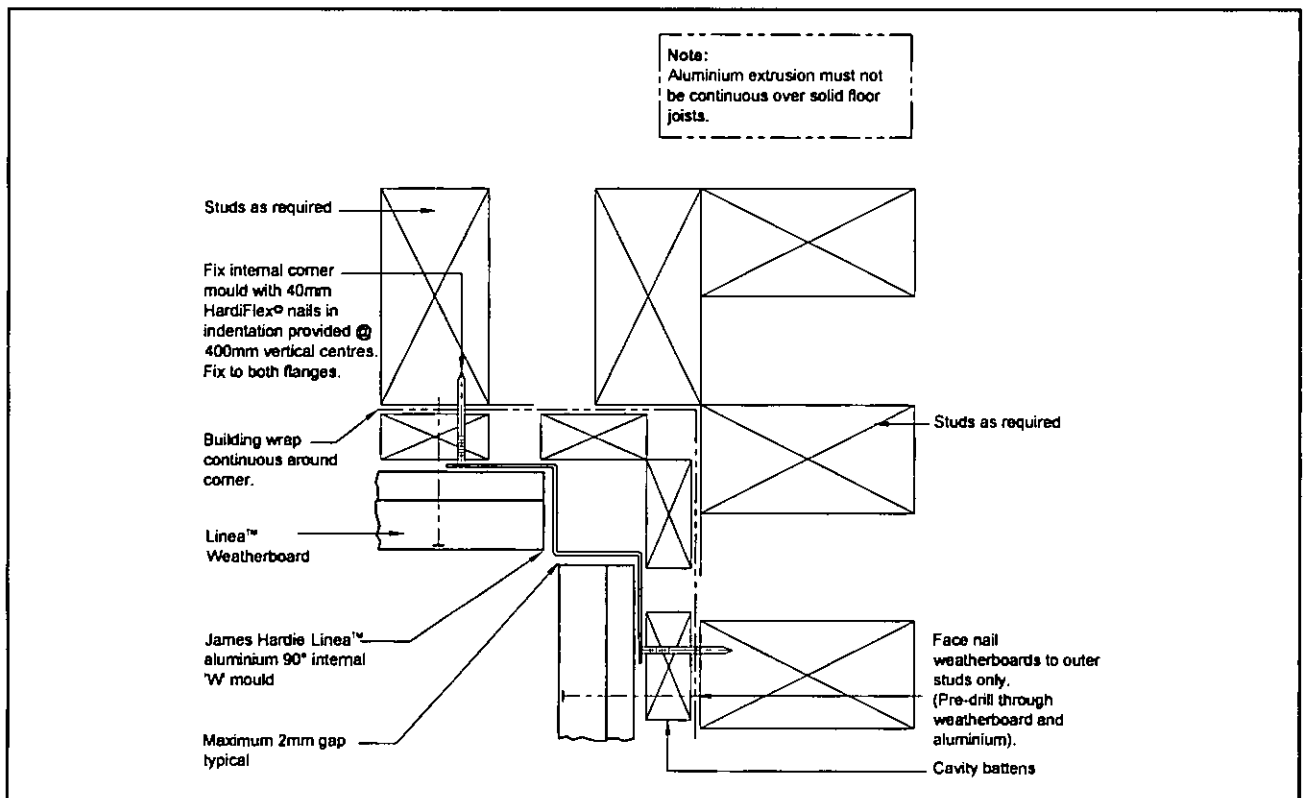


FIGURE 35: CAVITY INTERNAL 90° ALUMINIUM 'W' MOULD CORNER

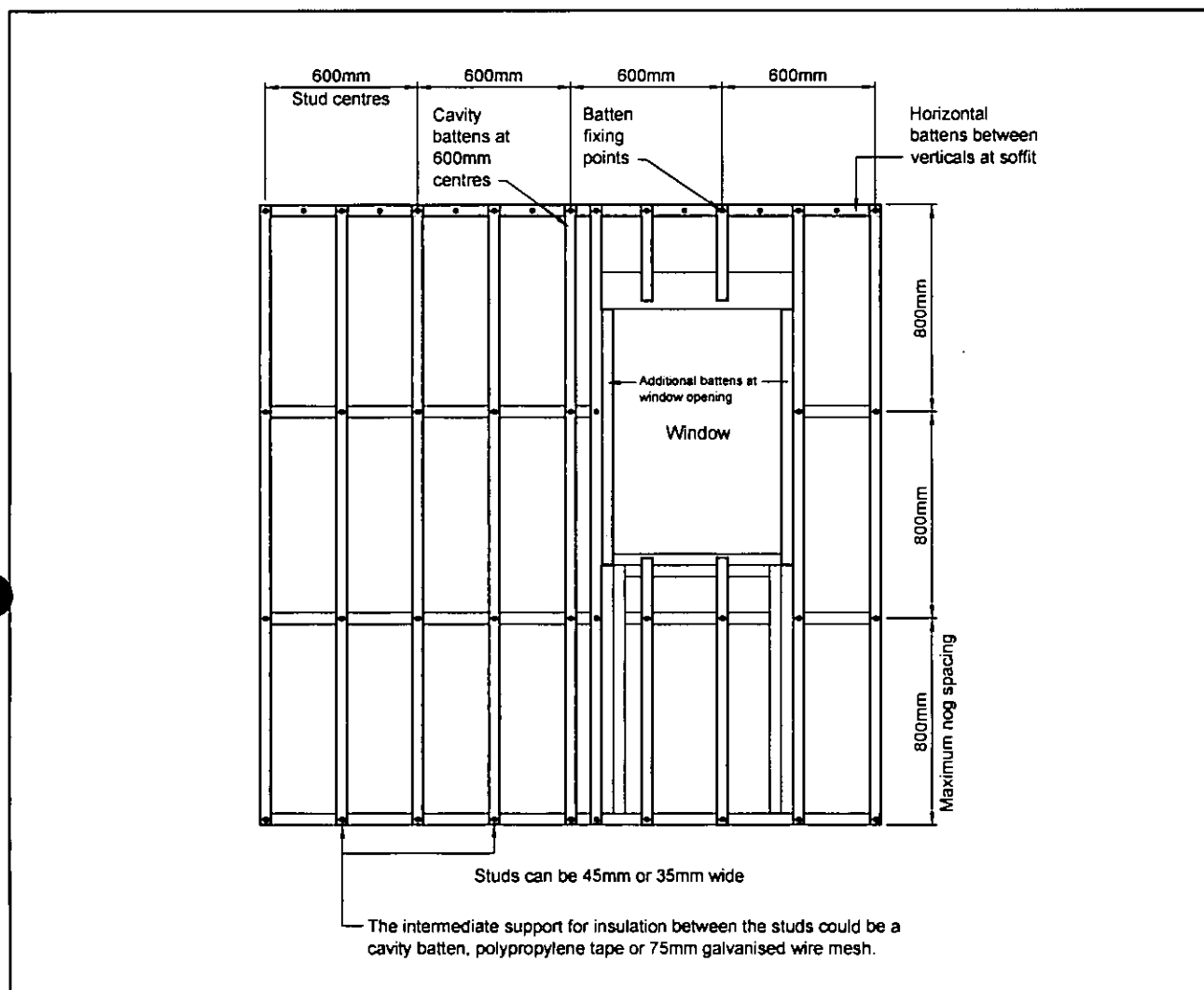


FIGURE 36: CAVITY BATTEN LAYOUT AT WINDOW OPENING

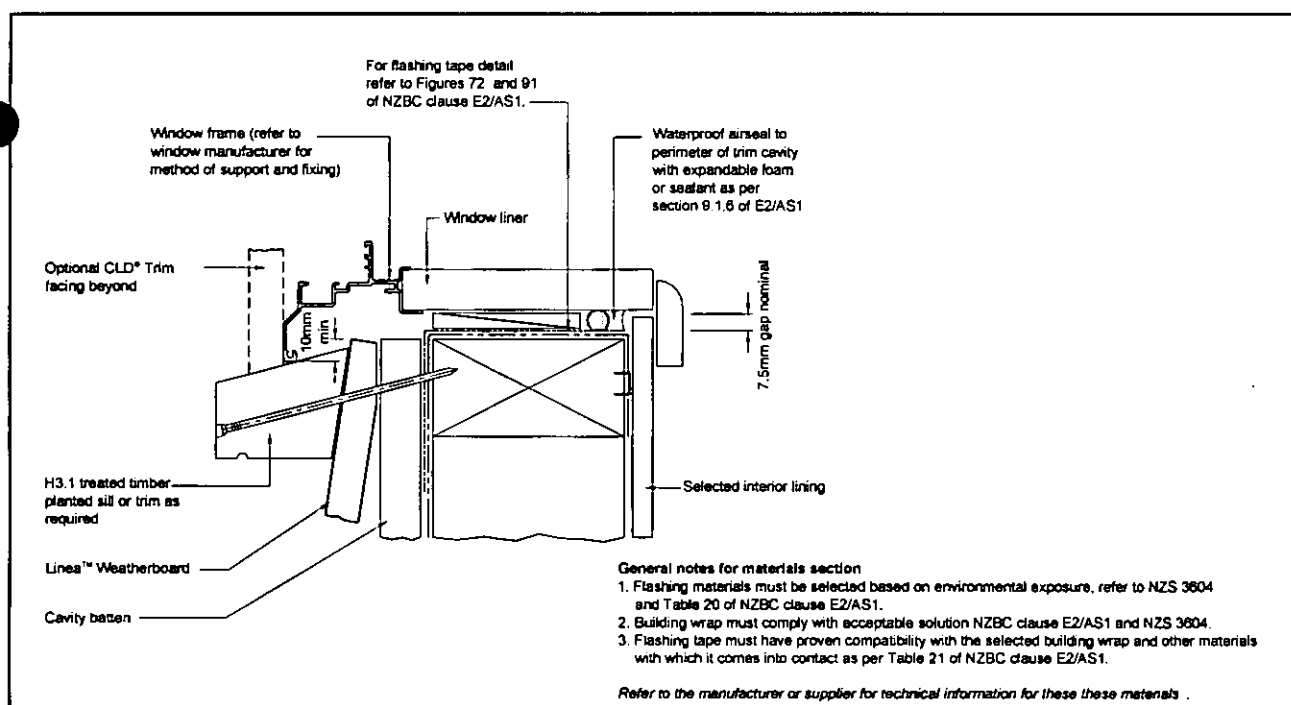


FIGURE 37: CAVITY WINDOW SILL WITH FACINGS

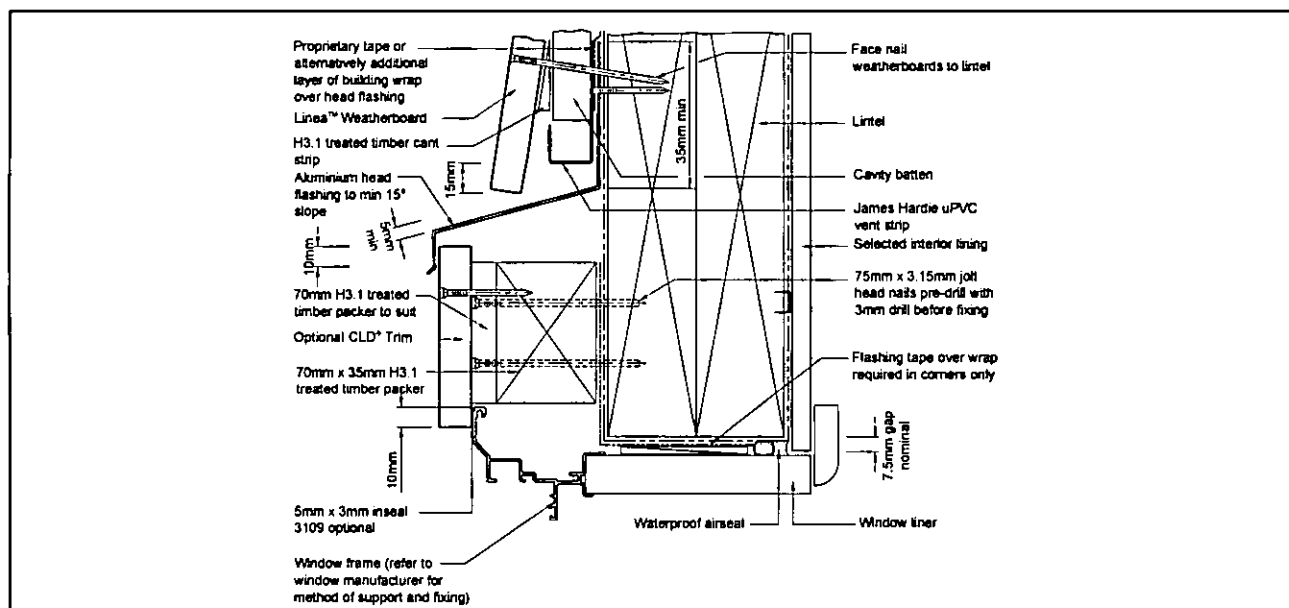


FIGURE 38: CAVITY WINDOW HEAD WITH FACINGS

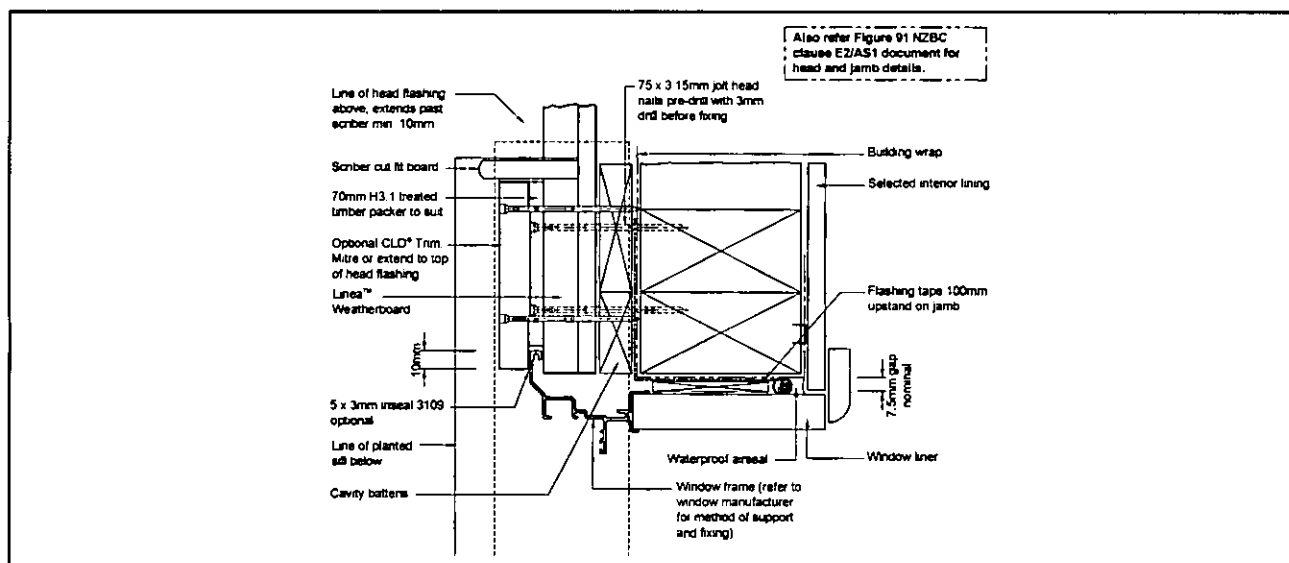


FIGURE 39: CAVITY WINDOW JAMB WITH FACINGS

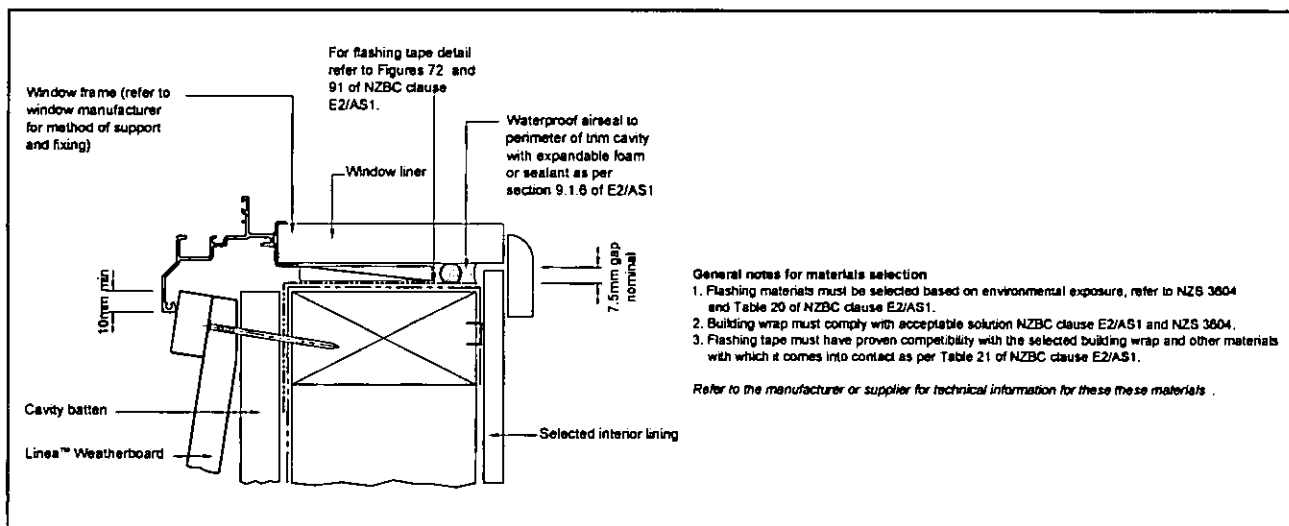


FIGURE 40: CAVITY WINDOW SILL WITHOUT FACINGS

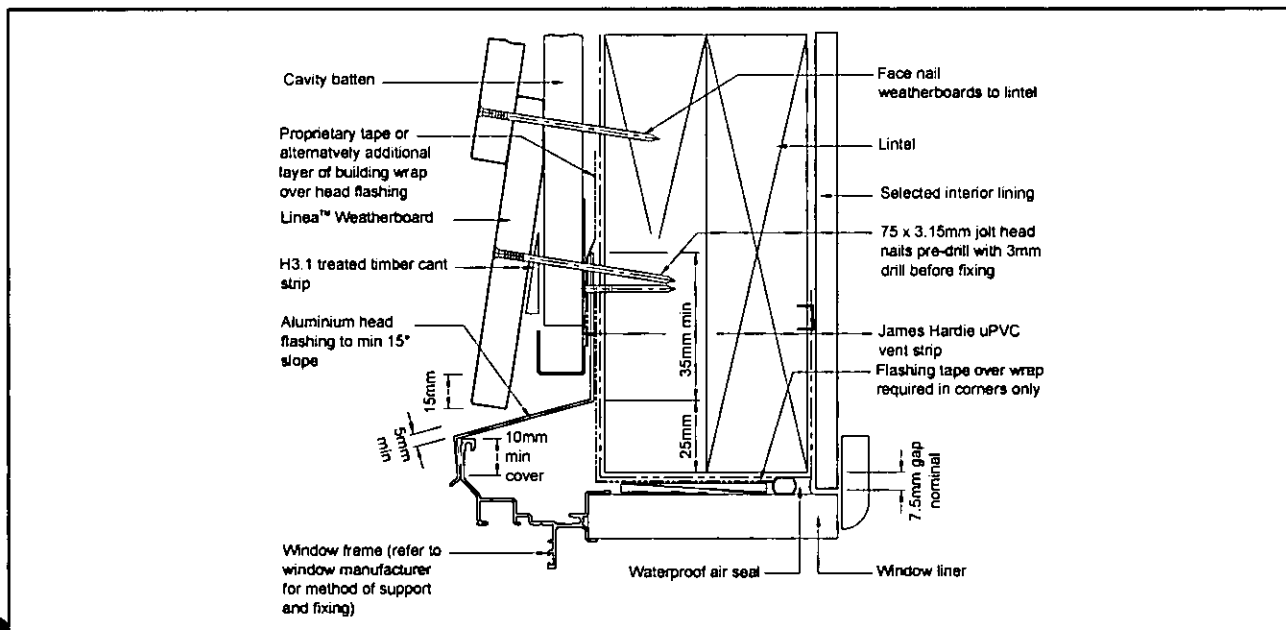


FIGURE 41: CAVITY WINDOW HEAD WITHOUT FACINGS

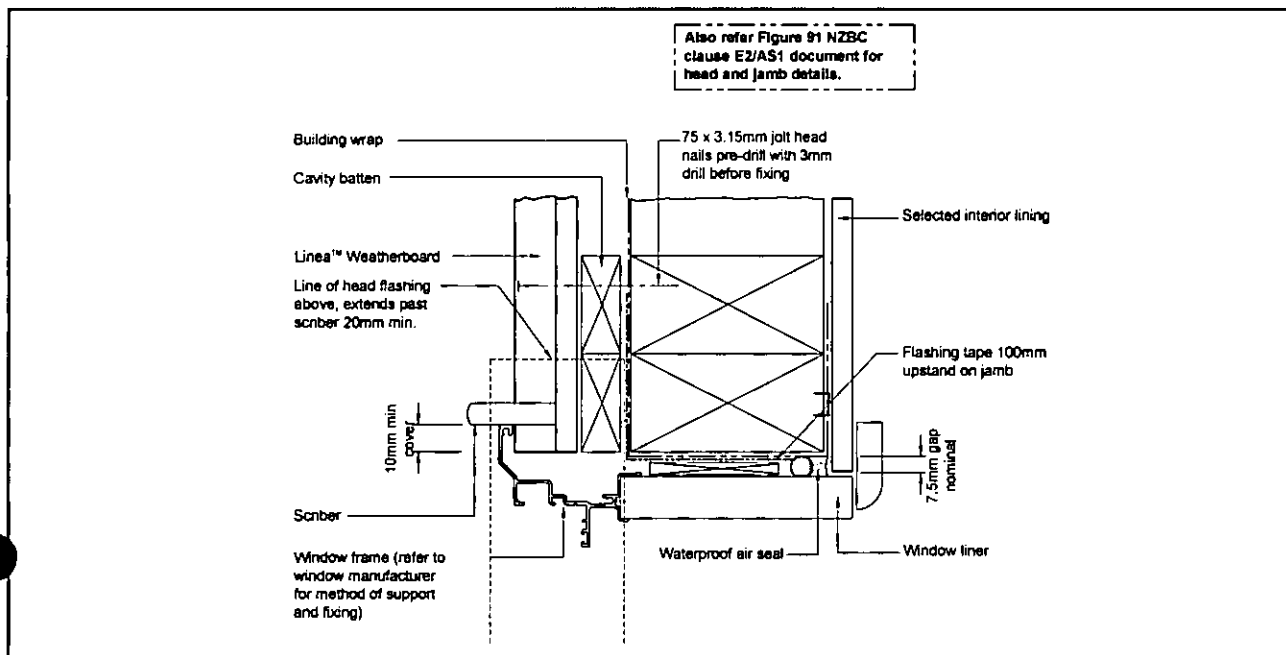


FIGURE 42: CAVITY WINDOW JAMB WITHOUT FACINGS

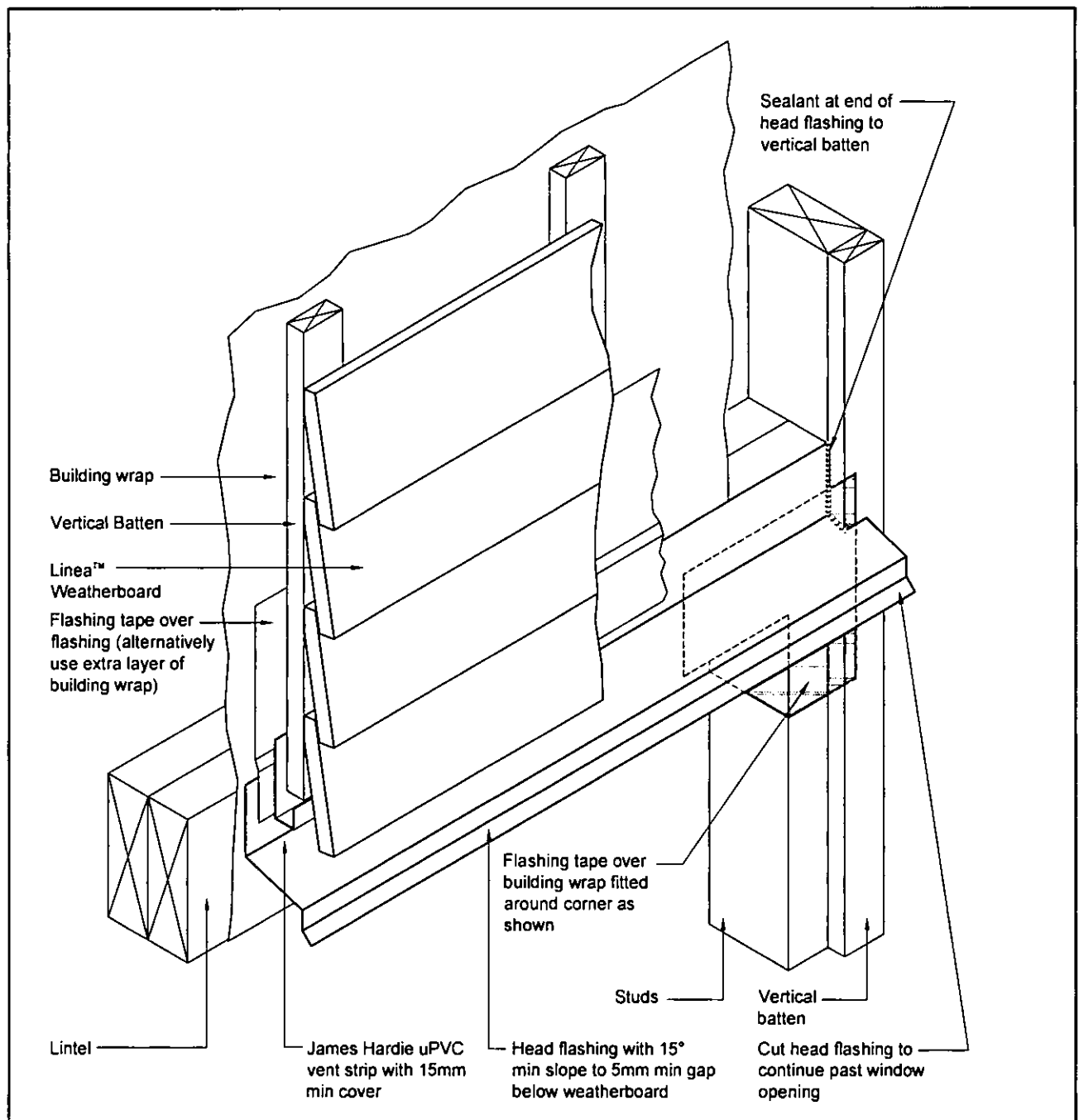


FIGURE 43: CAVITY HEAD FLASHING TERMINATION

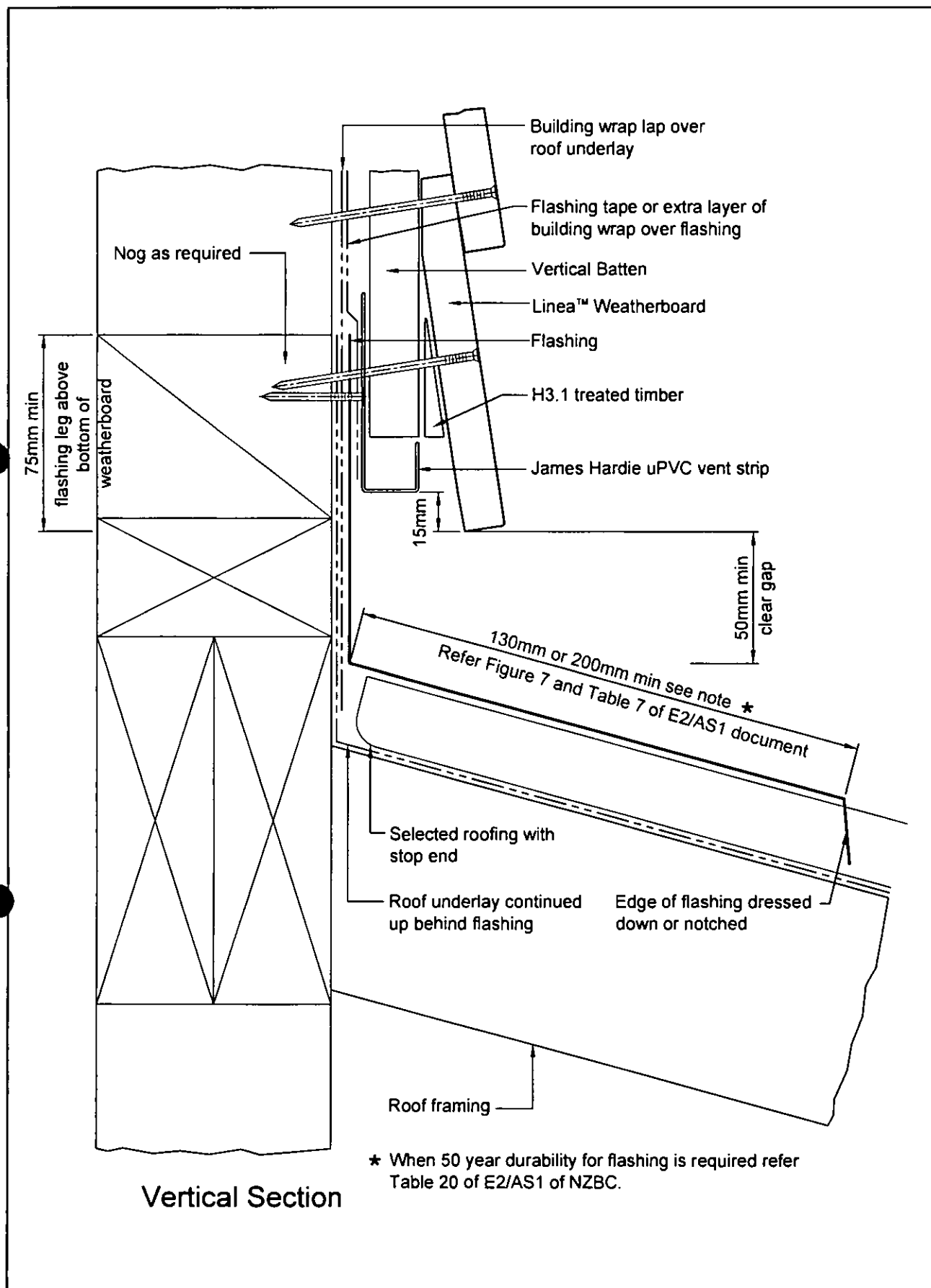


FIGURE 44: CAVITY ONE PIECE APRON FLASHING JOINT

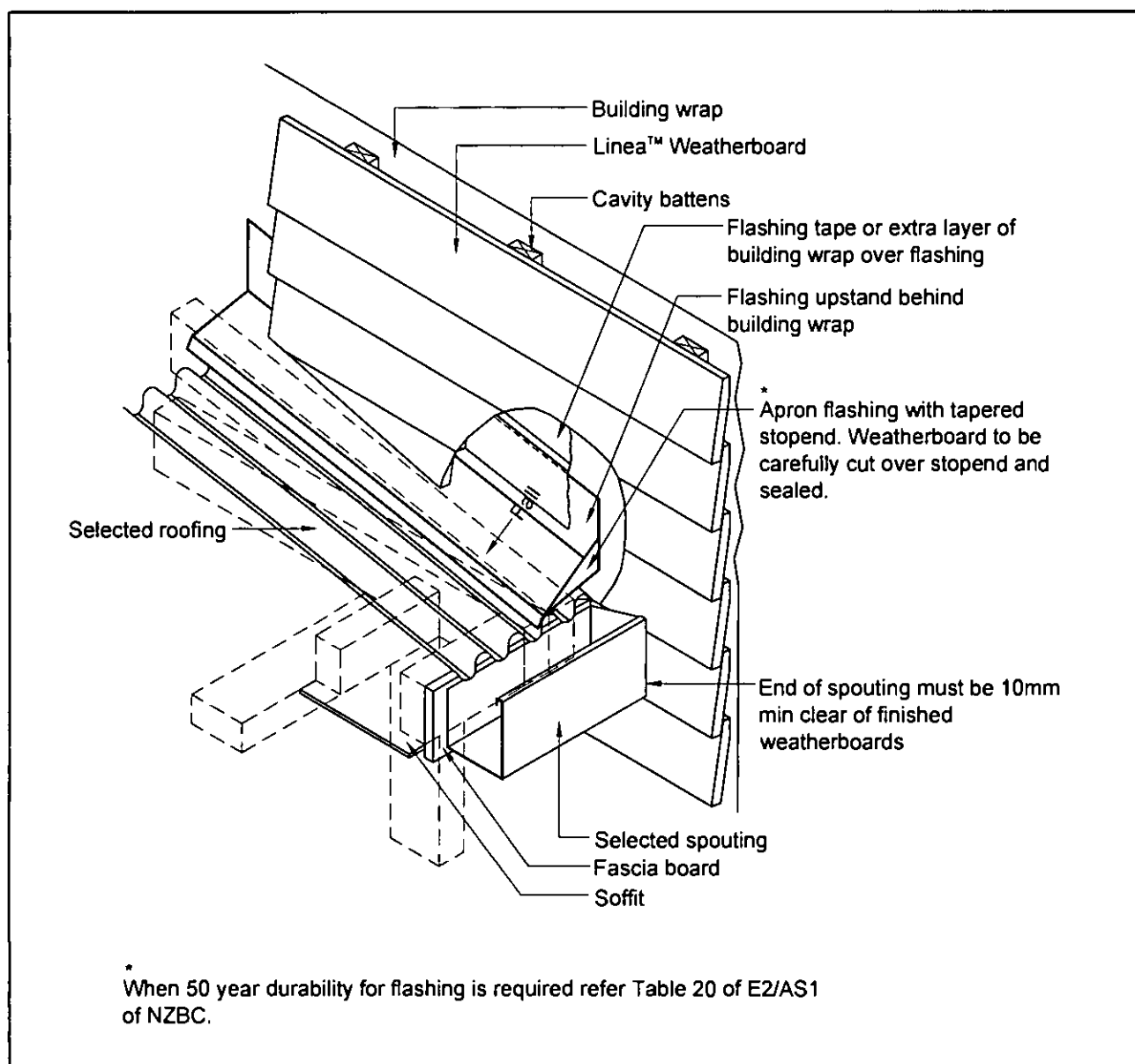


FIGURE 45: CAVITY ONE PIECE GUTTER/WALL JUNCTION

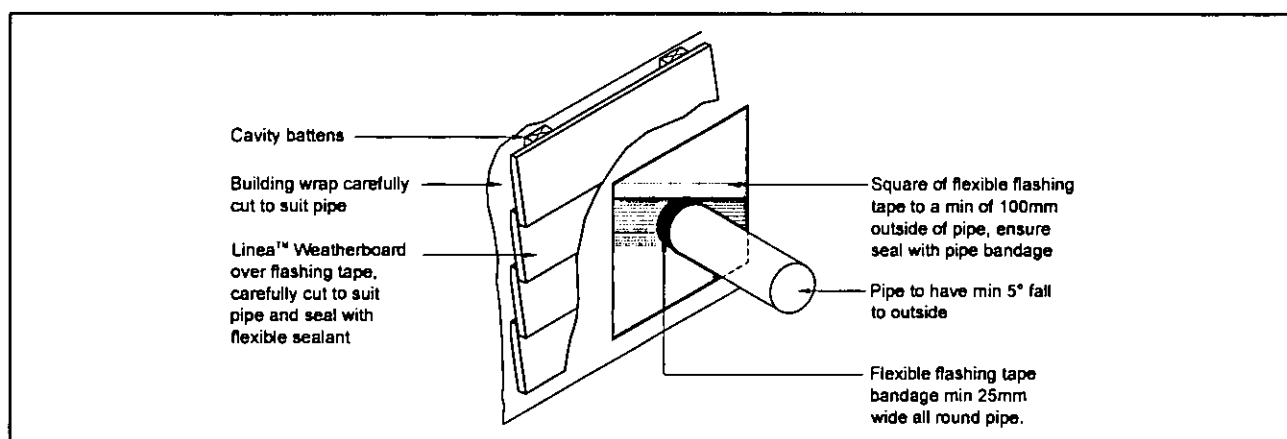


FIGURE 46: CAVITY PIPE PENETRATION

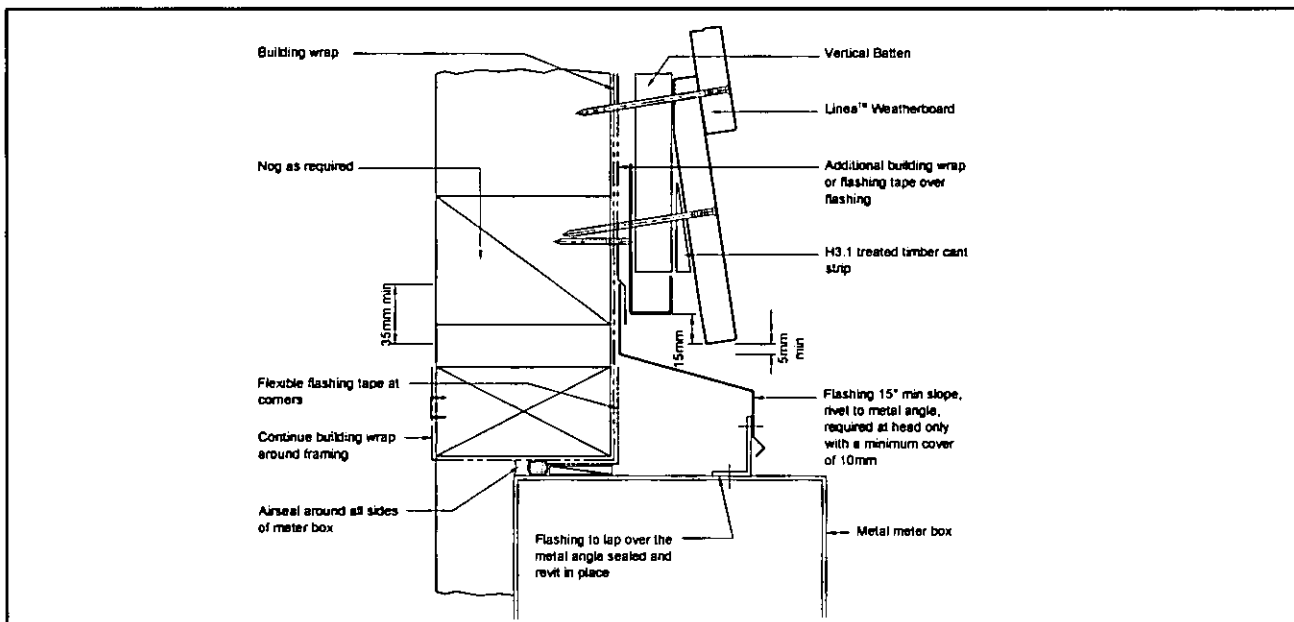


FIGURE 47: CAVITY METER BOX AT HEAD

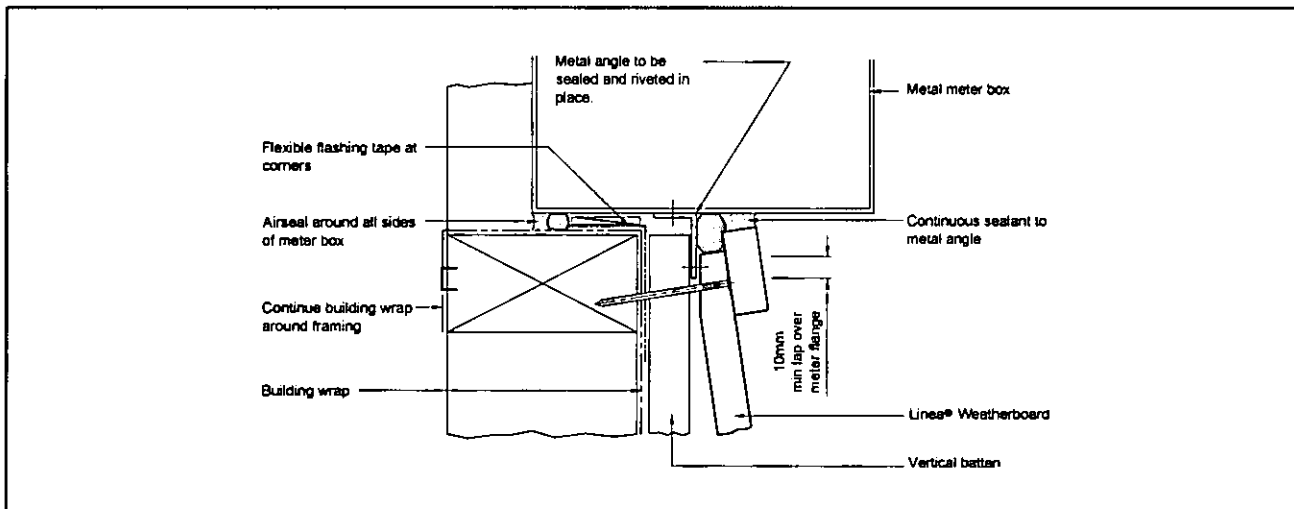


FIGURE 48: CAVITY METER BOX AT SILL

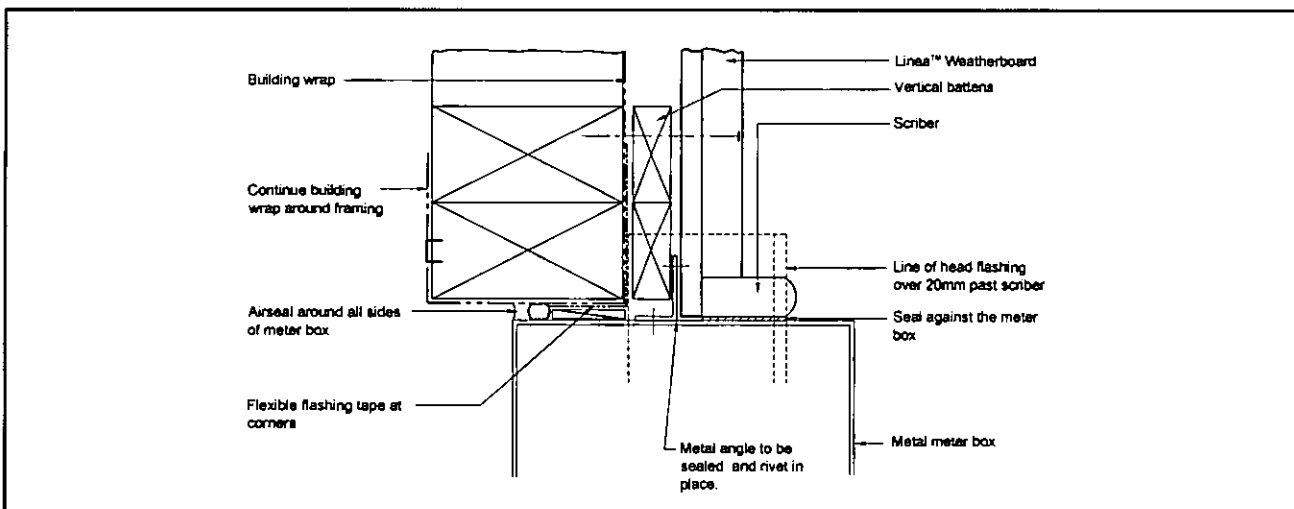


FIGURE 49: CAVITY METER BOX AT JAMB

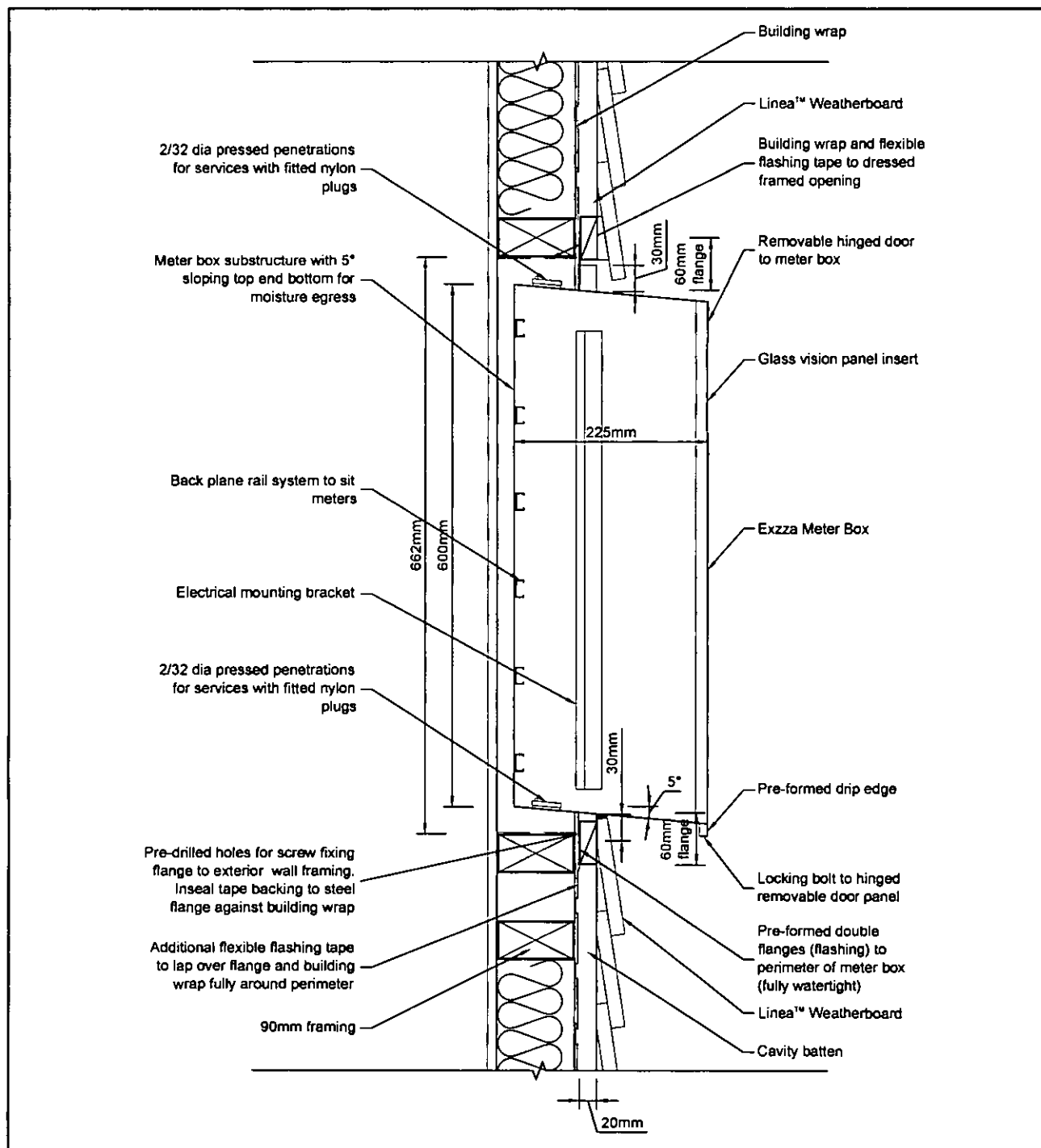


FIGURE 50: CAVITY FIX METER BOX

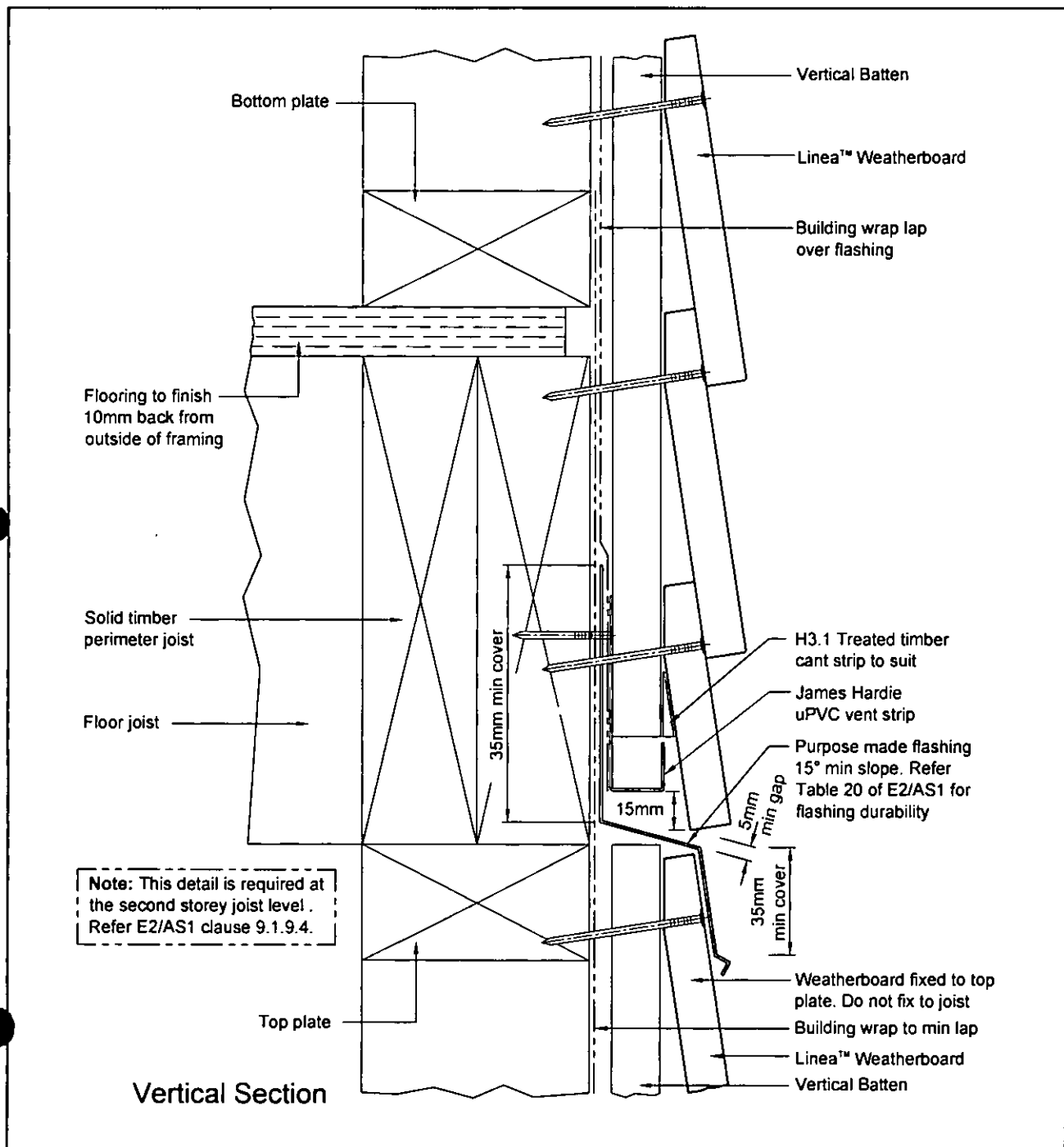


FIGURE 51: CAVITY DRAINAGE JOINT

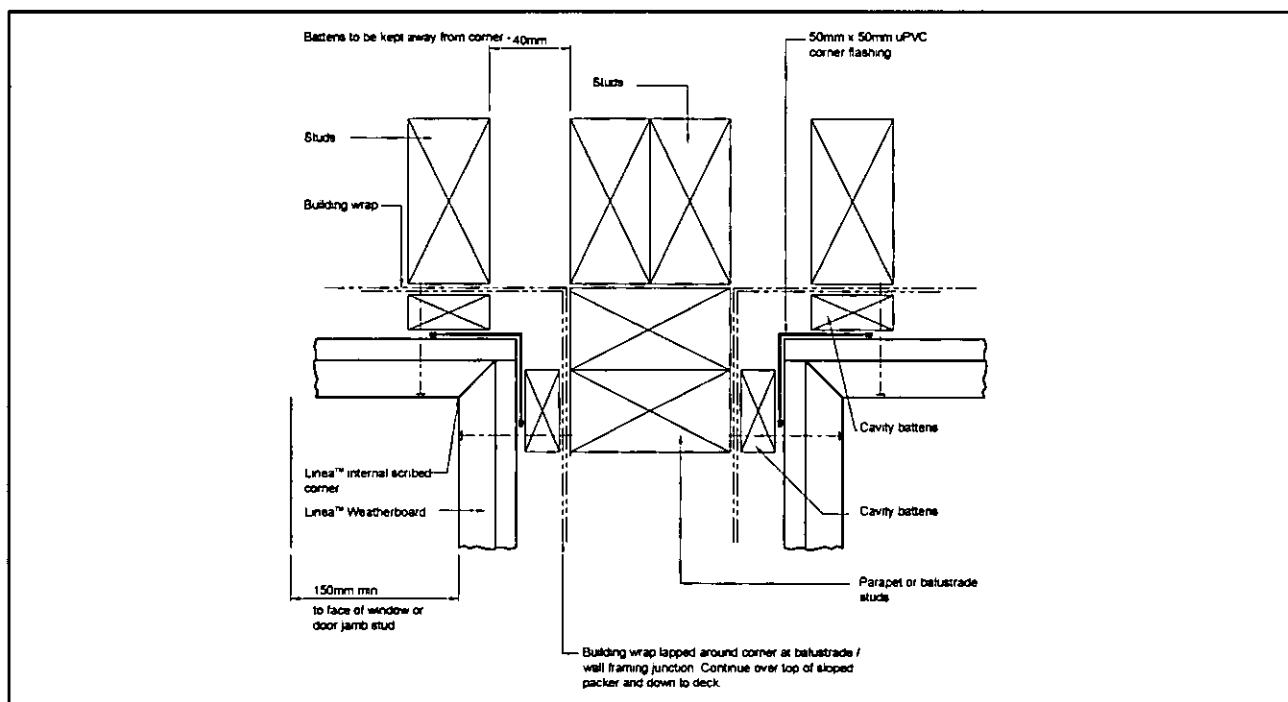


FIGURE 52: CAVITY ENCLOSED DECK BALUSTRADE TO WALL

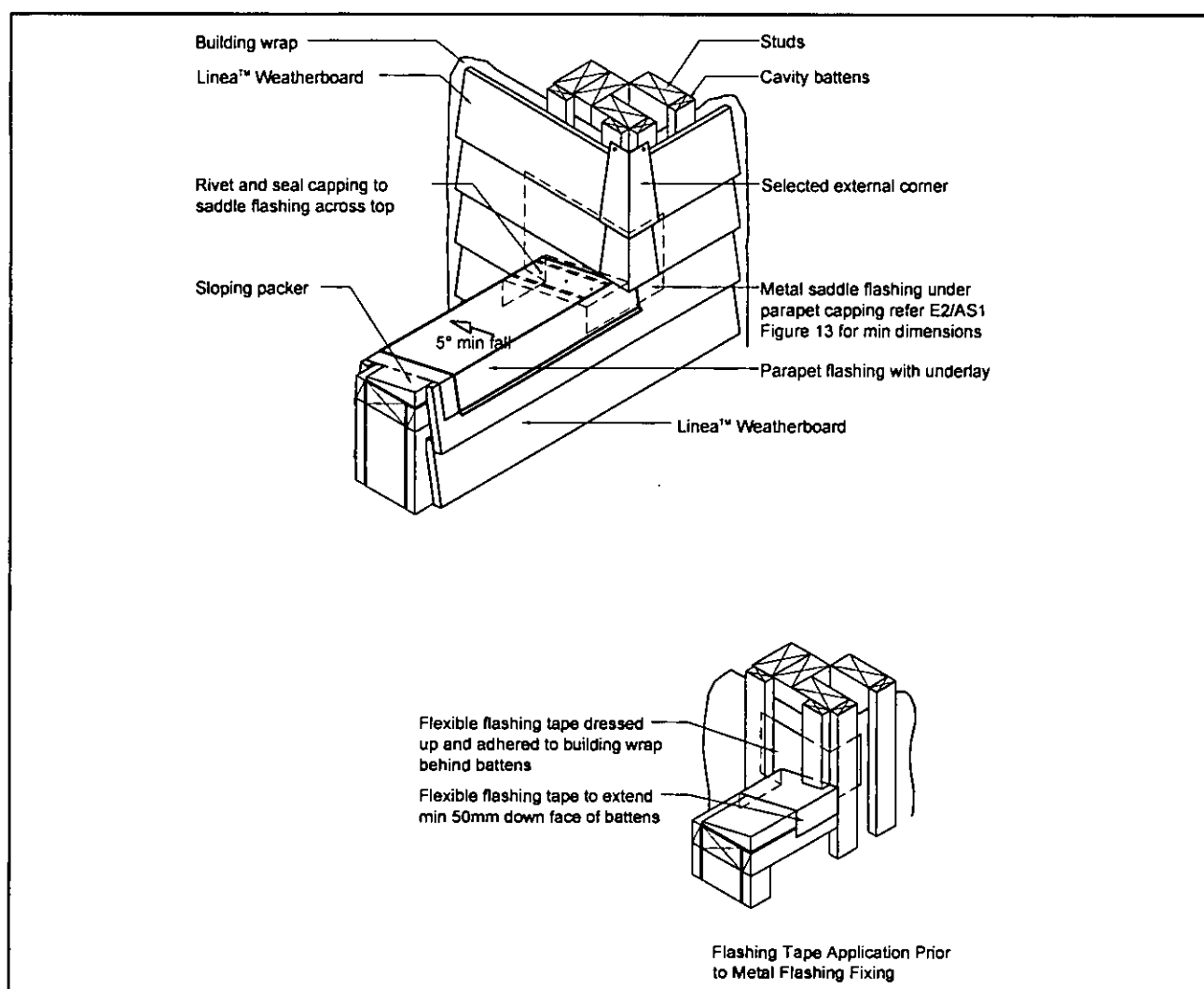


FIGURE 53: CAVITY ENCLOSED BALUSTRADE TO WALL

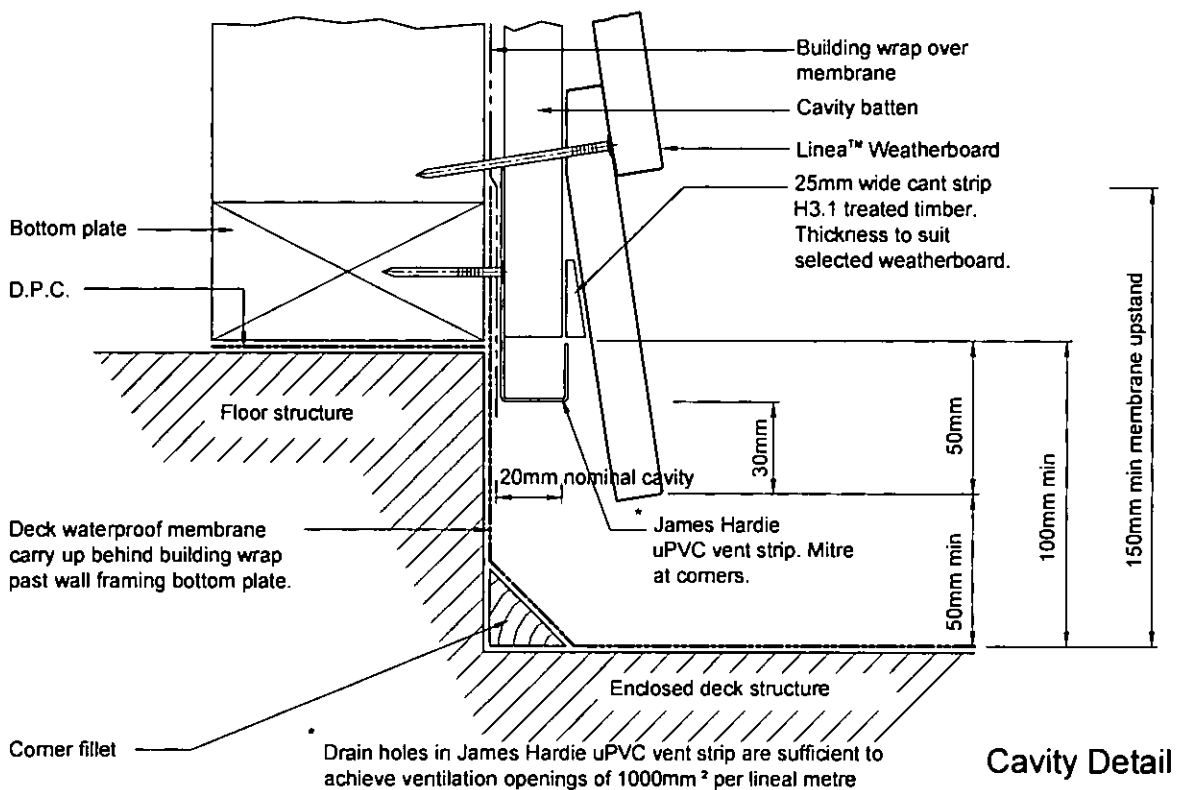
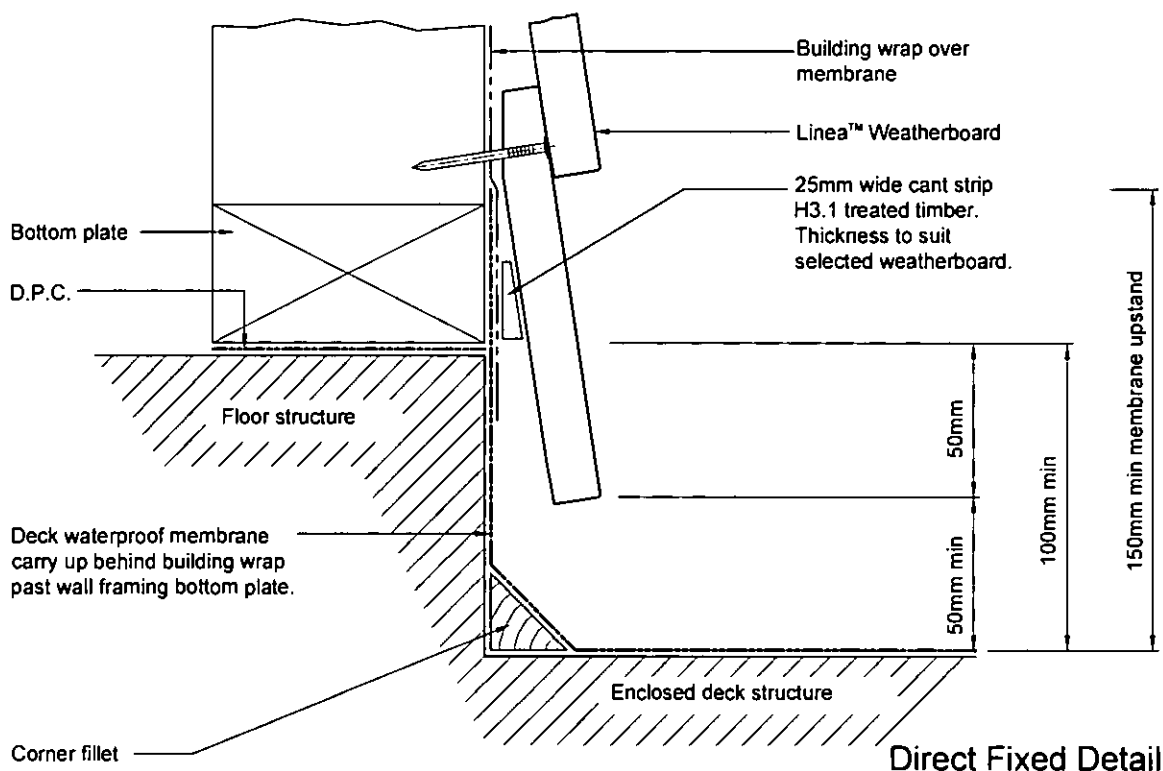


FIGURE 54: DIRECT FIXED AND CAVITY AT ENCLOSED DECK

15 WARRANTY

Linea™
WEATHERBOARD

PRODUCT WARRANTY

September 2008

WARRANTY: James Hardie New Zealand Limited ("James Hardie") warrants for a period of 25 years from the date of purchase that the Linea Weatherboard (the "Product"), will be free from defects due to defective factory workmanship or materials and, subject to compliance with the conditions below, will be resistant to cracking, rotting, fire and damage from termite attacks to the extent set out in James Hardie's relevant published literature current at the time of installation. James Hardie warrants for a period of 15 years from the date of purchase that the CLD Trim and accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials.

Nothing in this document shall exclude or modify any legal rights a customer may have under the Consumer Guarantees Act or otherwise which cannot be excluded or modified at law.

CONDITIONS OF WARRANTY: The warranty is strictly subject to the following conditions:

- (a) James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation.
- (b) This warranty is not transferable.
- (c) The Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including coating and jointing systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice.
- (d) The project must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("NZBC"), regulations and standards.
- (e) The claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product.
- (f) James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces).
- (g) All warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law.
- (h) If meeting a claim under this warranty involves re-coating of Products, there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.

DISCLAIMER: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. James Hardie has tested the performance of Linea™ Weatherboard when installed in accordance with the Linea™ Weatherboard technical specification, in accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design) James Hardie shall not be liable for the recommendations made in its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie installation manual are suitable for the intended project and that specific design is conducted where appropriate.

Ask James Hardie™
Call 0800 808 868
www.jameshardie.co.nz



James Hardie
Call 0800 808 868

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James Hardie International Finance BV.



HOROWHENUA DISTRICT COUNCIL

126-148 Oxford Street
Private Bag 4002
Levin
Telephone 06 366 0999
Facsimile 06 366 0977
Email enquiries@horowhenua.govt.nz
www.horowhenua.govt.nz

Application for Amendment to Building Consent

Note: this application must be accompanied by two copies of the relevant drawings from the issued building consent and two copies of the documents with the proposed amendments clearly highlighted.

Council Use Only

Building Officer

Steve Crambie

Amended plan No.

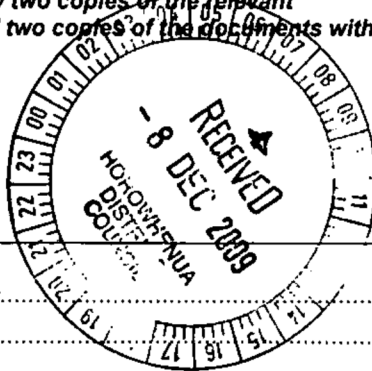
Existing consent No.

08-1589

The Project

Site Address

358 WAKA TETE PLACE
WAITAREBE BEACH



Description of Amended Work

[refer to notes overleaf]

AMENDMENT TO SOAK PIT FROM CONSENTED.
SEE ATTACHED PLAN. THREE WELL LINERS INSTALLED TO
REPLACE CONCENTED SOAK PIT.

Value of Amended Work (GST incl)

Does the amendment alter the Project value ☐ Yes \$ (new value)
☒ No

Are there any amendments to systems for which a compliance schedule has been issued? ☐ Yes ☐ No

Contact Details

Contact Details

Landline: 06 3593939
Facsimile Number: 06 3593949
After Hours:

Mobile:
Email: S.Crambie@signature.co.nz

The Owner

Owner/Agent Details

[note: owner details required in all cases]

Owner [if also agent, tick box ☐]:

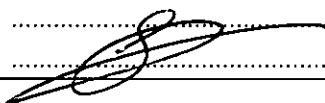
Business:
Address: 358 WAKA TETE PLACE
Suburb: WAITAREBE BEACH
Phone (day):
Cellphone:
Fax:
Correspondence to ☐ owner ☒ or agent

Agent

Business name: SIGNATURE HOMES
Contact person: STEVE CRAMBBIE
Address: 187 BROADWAY AVE
Suburb: PALMERSTON NORTH
Phone (day): 06 3593939
Cell phone:
Fax: 06 3593949

Signed by the Owner

Signed by the Agent [on behalf of, or with authority from, the owner]



Notes to Applicant

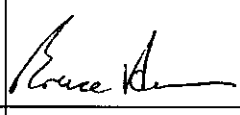
This application is to gain consent for minor changes which could arise from on-site problems and re-arrangement of facilities including reductions in the scope of the original consent. Proposals will not meet this criteria if they fall outside the space of the original consent or need more than minor changes to the existing conditions.

An amended plan may cover:

- A beam that needs to be included due to on-site problems.
- Wall construction changes.
- Removal or reduction of sanitary fixtures.
- Installation of an additional window.
- A room that needs to be widened slightly.

Amended plans are accepted at the discretion of Council. A full consent will be required if it becomes apparent that the submitted plans do not meet the above criteria.

Office Use Only

	Comment	Approving Officer	Date
Building	NIL.		
Plumbing & Drainage	300mm water soak pit. changed to concrete lines from u/pipes.		9/12/09.
Other	NIL.		

HDC PROCEDURE

Decision

Accept Decline
Pass / Fail

Procedure Type: Amendment

Accession number:

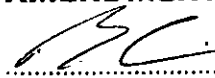
Reason: on less than 10% of the site.

Outcome: OK to Amend.

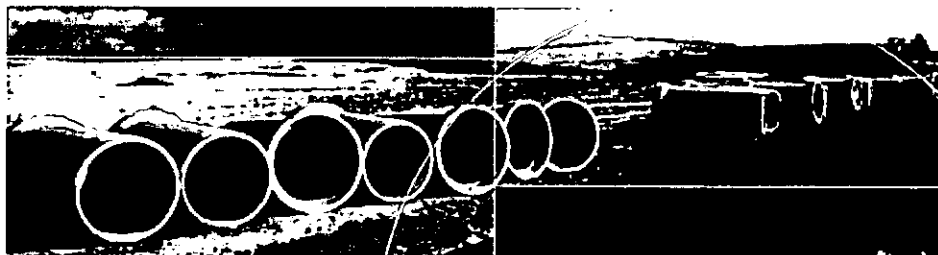
BCO:

HOROWHENUA DISTRICT COUNCIL

AMENDMENT APPROVED

 DATE 9/12/09.

SUBJECT TO COMPLIANCE
WITH THE BUILDING
CONSENT DOCUMENTATION



Well Liners / Soakage Pits

PRECAST REINFORCED CONCRETE

APPLICATIONS

- Subdivisions.
- Rural.
- Traffic areas.

UNIQUE BENEFITS

- Durable.
- Strength.
- Made of 'Blue Chip'.
- Can be stacked as high as 6m.

INTRODUCTION

Hynds well liners are strong and versatile with various sizes available to suit all applications.

Hynds well liners, originally designed for water wells for farmers to use, are

also used for soak holes. The overall design incorporates a concrete band at the top and bottom for extra strength.

An excellent use for well liners is at traffic areas, as they can carry a heavier class lid and therefore heavier loads than the standard pumice units that are often used. It is important in this instance to use an oversized lid so the weight is carried by the surrounding ground.

Well liners are built to last, mainly consisting of reo, blue chips and cement. However the soakage ability depends on the amount of water entering the soak pit.

INSTALLATION

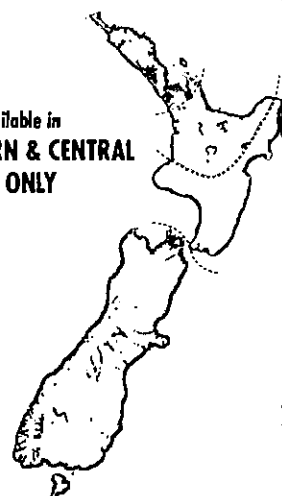
Whilst all liners should be handled carefully, pumice liners require extra care. They are a lot lighter than comparable pre-cast concrete units.

Once the hole has been dug or drilled, where possible level the bottom of the hole. The liners should then be stacked to the required height.

A normal well would consist of 3 to 4 pumice liners, with 2 solid liners on top. These can then be covered with one of our lid options. Sizing of soak holes are normally determined by catchment area and soil type.

AREA(S) OF PRODUCT AVAILABILITY:

Product available in
**NORTHERN & CENTRAL
REGIONS ONLY**



HYNDS BRANCHES

TECHNICAL SERVICES DEPARTMENT:

Ph: 09 274 0316 Fax: 09 274 8393
techservice@hynds.co.nz
0800 WE PIPE (93 7473)

NORTHERN REGION

Whangarei	09 438 7305
Warkworth	09 425 9837
Albany	09 415 9259
Avondale	09 820 0122
Penrose	09 579 5605
Manukau	09 273 3053
Pukekohe	09 237 1274

CENTRAL REGION

Hamilton	07 847 3193
Tauranga	07 575 5791
Rotorua	07 346 0454
Te Kuiti	07 878 8326
Taupo	07 378 9915

CAPITAL REGION

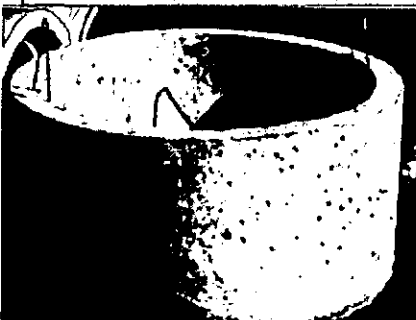
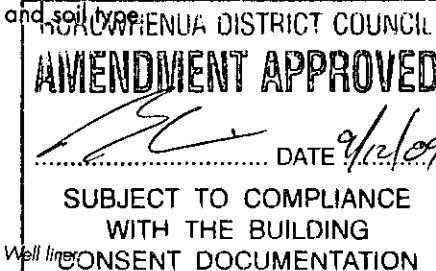
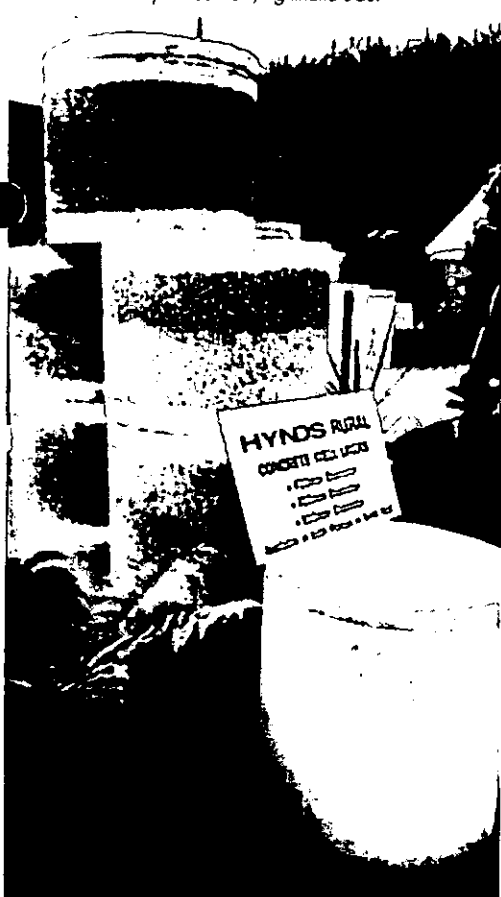
Hostings	06 879 8989
New Plymouth	06 759 8157
Palmerston North	06 357 2638
Masterston	06 370 0700
Kapiti	04 297 0689
Porirua	04 568 0933
Kaiwharawhara	04 472 4172

SOUTH ISLAND REGION

Nelson	03 543 8330
Amberley	03 314 8455
Christchurch	03 344 3500
Oamaru	03 434 6150
Cromwell	03 445 4760
Winton (Southland)	03 236 6044

Disclaimer: Users of the Hynds products and/or information within this document must make their own assessment for suitability for their particular circumstances. Product dimensions and specifications may vary according to factory of manufacture or changes due to product improvements. No warranty is neither expressed nor implied nor statutory is made by Hynds in this document unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.

Pumice Soak Rings stacked.
Well liner and lid pictured front, righthand side.



900mm Diameter Well Liners

Product Code	Description	Size	Weight
WL50900PF	Porous Concrete	900 x 1000mm	623kg
WL09001000S	Solid Concrete	900 x 1000mm	519kg
WL0900500S	Solid Concrete	900 x 500mm	260kg
WL09100500	Porous Concrete	910 x 500mm	220kg
WL09101000	Porous Concrete	910 x 1000mm	420kg
WL09101000B	Solid Concrete	910 x 1000mm	350kg

900mm Well Liner Lids

WL0900100	Blank	900 x 100mm	209kg
WL0900100.100	100PVC	900 x 100mm	209kg
WL0900150	Blank	900 x 150mm	313kg
WL0900150.150	150PVC	900 x 150mm	313kg

750mm Diameter Well Liners

Product Code	Description	Size	Weight
WL07500300	Porous Concrete	750 x 300mm	130kg
WL07500300S	Solid Concrete	750 x 300mm	130kg
WL07500450	Porous Concrete	750 x 450mm	207kg
WL07500450S	Solid Concrete	750 x 450mm	254kg
WL07500600	Porous Concrete	750 x 600mm	250kg
WL07500600S	Solid Concrete	750 x 600mm	221kg
WL07500750	Porous Concrete	750 x 750mm	345kg
WL07500750S	Solid Concrete	750 x 750mm	277kg
WL07501000	Porous Concrete	750 x 1000mm	415kg
WL07501000S	Solid Concrete	750 x 1000mm	450kg

750mm Well Liner Lids

WL0750075	Blank	750 x 75mm	128kg
WL0750100	Blank	750 x 100mm	153kg
WL0750150	Blank	750 x 150mm	230kg

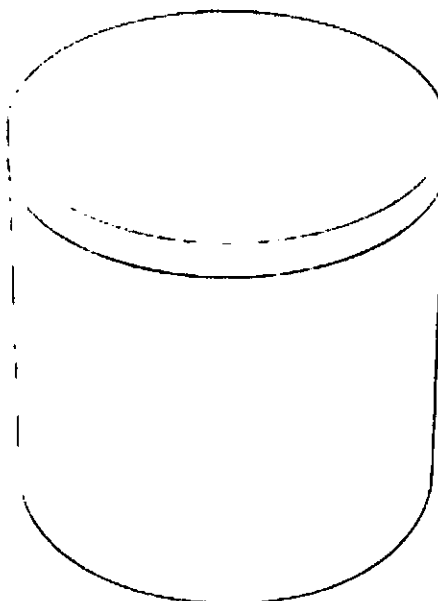
Pumice Soak Ring

Product Code	Description	Size	Weight
SRP6000450	Porous Concrete	600 x 450mm	46kg
SRP6000450S	Solid Concrete	600 x 450mm	58kg
SRP6000600S	Solid Concrete	600 x 600mm	74kg
SRP6000900	Porous Concrete	600 x 900mm	84kg
SRP6000900S	Solid Concrete	600 x 900mm	116kg
SRP9000450	Porous Concrete	900 x 450mm	78kg
SRP9000450S	Solid Concrete	900 x 450mm	102kg
SRP9000900	Porous Concrete	900 x 900mm	156kg

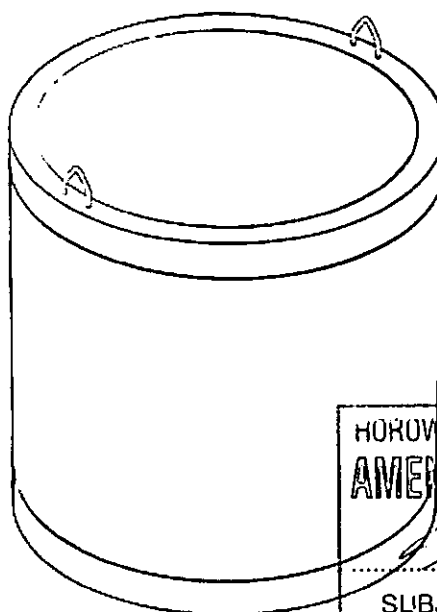
Offal Hole Lid

Product Code	Description	Weight
OHP105075	1050mm Offal Hole Lid c/w 75mm plug	11kg
OHP122075	1220mm Offal Hole Lid c/w 75mm plug	15kg
OL1350PF	1350mm Offal Hole Lid	19kg

Well liner and lid.



Well liner.



HOROWHENUA DISTRICT COUNCIL
AMENDMENT APPROVED
 DATE 9/12/27
 SUBJECT TO COMPLIANCE
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HOROWHOUA DISTRICT COUNCIL
 AMENITY COMMITTEE APPROVED
 DATE
 SUBJECT TO COMPLIANCE
 WITH THE BUILDING
 CONSENT DOCUMENTATION

Note :

High Wind Zone
Longrun Veedeck profile Zincolume finish
Pitch 8° main roof 3° entry & study
Combination HJ240x63 hyJOISTS @ 900c/s and trusses @ 900c/s as
hatched above
Roof underlay Thermakraft 215
180mm Linea Fascia with continuous Colorsteel guttering PVC downpipes

Roof penetrations to be flashed with Dekite EDPM flexible boot flashings

APPROVED
11 MAR 2009
CONSENT

Date... 20/2
Revision... A

**PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATERFIRE BEACH**

ROOF PLAN

These plans are copyright of Signature Homes

DATE:	20 FEB 09	REAR:	A3	1:00	A4	-
DRAWN:	PD	KEY	A			
LOT:	D-1	JOB NO.:	08-576			
16		SHEET NO.:	12			

These drawings are to be used in conjunction with the specifications and dimension notation that form part of the contract.

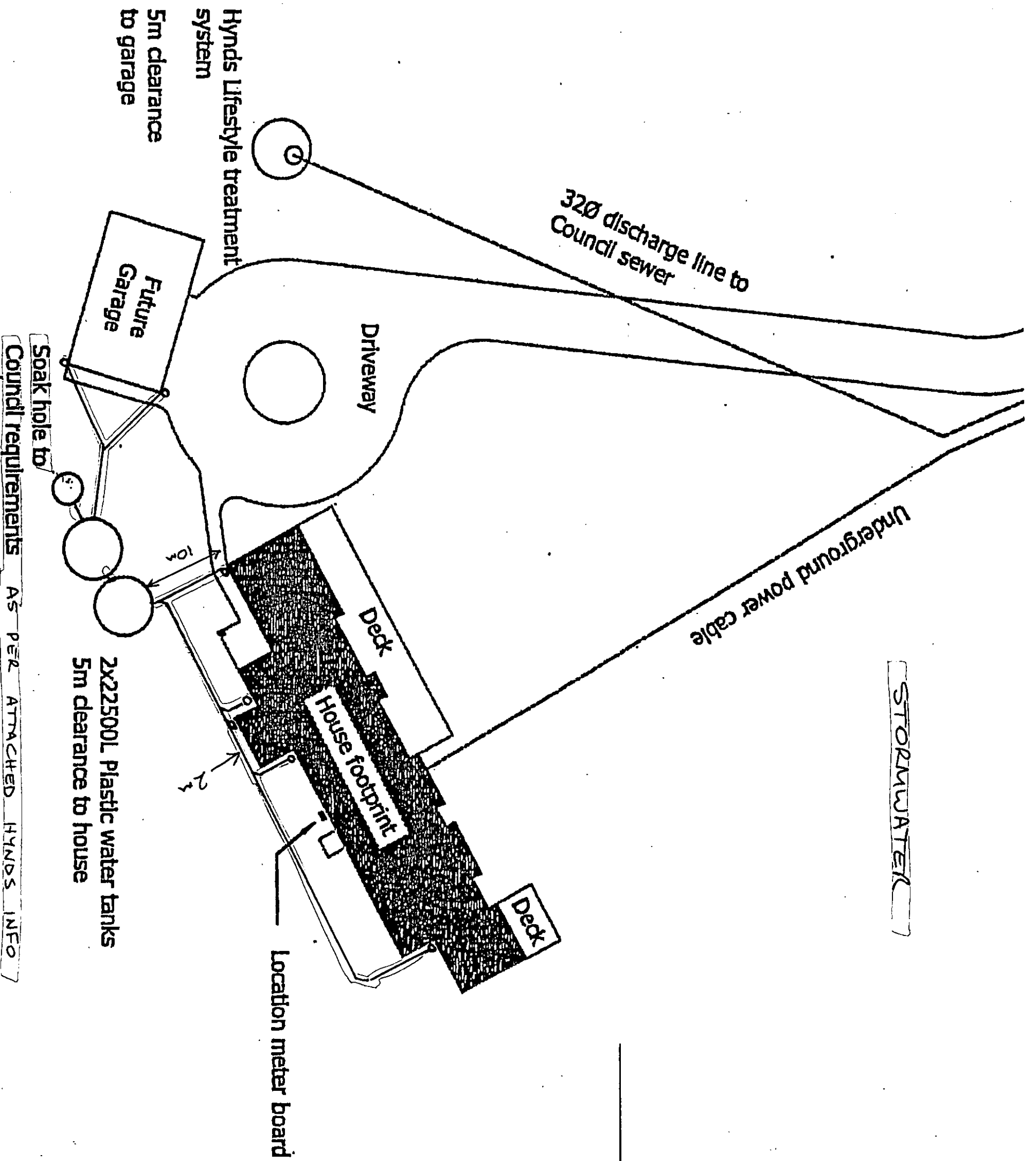
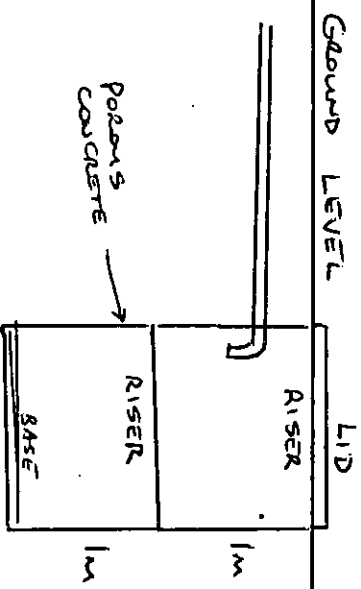
These drawings have been prepared on the understanding that the Building Contractor has a sound knowledge of the NZ Building Code NZS3604:1999. The Building Contractor, also Contractor or Administrator of the Owner or building user, must ensure that all works comply with these codes in addition to any requirements of the Technical Authority. Any such undertaking includes those requirements without the prior written approval of the engineer, Engineer and/or Architect. The Building Contractor must ensure that the Engineer and/or Architect is kept informed of any developments in the design and construction of the building and that the Building Contractor is kept informed of any developments in the design and construction of the building and that the Building Contractor is kept informed of any developments in the design and construction of the building.

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STORMWATER

HOROWHENUA DISTRICT COUNCIL
AMENDMENT APPROVED
DATE 9/12/17
SIGNED [Signature]
SUBJECT TO COMPLIANCE
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SOAK PIT DETAIL.





HOROWHENUA DISTRICT COUNCIL

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Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

BC/2008/1589/021

BUILDING ASSESSMENT REPORT

This report is to confirm progress inspections on your building project.

Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
4 December 2009 6043/2009	Final Inspection	Outstanding requirements to be completed: The tiling in the main bathroom and ensuit is required to be grouted and sealed around the wall to floor junctions. The deck is required to be finished. The laundry wall to floor junctions are required to be sealed where vinyl is butting up to the skirting. A installers declaration is required for the septic system and a signed service contract. A producer statement is required from the installer of the water proofing membrane. An amendment is required for the stormwater system as the original soak pit shown on the plans has been changed. The ground levels around the back of the house are required to be 225 mm below the finished floor level or 150mm to a permanent paved surface.	Fail

Outcome: Reinspection required when all the above items have been completed.

Next Inspection: Final

Inspector: Bruce Harris



Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

ADDRESS: LOT 16 WAKATETE PLACE

OWNER: W.C.

BC NUMBER: 08/1589

CONTRACTOR:

INSPECTOR: Bruce Harris

DATE: 4/12/09

[illegible]

NOTES:

SKIRTINGS need sealing as per floor functions.
Tiling is required to be grouted in main bathroom & kitchen.
Ground Heighty need to be applied as not to 225mm below floor level.
An amendment for the soak pit is required as soak hole is not as per 12/19.
The Deck needs to be completed.
Insurance Declaration for septic system needed. & service contract.
Tiler membrane producers warranty required.

—	Not Applicable
√	Checked & Approved
X	Failed

☒	Reinspection Required
☐	OK to issue CCC on receipt of Form 6



Safety • Competency

EWRS 551

No. 3073236

No. of residents

To be completed whether or not an inspection is required

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Signature Homes

Phone:

Lot 16 . Waka Te Te place

Waitarere Beach

WORK DETAILS

42 No. of lighting outlets

1 No. of ranges

31 No. of socket outlets

1 No. of water heaters

Was any installation work carried out by the homeowner?

Yes ☐ No ☒

Please tick (✓) as appropriate where work includes:

☒ Mains

☒ Main earthing system

☒ Switchboard

☐ Electric lines

Description Wired and fitted
off, as per plans
held at Laser Electrical
Manawatu

It is recommended that test results be recorded here:

Visual Examination ☒

Earth Continuity ☒

Bonding ☒

Polarity ☒

Insulation Resistance ∞ Mohm

Other P-N ∞

P-E ∞

If necessary attach any pages with sketches of work done

CERTIFICATION OF WORK

I certify that the above electrical work has been carried out in accordance with the requirements of the Electricity Act 1992 and Electricity Regulations 1997.

ELECTRICAL WORKER DETAILS

Name Teol Keenan

Registration no. E252574

Company Laser Electrical Manawatu

Signature Keenan

Date 4/12/09

Contact No.

CERTIFICATION OF ELECTRIC LINES

(to be completed where a separate electrical worker has installed the electric line portion of the mains)

Name

Registration no.

Company

Signature

Date

Contact No.

INSPECTION DETAILS Electrical work requiring inspection by a registered electrical inspector

☐ New mains

☐ Switchboard

☐ Earthing system

☐ Installation work in hazardous areas

I certify that the inspection has been carried out in accordance with the requirements of regulations under the Electricity Regulations 1997.

Inspector's Name
Signature

Inspector's Name
Signature

Duration of Work



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
1 December 2009 5872/2009	External Services Inspection / Drainage etc	See site inspection sheet attached.	Pass

Outcome: Ok to back fill.

Next Inspection: Final.

Inspector: Bruce Harris

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

ADDRESS: 16 WAKATETE PLACE

OWNER: _____

BC NUMBER: 08/1589

CONTRACTOR: SIGNATURE HANDS

INSPECTOR: Bruce HARRIS

DATE: 1/12/09

BRICK	PLUMBING PRE-LINE	POOL & SPA FENCING
Bricklayer	Plumber	Pool area does not contain any of the following:
Base rebate sealed (2 coats)	Pipework BRAND	- Washing line
Correct size cavity	Under test	- Play area & equipment
Building wrap fitted tight	Lagged where required	- Garage, carport, vehicle access
Brick ties spacing & ties bed in mortar	Pipework supported	- Vegetable garden
Correct ties for zone	Waste pipes in & venting / open / AAV	- Whole back yard
Steel linels	POST LINING	FENCE
Weep holes	Brace panels nailed correctly	1.2m high from ground
Jointing 7-13mm	Correct fasteners used	900mm between horizontal rails
Expansion joints	As per plan	Gaps under fence less than 100mm
Clean cavity & cleanout bricks	Braceline sheets correct corner fixings	Picket fence gaps no wider than 100mm
STUCCO/EIFS	Standard Gib correct fixings	Mesh size less than 10mm for 1.2m high fence
Plaster/Applicator	Aqualine tile shower fixed at 100mm	Mesh size less than 50mm for 1.8m high fence
Netting tight & space off frame	WATERPROOF MEMBRANE	No climbing points outside fence
Fixings correct/Galv nails 30mm into frame	Name of Applicator	GATES
EIFS plaster nail/washer used correctly	Type of membrane	Open outwards
Flashing mesh in if required	Interior/Exterior	Self closing & latching
Reinforcing mesh if required	Substrate	Latch at 1.5m high outside gate
Control joints in place & siliconed in	Fixing of substrate	Latch at 1.2m high inside gate
No lengths over 4m vertical & horizontal	Moisture content %	DOORS & WINDOWS IN WALLS
Control break at first floor level	DRAINAGE TAPE 06123	Door locking device over 1.5m
PRE-LINING	Drainlayer	Windows higher than 1.2 high
Bracing as per plan	Correct falls 1:100	Window restrictor stays on
Straps to bracing elements	Terminal vent riser in place	Doors open outwards/slide
Steel angle braces nailed correctly	Test on	ON GROUND (PARA TYPE) POOLS
Ceiling batten type Steel Timber	Drain inspection points	Sides 1.2m above ground
Ceiling batten spacings & fixings	Laid in bedding	Smooth sides no climbing points
Post size & treatment & fixings	Sumps installed as per plan	No climbing points within 1.2m of pool
Window air seals	As built received	Ladder removable & secured away from pool
Moisture content %	Soak pits <u>POW WATER MARKS</u>	
Insulation to walls	Correct stormwater pipe used	
Insulation to ceilings	Septic tank aerated system	
Dragon ties	Effluent field location as per plan	
Diaphragms fixed direct to trusses	Horizons approval	
Solid blocking to perimeter for diaphragm	Dripper lines pinned/100mm bark	
	Correct number of downpipes	

NOTES:

SOAK P.T. has been changed to waste tanks overland to concrete
 SOAK P.T. ALL OK. SELF CLEANOUT AT WATER TANK INLET.
 SEPTIC TANK PUMPED TO COUNCIL SERVICES AS per P/C. 32m buried line.

NEXT INSPECTION

FINAL

—	Not Applicable
✓	Checked & Approved
X	Failed

DECISION:
(PASS) FAIL
OUTCOME: OK TO COMPLY ON 2nd BACK FILE



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
26 November 2009 5804/2009	External Services Inspection / Drainage etc	No drainlayer on site and drain not on test.	Fail

Outcome: A reinspection required.

Next Inspection: Sanitary Drainage.

Inspector: Bruce Harris

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach



GENERAL INSPECTION SHEET 2

OWNER:

CONTRACTOR:

DATE: 26/11/09

[illegible]

NOTES:

NO DANGER on Shore!

No Test on

Next: Integration

Reinfection of Brain Ace

—	Not Applicable
√	Checked & Approved
X	Failed

DECISION:	PASS FAIL
OUTCOME:	Review/Action Required



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
1st October 2009 6680/2008	Post Line Inspection / Gib Nailing etc	Post-Line Inspection: <u>Second Inspection</u> : All bracing panels have been fixed in accordance with the consent documents and gib specification.	Pass

Outcome: May proceed with construction to the next inspection:

Next Inspection: External services inspection:

Inspector: Graeme Whitefield

Date: 2/10/09

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
17 September 2009 6677/2008	Pre-Line Insp : Moisture, Insulation, Bracing	Please refer attached field sheet.	Pass

Outcome: All ok to continue lining

Next Inspection: Post Line

Inspector: Murray Lougher

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

ADDRESS: Lot 16 Waka Tete.

OWNER: _____

BC NUMBER: 2008/1589

CONTRACTOR: Signature Homes

INSPECTOR: Murray ROUCHER

DATE: 16-09-09

BRICK	PLUMBING PRE-LINE	POOL & SPA FENCING
Bricklayer	Plumber	Pool area does not contain any of the following:
Base rebate sealed (2 coats)	Pipework BRAND	- Washing line
Correct size cavity	Under test	- Play area & equipment
Building wrap fitted tight	Lagged where required	- Garage, carport, vehicle access
Brick ties spacing & ties bed in mortar	Pipework supported	- Vegetable garden
Correct ties for zone	Waste pipes in & venting / open / AAV	- Whole back yard
Steel linels	POST LINING	FENCE
Weep holes	Brace panels nailed correctly	1.2m high from ground
Jointing 7-13mm	Correct fasteners used	900mm between horizontal rails
Expansion joints	As per plan	Gaps under fence less than 100mm
Clean cavity & cleanout bricks	Braceline sheets correct corner fixings	Picket fence gaps no wider than 100mm
STUCCO/EIFS	Standard Gib correct fixings	Mesh size less than 10mm for 1.2m high fence
Plaster/Applicator	Aqualine tile shower fixed at 100mm	Mesh size less than 50mm for 1.8m high fence
Netting tight & space off frame	WATERPROOF MEMBRANE	No climbing points outside fence
Fixings correct/Galv nails 30mm into frame	Name of Applicator	GATES
EIFS plaster nail/washer used correctly	Type of membrane	Open outwards
Flashing mesh in if required	Interior/Exterior	Self closing & latching
Reinforcing mesh if required	Substrate	Latch at 1.5m high outside gate
Control joints in place & siliconed in	Fixing of substrate	Latch at 1.2m high inside gate
No lengths over 4m vertical & horizontal	Moisture content %	DOORS & WINDOWS IN WALLS
Control break at first floor level	DRAINAGE	Door locking device over 1.5m
PRE-LINING	Drainlayer	Windows higher than 1.2 high
✓ Bracing as per plan	Correct falls	Window restrictor stays on
✓ Straps to bracing elements	Terminal vent riser in place	Doors open outwards/slide
✓ Steel angle braces nailed correctly	Test on	ON GROUND (PARA TYPE) POOLS
✓ Ceiling batten type Steel Timber	Drain inspection points	Sides 1.2m above ground
✓ Ceiling batten spacings & fixings	Laid in bedding	Smooth sides no climbing points
✓ Post size & treatment & fixings	Sumps installed as per plan	No climbing points within 1.2m of pool
✓ Window air seals	As built received	Ladder removable & secured away from pool
✓ Moisture content <u>14-16</u> %	Soak pits	
✓ Insulation to walls <u>2.6</u>	Correct stormwater pipe used	
✓ Insulation to ceilings <u>3.6</u>	Septic tank aerated system	
✓ Dragon ties	Effluent field location as per plan	
✓ Diaphragms fixed direct to trusses	Horizons approval	
✓ Solid blocking to perimeter for diaphragm	Dripper lines pinned/100mm bark	
	Correct number of downpipes	

NOTES: Gib Ezybrace Bracket used for BK bracing Elements
All Insulation installed R2.6 Walls R 3.6 Ceilings
Windows fully air sealed: Moisture Content 14-16%
All Internal pipework outside the Thermal Envelope Lagged.
Up to Panel to Outside Southern wall to be completed
before any internal linings commence:

— Not Applicable
 ✓ Checked & Approved
 X Failed

DECISION:

PASS/FAIL

OUTCOME:

Ok to Continue.



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Date	Procedure Type	Reason	Decision Pass/Fail
9 September 2009 6672/2008	Cavity Frame	Please refer attached field sheet.	Pass

Outcome: All ok to continue

Next Inspection: Post Clad / Pre-Line

Inspector: Murray Lougher

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

ADDRESS: Lot Waka Tete Place
BC NUMBER: 2008/1589
INSPECTOR: Murphy

OWNER: P & D Wing.
CONTRACTOR: Signature Homes P.Nth.
DATE: 8-9-09

SITINGS			
Boundary pegs & datum identified		Support for brace walls in place	Subfloor vent holes
Distance to boundary		Correct timber treatment used	Cleanout ports
Finished floor levels as per plan		Correct bolt fixings S/S Galvanised	Control joints
FOUNDATION/BLOCK WALLS		Joist hangers correctly nailed	Engineer to inspect
Bearing capacity		Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
Horizontal rods		Correct ground clearance	Type:
Starters vertical rods		Base ventilation allowed for & access door	Continuous from foundations to top plate
Side/Bottom cover		TRUSS ROOF & CUT ROOF	Correct laps
Lapping/Tying		Wind zone	Sill wraps in place
Width/Depth		Purlin fixings as per plans & wind zone	No holes or tears
PILES/POST HOLES		Truss layout & fixings correct	Meter box/Gas unit flashings
Driven piles		Girder truss supports & fixings	Jam flashing
Anchor piles 900mmx350sq or 400 dia		Roof bracing	Sill flashings
Braced piles 450 deep x 350sq		Cut roof & Skillion hold downs correct	Head flashings
Ordinary piles 200deep x 250sq		PRE-WRAP	Apron flashings turned out at ends
Timber treatment H5		Walls as per plan	Head & sill flashings turned up at ends
Cut faces treated		DPM under plates	On drained ventilated cavity
Engineer to inspect		Stud sizing & spacings	Backing as per consent
Shed post holes		Bottom plate fixings	Base flashing
SLABS		Exterior braces in place	Batten type Hs timber other <u>CLD</u>
Topsoil removed		Lintel sizes	Penetrations flashed
Base course less than 600mm		Lintel & cantilevered beams tied down	Roof space closed off from cavity
Blinding layer in place		Top plates to stud connections	Insulation not closing cavity
Damp-proofing in place		Timber Grade	Thermal barrier
Mesh in place TYPE		Timber treatment & species	Penetrations sealed through firewalls
Supported on bar chairs		Walls Roof	STEEL/VINYL CLADDING & OTHER
Waste pipes laid with falls		Bottom plates	Horizontal or Vertical
Pipes protected through slab		Firewalls	Cavity
Additional reo to internal corners		Studs tied down correctly	Flashings in place as per consent
Shrinkage joints/free joints		Correct fasteners used	Bond breaker on battens
Insulation		RETAINING WALLS/BLOCK WALLS	Type
Slab thickening's		Timber Poles	Correct timber treatment used
TIMBER FLOORS		Tanking behind wall & protected	Deck drains/overflows
Piles to bearer connections correct		Drainage coil & cloth in place	
Braces-angle & connections correct		Drainage metal installed	
Bearers joined correctly		CONCRETE MASONARY	
Joists as per plan		Excavation to good bearing	
Joists to bearer connections S/S under 600mm		Horizontal rods	
Subfloor bracing as shown		Starters vertical rods	
Solid blocking in place		Lapping/tying	

NOTES: Cavity Closure Strip to be lowered to 20mm Below Bottom Plate.
Soft flashing (Supercore) to be fitted as per documents and at the Titan Cladding Areas.
Nylon Strip to be fitted between Cavity Battens where the Spacing are greater than 400mm.
Linea Wawa Cover at the external joinery to have 10mm cover as documented on the previous inspection report. No Scribes are to be fitted until this has been inspected.

— Not Applicable
✓ Checked & Approved
X Failed

DECISION: PASS / FAIL
OUTCOME: OK to Continue.



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BC/2008/1589/021

BUILDING ASSESSMENT REPORT

This report is to confirm progress inspections on your building project.

Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
26 August 2009 6678/2008	Internal Services Inspection / Pipe Water Test etc	Refer to the attached inspection report. It was noted on site that the wall insulation has been fitted prior to completion of the external building envelope. This is at the contractor's risk & where any deficiency is identified at the preline stage (moisture uptake) it may require replacement. It was further noted that there is insufficient Linea cover at the external joinery vertical jamb junction to isolated areas. Please ensure that the prescribed 10mm minimum cover is achieved with scribes not to be fitted until inspected.	Pass

Outcome: Ok to release the pressure test.

Next Inspection: External cladding including the raking eaves Supercourse flashing prior to fitting of scribes & soffit cover beads.

Inspector: Jason Batt

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

ADDRESS: LOT 16 WAKATEPE PLACE
OWNER: P & D WING
BC NUMBER: 08-1589
CONTRACTOR: SIGNATURE HOMES - P. NORTH
INSPECTOR: D. P. Bata
DATE: 26.8.09

BRICK	PLUMBING PRE-LINE	POOL & SPA FENCING
Bricklayer	Plumber <u>HENRY HUNTZ #18006</u>	Pool area does not contain any of the following:
Base rebate sealed (2 coats)	Pipework <u>BRAND WAVIN FUTURE K2</u>	- Washing line
Correct size cavity	Under test <u>1500 KPa</u>	- Play area & equipment
Building wrap fitted tight	Lagged where required	- Garage, carport, vehicle access
Brick ties spacing & ties bed in mortar	Pipework supported	- Vegetable garden
Correct ties for zone	Waste pipes in & venting / open / AAV	- Whole back yard
Steel linels	POST LINING	FENCE
Weep holes	Brace panels nailed correctly	1.2m high from ground
Jointing 7-13mm	Correct fasteners used	900mm between horizontal rails
Expansion joints	As per plan	Gaps under fence less than 100mm
Clean cavity & cleanout bricks	Braceline sheets correct corner fixings	Picket fence gaps no wider than 100mm
STUCCO/EIFS	Standard Gib correct fixings	Mesh size less than 10mm for 1.2m high fence
Plaster/Applicator	Aqualine tile shower fixed at 100mm	Mesh size less than 50mm for 1.8m high fence
Netting tight & space off frame	WATERPROOF MEMBRANE	No climbing points outside fence
Fixings correct/Galv nails 30mm into frame	Name of Applicator	GATES
EIFS plaster nail/washer used correctly	Type of membrane	Open outwards
Flashing mesh in if required	Interior/Exterior	Self closing & latching
Reinforcing mesh if required	Substrate	Latch at 1.5m high outside gate
Control joints in place & siliconed in	Fixing of substrate	Latch at 1.2m high inside gate
No lengths over 4m vertical & horizontal	Moisture content %	DOORS & WINDOWS IN WALLS
Control break at first floor level	DRAINAGE	Door locking device over 1.5m
PRE-LINING	Drainlayer	Windows higher than 1.2 high
Bracing as per plan	Correct falls	Window restrictor stays on
Straps to bracing elements	Terminal vent riser in place	Doors open outwards/slide
Steel angle braces nailed correctly	Test on	ON GROUND (PARA TYPE) POOLS
Ceiling batten type Steel Timber	Drain inspection points	Sides 1.2m above ground
Ceiling batten spacings & fixings	Laid in bedding	Smooth sides no climbing points
Post size & treatment & fixings	Sumps installed as per plan	No climbing points within 1.2m of pool
Window air seals	As built received	Ladder removable & secured away from pool
Moisture content %	Soak pits	
Insulation to walls	Correct stormwater pipe used	
Insulation to ceilings	Septic tank aerated system	
Dragon ties	Effluent field location as per plan	
Diaphragms fixed direct to trusses	Horizons approval	
Solid blocking to perimeter for diaphragm	Dripper lines pinned/100mm bark	
	Correct number of downpipes	

NOTES: HOT & COLD WATER SERVICE PIPED OUT IN WAVIN FUTURE K2, AS OPPOSED TO POLYBUTENE DUX SECURE COLD. THIS PRODUCT SUBSTITUTION IS APPROVED ON THE BASIS OF WAVIN FUTURE K2 BEING A COMPARABLE MATERIAL IN RESPECT OF BUILDING CODE COMPLIANCE 1500 KPa PIPED WATER TEST HELD WITH STATIC HEAD OBSERVED FOR A PASS RESULT. HOT WATER PIPES OUTSIDE THE THERMAL ENVELOPE SHALL BE THERMALLY INSULATED FOR ENERGY EFFICIENCY AS PER SEC 3.7.3 NZS4305:1996 AS DISCUSSED.

—	Not Applicable
✓	Checked & Approved
X	Failed

DECISION:	<u>PASS</u> / FAIL
OUTCOME:	<u>OK TO RELEASE TEST.</u>



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BUILDING ASSESSMENT REPORT

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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
15 July 2009 6675/2008	Wall Framing Inspection / Roof Framing Inspection	Wall//roof framing Inspection: All metal propriety fixings in place, including bracing fixings, No detail on consent documents for the formation of the eaves where the top cord of the timber trusses fly over passed the exterior wall framing.	Pass

Outcome: May continue with construction to next inspection:

Next Inspection: Pre- Lining Inspection:

Inspector: Graeme Whitefield:

Date: 17/07/09

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach



ADDRESS: Waka Yate Place

OWNER: Wing

BC NUMBER: 08/1589

CONTRACTOR: Signature Home

INSPECTOR: G. Whiteful

DATE: 15/04/09

SITINGS		
Boundary pegs & datum identified	Support for brace walls in place	Subfloor vent holes
Distance to boundary	Correct timber treatment used	Cleanout ports
Finished floor levels as per plan	Correct bolt fixings S/S Galvanised	Control joints
FOUNDATION/BLOCK WALLS	Joist hangers correctly nailed	Engineer to inspect
Bearing capacity	Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
Horizontal rods	Correct ground clearance	Type:
Starters vertical rods	Base ventilation allowed for & access door	Continuous from foundations to top plate
Side/Bottom cover	TRUSS ROOF & CUT ROOF	Correct laps
Lapping/Tying	✓ Wind zone <u>H1617</u>	Sill wraps in place
Width/Depth	✓ Purlin fixings as per plans & wind zone	No holes or tears
PILES/POST HOLES	✓ Truss layout & fixings correct	Meter box/Gas unit flashings
Driven piles	✓ Girder truss supports & fixings	Jam flashing
Anchor piles 900mmx350sq or 400 dia	✓ Roof bracing	Sill flashings
Braced piles 450 deep x 350sq	✓ Cut roof & Skillion hold downs correct	Head flashings
Ordinary piles 200deep x 250sq	PRE-WRAP	Apron flashings turned out at ends
Timber treatment H5	✓ Walls as per plan	Head & sill flashings turned up at ends
Cut faces treated	✓ DPM under plates	On drained ventilated cavity
Engineer to inspect	✓ Stud sizing & spacings	Backing as per consent
Shed post holes	✓ Bottom plate fixings	Base flashing
SLABS	✓ Exterior braces in place	Batten type: Hs timber other
Topsoil removed	✓ Lintel sizes	Penetrations flashed
Base course less than 600mm	✓ Lintel & cantilevered beams tied down	Roof space closed off from cavity
Blinding layer in place	✓ Top plates to stud connections	Insulation not closing cavity
Damp-proofing in place	✓ Timber Grade	Thermal barrier
Mesh in place TYPE	✓ Timber treatment & species	Penetrations sealed through firewalls
Supported on bar chairs	Walls <u>Roof Pine/Hy spec</u>	STEEL/VINYL CLADDING & OTHER
Waste pipes laid with falls	Bottom plates <u>4.3.2</u>	Horizontal or Vertical
Pipes protected through slab	Firewalls	Cavity
Additional rep to internal corners	✓ Studs tied down correctly	Flashings in place as per consent
Shrinkage joints/free joints	✓ Correct fasteners used	Bond breaker on battens
Insulation	RETAINING WALLS/BLOCK WALLS	Type
Slab thickening's	Timber Poles	Correct timber treatment used
TIMBER/FLOORS	Tanking behind wall & protected	Deck drains/overflows
Piles to bearer connections correct	Drainage coil & cloth in place	
Braces-angle & connections correct	Drainage metal installed	
Bearers joined correctly	CONCRETE MASONRY	
Joists as per plan	Excavation to good bearing	
Joists to bearer connections S/S under 600mm	Horizontal rods	
Subfloor bracing as shown	Starters vertical rods	
Solid blocking in place	Lapping/tying	

NOTES:

No Detail shown on plan for Truss & Lattice Detail.

— Not Applicable
✓ Checked & Approved
X Failed

DECISION:

PASS/FAIL

OUTCOME:

May continue with Construction



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
11 June 2009 2597/2009	Pre Pour Inspection	Polythene layed and taped. Waste pipes lagged and taped. Bar chairs placed as required. Mesh and steel work placed and tied as required. This inspection to Kitchen, bathroom and porch slabs.	Pass

Outcome: Ok to pour.

Next Inspection: Pre Wrap wall and roof framing.

Inspector: Russell Brook

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach



ADDRESS: Lot 16, Waka Tele PL
BC NUMBER: 2008/1589
INSPECTOR: Russell Brook

OWNER: Wing
CONTRACTOR: Signature Homes
DATE: 11/6/09

SITINGS		
Boundary pegs & datum identified	Support for brace walls in place	Subfloor vent holes
Distance to boundary	Correct timber treatment used	Cleanout ports
Finished floor levels as per plan	Correct bolt fixings S/S Galvanised	Control joints
FOUNDATION/BLOCK WALLS	Joist hangers correctly nailed	Engineer to inspect
Bearing capacity	Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
Horizontal rods	Correct ground clearance	Type:
Starters vertical rods	Base ventilation allowed for & access door	Continuous from foundations to top plate
Side/Bottom cover	TRUSS ROOF & CUT ROOF	Correct laps
Lapping/Tying	Wind zone	Sill wraps in place
Width/Depth	Purlin fixings as per plans & wind zone	No holes or tears
PILES/POST HOLES	Truss layout & fixings correct	Meter box/Gas unit flashings
Driven piles	Girder truss supports & fixings	Jam flashing
Anchor piles 900mmx350sq or 400 dia	Roof bracing	Sill flashings
Braced piles 450 deep x 350sq	Cut roof & Skillon hold downs correct	Head flashings
Ordinary piles 200deep x 250sq	PRE-WRAP	Apron flashings turned out at ends
Timber treatment H5	Walls as per plan	Head & sill flashings turned up at ends
Cut faces treated	DPM under plates	On drained ventilated cavity
Engineer to inspect	Stud sizing & spacings	Backing as per consent
Shed post holes	Bottom plate fixings	Base flashing
SLABS	Exterior braces in place	Batten type Hs timber other
Topsoil removed	Lintel sizes	Penetrations flashed
Base course less than 600mm	Lintel & cantilevered beams tied down	Roof space closed off from cavity
Blinding layer in place	Top plates to stud connections	Insulation not closing cavity
Damp-proofing in place	Timber Grade	Thermal barrier
Mesh in place TYPE <u>665</u>	Timber treatment & species	Penetrations sealed through firewalls
Supported on bar chairs	Walls Roof	STEEL/VINYL CLADDING & OTHER
Waste pipes laid with falls	Bottom plates	Horizontal or Vertical
Pipes protected through slab	Firewalls	Cavity
Additional reo to internal corners	Studs tied down correctly	Flashings in place as per consent
Shrinkage joints/free joints	Correct fasteners used	Bond breaker on battens
Insulation	RETAINING WALLS/BLOCK WALLS	Type
Slab thickening's	Timber Poles	Correct timber treatment used
TIMBER FLOORS	Tanking behind wall & protected	Deck drains/overflows
Piles to bearer connections correct	Drainage coil & cloth in place	
Braces-angle & connections correct	Drainage metal installed	
Bearers joined correctly	CONCRETE MASONARY	
Joists as per plan	Excavation to good bearing	
Joists to bearer connections S/S under 600mm	Horizontal rods	
Subfloor bracing as shown	Starters vertical rods	
Solid blocking in place	Lapping/tying	

NOTES:

* Polythene laved & taped
* waste pipes lagged & taped
* Bar chairs placed as required
* Mesh & steel work placed on tied as required
Inspection to kitchen, bathroom and porch slab

— Not Applicable
✓ Checked & Approved
X Failed

DECISION:

PASS / FAIL

OUTCOME:

Ok to pour



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
9 June 2009 6671/2008	P&D Sub Floor Inspection	Please refer attached field sheet	Pass

Outcome: Ok to backfill drains

Next Inspection: Pre-pour

Inspector: Murray Lougher

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach

ADDRESS: Waka-tete Drive.

OWNER: Wing

BC NUMBER: 2008/1589

CONTRACTOR: Signature Homes

INSPECTOR: Murray

DATE: 9/6/09

SITINGS			
Boundary pegs & datum identified		Support for brace walls in place	Subfloor vent holes
Distance to boundary		Correct timber treatment used	Cleanout ports
Finished floor levels as per plan		Correct bolt fixings S/S Galvanised	Control joints
FOUNDATION/BLOCK WALLS		Joist hangers correctly nailed	Engineer to inspect
Bearing capacity		Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
Horizontal rods		Correct ground clearance	Type:
Starters vertical rods		Base ventilation allowed for & access door	Continuous from foundations to top plate
Side/Bottom cover		TRUSS ROOF & CUT ROOF	Correct laps
Lapping/Tying		Wind zone	Sill wraps in place
Width/Depth		Purlin fixings as per plans & wind zone	No holes or tears
PILES/POST HOLES		Truss layout & fixings correct	Meter box/Gas unit flashings
Driven piles		Girder truss supports & fixings	Jam flashing
Anchor piles 900mmx350sq or 400 dia		Roof bracing	Sill flashings
Braced piles 450 deep x 350sq		Cut roof & Skillon hold downs correct	Head flashings
Ordinary piles 200deep x 250sq		PRE-WRAP	Apron flashings turned out at ends
Timber treatment H5		Walls as per plan	Head & sill flashings turned up at ends
Cut faces treated		DPM under plates	On drained ventilated cavity
Engineer to inspect		Stud sizing & spacings	Backing as per consent
Shed post holes		Bottom plate fixings	Base flashing
SLABS		Exterior braces in place	Batten type Hs timber other
Topsoil removed		Lintel sizes	Penetrations flashed
Base course less than 600mm		Lintel & cantilevered beams tied down	Roof space closed off from cavity
Blinding layer in place		Top plates to stud connections	Insulation not closing cavity
Damp-proofing in place		Timber Grade	Thermal barrier
Mesh in place TYPE		Timber treatment & species	Penetrations sealed through firewalls
Supported on bar chairs		Walls Roof	STEEL/VINYL CLADDING & OTHER
Waste pipes laid with falls		Bottom plates	Horizontal or Vertical
Pipes protected through slab		Firewalls	Cavity
Additional reo to internal corners		Studs tied down correctly	Flashings in place as per consent
Shrinkage joints/free joints		Correct fasteners used	Bond breaker on battens
Insulation		RETAINING WALLS/BLOCKWALLS	Type
Slab thickening's		Timber Poles	Correct timber treatment used
TIMBER FLOORS		Tanking behind wall & protected	Deck drains/overflows
Piles to bearer connections correct		Drainage coil & cloth in place	
Braces-angle & connections correct		Drainage metal installed	
Bearers joined correctly		CONCRETE MASONARY	
Joists as per plan		Excavation to good bearing	
Joists to bearer connections S/S under 600mm		Horizontal rods	
Subfloor bracing as shown		Starters vertical rods	
Solid blocking in place		Lapping/tying	

NOTES:

Plumbers Rego Number 18006 HENRY HINTZ.
All DN40 waste pipes lagged through concrete penetrations
DN110 Pan Connections lagged
All waste pipes have falls 1:40 or ~~and~~ Greater

—	Not Applicable
✓	Checked & Approved
X	Failed

DECISION:

PASS / FAIL

OUTCOME:

OK to Backfill
Next Inspection Pre-pour



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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
15 May 2009 6668/2008	Site/Foundation Inspection	Foundation not boxed up as per detail on consented plans to form the required rebate. Siting of proposed dwelling has been changed. Require revised site plan. Siting has been changed due to the need in creating less of a cut into hill. Foundation sited 400mm above datum.	Fail

Outcome: Re inspection Required.

Next Inspection: Re inspection of foundation required

Inspector: Russell Brook

Site Address: 568 Waitarere Beach Road,
LEVIN RURAL 5574



ADDRESS: 508 Waitare Beach Road OWNER: Waitare Rise Ltd
BC NUMBER: 2008/1589 CONTRACTOR: Signature Homes
INSPECTOR: Russell Brook DATE: 15/5/09

☒ SITINGS			
☒ Boundary pegs & datum identified		Support for brace walls in place	Subfloor vent holes
☒ Distance to boundary		Correct timber treatment used	Cleanout ports
☒ Finished floor levels as per plan		Correct bolt fixings S/S Galvanised	Control joints
☒ FOUNDATION/BLOCK WALLS		Joist hangers correctly nailed	Engineer to inspect
☒ Bearing capacity		Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
☒ Horizontal rods		Correct ground clearance	Type:
☒ Starters vertical rods		Base ventilation allowed for & access door	Continuous from foundations to top plate
☒ Side/Bottom cover		TRUSS ROOF & CUT ROOF	Correct laps
☒ Lapping/Tying		Wind zone	Sill wraps in place
☒ Width/Depth		Purlin fixings as per plans & wind zone	No holes or tears
☒ PILES/POST HOLES		Truss layout & fixings correct	Meter box/Gas unit flashings
☒ Driven piles		Girder truss supports & fixings	Jam flashing
☒ Anchor piles 900mmx350sq or 400 dia		Roof bracing	Sill flashings
☒ Braced piles 450 deep x 350sq		Cut roof & Skillion hold downs correct	Head flashings
☒ Ordinary piles 200deep x 250sq		PRE-WRAP	Apron flashings turned out at ends
☒ Timber treatment H5		Walls as per plan	Head & sill flashings turned up at ends
☒ Cut faces treated		DPM under plates	On drained ventilated cavity
☒ Engineer to inspect		Stud sizing & spacings	Backing as per consent
☒ Shed post holes		Bottom plate fixings	Base flashing
☒ SLABS		Exterior braces in place	Batten type Hs timber other
☒ Topsoil removed		Lintel sizes	Penetrations flashed
☒ Base course less than 600mm		Lintel & cantilevered beams tied down	Roof space closed off from cavity
☒ Blinding layer in place		Top plates to stud connections	Insulation not closing cavity
☒ Damp-proofing in place		Timber Grade	Thermal barrier
☒ Mesh in place TYPE		Timber treatment & species	Penetrations sealed through firewalls
☒ Supported on bar chairs		Walls Roof	STEEL/VINYL CLADDING & OTHER
☒ Waste pipes laid with falls		Bottom plates	Horizontal or Vertical
☒ Pipes protected through slab		Firewalls	Cavity
☒ Additional reo to internal corners		Studs tied down correctly	Flashings in place as per consent
☒ Shrinkage joints/free joints		Correct fasteners used	Bond breaker on battens
☒ Insulation		RETAINING WALLS/BLOCK WALLS	Type
☒ Slab thickening's		Timber Poles	Correct timber treatment used
☒ TIMBER FLOORS		Tanking behind wall & protected	Deck drains/overflows
☒ Piles to bearer connections correct		Drainage coil & cloth in place	
☒ Braces-angle & connections correct		Drainage metal installed	
☒ Bearers joined correctly		CONCRETE MASONRY	
☒ Joists as per plan		Excavation to good bearing	
☒ Joists to bearer connections S/S under 600mm		Horizontal rods	
☒ Subfloor bracing as shown		Starters vertical rods	
☒ Solid blocking in place		Lapping/tying	

NOTES:

* Foundation not boxed up as per detail on consented plans to form the required rebate
* Siting of proposed dwelling has been changed
* Require revised site plan
* Survey pegs sighted existing fencing on boundary
* Siting changed due to creating less cut in hill
* Foundation sited 400mm above datum *

☐ Not Applicable
☒ Checked & Approved
☒ Failed

DECISION:

OUTCOME:

FAIL
Re-inspection to formal rebate required



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BUILDING ASSESSMENT REPORT

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Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
21 May 2009 6674/2008	Pre Pour Inspection	Refer to the attached inspection report.	Pass

Outcome: Partial pour aproved. (Boxed out service/tiled areas subject to inspection)

Next Inspection: Remainder of slab.

Inspector: Jason Batt

Site Address: 568 Waitarere Beach Road,
LEVIN RURAL 5574



ADDRESS: 568 WAITAREE B'CH RD

OWNER: P & D WING

BC NUMBER: 08-1589

CONTRACTOR: SIGNATURE HOMES

INSPECTOR: 

DATE: 21.5.09

SITINGS		
Boundary pegs & datum identified	Support for brace walls in place	Subfloor vent holes
Distance to boundary	Correct timber treatment used	Cleanout ports
Finished floor levels as per plan	Correct bolt fixings S/S Galvanised	Control joints
FOUNDATION/BLOCK WALLS	Joist hangers correctly nailed	Engineer to inspect
Bearing capacity	Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
Horizontal rods	Correct ground clearance	Type:
Starters vertical rods	Base ventilation allowed for & access door	Continuous from foundations to top plate
Side/Bottom cover	TRUSS ROOF & CUT ROOF	Correct laps
Lapping/Tying	Wind zone	Sill wraps in place
Width/Depth	Purlin fixings as per plans & wind zone	No holes or tears
PILES/POST HOLES	Truss layout & fixings correct	Meter box/Gas unit flashings
Driven piles	Girder truss supports & fixings	Jam flashing
Anchor piles 900mmx350sq or 400 dia	Roof bracing	Sill flashings
Braced piles 450 deep x 350sq	Cut roof & Skillon hold downs correct	Head flashings
Ordinary piles 200deep x 250sq	PRE-WRAP	Apron flashings turned out at ends
Timber treatment H5	Walls as per plan	Head & sill flashings turned up at ends
Cut faces treated	DPM under plates	On drained ventilated cavity
Engineer to inspect	Stud sizing & spacings	Backing as per consent
Shed post holes	Bottom plate fixings	Base flashing
SLABS PARTIAL ONLY.	Exterior braces in place	Batten type Hs timber other
Topsoil removed	Lintel sizes	Penetrations flashed
Base course less than 600mm	Lintel & cantilevered beams tied down	Roof space closed off from cavity
Blinding layer in place SAND	Top plates to stud connections	Insulation not closing cavity
Damp-proofing in place	Timber Grade	Thermal barrier
Mesh in place TYPE 665	Timber treatment & species	Penetrations sealed through firewalls
Supported on bar chairs	Walls Roof	STEEL/VINYL CLADDING & OTHER
Waste pipes laid with falls	Bottom plates	Horizontal or Vertical
Pipes protected through slab	Firewalls	Cavity
Additional reo to internal corners	Studs tied down correctly	Flashings in place as per consent
Shrinkage joints/free joints	Correct fasteners used	Bond breaker on battens
Insulation 50mm EPS	RETAINING WALLS/BLOCK WALLS	Type
Slab thickening's	Timber Poles	Correct timber treatment used
TIMBER FLOORS	Tanking behind wall & protected	Deck drains/overflows
Piles to bearer connections correct	Drainage coil & cloth in place	
Braces-angle & connections correct	Drainage metal installed	
Bearers joined correctly	CONCRETE MASONARY	
Joists as per plan	Excavation to good bearing	
Joists to bearer connections S/S under 600mm	Horizontal rods	
Subfloor bracing as shown	Starters vertical rods	
Solid blocking in place	Lapping/tying	

NOTES: THICKENED EDGE CONSTRUCTION CONFORMS TO DRAWING 15A WITH THE EXCEPTION OF THE GRAVULAR BASE OMISSION. THIS HAS BEEN ACCEPTED AFTER CAREFUL CONSIDERATION BASED ON AN INHERENTLY DRY COASTAL SITE WITH NO INDICATIVE SIGNS OF GROUND MOISTURE AFTER SIGNIFICANT RAIN EVENTS, IN CONFORMITY TO SEC 7.5.3.3 NZS3604:1999. PROFESSIONAL JUDGMENT & EXPERTISE AS A DESIGNATED TECHNICAL LEADER HAS FACILITATED THIS DECISION OUTCOME. 20 MPa CONCRETE SPECIFIED FOR CORROSION ZONE 1.

—	Not Applicable
✓	Checked & Approved
X	Failed

DECISION: PASS / FAIL
OUTCOME: OK TO POUR



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187 Broadway Avenue
Palmerston North 5301

BC/2008/1589/021

BUILDING ASSESSMENT REPORT

This report is to confirm progress inspections on your building project.

Building Accreditation Regulation 6

Date	Procedure Type	Reason	Decision Pass/Fail
18 May 2009 2429/2009	Site/Foundation Inspection	Site/Foundation Inspection: Called to the site and checked the re-siting of the dwelling, this now appears to be in the correct position. Footings are of firm sand, probed with steel rod, high level of resistance encountered.	Pass

Outcome: May proceed to the next inspection:

Next Inspection: Pre-pour Inspection:

Inspector: Graeme Whitefield

Date: 11/06/09

Site Address: Lot 16, Waka Tete Place,
Waitarere Beach



ADDRESS: 568 Waimara Road

BC NUMBER: 08/1589

INSPECTOR: G. Whitfield

OWNER: Wang

CONTRACTOR: Supatane Homes

DATE: 18/05/09

☒ SITINGS		
☒ Boundary pegs & datum identified	Support for brace walls in place	Subfloor vent holes
☒ Distance to boundary	Correct timber treatment used	Cleanout ports
Finished floor levels as per plan	Correct bolt fixings S/S Galvanised	Control joints
☒ FOUNDATION/BLOCK WALLS	Joist hangers correctly nailed	Engineer to inspect
☒ Bearing capacity	Underfloor insulation in place	POST-WRAP & CAVITY SYSTEMS
☒ Horizontal rods	Correct ground clearance	Type:
☒ Starters vertical rods	Base ventilation allowed for & access door	Continuous from foundations to top plate
☒ Side/Bottom cover	TRUSS ROOF & CUT ROOF	Correct laps
☒ Lapping/Tying	Wind zone	Sill wraps in place
☒ Width/Depth	Purlin fixings as per plans & wind zone	No holes or tears
PILES/POST HOLES	Truss layout & fixings correct	Meter box/Gas unit flashings
Driven piles	Girder truss supports & fixings	Jam flashing
Anchor piles 900mmx350sq or 400 dia	Roof bracing	Sill flashings
Braced piles 450 deep x 350sq	Cut roof & Skillon hold downs correct	Head flashings
Ordinary piles 200deep x 250sq	PRE-WRAP	Apron flashings turned out at ends
Timber treatment H5	Walls as per plan	Head & sill flashings turned up at ends
Cut faces treated	DPM under plates	On drained ventilated cavity
Engineer to inspect	Stud sizing & spacings	Backing as per consent
Shed post holes	Bottom plate fixings	Base flashing
SLABS	Exterior braces in place	Batten type Hs timber other
Topsoil removed	Lintel sizes	Penetrations flashed
Base course less than 600mm	Lintel & cantilevered beams tied down	Roof space closed off from cavity
Blinding layer in place	Top plates to stud connections	Insulation not closing cavity
Damp-proofing in place	Timber Grade	Thermal barrier
Mesh in place TYPE	Timber treatment & species	Penetrations sealed through firewalls
Supported on bar chairs	Walls Roof	STEEL/VINYL CLADDING & OTHER
Waste pipes laid with falls	Bottom plates	Horizontal or Vertical
Pipes protected through slab	Firewalls	Cavity
Additional reo to internal corners	Studs tied down correctly	Flashings in place as per consent
Shrinkage joints/free joints	Correct fasteners used	Bond breaker on battens
Insulation	RETAINING WALLS/BLOCK WALLS	Type
Slab thickening's	Timber Poles	Correct timber treatment used
TIMBER FLOORS	Tanking behind wall & protected	Deck drains/overflows
Piles to bearer connections correct	Drainage coil & cloth in place	
Braces-angle & connections correct	Drainage metal installed	
Bearers joined correctly	CONCRETE MASONARY	
Joists as per plan	Excavation to good bearing	
Joists to bearer connections S/S under 600mm	Horizontal rods	
Subfloor bracing as shown	Starters vertical rods	
Solid blocking in place	Lapping/tying	

NOTES:

Amended Site Plan Required. Showing re-siting or positioning of dwelling

☐	Not Applicable
☒	Checked & Approved
☒	Failed

DECISION:

PASS FAIL

OUTCOME:

May continue to form concrete floors.



HOROWHENUA DISTRICT COUNCIL

Application for Amendment to Building Consent

126-148 Oxford Street
Private Bag 4002
Levin
Telephone 06 366 0999
Facsimile 06 366 0977
Email enquiries@horowhenua.govt.nz
www.horowhenua.govt.nz



Note: this application must be accompanied by two copies of the relevant drawings from the issued building consent and two copies of the documents with the proposed amendments clearly highlighted.

Council Use Only
Building Officer

Amended plan No.

Existing consent No.

2008/1589

The Project

Site Address

Lot 16 Beach Road
Waitarere Beach
Levin Rural 5574

Description of Amended Work

[refer to notes overleaf]

Redesign encapsulated slab foundation and slab rebate for tiled area.

Value of Amended Work (GST incl)

Does the amendment alter the Project value

☐ Yes \$
☒ No

(new value)

Are there any amendments to systems for which a compliance schedule has been issued?

☐ Yes ☐ No

Contact Details

Contact Details

Landline: 06 359 2844

Mobile:

Facsimile Number: 06 354 5085

Email: russell@plans.co.nz

After Hours:

The Owner

Owner/Agent Details

[note: owner details required in all cases]

Owner [If also agent, tick box ☐]:

Business: Paul + Debbie Wing C/- Signature Homes

Address: 187 Broadway Avenue

Suburb: Palmerston North

Phone (day):

Cellphone:

Fax:

Correspondence to ☐ owner ☒ or agent

Agent

Business name: plans.co.nz

Contact person: 15 Wadding Street

Address: Palmerston North

Suburb: Phone (06) 359 2844

Phone (day): Fax (06) 354 5085

Cell phone: jeff@plans.co.nz

Fax:

Signed by the Owner

Signed by the Agent

[on behalf of, or with authority from, the owner]

Millennia

Notes to Applicant

This application is to gain consent for minor changes which could arise from on-site problems and re-arrangement of facilities including reductions in the scope of the original consent. Proposals will not meet this criteria if they fall outside the space of the original consent or need more than minor changes to the existing conditions.

An amended plan may cover:

- A beam that needs to be included due to on-site problems.
- Wall construction changes.
- Removal or reduction of sanitary fixtures.
- Installation of an additional window.
- A room that needs to be widened slightly.

Amended plans are accepted at the discretion of Council. A full consent will be required if it becomes apparent that the submitted plans do not meet the above criteria.

Office Use Only

	Comment	Approving Officer	Date
Building	Complies with Building Code OK to lodge onto B/C consent file	<i>[Signature]</i>	20-5-09
Plumbing & Drainage			
Other			

HDC PROCEDURE	
Decision	<u>Accept</u> / Decline
	Pass / Fail
Procedure Type:	<u>amendment</u>
Reason	<u>shown</u>
Outcome	<u>lodge onto B/C consent file</u>
DATE:	<u>21-5-09</u> BCO: <i>[Signature]</i>

From: Russell Petersen [russell@plans.co.nz]
Sent: Wednesday, 20 May 2009 12:15 p.m.
To: Colin Gibbs
Subject: Signature Wing House 2008/1589/021
Attachments: Foundation Details A.pdf; Slab Plan.pdf

Colin

Jason @ Signature has asked us to amend the slab foundation detail

As the client wants polished concrete in some areas they wish to avoid slab joints in doorways

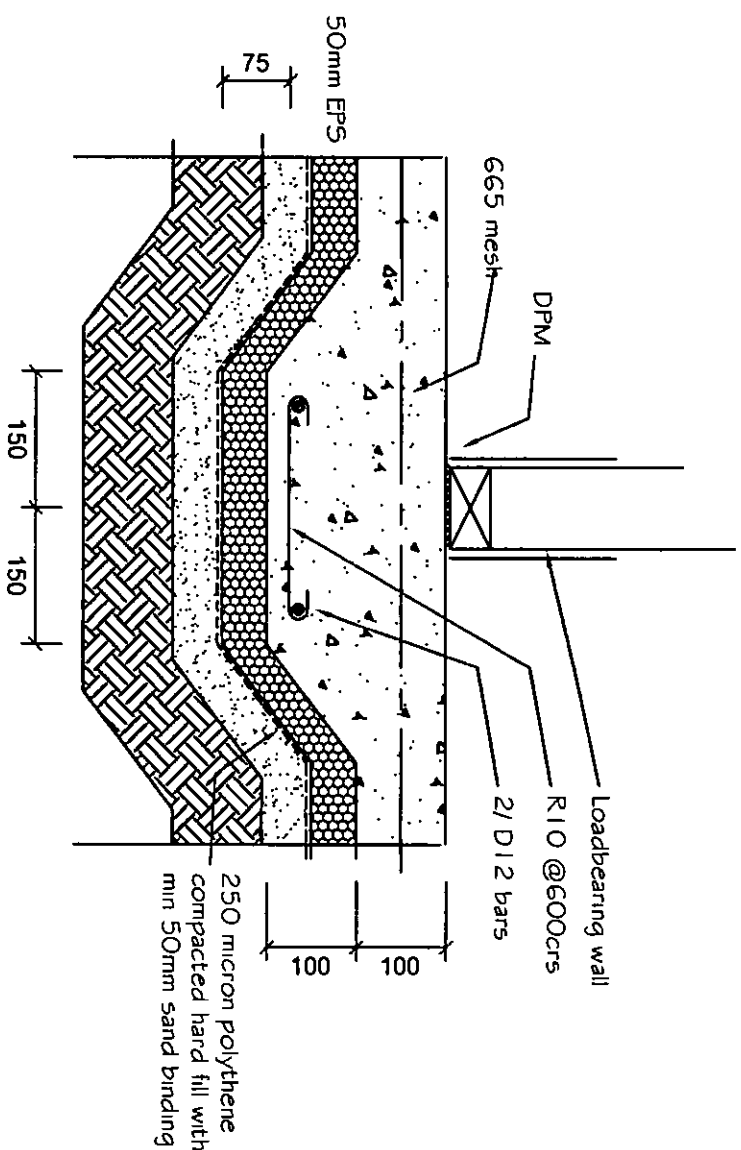
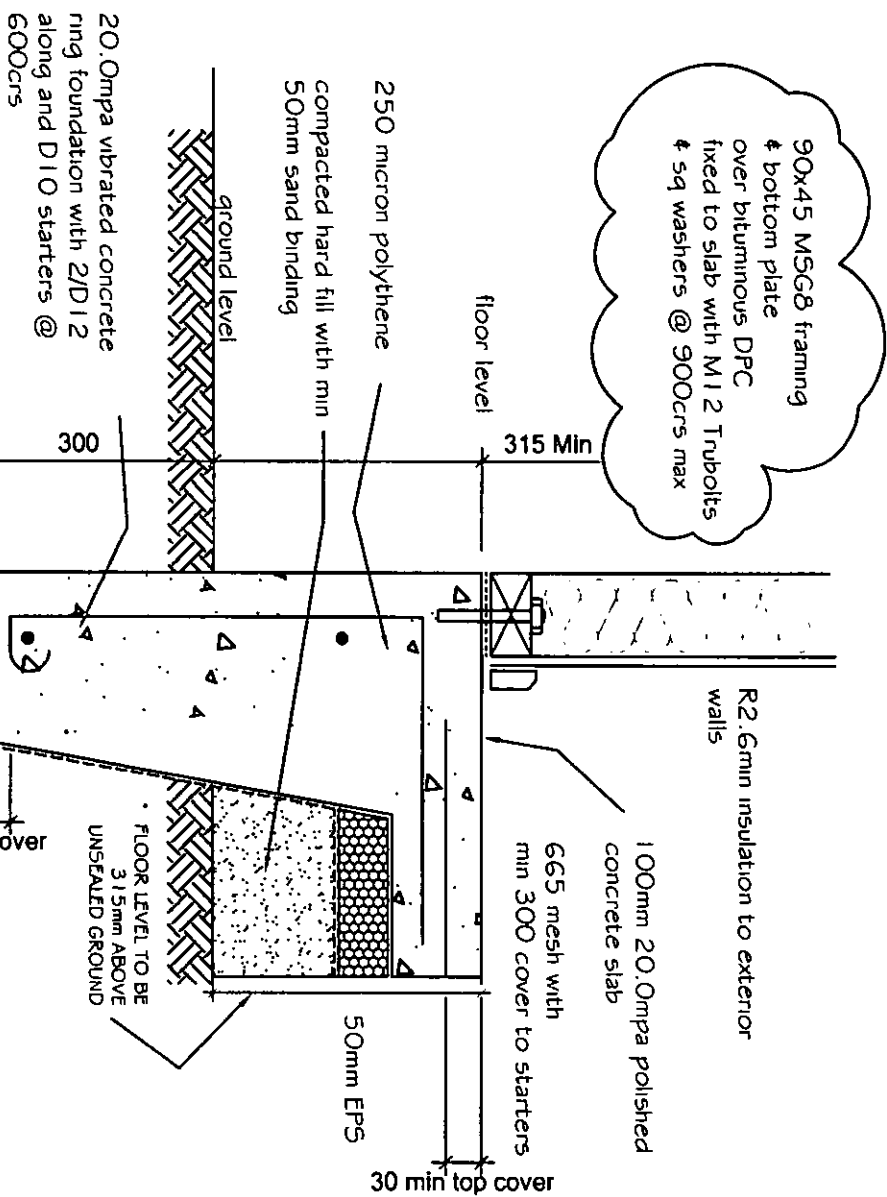
Also they will now pour separately the foundation and slab for tiled areas as marked on slab plan hence the amendment to rebate detail.

Regards

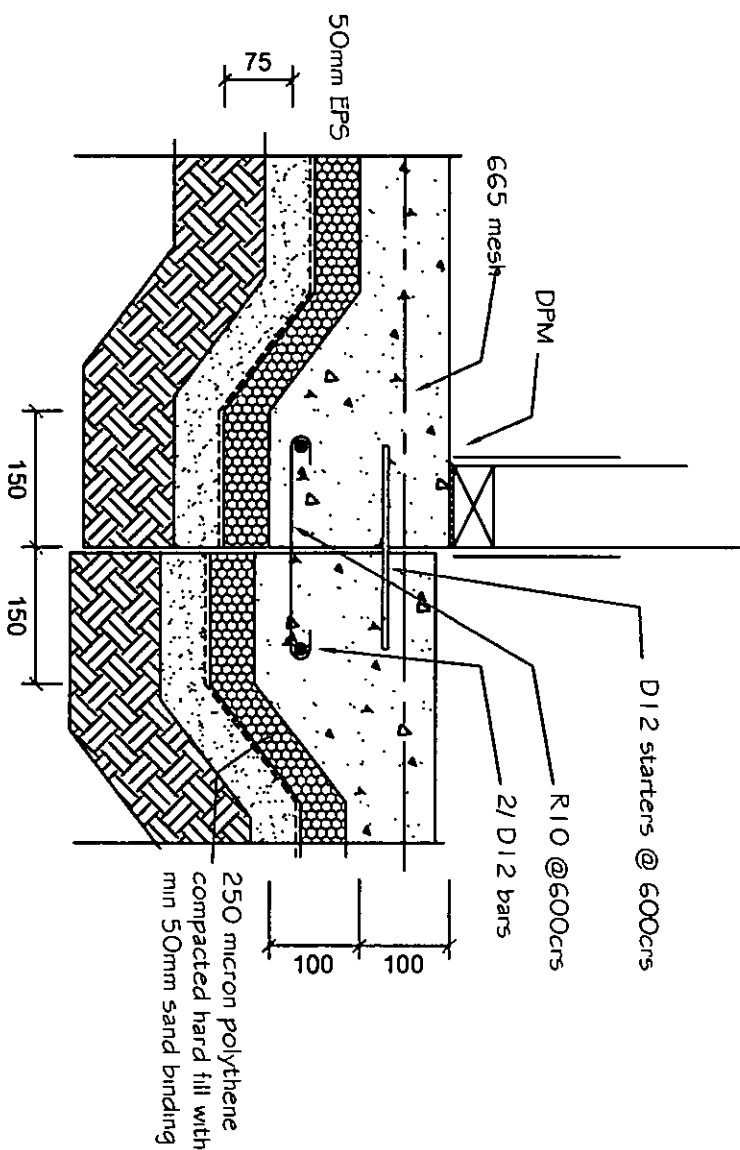
Russell Petersen / PLANS.CO.NZ / Ph 6 359 2844 / Fax 06 354 5085

This communication, including any attachments, is confidential. If you are not the intended recipient, please contact me immediately, delete this message, and do not copy or use any part of this communication or disclose anything about it. Thank you.

20/05/2009



SLAB THICKENING



CONTROL JOINT

2 POUR SLAB REBATE TILED AREAS

These drawings are to be used in conjunction with the specifications and documentation that form part of the contract. Where drawings are conflicting the contract documents shall prevail. If you are not the intended recipient you may not copy, distribute or use the contents in any way.

These drawings have been prepared on the understanding that the building owner has a sound knowledge of the NZ Building Code requirements. The drawings are not to be used for any other purpose without the written consent of the architect. Any use of the drawings without the prior written approval of the architect is prohibited. The architect is not responsible for any errors or omissions in the drawings or for any consequences arising from their use.

Signature
PAUL & DEBBIE WING
YOUR HOME. YOUR WAY.

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBERRY BEACH

FOUNDATION DETAILS A

DATE	20 MAY 09	SCALE	A3 1:5	M
DRAWN BY	SP	REV	08-576	
CHKD BY	C	SHEET NO	15A	

These plans are copyright of Signature Homes

Ramset™ | AnkaScrew™ Screw In Anchor

Solid Concrete Anchoring



Function

The Anka Screw Anchor is a medium duty, rotation setting thread forming anchor.

Features and Benefits

Fast and easy to install

- Simply screws into hole.

Fast and easy to remove

- Screws out leaving an empty hole with no protruding metal parts to grind off.

Close to edge and for close anchor spacing

- Does not expand and burst concrete.

Principal Applications

- Pallet racking
- Temporary safety barriers
- Conveyors
- Pipe brackets
- Gate hinges into brickwork
- Temporary hand rails

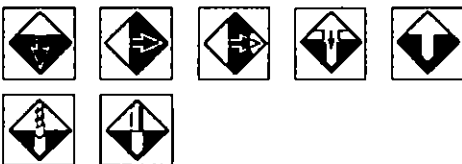
Performance Related



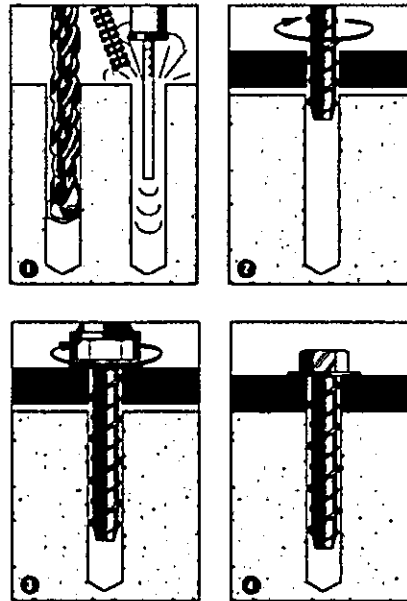
Material



Installation Related



Installation



1. Drill hole to correct diameter and depth. Clean thoroughly with brush. Remove debris by way of vacuum or hand pump, compressed air etc.
2. Using a socket wrench, screw the Anka Screw into the hole using slight pressure until the self tapping action starts.
3. Tighten the Anka Screw. If resistance is experienced when tightening, unscrew anchor one turn and re-tighten. Ensure not to over tighten.
4. For optimum performance, a torque wrench should be used.

Ramset™ | AnkaScrew™ Screw In Anchor

Solid Concrete Anchoring

Installation and Performance Details

Anchor size, d_a (mm)	Installation details			Minimum Dimensions*				Reduced Characteristic Capacity			
	Drilled hole D , d_f (mm)	Fixture hole D , d_f (mm)	Anchor effective depth, h (mm)	Tightening torque, T , (Nm)	Edge distance, e_c (mm)	Anchor spacing, a_s (mm)	Substrate thickness, b_s (mm)	Shear V_s (kN)	Tension N_s (kN)		
									Concrete strength (MPa)		
M6	6	8	30	25	25	50	55	6.8	3.7	4.3	4.7
			37				62	7.7	4.7	5.5	5.9
			45				70	8.6	5.8	6.9	7.4
			40				65	12.6	5.5	6.4	7.0
M8	8	10	50	40	35	70	75	14.3	7.3	8.8	9.3
			60				85	16.0	9.3	10.9	11.8
			50				75	20.7	7.9	9.3	10.0
M10	10	12	62	60	40	80	87	23.4	10.6	12.5	13.5
			75				100	26.2	13.9	16.3	17.7
			60				85	25.0	11.2	13.2	14.3
M12	12	15	75	80	50	100	100	28.4	15.5	18.3	19.8
			90				115	31.7	20.3	23.9	25.8

* For shear loads acting towards an edge or where these minimum dimensions are not achievable, please use the simplified strength limit state design process to verify capacity.

* For details on Reduced Characteristic capacities refer page 3.

Reduced Characteristic

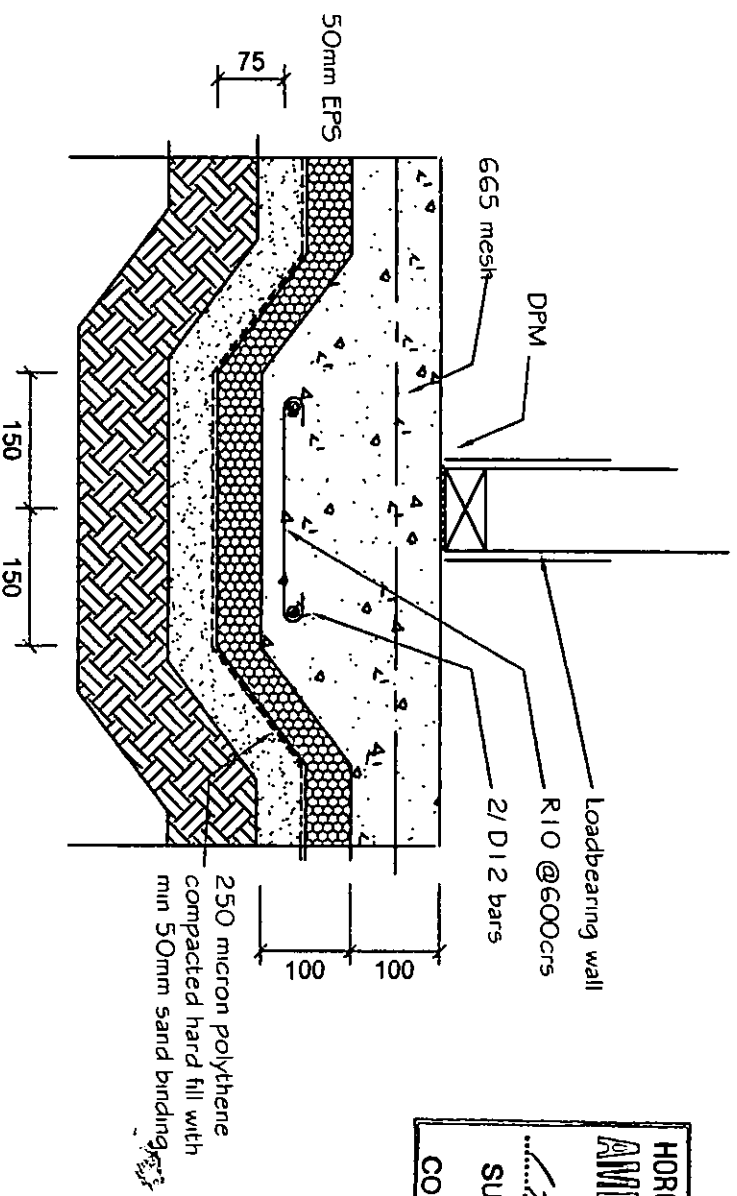
Description and Part Numbers

Anchor size, d_a (mm)	Length, L (mm)	Part No.
M6	50	AS06050H
	75	AS06075H
	100	AS06100H
M8	60	AS08060H
	75	AS08075H
	100	AS08100H
M10	60	AS10060H
	75	AS10075H
	100	AS10100H
M12	75	AS12075H
	100	AS12100H
	150	AS12150H

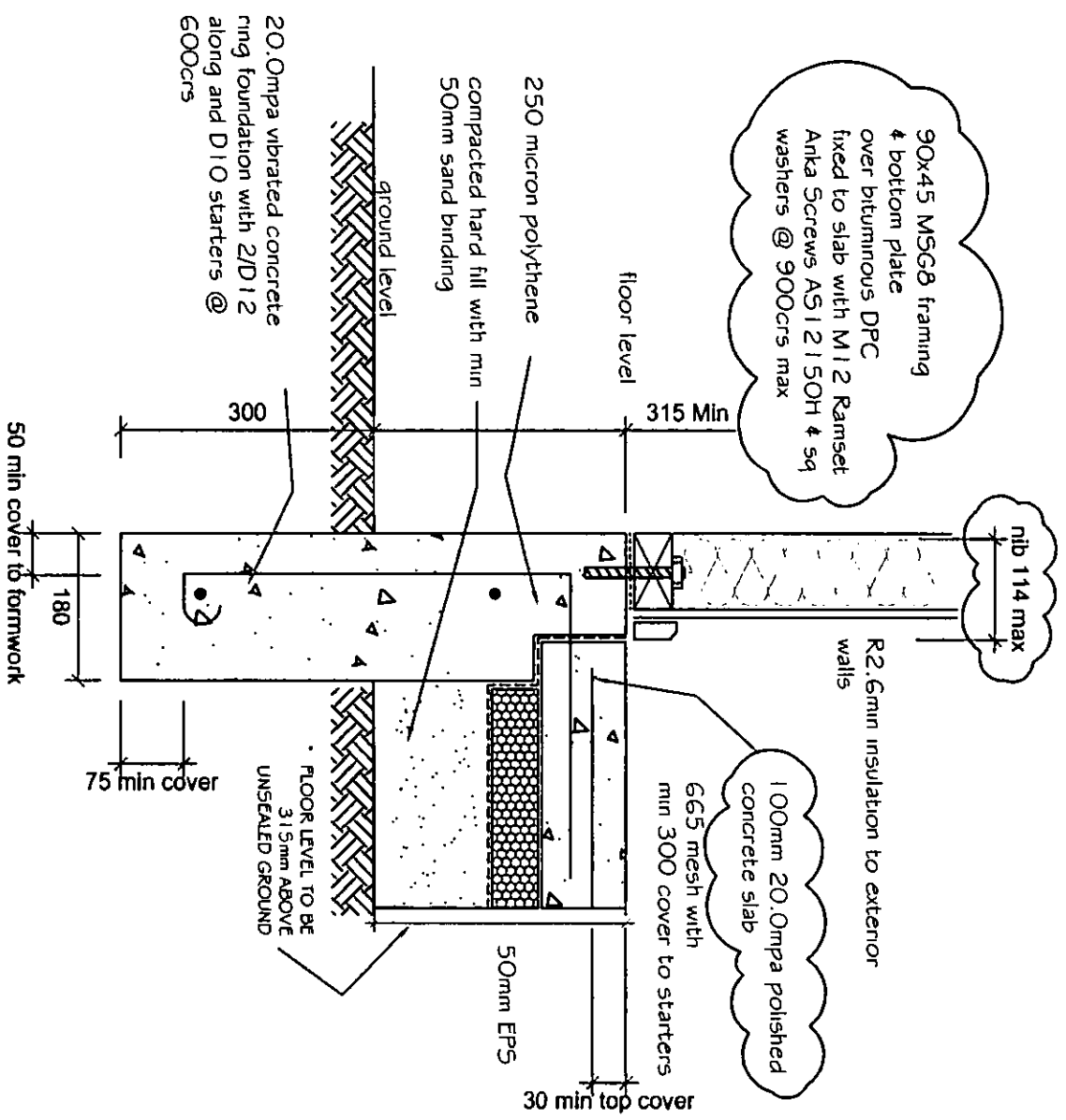
AnkaScrew™ Screw In Anchor

HOROWHENUA DISTRICT COUNCIL
AMENDMENT APPROVED
DATE 18 MAY 2009
SUBJECT TO COMPLIANCE
WITH THE BUILDING
CONSENT DOCUMENTATION

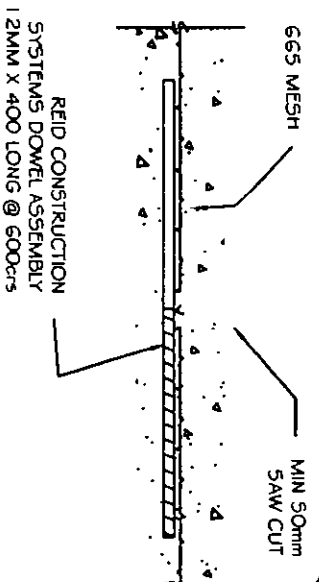
APPROVED
18 MAY 2009
CONSENT



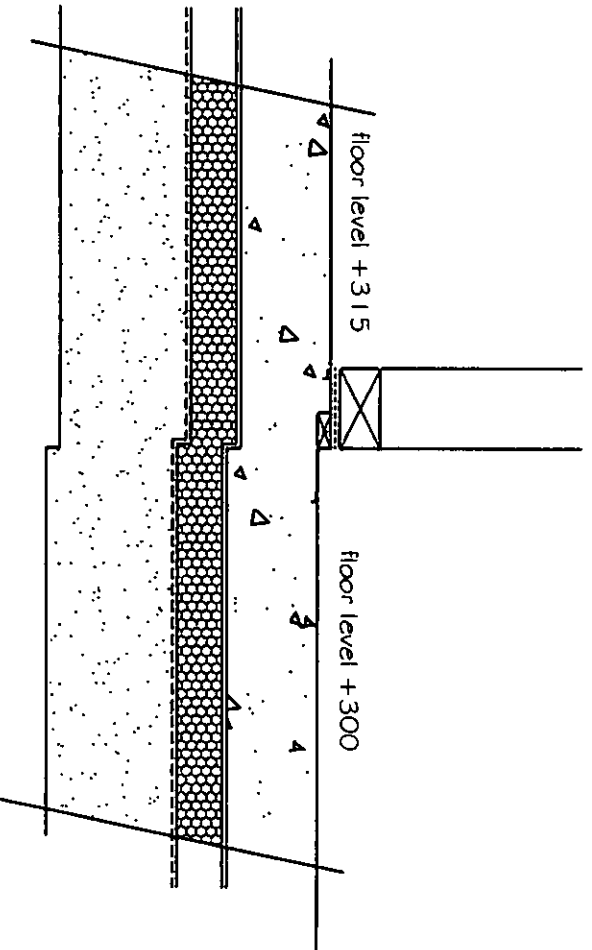
SLAB THICKENING



ENCAPSULATED SLAB FOUNDATION
POLISHED CONCRETE FLOORS



CONTROL JOINT



SLAB REBATE TILED AREAS

These drawings are to be used in conjunction with the specifications and dimensions set out in the contract. Where drawings are omitted the contractor is to follow the relevant standards and specifications. It is the contractor's responsibility to ensure that the drawings are used in accordance with the contract.

These drawings have been prepared for the construction of the building. The contractor is responsible for ensuring that the drawings are used in accordance with the contract. The contractor is also responsible for ensuring that the drawings are used in accordance with the contract.

Signature
YOUR HOME. YOUR WAY.

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBEBE BEACH

FOUNDATION DETAILS A

DATE	15 MAY 09	SCALE	A3 1:5	M.I.
DESIGNED BY	DP	REV	208	08-576
UDS	DP	B	SHEET	15A

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126-148 Oxford Street
Private Bag 4002
Levin
Telephone 06 366 0999
Facsimile 06 366 0977
Email enquiries@horowhenua.govt.nz
www.horowhenua.govt.nz

Building Consent
Section 51, Building Act 2004

The Building:	The Owner:
Street Address: 568 Waitarere Beach Road, LEVIN RURAL 5574	Name: Waitarere Rise Limited
	Contact Person: Waitarere Rise Limited
Legal Description: Lot 3 DP 50712 1722580m2	Mailing Address: C/- Signature Homes 187 Broadway Avenue Palmerston North 5301

First Point of Contact:

The first point of contact for communications with the building consent authority will be with the Contact Person.

Building Work:

The following building work is authorised by this building consent:

Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

THIS BUILDING CONSENT IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. SECTION 52, BUILDING ACT 2004 – Work is to commence within 12 months of issuance
1. SECTION 92, BUILDING ACT 2004 - Owner is to apply for Code Compliance Certificate as soon as building work is complete
2. SECTION 93, BUILDING ACT 2004 – Building Consent Authority must decide whether to issue Code Compliance Certificate within 20 days of either
 - Receipt of Code Compliance Certificate application form or
 - 24 Months from date of issue if no application is received.

Please note that if your Building Consent is subject to Resource Consent approval, building works approved in the Building Consent process cannot commence until such time as you have been given Resource Consent approval.

BUILDING CONSENT MEMORANDUM & ATTACHMENTS

- At least 24 working hours notice shall be given for inspections as detailed in the inspection schedule contained in the job copy plans. No work shall commence or continue until approval is given by the Horowhenua District Council Building Control Officer.
- Boundary pegs necessary for checking the correct siting of the building are to be exposed and "flagged". Where any doubt arises as to the accuracy of their location a surveyor shall be engaged to check or re-establish the peg position. (Note that fences are not a reliable indication of the boundary position on their own).
- The wastewater system installer's declaration & a copy of the service contract shall be submitted on completion.
- The truss and lintel/beam design certificate & associated fix lists shall be submitted before the preline inspection is actioned.

PROJECT SPECIFIC INFORMATION TO BE SUPPLIED WITH CODE COMPLIANCE APPLICATION FORM 6

Roof Cladding warranty.
Wall Cladding Warranty – material & construction (one for each product type)
As-Built Drainage Plan (endorsed with registration number)
Energy Work Certificate - Electricity
Waste Water Disposal System Installers Declaration & Service Contract
Exterior Joinery Warranty

Notes:

Estimated Value: \$440,000.00
Floor Area: 183m2

Compliance Schedule:

A compliance schedule is not required for the building.

Attachments:

Copies of the following documents are attached to this building consent:

Copy of Tax Invoice (PAID)
Stamped Job Copy Plans



.....
Building Consents Officer

On behalf of Horowhenua District Council

Date: 29 April 2009

Receipt Number: 1630022
Receipt Number: 1665977 19 March 2009

THE INSPECTION PROCESS - Issued Consents

Whenever possible someone who has the authority to make decisions or act on behalf of the consent holder, should be on-site during the inspection process. Your approved plans and supporting documents must be on-site at the time of inspection.

WHAT WE WILL BE LOOKING FOR DURING EACH SPECIFIC INSPECTION

What we will be looking for during the inspection, what you need to do in preparation and when you need to call for the inspection is per the attached information sheets that are relevant to your consented works.

Other Considerations

Often byproducts of the construction process create complaints to the Council which can take up a considerable amount of our time.

We appreciate that your focus is generally concentrated on the physical construction of the building project; however many of the complaints the Council receives could be avoided if some simple steps were taken prior to commencement of the work.

If we are responding to a reasonable justifiable complaint relating to something that should have been done the Council reserves the right to recover the cost of the inspection.

Wind Blown Sand

Many of the building sites with the District especially in the beach areas are predominately sand which can cause problems once the grass cover is disturbed.

The resulting loose sand can be a significant nuisance to neighbouring properties and if not contained quickly drifts onto roads and blocks stormwater systems.

This is particularly prevalent during the summer period and the use of water to dampen loose sand is, due to water restriction, not an option.

Restrict the removal of vegetation to the immediate footprint of the building and cover any loose or stock piled sand with scrim or polythene.

Vibration or Shaking

The use of driven timber piles is a common method used for establishing foundations in our predominately sand and peat areas.

The physical driving of the piles can and often has caused a considerable amount of concern and stress to adjoining property owners due to a significant vibration and ground shaking as the piles are driven.

Often the first the Council hears of this occurring is through a call from a distressed neighbour complaining that his or home is being damaged as a result.

If we could suggest a simple early discussion with the neighbours advising of the intent to drive piles and a simple explanation of the resulting effect could avoid a potential confrontation.

Noise

The Council is often contacted over noise issues on building sites and they generally fall into two categories:

- construction noise
- music

Construction noise complaints are normally generated as a result of construction starting or finishing outside the normal 'working hours'.

Noise limits have been established in the Horowhenua District Plan and is controlled under the Resource Management Act 1991

Permitted Noise Levels From Construction Work Measured Within Residential Areas		
Day	Time	L₁₀* at any affected property
Monday to Friday	7.30 am to 6.00pm	75dBA
	6.00 pm to 8.00 pm	70dBA
Saturdays	7.30 am to 6.00pm	75dBA
Sundays and Public Holidays	Noisy Construction is not permitted	

Noisy construction work is not permitted before 7.30am on any day, or after 8.00pm on normal weekdays or 6.00pm on Saturdays.

The Council may grant permission for construction work to occur outside these times or levels, if **emergency** works are necessary, or work cannot be completed during normal working hours because of public safety or traffic hazards.

If you have special permission to work outside the permitted hours, it is advisable to notify any residents who may be affected by noise, about the times and days of operation and give them an onsite contact phone number.

Music on site is very common and if kept to a reasonable level will not be objectionable. However there are occasions when levels are unacceptable generating complaints.

All noise generated on a building site whether from a radio or other sources are subject to the same limits. All it takes is some common courtesy and consideration to neighbours.

DOGS

While it is our opinion that dogs don't belong on building sites we would remind you that if you choose to have your dog with you they must be under control at all times. If they wander or cause a nuisance to passerby's or neighbours, you run the risk of being taken to task by the Council dog control staff.

TOILETS

Please provide suitable toilet facilities on site. You would be surprised at the number of complaints received by the Council for inappropriate urinating by builders on building sites particularly in built up residential areas.

In conclusion the Council wishes you all the best with your building project and please remember that if in doubt over any matter relating to your project we are only a phone call away on (06) 366 0999.

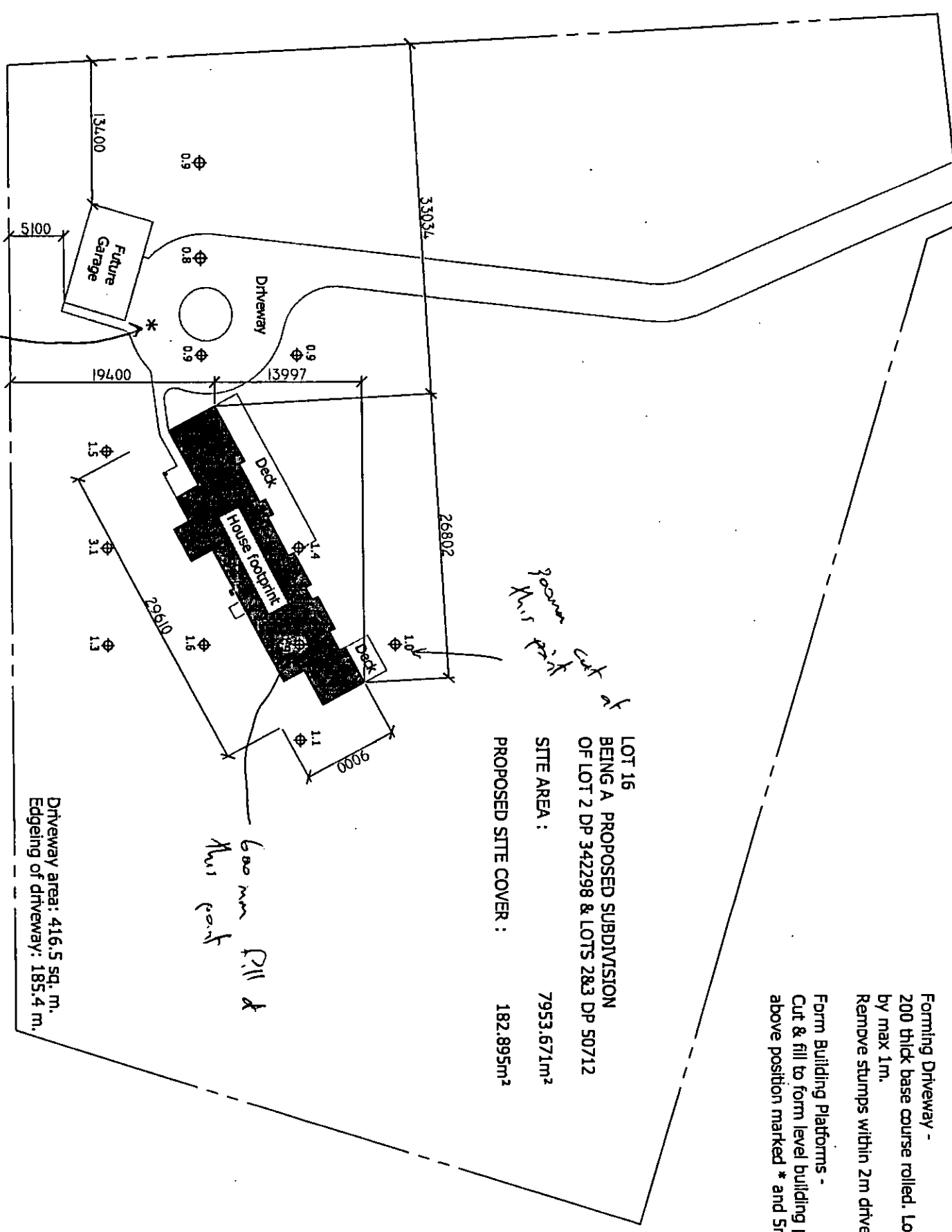
⊕ Datum on kerb 0.00

4.0 TO CL DRIVE

Site Preparation:
Forming Driveway -
200 thick base course rolled. Lower drive way over crest
by max 1m.
Remove stumps within 2m driveway
Form Building Platforms -
Cut & fill to form level building platform approx 300mm
above position marked * and 5m back from building line.

LOT 16
BEING A PROPOSED SUBDIVISION
OF LOT 2 DP 342298 & LOTS 2&3 DP 50712
SITE AREA : 7953.671m²
PROPOSED SITE COVER : 182.895m²

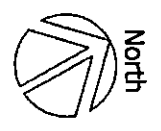
*300mm thick
kerb & 5m back*



Driveway area: 416.5 sq. m.
Edging of driveway: 185.4 m.

*600mm fill &
this point*

*Height set approx 300mm
above this point, say at 1.3*



These plans are copyright of Signature Homes

Signature
HOMES
YOUR HOME. YOUR WAY.

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARRERE BEACH

SITE PLAN

DATE:	18 NOV 08	SCALE:	A3 1:500	M.
DRAWN:	AP	REV:	08-576	
LOT:	DP:			
16				1

These drawings are to be used in conjunction with the specifications and documentation that form part of the contract. When drawings are sealed the contract is considered and signed. If you are not the intended recipient you may not copy, distribute or use the drawings in any way.

These drawings have been prepared on the understanding that the Building Contractor has a valid license of the NZ Building Code (NZBC) 1992. The Building Contractor, Paul & Debbie Wing, is not responsible for the design or construction of the building. The Building Contractor is responsible for the design and construction of the building. The Building Contractor is responsible for the design and construction of the building. The Building Contractor is responsible for the design and construction of the building.

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PROJECT INFORMATION MEMORANDUM PLANNING REQUIREMENTS (SHEET A)

COPY

Section 34 Building Act 2004

Date Lodged: 19 December 2008

FILE COPY

1. APPLICANT DETAILS

Applicant: Waitarere Rise Limited	Ph No:
	Mobile:
Mailing Address: C/- Signature Homes, 187 Broadway Avenue, Palmerston North 5301	

2. PROJECT

PIM Application No: 2008/1590/01PIM	BC Application No: 2008/1589/021
-------------------------------------	----------------------------------

Description of Work: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

3. SITE DETAILS

Site Address:	568 Waitarere Beach Road, LEVIN RURAL 5574
Legal Description:	Lot 3 DP 50712 1722580m2
Reference No:	422185

4. PLANNING ASSESSMENT - HOROWHENUA DISTRICT PLAN

Zone:	Rural	Designation:	No	Outstanding Landscape:	Yes
-------	-------	--------------	----	------------------------	-----

Activity Type:	Permitted ☒	Limited Discretionary ☐
	Controlled ☐	Discretionary ☐

Resource Consent:	REQUIRED	YES	☐	NO	☒
	OBTAINED	YES	☐	NO	☐
RCA No:					
Section 37 Building Act 2004 Certificate:	REQUIRED	YES	☐	NO	☒
	ATTACHED	YES	☐	NO	☐
Development Contribution:	REQUIRED	YES	☐	NO	☒
Section 36 Building Act 2004 Certificate:	ATTACHED	YES	☐	NO	☒
Section 73 Building Act 2004 Certificate:	REQUIRED	YES	☐	NO	☒
	ATTACHED	YES	☐	NO	☐
Section 75 Building Act 2004 Certificate:	REQUIRED	YES	☐	NO	☒
	ATTACHED	YES	☐	NO	☐
Further Information:	REQUIRED	YES	☐	NO	☒
	OBTAINED	YES	☐	NO	☐
Applicant Advised:		YES	☒	NO	☐
Planner: Lynette Balsh					
Date: 22 nd February 2009					

Notes:

Titles issued. Development contributions already paid by Waitarere Rise Ltd. Earthworks should not be required as the building platform is to be built up. Colours have been approved by Waitarere Rise Directors.

5. BUILDING ACT NEEDS (SCHEDULE 2 BUILDING)

Access and facilities: Is this a Schedule 2 Building as defined by s.118-120 Building Act 2004? Yes ☐ No ☒
Earthquake Risk Building Yes ☐ No ☒
Evacuation Plan Required Yes ☐ No ☒

6. ENGINEERING REQUIREMENTS/OTHER FEATURES

Other feature(s) or characteristic(s) likely to be relevant to the design or construction of the proposed buildings and not apparent from the District Scheme or District Plan.

No Easements or Consent Notices identified on copy of Certificate of Title provided to Council

7. PLUMBING & DRAINAGE

Sewer Available/Connected	Not available
Location of Sewer Lateral	Not applicable
Water Available/Connected	Not available
Location of Water Topy	Not applicable
Site Plan of Existing Services (If Any)	Not applicable
Location of Easements (If Any)	None known

STORMWATER DISPOSAL	ON SITE	✓	DRAIN	-	CHANNEL	-
---------------------	---------	---	-------	---	---------	---

8. CHECKED BY

Joanne Molloy
Support Officer – Support Services

Date: 18.12.2008

9. IDENTIFIED HAZARDS

Council is aware of the following:

	YES	NOT KNOWN
Potential Erosion		X
Potential Avulsion		X
Potential Subsidence		X
Potential Slippage		X
Potential Alluvion		X
Potential Inundation		X
Presence of Hazardous Contaminants		X
Presence of Earthquake Hazard/Fault Line		X

Methods of mitigating potential hazards:

10. SPECIAL FEATURES

Council is aware of the following:

	YES	NOT KNOWN
Heritage Value		X
Notable Tree		X
Consent Notice/Encumbrances	X	
Other		X

Methods of protection and management of Special Features:

Consent notice stipulating minimum floor level of 300mm above natural ground level adjacent to the dwelling, specifications for stormwater and ground soakage etc.

11. PLANNING REQUIREMENTS

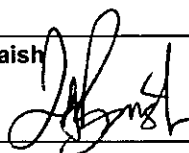
DESIGNATIONS	YES	COMPLIES NO	N/A
Zoning	X		
Height Standard	X		
Day lighting Standard			X
Building Setbacks	X		
Dwelling Separation Standard			X
Accessory Buildings			X
Site Coverage			X
Water Supply	X		
Vehicle Access	X		
Vehicle Parking & Manoeuvring	X		
Hazardous Substances			X
Network Utility Standard			X

12. NATURAL FEATURE PROTECTION

Outstanding Landscape?	Yes ☒	No ☐	Identifier: Coastal Landscape
Significant Natural Area	Yes ☐	No ☒	Identifier:
Earthworks over 1metre in a rural zone?	Yes ☐	No ☒	Consent Required ☐
Buildings or structures located within the Coastal Buffer?	Yes ☐	No ☒	Consent Required ☐

13. CHECK COMPLETED BY: Lynette Baish

Signature:



Date: 22nd April 2009

WARNING

Information provided in this document is based solely on historical records held by Horowhenua District Council. The accuracy of the information provided has not been checked. Use of this information for any purpose what so ever is at the discretion of the user. Horowhenua District Council accepts no responsibility for any loss or hurt, which may be suffered due to that use.



HOROWHENUA DISTRICT COUNCIL

126-148 Oxford Street

Private Bag 4002

Levin

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

PROJECT INFORMATION

MEMORANDUM FILE COPY

APPLICANT	PROJECT
Applicant Name & Address: Waitare Rise Limited C/- Signature Homes 187 Broadway Avenue Palmerston North 5301	Application No: 2008/1590/01PIM Description of Project: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove
PROPERTY	
Location: 568 Waitare Beach Road, LEVIN RURAL 5574	Legal Description: Lot 3 DP 50712 1722580m2

This project information memorandum is:

- ☒ Confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 2004 and any requirements of the building consent and subject also to all other necessary authorisations being obtained.
- ☐ Notification that the proposed building work may **NOT** be undertaken because a necessary authorisation has been refused, despite the issue of any building consent.

The following attachments are provided from existing Council records. You should also seek information from relevant power, gas and telecommunication network operators.

- ☐ Information identifying relevant special features of the land concerned.
- ☐ Information about the land or buildings concerned notified to the Council by any statutory organisation having the power to classify land or buildings.
- ☐ Details of relevant utility systems.
- ☐ Details of authorisations, which have been granted.
- ☐ Notification of any other authorisations which must be obtained before the proposed building work may be undertaken.
- ☐ Details of authorisations, which have been refused.

Signed for and on behalf of the Horowhenua District Council

Date: 22 April 2009



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R. W. Muir
Registrar-General
of Land

Identifier 411934
Land Registration District Wellington
Date Issued 06 March 2009

Prior References
WN20B/733

Estate Fee Simple
Area 8042 square metres more or less
Legal Description Lot 16 Deposited Plan 403623
Proprietors
Waitarere Rise Limited

Interests

7710188.4 Mortgage to Bank of New Zealand - 5.3.2008 at 9:01 am
7723552.1 Mortgage to Allied Nationwide Finance Limited - 5.3.2008 at 9:08 am
7755815.1 Encumbrance to Horowhenua District Council - 19.3.2008 at 9:00 am
8093654.6 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 6.3.2009 at 9:00 am
8093654.7 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 6.3.2009 at 9:00 am
Land Covenant in Easement Instrument 8093654.9 - 6.3.2009 at 9:00 am

HOROWHENUA DISTRICT COUNCIL

The Subdivision of Lots 2 & 3 DP 50712 and
Lot 2 DP 342298 (Stage 1)

Subdivision No. 2109

CONO 8093654.7 Cons

Cpy - 01/01, Pgs - 002, 05/03/09, 13:02



DocID: 212335120

CONSENT NOTICE

In the matter of the plan LT 403623 ("Plan") and pursuant to Section 221(1) of the Resource Management Act 1991 ("Act"), I hereby certify that the Horowhenua District Council has consented to the subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298 under SUB 2109 ("Consent") subject to the Owner (as defined in the Act) of Lots 1-33, 91-120, 138-143, 146, 150, 152, 156, 161, 163 and 164 on the Plan complying with the following conditions of the Consent on a continuing basis:

- a. The sanitary sewer system serving each Lot is a pressure main and each Lot needs to provide a pump station with non-return valve and a pressure connection to the main. All effluent disposal shall be on-site secondary treated before being pumped into the Council's pressurised sewer reticulation. The Issuance of any Project Information Memorandum & Building Consent is subject to approval of the wastewater disposal design, from Horowhenua District Council. No works shall commence prior to issuance of the same. It shall be designed and installed by a suitably qualified person experienced in effluent disposal systems.
- b. The Owners are to be aware of and comply with the system management plan required by the conditions of the resource consent.
- c. Any dwelling shall have a minimum floor level of not less than 300mm above natural ground level adjacent to the dwelling.
- d. At the time of construction of any dwelling or accessory building the building shall be clad and coloured with materials that have a low level of reflectivity and colours that blend and are in keeping with the rural environment. Colours should be generally in accordance with BS52525 colour codes, walls: B17 to B25, and roofs: A11 to 14, B25 to 29 and C39 & 40.
- e. That any Owner or occupant of the lot should be aware that the lot is located within an agricultural and forestry area and may be subject to activities such as harvesting and transport of logs, planting, thinning, road construction and maintenance and pest control which may cause noise and associated air

emissions such as dust, smoke and spray. Pest control may include but not be limited to trapping that is undertaken on an ongoing basis.

- f. The Owners or occupant should expect to experience the effects of normal rural activities and will have no right of objection against any permitted activity as described for the rural zone under the current rules of the Operative District Plan. This includes seasonal sporting activities such as duck shooting.
- g. Stormwater run-off from hard surface areas on the lot shall be disposed of via on site soakage contained within the subject lots. Soakage pits within the lot shall comply with NZS 4404:2004 Land Development and Subdivision Engineering, Part 4 and the District Plan Rules section 20.2.5. The soakage pits shall be designed to accommodate a 1 in 10 year rainfall event, with overland flow paths or suitable disposal areas for a 1 in 100 year rainfall event.
- h. There shall be no on-site disposal of sewage or human waste.
- i. At the time of construction of any dwelling on the lot the Owner shall provide fire fighting storage and access to meet all the requirements of NZS PAS 4509:2003 New Zealand Fire Service Fire Fighting Water Supplies Code of Practice.
- j. At the time of construction of any building on the lot the Owner may be required to submit a geotechnical report with regard to the selected building platform on the site. Specific foundation design may also be required for any proposed buildings.

Dated at Levin this the 12th day of February 2009



Pieter Vorster
Resource Management Manager
Environmental and Regulatory Services

HOROWHENUA DISTRICT COUNCIL

The Subdivision of Lots 2 & 3 DP 50712 and
Lot 2 DP 342298 (Stage 1)

Subdivision No. 2109

CONSENT NOTICE

CONO 8093654.6 Cons

Cpy - 01/01, Pgs - 001, 05/03/09, 13:02

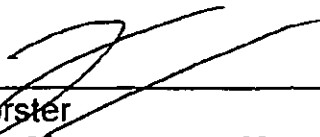


DocID: 212335110

In the matter of the plan LT 403623 ("Plan") and pursuant to Section 221(1) of the Resource Management Act 1991 ("Act"), I hereby certify that the Horowhenua District Council has consented to the subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298 under SUB 2109 ("Consent") subject to the Owner (as defined in the Act) of Lots 1-31, 91-120, 138-142, 146, 150, 152, 156, 161, 163 and 164 on the Plan complying with the following conditions of the Consent on a continuing basis:

- a) The Owner of each lot shall become and remain a member of the Incorporated Society formed to undertake, operate, maintain and if necessary replace all works and assets (collectively "Works") on the lots owned by the Society.
- b) The Owner's must comply with the constitution and rules of the Society and must pay all levies or contributions due to the Society for the purpose of undertaking, operating, maintaining and if necessary replacing such Works.
- c) If for any reason the Society is deregistered or ceases to operate then the Owner of each lot shall be jointly and severally liable for carrying out the obligations of the Society in terms of the Consent.
- d) Prior to settling the sale of a lot, the Owner thereof shall procure the purchaser to execute and deliver to the Society a Deed of Covenant in favour of the Society in which the purchaser covenants to become and remain a member of the Society and observe and perform the obligations of a member of the Society as set out in the constitution.

Dated at Levin this the 12th day of February 2009



Pieter Vorster
Resource Management Manager
Environmental and Regulatory Services

Easement instrument to grant easement or profit à prendre, or create land covenant
Sections 90A and 90F, Land Transfer Act 1952

EI 8093654.10 Easeme

Cpy - 01/01, Pgs - 003, 05/03/09, 13:04

Land registration district

WELLINGTON



DocID 212335123

Grantor

Surname(s) must be underlined or in CAPITALS.

WAITARERE RISE LIMITED

Grantee

Surname(s) must be underlined or in CAPITALS.

WAITARERE RISE LIMITED

~~Grant of easement or profit à prendre or creation of covenant~~

The Grantor, being the registered proprietor of the servient tenement(s) set out in Schedule A, **grants to the Grantee** (and, if so stated, in gross) ~~the easement(s) or profit(s) à prendre set out in Schedule A, or creates the covenant(s) set out in Schedule A, with the rights and powers or provisions set out in the Annexure Schedule(s).~~

Dated this 13th day of **February** 2009

Attestation

Executed by WAITARERE RISE LIMITED as Grantor by its directors

Signature [common seal] of Grantor

Signed in my presence by the Grantor

Signature of witness

Witness to complete in BLOCK letters (unless legibly printed)

Witness name

Occupation

Address

Executed by WAITARERE RISE LIMITED as Grantee by its directors

Signature [common seal] of Grantee

Signed in my presence by the Grantee

Signature of witness

Witness to complete in BLOCK letters (unless legibly printed)

Witness name

Occupation

Address

Certified correct for the purposes of the Land Transfer Act 1952.

[Solicitor for] the Grantee

*If the consent of any person is required for the grant, the specified consent form must be used.

Annexure Schedule 1



Easement instrument

Dated

Page 1 of 1 pages

Schedule A

(Continue in additional Annexure Schedule if required.)

Purpose (nature and extent) of easement, profit, or covenant	Shown (plan reference)	Servient tenement (Identifier/CT)	Dominant tenement (Identifier/CT or in gross)
Land covenant	"A" on deposited plan 403623	411939	411861 - 411884 inclusive

Delete phrases in [] and insert memorandum number as required.

Continue in additional Annexure Schedule if required.

~~Easements or profits à prendre rights and powers (including terms, covenants, and conditions)~~

Unless otherwise provided below, the rights and powers implied in specific classes of easement are those prescribed by the Land Transfer Regulations 2002 and/or the Fifth Schedule of the Property Law Act 2007.

The implied rights and powers are [varied] ~~[negated]~~ [added to] or [substituted] by:

[Memorandum number _____, registered under section 155A of the Land Transfer Act 1952].

[the provisions set out in Annexure Schedule 2].

Covenant provisions

Delete phrases in [] and insert memorandum number as required.

Continue in additional Annexure Schedule if required.

The provisions applying to the specified covenants are those set out in:

~~[Memorandum number _____, registered under section 155A of the Land Transfer Act 1952]~~

[Annexure Schedule 2].

All signing parties and either their witnesses or solicitors must sign or Initial in this box

Annexure Schedule



Insert type of instrument

"Mortgage", "Transfer", "Lease" etc

Grant of Easement

Dated

Page 1 of 1 pages

(Continue in additional Annexure Schedule, if required.)

ANNEXURE SCHEDULE 2

The registered proprietor of CT 411939 will not construct or locate any building or other structure on that part of Lot 146 marked "A" on deposited plan 403623.

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

Approved by Registrar-General of Land under No. 2007/6225

~~Easement instrument to grant easement or profit à prendre, or create land covenant~~
Sections 90A and 90F, Land Transfer Act 1952

EI 8093654.9 Easement I

Land registration district

WELLINGTON



Cpy - 01/01, Pg - 008, 27/03/09, 12:36



DocID: 212336122

Grantor

Surname(s) must be underlined or in CAPITALS.

WAITARERE RISE LIMITED

Grantee

Surname(s) must be underlined or in CAPITALS.

WAITARERE RISE LIMITED

~~Grant of easement or profit à prendre or creation of covenant~~

The Grantor, being the registered proprietor of the servient tenement(s) set out in Schedule A, ~~grants to the Grantee (and, if so stated, in gross) the easement(s) or profit(s) à prendre set out in Schedule A, or creates the covenant(s) set out in Schedule A, with the rights and powers or provisions set out in the Annexure Schedule(s).~~

Dated this 13 day of February 2009

Attestation

Executed by WAITARERE RISE LIMITED as Grantor by its directors

Signature [common seal] of Grantor

Signed in my presence by the Grantor

Signature of witness

Witness to complete in BLOCK letters (unless legibly printed)
Witness name

Occupation

Address

Executed by WAITARERE RISE LIMITED as Grantee by its directors

Signature [common seal] of Grantee

Signed in my presence by the Grantee

Signature of witness

Witness to complete in BLOCK letters (unless legibly printed)
Witness name

Occupation

Address

Certified correct for the purposes of the Land Transfer Act 1952.

[Solicitor for] the Grantee

*If the consent of any person is required for the grant, the specified consent form must be used.

REF: 7003 - AUCKLAND DISTRICT LAW SOCIETY

Approved by Registrar-General of Land under No. 2007/6225
Annexure Schedule 1



Easement instrument

Dated

[]

Page

1

of

1

pages

Schedule A

(Continue in additional Annexure Schedule if required.)

Purpose (nature and extent) of easement , profit , or covenant	Shown (plan reference)	Servient tenement (Identifier/CT)	Dominant tenement (Identifier/CT or in gross)
See annexure schedule 1			

Delete phrases in [] and insert memorandum number as required.

Continue in additional Annexure Schedule if required.

~~Easements or profits à prendre rights and powers (including terms, covenants, and conditions).~~

~~Unless otherwise provided below, the rights and powers implied in specific classes of easement are those prescribed by the Land Transfer Regulations 2002 and/or the Fifth Schedule of the Property Law Act 2007.~~

~~The implied rights and powers are [varied] [negatived] [added to] or [substituted] by:~~

~~[Memorandum number , registered under section 155A of the Land Transfer Act 1952].~~

~~[the provisions set out in Annexure Schedule 2].~~

Covenant provisions

Delete phrases in [] and insert memorandum number as required.

Continue in additional Annexure Schedule if required.

The provisions applying to the specified covenants are those set out in:

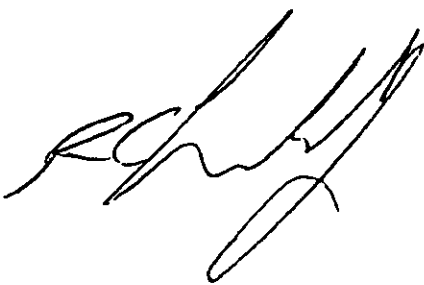
~~[Memorandum number , registered under section 155A of the Land Transfer Act 1952].~~

~~[Annexure Schedule 2].~~

All signing parties and either their witnesses or solicitors must sign or initial in this box

ANNEXURE SCHEDULE 1

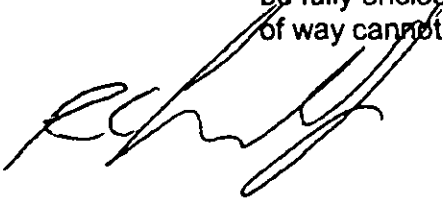
Purpose of covenant	Servient tenement	Dominant tenement
Building and subdivision covenants	411861 – 411864 inclusive	411861 – 411864 inclusive
	411933	411933
	411865	411865
	411935	411935
	411919	411919
	411866	411866
	411867	411867
	457941	457941
	457942	457942
	411868	411868
	411869	411869
	411936	411936
	411934	411934
	411870 – 411884 inclusive	411870 – 411884 inclusive
	411885 – 411889 inclusive	411885 – 411889 inclusive
	411921	411921
	411914	411914
	411915	411915
	411890 – 411893 inclusive	411890 – 411893 inclusive
	411903 – 411909 inclusive	411903 – 411909 inclusive
	411937	411937
	411938	411938
	411923 – 411925 inclusive	411923 – 411925 inclusive
	411931	411931
	411932	411932
	411910	411910
	411911	411911
	411930	411930
	411895	411895
	411916	411916
	411917	411917
	411918	411918
	411900	411900
	411901	411901
	411939	411939
	411912	411912
	411897	411897
	411898	411898
	411899	411899
	411894	411894
	411896	411896



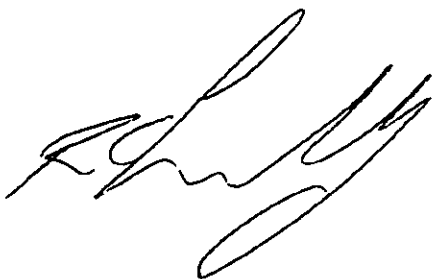

ANNEXURE SCHEDULE 2

1.

- (a) The Grantee will not erect or place on the property any building other than a single new residential home having a closed in floor area (exclusive of basement, carport or garage) of not less than 100m², excluding eaves and decks and a garage or other buildings as would usually be appurtenant or ancillary to a single dwelling house provided that such garage or other building can only be erected once the dwelling is first erected and such garage or other building shall be a design that is architecturally in keeping with the dwelling. The Grantee will not commence construction without first obtaining the written approval of the Grantor to the plans and specifications and the exterior design, colour and appearance of the proposed dwelling house, such approval to be at the Grantor's complete discretion.
- (b) Construction of the dwelling is to be completed within 9 months of commencement of laying foundations and within that 9 month period a driveway or vehicle access in a permanent continuous surface.
- (c) Lawns are to be laid and fences completed within a further period of 12 months. The curtilage is to be kept trimmed and tidy at all times.
- (d) The entire lot shall be kept tidy and free of debris.
- (e) The land is not to be occupied or used as a dwelling until the dwelling has been substantially completed in accordance with these covenants and the local authority consent.
- (f) The Grantee acknowledges and agrees with the Grantor that each lot in the subdivision forms part of a development which is intended to be established and maintained as a modern subdivision for private ownership and no commercial activity or usage principally for subsidised or communal housing shall be permitted.
- (g) Once construction of the dwelling has been substantially completed the Grantee will not allow to remain on the land any temporary dwelling, caravan, bus, trade vehicle or other equipment or materials or machinery unless garaged or screened so as to preserve the amenities of the neighbourhood and to prevent noise likely to cause offence to residences in the subdivision. No recreation or commercial vehicles or trailers are to be regularly parked on the street or footpath nor in front of the building line of the dwelling on the land.
- (h) No lot shall be further subdivided unless a 55 metre diameter circle can be fully enclosed within each new proposed lot. Areas subject to a right of way cannot be included in the 55 metre circle.



2. Once all the lots within the Grantor's subdivision have been built upon the Grantor shall not be responsible for administration of or compliance with these covenants.
3. If there should be any breach of non-observance of any of the foregoing covenants and without prejudice to any other liability which the Grantee may have to any person having the benefit of this covenant, should the Grantee not rectify the breach or non-observance of any of the foregoing covenants within 15 working days of the written demand being made by the Grantor or any of the registered proprietors of the Lots, then the Grantee will:
 - (a) pay to the person making such demands as liquidated damages the sum of \$200 per day for every day that such breach or non-observance continues after the date upon which written demand has been made together with any costs and expenses incurred by the Grantor or any registered proprietor to remedy the breach or non-observance;
 - (b) remove or cause to be removed from the land any secondhand or used dwelling house, garage, carport, building or other structure erected or place don the land in breach of non-observance of the foregoing covenants;
 - (c) cease any activity in breach of those covenants.

A large, stylized handwritten signature in black ink, located at the bottom left of the page.A smaller, stylized handwritten signature in black ink, located at the bottom right of the page.

Annexure Schedule - Consent Form

Land Transfer Act 1952 section 238(2)

Insert type of instrument
"Caveat", "Mortgage" etc

Land Covenants

Page 1 of 1 pages

Consentor

Surname must be underlined or in CAPITALS

Capacity and interest of Consentor

(eg. Caveator under Caveat no./Mortgagee under Mortgage no.)

HOROWHENUA DISTRICT COUNCIL

Encumbrance 7755815.1

Consent

Delete Land Transfer Act 1952, if inapplicable, and insert name and date of application Act.

Delete words in [] if inconsistent with the consent.

State full details of the matter for which consent is required.

Pursuant to [section 238(2) of the Land Transfer Act 1952]

[section of the Act]

[Without prejudice to the rights and powers existing under the interest of the Consentor]

the Consentor hereby consents to:

registration of:

(a) the instrument dated 13 February 2009 between Waitarere Rise Limited as both grantor and grantee creating restrictive building covenants.

(b) the instrument dated 13 February 2009 between Waitarere Rise Limited as both grantor and grantee imposing a land covenant in respect of Lot 146.

Dated this 20th day of MARCH 2009**Attestation**

Signed in my presence by the Consentor

Signature of Witness

Witness to complete in BLOCK letters (unless legibly printed)

Witness name

Occupation CHIEF EXECUTIVE OFFICER

Address

Signature of Consentor

An Annexure Schedule in this form may be attached to the relevant instrument, where consent is required to enable registration under the Land Transfer Act 1952, or other enactments, under which no form is prescribed.

Encumbrance instrument Section 101, Land Transfer Act 1952

ENC 7755815.1 Encumbr

Cpy - 01/04, Pgs - 005, 18/03/08, 13:51



DocID 411954398



Land registration district

WELLINGTON

Unique identifier(s)

or C/T(s)

All/part

Area/description of part or stratum

WN173880

All

WN20B/732

WN20B/733

Encumbrancer

Surname(s) must be underlined or in CAPITALS

WAITARERE RISE LIMITED (WAITARERE RISE)

Encumbrancee

Surname(s) must be underlined or in CAPITALS

HOROWHENUA DISTRICT COUNCIL (HDC)

Estate or interest to be encumbered

Insert, eg, fee simple; leasehold in lease number, etc.

Fee Simple

Encumbrance memorandum number

Nature of security

State whether sum of money, annuity, or rentcharge, and amount.

Continued on subsequent Annexure Schedules

Operative clause

Delete words in [], as appropriate

The Encumbrancer encumbers for the benefit of the Encumbrancee the land in the above certificate(s) of title or computer register(s) with the above sum of money, annuity, or rentcharge to be raised and paid in accordance with the terms set out in the [above encumbrance memorandum] [Annexure Schedule(s)] and so as to incorporate in this encumbrance the terms and other provisions set out in the [above encumbrance memorandum] [and] [Annexure Schedule(s)] for the better securing to the Encumbrancee the payment(s) secured by this encumbrance, and compliance by the Encumbrancer with the terms of this encumbrance.

Dated this 24 day of October 2007

Attestation

	Signed in my presence by the Encumbrancer
	Signature of witness Witness to complete in BLOCK letters (unless legibly printed)
	Witness name
	Occupation
Signature [common seal] of Encumbrancer	Address

Certified correct for the purposes of the Land Transfer Act 1952

[Solicitor for] the Encumbrancee

Approved by Registrar-General of Land under No. 2002/6117
Annexure Schedule 1



Encumbrance
instrument

Dated 24.10.07

Page 2 of 4 pages

Terms

(Continue in additional Annexure Schedule(s) if required.)

- 1 Length of term **Continued on subsequent Annexure Schedule**
- 2 Payment date(s)
- 3 Rate(s) of interest
- 4 Event(s) in which the sum, annuity, or rentcharge becomes payable
- 5 Events(s) in which the sum, annuity, or rentcharge ceases to be payable

Covenants and conditions

(Continue in additional Annexure Schedule(s) if required.)

Continued on subsequent Annexure Schedule

Modification of statutory provisions

(Continue in additional Annexure Schedule(s) if required.)

All signing parties and either their witnesses or solicitors must sign or initial in this box.

Annexure Schedule



Insert type of instrument
"Mortgage", "Transfer", "Lease" etc

Encumbrance

Dated

24.10.07

Page

3

of

4

pages

(Continue in additional Annexure Schedule, if required.)

Background:

- A. **WAITARERE RISE** is the conditional purchaser of the lands described in Certificates of Title WN173880, WN20B/732 and WN20B/733 pursuant to an Agreement for Sale and Purchase dated 30 November 2005 ("the lands").
- B. **WAITARERE RISE** has obtained resource consent granted 17 October 2007 from HDC to subdivide the lands into 164 residential lots.
- C. One of the conditions of the consent is that **WAITARERE RISE** is required to pay to **HDC** a development contribution of \$4,869.00 plus GST ("the contribution") for each of the said residential lots which payment **WAITARERE RISE** has agreed to make.

THIS MEMORANDUM WITNESSES that **WAITARERE RISE** **HEREBY ENCUMBERS** the said residential lots for the benefit of **HDC** and to secure the performance of the covenants herein set forth and the payment of the contribution in respect of each of the said residential lots.

COVENANTS:

1. **WAITARERE RISE** covenants with **HDC** that it will observe and perform the terms of this encumbrance and pay the contribution to **HDC** as provided herein.
2. **WAITARERE RISE** covenants to pay to **HDC** the contribution (upon receipt of the **HDC** GST invoice) for each lot sold or transferred by **WAITARERE RISE** and will not transfer title to any of the said lots until payment has been made in respect thereof to **HDC**.
3. (a) On receipt of an undertaking from the solicitors for **WAITARERE RISE** to pay the said contribution on settlement of the sale of each lot, **HDC** will make available to **WAITARERE RISE** a discharge of this encumbrance in respect of the lot that has been sold such a discharge to be prepared by **WAITARERE RISE** at its expense.

(b) Forthwith upon settlement of the sale of each lot **WAITARERE RISE** will pay the said contribution to **HDC**.
4. **WAITARERE RISE** will register this encumbrance on each of the said residential lots contemporaneously with the issue of new titles therefore.

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

Annexure Schedule



Insert type of instrument
"Mortgage", "Transfer", "Lease" etc

Encumbrance

Dated

24.10.07

Page

4

of

4

pages

(Continue in additional Annexure Schedule, if required.)

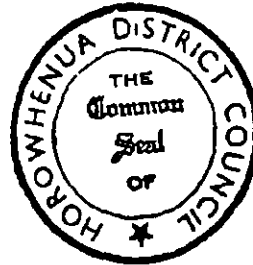
5. This encumbrance shall be binding on the assignees, transferees and successors in title to **WAITARERE RISE**.

IN WITNESS WHEREOF this Deed has been executed the 24th day of October 2007

EXECUTED by WAITARERE RISE)
LIMITED by its Directors in the)
presence of:

ROGER GERARD DOWNEY
SOLICITOR
LEVIN

THE COMMON SEAL of
HOROWHENUA DISTRICT
COUNCIL was hereunto affixed
in the presence of:



CHIEF EXECUTIVE OFFICER

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

Application No: 2008/1590/01PIM

29 January 2009

Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

COPY

Dear Waitarere Rise Limited

Address: Lot 3 DP 50712 1722580m2, 568 Waitarere Beach Road, LEVIN RURAL 5574
Proposal: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

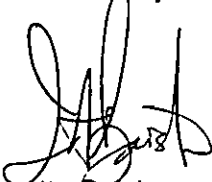
You have recently submitted a Building Consent Application for the above work. In order to process your Application the following information in respect of the Project Information Memorandum (PIM) is required, as follows;

- Please provide a site plan showing the Certificate of Title boundaries.
- Please provide a contour layout of the site plan and elevations. You may use the site plan for Lot 16.

We require the outstanding information in order to complete the PIM and process your application for Building Consent. Please provide the information at your earliest convenience in order to avoid any delays.

If you have any queries please do not hesitate to call the Planning Officer responsible on (06) 3660999.

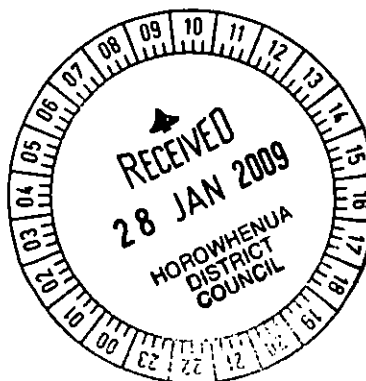
Yours faithfully



Lynette Baish
Resource Management Planner

27th January 2009

Lynette Baish
Horowhenua District Council
126-148 Oxford Street
Private Bag 4002
Levin 5540



Re: Wing Residence

Dear Lynette

In response to your letter dated 7th January 2009 (copy attached) I wish to advise the following.

- The title for Lot 16 is yet to be issued, I'm told they are not too far away and therefore will advise you immediately when it is issued.
- Attached is a site plan with some notes on it. We expect the maximum depth of any site works will not exceed 600mm.

Please let me know if you require any further information at this time.

Yours sincerely

A handwritten signature in black ink, appearing to read "Steve Crombie".

Steve Crombie
General Manager
Signature Homes Palmerston North



HOROWHENUA DISTRICT COUNCIL

126-148 Oxford Street

Private Bag 4002

Levin 5540

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

Application No: 2008/1590/01PIM

7 January 2009

Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

Dear Waitarere Rise Limited

Address: Lot 3 DP 50712 1722580m2, 568 Waitarere Beach Road, LEVIN RURAL 5574
Proposal: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

You have recently submitted a Building Consent Application for the above work. In order to process your Application the following information in respect of the Project Information Memorandum (PIM) is required, as follows;

- Please supply a Certificate of Title for the subject site on Lot 16.
- Please indicate the maximum depth of any earthworks on the site.

We require the outstanding information in order to complete the PIM and process your application for Building Consent. Please provide the information at your earliest convenience in order to avoid any delays.

If you have any queries please do not hesitate to call the Planning Officer responsible on (06) 3660999.

Yours faithfully

Lynette Baish
Resource Management Planner

From: Paul [mailto:paul.wing@xtra.co.nz]
Sent: Sunday, 23 November 2008 9:42 p.m.
To: 'David Beck'
Cc: paul.wing001@msd.govt.nz
Subject: Colours

David

Thank you for your time at the weekend, it was good to meet everyone and please say thank you to Sandra for us. Below is the e-mail I am sending to Susanne FYI.

Regards

Paul

Subject: Lot 16 House and Garage Plans

Susanne

As discussed and as a requirement of the section covenants I have included our plans for your approval. I have attached a copy of our site plan and elevations of the house and garage.

The house will be clad in a combination of Linea weather board and Titan panel. The Linea will have 150mm profile. Our wish is to paint the house two colours, the Linea in Resene Stonehenge (BR61-012-073) and the Titan panel in Resene Tea (Y81-019-081). I believe both of these are within the approved colour range for the development. The roof will be mono-pitch sloping away from the front of the house.

The garage will be of a more simple and functional design using 150mm skyboard which will be painted in Resene Tea (Y81-019-081) over its zincalume base. The sectional double garage door will be painted with Resene Stonehenge (BR61-012-073). Our wish with the garage is not to have a miniature version of the house it is to have a functional structure that contrasts with the house. We have therefore gone for a more plane design using materials that are still suitable for the environment and using the same colours as the house but in reverse. The garage door will match the Linea on the house and the garage cladding will match the Titan panel on the house. Although the garage is not in the same material as the house they will both have the same 150mm weatherboard profile. The garage will have a standard gable roof to allow for the addition of photovoltaic panels on the northern aspect of the roof at a later date.

Please note that the front edge of the house roof will be nearly 1.5m higher than the top of the garage roof. This is a combination of the house being taller than the garage and the house will also be on a raised building platform, about 300mm above the drive level and that of the garage floor. Also the north western corner of the house will be about 8m in front of the garage and plants will obscure the garage from view at the top of the drive. The effect should be that when you reach the highest point of the drive (about 10m from the road) the position of the house, landscaping and planting of the site will all make the house the focal point.

If you do have any questions about the design then please contact me on 04-978-4155 during the day or 04-476-6034 during the evening. Please note that I will not be in the office on the 27th and 28th of this month and we are on holiday to South Island from the 30th of November to the 7th of December but I can be contacted on 029-275-9327

Regards

Paul and Debbie Wing.

Directors:

Elliott FalconER AREINZ

Stuart Pescini AREINZ, Dip. Ag. D.p; B.S.

Mick Robbers AREINZ

Harcourts

MANA-KAPITI-HOROWHENUA REALTY LTD

Mana-Kapiti-Horowhenua Realty Ltd

12 Exeter Street

PO Box 365, Levin

New Zealand

Phone 04-368 8449

Fax 06-368 8187

Email: levin@harcourts.co.nz

Web: www.wellingtonharcourts.co.nz

18 December 2008

Paul & Deborah Wing

Dear Paul and Deborah

Enclosed with this letter is a copy of the Conservation Statement regarding "The Beach Farm" which I'm sure you will find of interest.

With the roads now sealed and named, the development is looking fantastic. Looks like titles will be through in February.

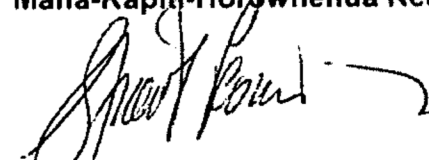
If you are in the area over the Christmas break make sure you visit "The Beach Farm". The road will be open.

If you have any questions please call Susanne Hanlon or myself, we will both be about over the holiday period.

Have a wonderful Christmas and we look forward to catching up with everyone at "The Beach Farm".

Yours faithfully

Mana-Kapiti-Horowhenua Realty Ltd



Stuart Pescini

Director/Manager MREINZ

Offices at

WHITBY • PAREMATA • PARAPARAUMU • WAIKANAЕ • OTAKU

Associate Companies: LOWER HUTT, KHANDALLAH, UPPER HUTT, MIRAMAR, SILVERSTREAM

The site plan shows a property with a driveway and a house footprint. The driveway is labeled "Driveway" and has a "Future Garage" area. The house footprint is labeled "House footprint" and includes a "Deck" and a "Finished floor level at 1.2m". The property is bounded by "Property contours" and a "Vulping" area. The driveway area is 416.5 sq. m. and the edging of the driveway is 183.4 m. The plan includes various elevation points (0.8, 0.9, 1.0) and dimensions (1.5m, 2.0m, 3.1m, 3.1m).

Signature
H O M E S
Est. 1983

YOUR HOME. YOUR WAY.

Job Title:
**Proposed House for
Paul & Debbie Wing**

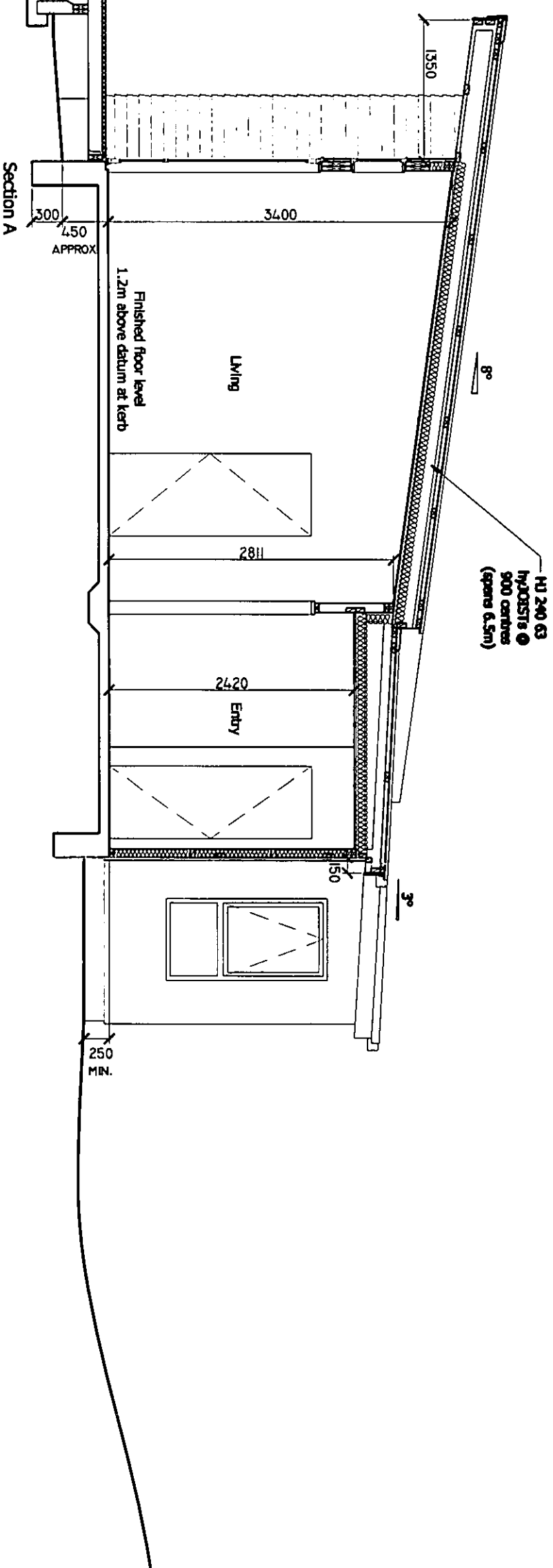
Drawing Title:
Section A

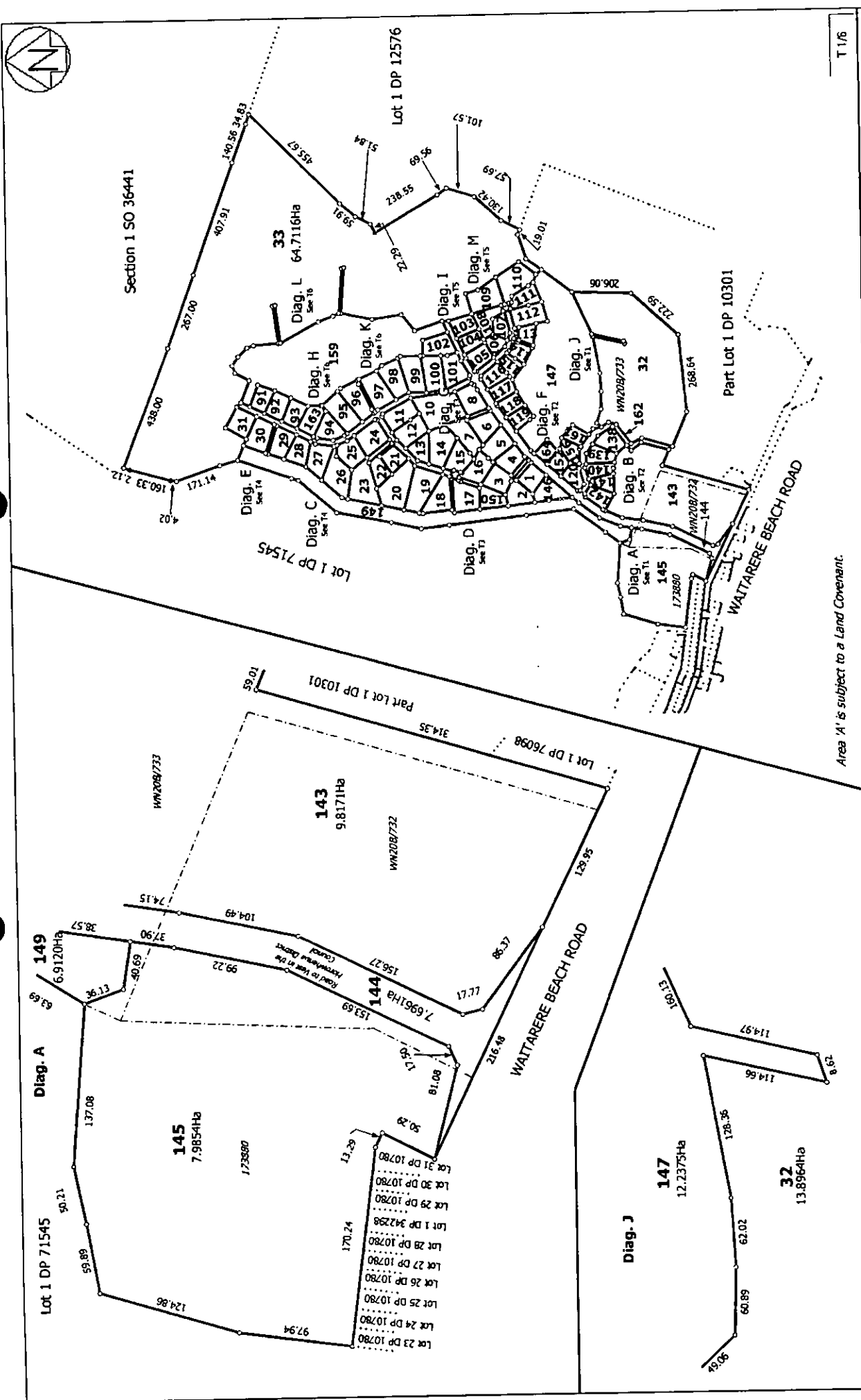
Site Address:
**Beach Road
Walterre Beach**

Job	19749
Drawn	Graham Doney
Checked	-
Scale	1:50
Date	15/4/09
Page	2
Sheet Rev No.	-

These drawings have been prepared on the understanding that the Building Contractor has a sound knowledge of the NZ Building Code and MCS 3604: 1999. The main Contractor, Sub Contractor or Authorised Agent of the owner or Builder shall ensure that all works comply with these codes in addition to any requirements of the Territorial Authority. Any work undertaken outside these requirements without prior written approval of the Designer, Engineer and/or the Territorial Authority hereby indemnifies the Designer or the Agent against any claim, or claims, in respect of the said work.

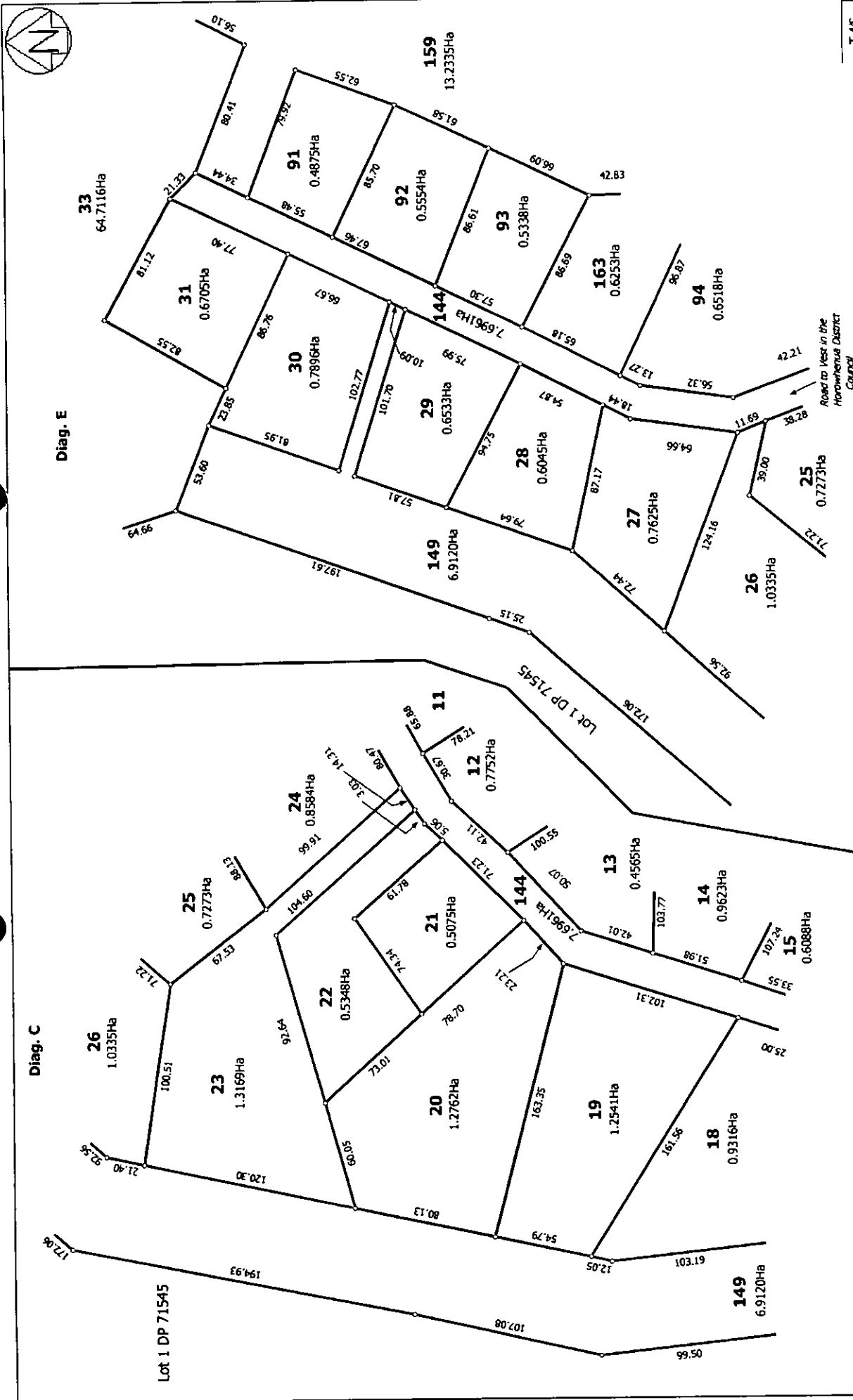
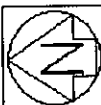
Notes:





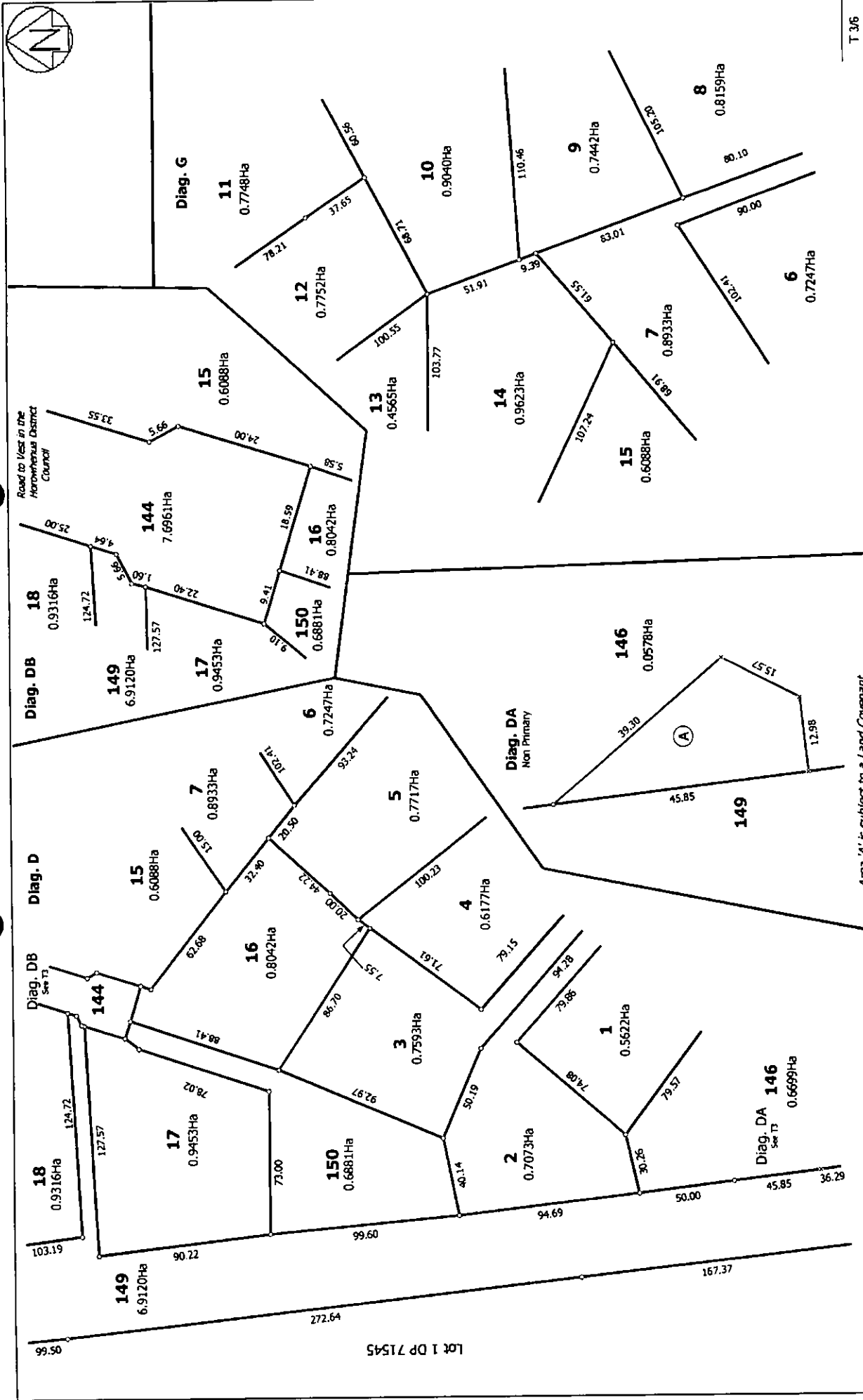
T 1/6

Land District: Wellington	Lots 1 - 33, 91 - 120, 138 - 147, 149, 150, 152, 156, 159 & 161 - 164 being a subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298	Surveyor: William Loudon Riordan Firm: Truebridge Associates Ltd (Feilding)	Digital Title Plan DP 403623 Deposited on: 6/03/2009
Digitally Generated Plan Generated on: 30/03/2009 11:31 am Page 4 of 9			



T 4/6

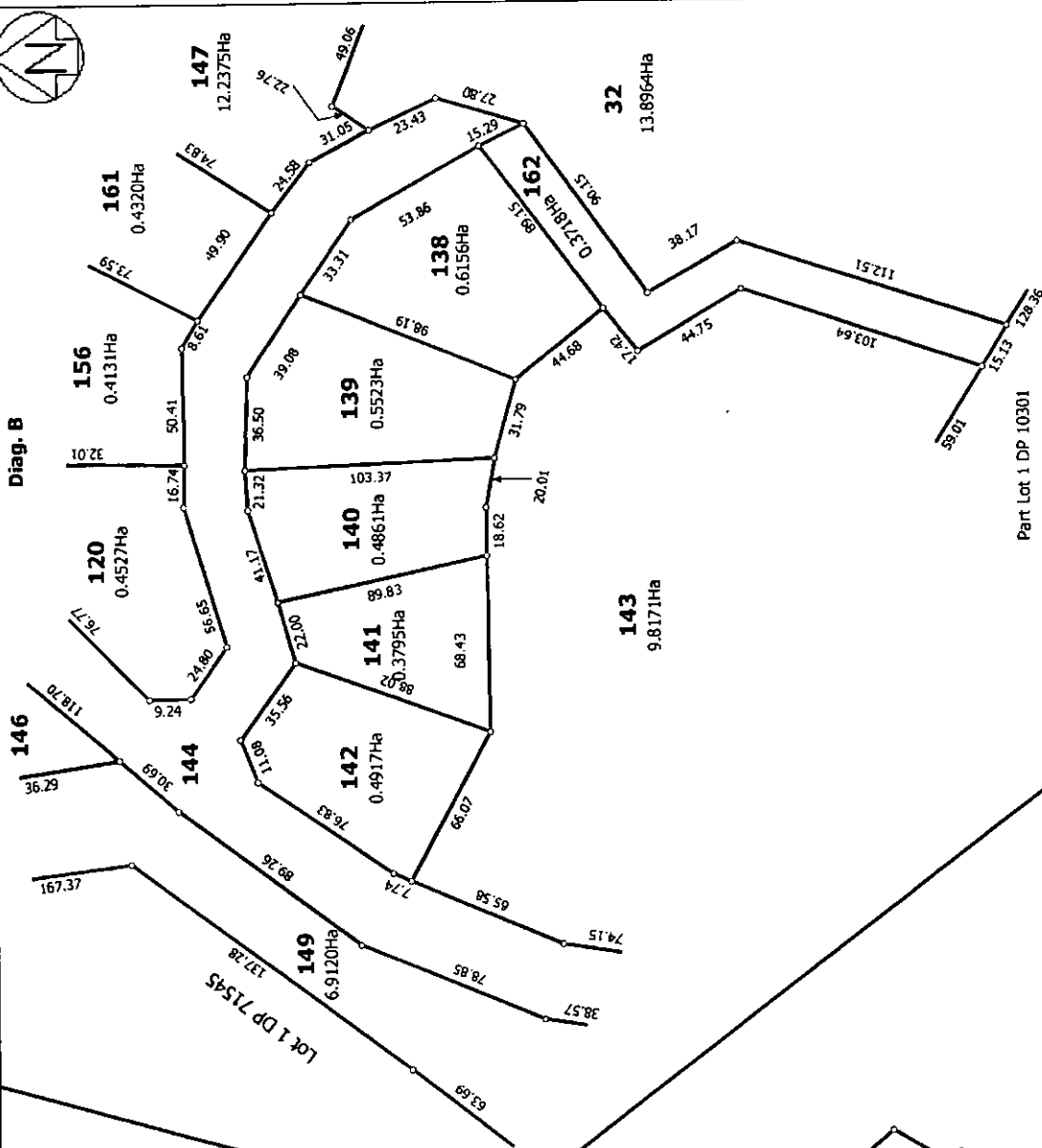
Land District: Wallington Digitally Generated Plan Generated on: 30/03/2009 11:31 am Page 7 of 9	Lots 1 - 33, 91 - 120, 138 - 147, 149, 150, 152, 156, 159 & 161 - 164 being a subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298	Surveyor: William Loudon Riordan Firm: Truebridge Associates Ltd (Feilding)	Digital Title Plan DP 403623 Deposited on: 6/03/2009
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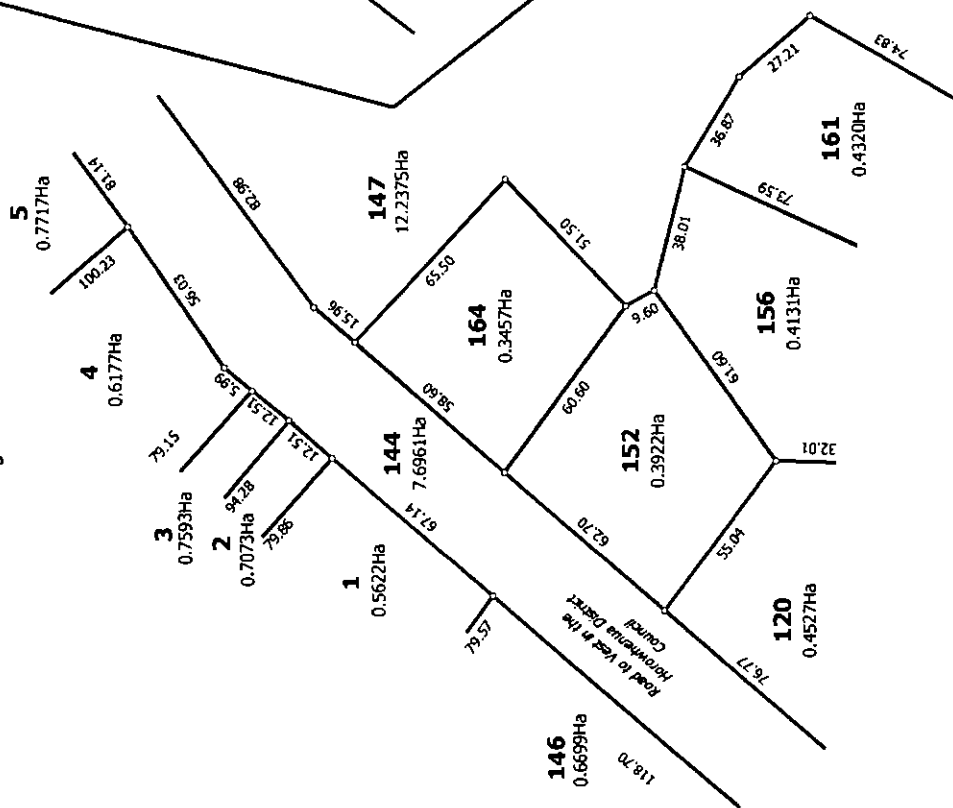
Land District: Wellington		Lots 1 - 33, 91 - 120, 138 - 147, 149, 150, 152, 156, 159 & 161 - 164 being a subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298		Surveyor: William Loudon Riordan Firm: Truebridge Associates Ltd (Feilding)		Digital Title Plan DP 403623		Deposited on: 6/03/2009	
Digitally Generated Plan Generated on: 30/03/2009 11:31 am		Page 6 of 9							



Diag. B



Diag. F



T 2/6

Digital Title Plan
DP 403623

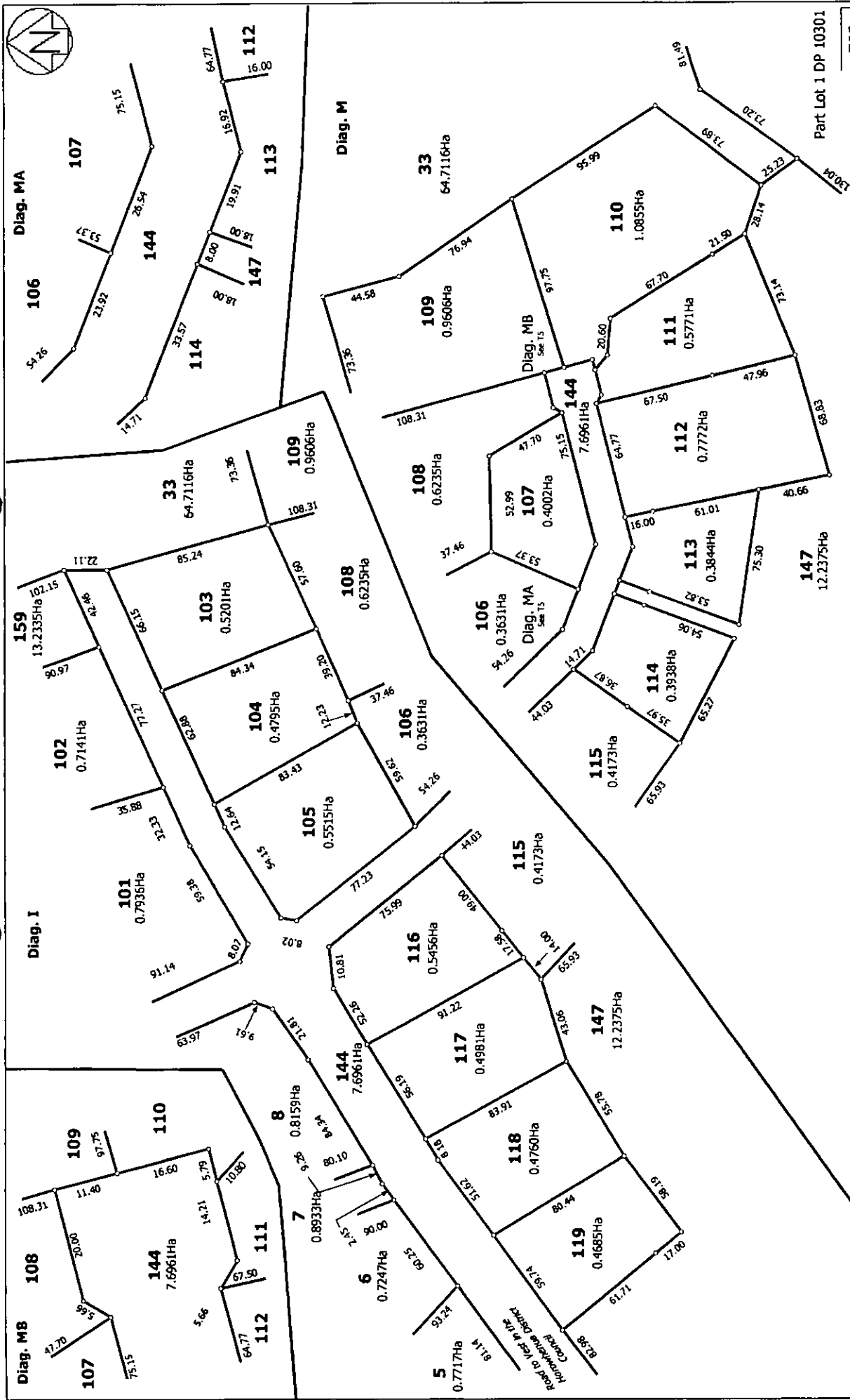
Deposited on: 6/03/2009

Surveyor: William Loudon Riorden
Firm: Truebridge Associates Ltd (Feilding)

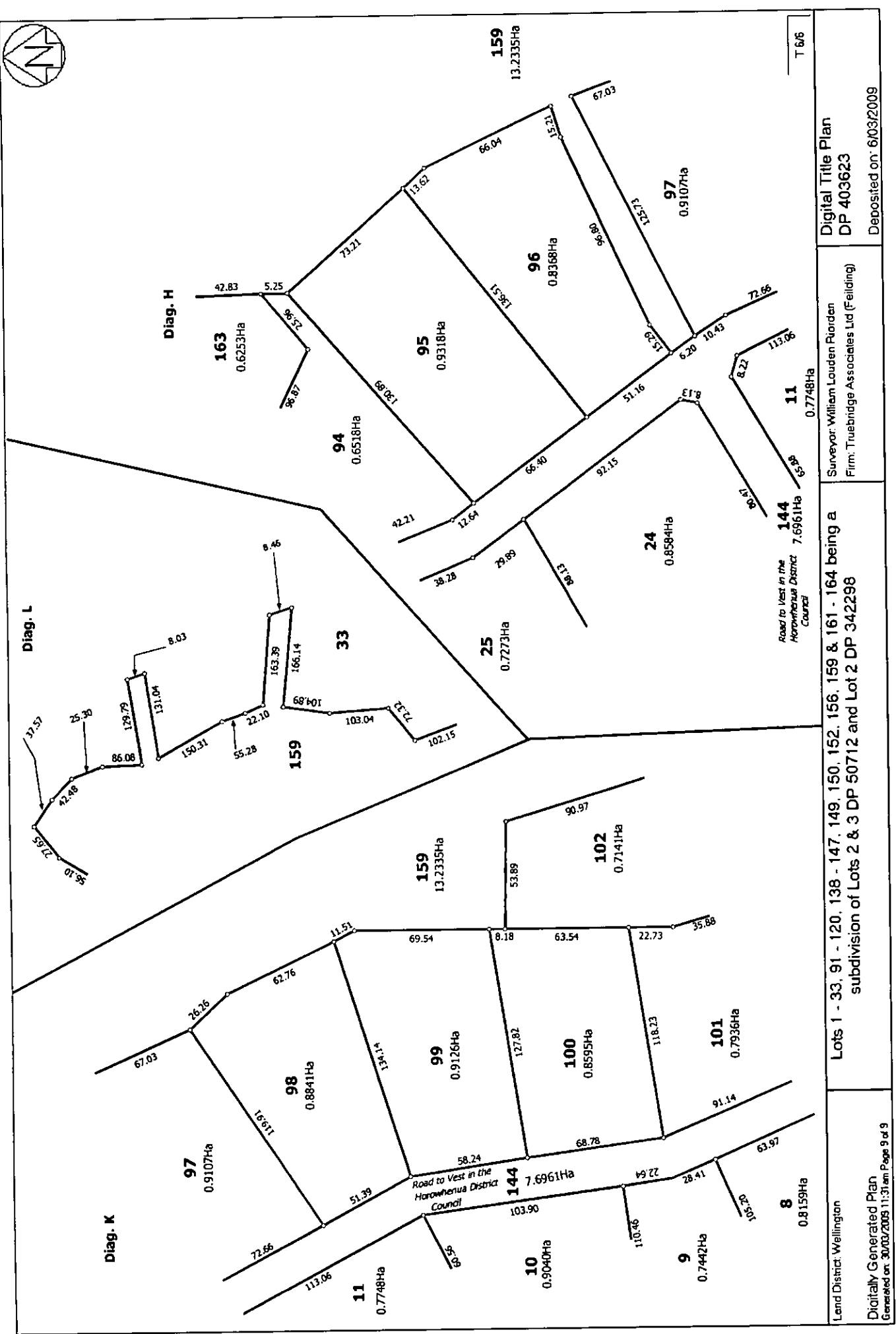
Lots 1 - 33, 91 - 120, 138 - 147, 149, 150, 152, 156, 159 & 161 - 164 being a
subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298

Land District: Wellington

Digitally Generated Plan
Generated on: 30/03/2008 11:31 am Page 5 of 9



Lond District Wellington	Surveyor: William Loudon Riordan Firm: Truebridge Associates Ltd (Feilding)	Digital Title Plan DP 403623
Digitally Generated Plan Generated on: 30/03/2009 11:37 am Page 8 of 9	Lots 1 - 33, 91 - 120, 138 - 147, 149, 150, 152, 156, 159 & 161 - 164 being a subdivision of Lots 2 & 3 DP 50712 and Lot 2 DP 342298	Deposited on: 6/03/2009











Option B - Sewage with to Onsite disposal



Lots 1 - 164 being a proposed subdivision of Lot 2 DP 342298 & Lots 2 & 3 DP 50712

Prepared for: **Waitare Rise Limited**
 CT Reference: **WN20B/733, WN20B/72 & 173880**
 Local Authority: **Horowhenua District**
 Scale (at A3): **1:7500**
 Date Drawn: **August 2006**
 Our Reference: **TA - 3004.F**
 Physical Address: **Waitare Beach Road, Waitare**

Amended - 28 July 2006
 Amended - 22 August 2006
 Amended - 11 November 2006
 Amended - 25 January 2007

DRAFT PLAN
 Not yet approved by the Horowhenua District Council

Stage One Area = 107.0 ha
 Stage Two Area = 65.0 ha
 Stage Three Area = 14.0 ha

DISCLAIMER / LEGAL

I, Roger Colin Truebridge, being a Licensed Cadastral Surveyor, hereby certify that this Scheme Plan has been prepared by me for the sole purpose of gaining Resource Consent pursuant to Section 105 of the Resource Management Act 1991.

Truebridge Associates Limited accepts no responsibility for its use for any other purpose.

Further, the resource consent has been prepared at the request of and for the purpose of, our client only and neither we nor any of our employees accept any responsibility on any ground whatever including liability in negligence, to any other person if it is used by any other person or for any other purpose.

The areas and dimensions shown on this Scheme Plan have not been checked by survey and are likely to change upon final survey.

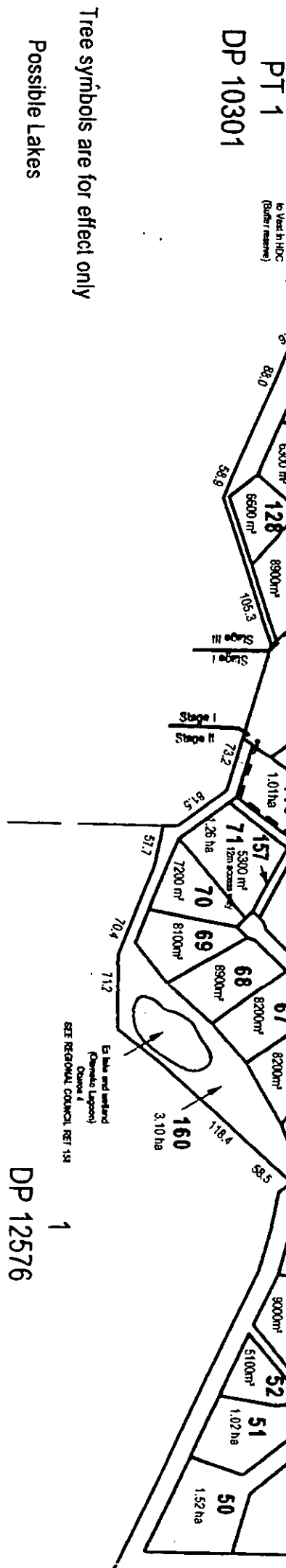
Prepared by



Licensed Cadastral Surveyors & Resource Management Consultants

Office: 522 Queen Street, Levin
 Telephone: 06 368 6249
 Facsimile: 06 368 6049
 Email: lev@truebridge.co.nz

WAITARE BEACH ROAD
 LEGAL ROAD (SEALED) 20.12 WIDE



Application No: 2008/1590/01PIM

7 January 2009

COPY

Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

Dear Waitarere Rise Limited

Address: Lot 3 DP 50712 1722580m2, 568 Waitarere Beach Road, LEVIN RURAL 5574
Proposal: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

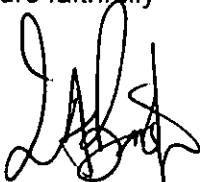
You have recently submitted a Building Consent Application for the above work. In order to process your Application the following information in respect of the Project Information Memorandum (PIM) is required, as follows;

- Please supply a Certificate of Title for the subject site on Lot 16.
- Please indicate the maximum depth of any earthworks on the site.

We require the outstanding information in order to complete the PIM and process your application for Building Consent. Please provide the information at your earliest convenience in order to avoid any delays.

If you have any queries please do not hesitate to call the Planning Officer responsible on (06) 3660999.

Yours faithfully



Lynette Baish
Resource Management Planner



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R. W. Muir
Registrar-General
of Land

Identifier **WN20B/733**
Land Registration District **Wellington**
Date Issued 24 April 1980

Prior References
WN14C/158

Estate Fee Simple
Area 172.2580 hectares more or less
Legal Description Lot 3 Deposited Plan 50712
Proprietors
Waitarere Rise Limited

Interests

7710188.4 Mortgage to Bank of New Zealand - 5.3.2008 at 9:01 am
7723552.1 Mortgage to Allied Nationwide Finance Limited - 5.3.2008 at 9:08 am
7755815.1 Encumbrance to Horowhenua District Council - 19.3.2008 at 9:00 am

Pursuant to a resolution of the Northampton County Council passed on the 11th day of July 1975, the following person is appointed to Section 3 of the Local Government Act 1974. This survey plan and certifying that the plan is in accordance with the requirements and conditions of the operating district scheme, the common land of the Northampton County Council was offered to the person in the presence of:



R. P. Lator
Caretaker

C. H. Drew
Cancellor

1

W-13

W.J. 16.

In the matter of Land Transfer Act No. 507/72
and pursuant to Section 508(1)(F)(i) of the Local
Government Act 1974 / hereby certify that all the
conditions shown or referred to in the foregoing
plotted subdivision have been complied with to
the satisfaction of The Honourable County Council.

Dated on 16th day of July 1972

Carmy Clark

Total Area 191.0296 ha.

Comprised in C5T, HCS/150 (All)
8 59Z/31 (All)

L. Stuart, Aberdeen, Father of LEVIN
Registered Surveyor and holder of an annual practicing certificate
herely certify that this plan has been made from Surveyors executed
by me or under my direction, that such plan and Survey are correct
and have been made in accordance with the regulations under the
Surveyors Act 1854
this 17th day
Signed at LEVIN
10.79
1 October 1875

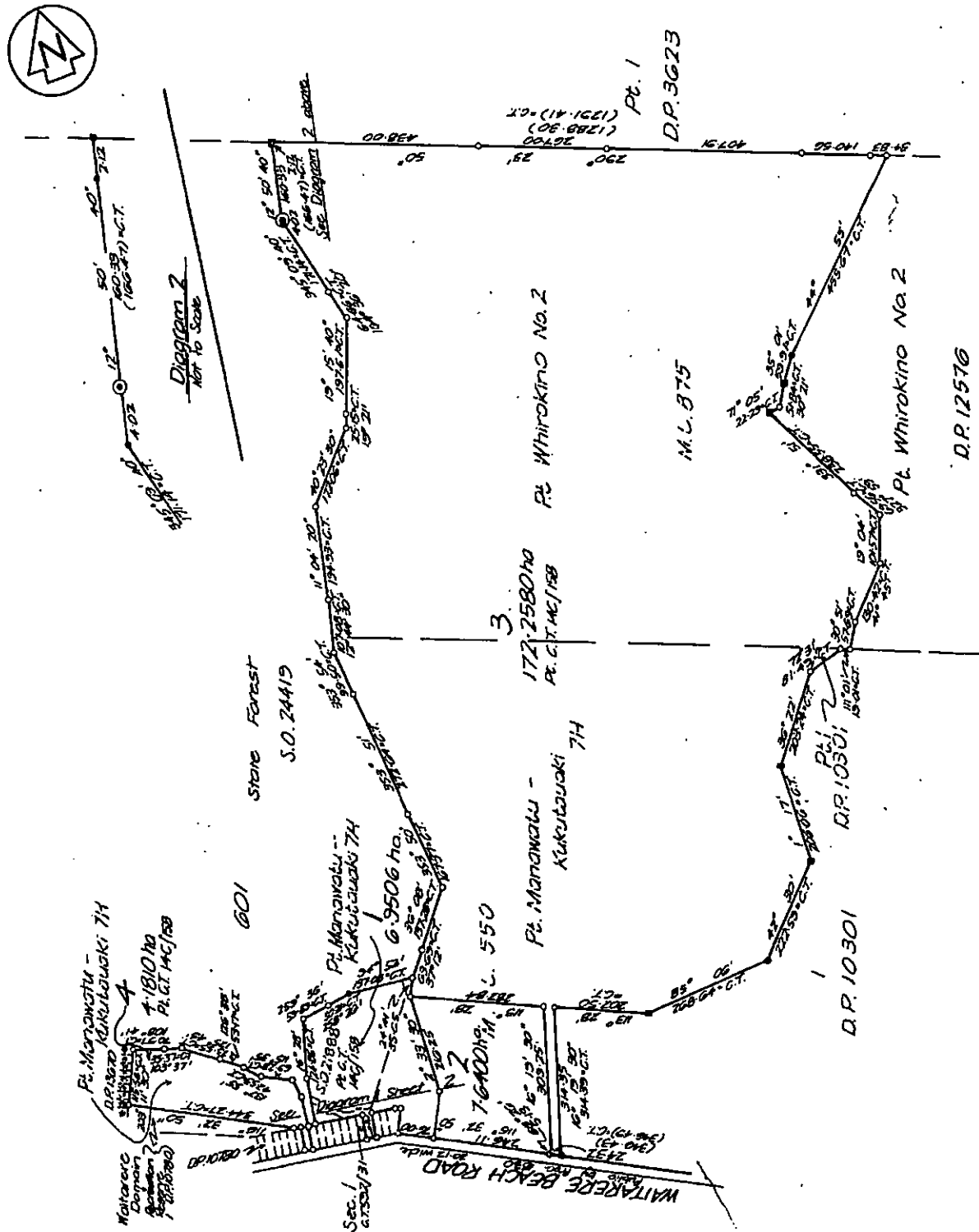
Field Book 334 69-76 Intense Boat 368 670-71
SD 6 1844 2007 21753 21785
Reference Plans 71800, 72107, 72445, 72511
015141, 103410100, 1576 91570 ALLY 550 875
Examined 3. Toff's Correct *[Signature]* 12.30

Approved as to Survey

M. W. J. H. J.
Chief Surveyor
1713.180

Deposited this 24th day of August 1942.

File	Received 8-11-79	50712
Instructions		



Sheet 1 of 2

D.P. 12576

LOCAL AUTHORITY: HAWKSWORTH COUNTY
Surveyed by: Easter and Company
Scale: 1:6000 Date: MAY 1979

BEING SUBDIVISION OF PT. WHIROKINO NO.2, PT. MANAWATU-
KURUTALAKI TH, LOT 21 D.P.10780, PT. LOT 1 DP 10301
AND SECTION 1 BLOCK III MOUTERE S.O.

LAND DISTRICT ... WELLINGTON
SURVEY BLK. & DIST. ... III. MONTPERE
NZMS ... SHEET No.



Diagram 1
Scale 1:1000

Total Area 191.0296 ha.

Comprised in G3T 14C/150 (All)

Stuart - Barber, 1820. Fogelers - L. Extra.
Registered Surveyor and holder of an annual practicing certificate
I hereby certify that this plan has been made from Surveyors associated
with me or under my direction; that both plan and Survey are correct
and have been made in accordance with the regulations under the
Surveyors Act 1820.
Dated at L. EGYPT this 17th day of October 1879
Surveyor

Field Book - 334. 1 69-76 Invertebrate Book 35B. 70-71
 52 3 (1969-70), 21753, 21765
 21767, 21767-78, 21769, 20311.
 DPT. 2032, 2033, 20789, 22576, 20320 ALLY 5500 875
 Examined - 5: Topffs. --- Correct *Amphipod* 17. 203

Approved as to Survey

1713 180. ...
M. H. Armstrong
Chief Surveyor

Deposited this: 24th day of April 1950

[Signature]
District Land Registrar

File - Received 8-11-74
50712

Sheet 2 of 2

LOCAL AUTHORITY ~~HORWINGEN~~ COUNTY.

Surveyed by: Foster and Company

Date	As shown	Date	July 1979

LOTS 1 - 4

BEING SUBDIVISION OF PT. WHIROKINO NO.2, PT. MANAWATU -
KUKUTALAKI TH, LOT 21 DP 10780, PT LOT 1 DP 10801
AND SECTION 1 BLOCK III MOUTERE S.D.

AND DISTRICT _____ WELLINGTON _____

URVEY BLK. & DIST. III MOLTEGE.

IMS 261 SHEET NO. 524/2.4

THE

1. Name: _____

PROJECT SPECIFIC INSPECTION SCHEDULE (to be held on site at all times)Inspections required for Building Consent: 08 / 1589

Number Required	Inspection Description	Council Building Officer signature and date
1	Site / Foundation Inspection	
1	Footing Inspection	
N/A	Block-Fill Inspection	
N/A	Sub-Floor Inspection	
N/A	Fixing Assemblies etc	
N/A	Plumbing & Drainage Sub-Floor Inspection	
1	Pre-Pour Inspection	
1	Under Slab Services Inspection WITH TEST ON	
1	Wall / Roof Framing Inspection	
1	Pre-Clad / Post-Wrap Inspection	
1	Exterior Cladding Inspection Brick / Stucco / Monolithic	
1	Pre-Line Inspection Insulation / Timber Moisture	
1	Internal Services Inspection Pipe Water Test etc	
1	Wet Area Membrane Inspection Substrate	
1	Post-Line Inspection Brace Element Fixing etc	
1	External Services Inspection Sanitary Sewer & Stormwater	
N/A	Heating Appliance Inspection	
N/A	Fire Safety, Egress & Accessibility Inspection	
N/A	Retaining Wall Inspection	
1	Final Inspection	
N/A	Engineer to inspect	

ALL INSPECTIONS REQUIRE AT LEAST 24 WORKING HOURS NOTICE. TRADESPEOPLE WHO HAVE UNDERTAKEN THE WORK BEING INSPECTED ARE TO BE ON SITE AT THE TIME OF INSPECTION.

N/A = Not Applicable to this Project

From: Russell Petersen [russell@plans.co.nz]
Sent: Monday, 9 March 2009 2:17 p.m.
To: Jason Batt
Subject: Signature Wing House BC # 2008/1589/201 request further info
Attachments: Specs 7403 sheet 2.pdf; Specs 7403 sheet 1.pdf

Jason

As per our telecon

Regarding roof flashing design for the transverse flashing at the 3-8 degree transition ... I have spoken with Rex @ Dimond roofing who are Signatures roofers. This flashing will be custom bent consisting of 2 pieces a apron apron flashing which will have the barge barge flashing overlapped.

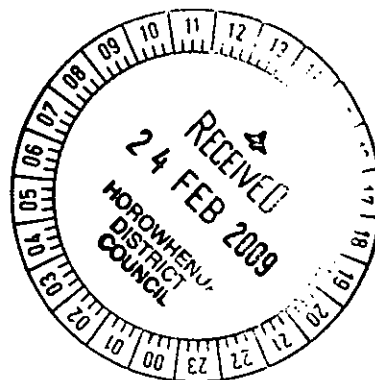
Pages 7403.3 attached

Regards

Russell Petersen / PLANS.CO.NZ / Ph 6 359 2844 / Fax 06 354 5085

This communication, including any attachments, is confidential. If you are not the intended recipient, please contact me immediately, delete this message, and do not copy or use any part of this communication or disclose anything about it. Thank you.

HDC PROCEDURE	
Decision	Accept / Decline Pass / Fail
Procedure Type:	CORRESPONDANCE
Reason	CONFORMS TO FIR CRITERIA
Outcome	LODGED ONTO BUILDING FILE
DATE:	11.2.09
BCO:	J.P. Batt



Friday 20 Feb

HOROWHENUA DISTRICT COUNCIL

ATTN. Jason Batt

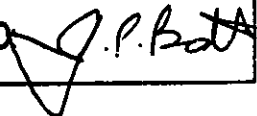
RE: BC 2008/1589/021 REQUEST FOR FURTHER INFORMATION

1. Certificates of Title for this subdivision will not be issued until early March
2. Amended Specification page enclosed.
3. Foundation amended to an encapsulated slab
4. Supplementary bars added
5. Loading points not an issue as cylinder is not roof mounted
6. Additional brace added.
7. Barge flashing included with original application. No change in pitch flashing required as one roof sits below the other.
8. Note included on dimension Plan.
9. Rondo battens direct fixed to bottom chord.
10. Panel design information included.
11. Additional smoke alarms.
12. Noted on contour plan no cut over 1m in height required to form building platform.

The above information has been included on amended sheets which are enclosed.

Thanks and regards

PLANS-CO COVERING LETTER

HDC PROCEDURE	Decision	☒ Accept / Decline
		Pass / Fail
Procedure Type:	CORRESPONDANCE	
	CONFORMS TO FILE	
Reason	CRITERIA	
	LODGED ONTO BUILDING	
Outcome	FILE	
DATE:	11.3.09	BCO 

01 March 2009

Mr Jason Batt
Horowhenua District Council
Private Bag 4002
Levin 5540

RE: Consent, Lot 3 DP 50712

HDC PROCEDURE	
Decision	<u>Accept</u> / Decline Pass / Fail
Procedure Type:	<u>CORRESPONDANCE</u>
Reason	<u>CONFORMS TO FIR</u> <u>CRITERIA</u> <u>LOADED ONTO</u>
Outcome	<u>BUILDING FILE</u>
DATE:	<u>11.3.09</u> BCO: <u>J.P. Batt</u>

Dear Jason

Please find enclosed amended details in response to you letter dated 17th February 2009 (also attached).

Please note the following in addition to the attached.

- Titles are due to be issued any day now, we will forward as soon as we have it.
- We will comply with your points 9 and 11
- All other information is on the attached revised documents

If you have any queries regarding the above please do not hesitate to contact me.

Regards,



Steve Crombie
General Manger
Signature Homes Palmerston North



Application No: 2008/1589/021



HOROWHENUA DISTRICT COUNCIL

126-148 Oxford Street

Private Bag 4002

Levin

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

2 March 2009

Waitarere Rise Limited

C/- Signature Homes

Attn: S. Crombie

187 Broadway Avenue

Palmerston North 5301

Dear Steve,

Address: Lot 3 DP 50712 1722580m2, 568 Waitarere Beach Road, LEVIN RURAL 5574
Proposal: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

Council has received & approved the majority of the further information requested however the following items require addressing –

- ✓ 1. Section 7403-3.3 of the specifications cites G13/AS3 as the Building Code means of compliance whereas the drainage plan shows the G13/AS1.AS2 solution & shall be amended accordingly. (The revision applies to page 52 of the specifications with page 51 lodged only.)
- ✓ 2. Roof flashing design for the transverse flashing at the 3-8 degree transition as depicted on sheet 13. (This is in effect a tapered composite barge & apron flashing.)

We appreciate that requests for further information may seem somewhat frustrating and onerous, however the building consent can only be granted when building code compliance is clearly demonstrated.

Building consent processing has been suspended pending receipt & consideration of the above information. Please be assured that your application will be given priority attention once this information is received.

If you have any queries please do not hesitate to contact me.

Regards

Jason Batt
Building Advisory Officer

HDC PROCEDURE	
Decision	<u>Accept</u> / Decline
	Pass / Fail
Procedure Type:	<u>B/C PROCESSING</u>
Reason	<u>B/C CODE COMPLIANCE</u>
	<u>DEMONSTRATED</u>
Outcome	<u>GRANT BUILDING</u>
	<u>CONSENT</u>
DATE:	<u>11.3.09</u>
BCO:	<u>J.P. Batt</u>

Application No: 2008/1589/021



HOROWHENUA DISTRICT COUNCIL

126-148 Oxford Street

Private Bag 4002

Levin

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

17 February 2009

Waitarere Rise Limited
C/- Signature Homes
Attn: S. Crombie.
187 Broadway Avenue
Palmerston North 5301

Dear Steve,

Address: Lot 3 DP 50712 1722580m2, 568 Waitarere Beach Road, LEVIN RURAL 5574
Proposal: Construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove

The Building Act 2004 mandates Building Consent Authorities to be satisfied on reasonable grounds that the provisions of the Building Code would be met if the building work were properly completed in accordance with the plans & specifications that accompany the application before granting of the building consent.

As Code Compliance Certificates are issued against the building consent documentation it is critical that the plans & specifications clearly demonstrate building code compliance.

Having assessed your plans & specifications, we require 2 sets of the following information to ensure that compliance is properly demonstrated to facilitate granting of the building consent:

- ✓ 1. A Certificate of Title is required for Lot 16.
- X 2. Section 7403-3.3 of the specifications cites G13/AS3 as the Building Code means of compliance whereas the drainage plan shows the G13/AS1,AS2 solution & shall be amended accordingly.
- ✓ 3. Non captured slab construction is outside the scope of NZS3604:1999 & the alternative solution shall show how the long term integrity of the D10 starters will be achieved.
- ✓ 4. Provision of supplementary reo to re-entrant slab corners as per fig'7.17 – NZS3604:1999.
- ✓ 5. Solar unit point loadings to be factored into the truss design.
- ✓ 6. Roof bracing revision to conform to sec'10.3.4a – NZS3604:1999 as 3 pairs of roof plane bracing will serve a maximum of 150m2 of roof area.
- X 7. Roof flashing design for the terminal vent penetration, barge, aprons & transverse flashing for the 3-8 degree transition with all cover dimensions to be specified.
- ✓ 8. Trimming studs to be specified to verify conformity to fig'8.5 & table 8.5 – NZS3604:1999.

- ✓9. Please confirm that the Rondo battens will be mechanically fixed to conform to the truss design criteria for bottom chord restraint.
- ✓10. Azzuro solar booster panel design.
- ✓11. Smoke detection to extend to escape routes to satisfy sec'3.3.1 – F7/AS1.
- ✓12. Scope of cut & fill to be shown as the design is not definitive.

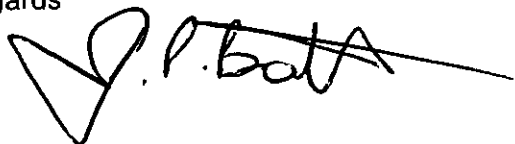
Further, please note that the Project Information Memorandum has been suspended pending receipt of further information & will need to be assessed on issuance. This may or may not materially affect the proposed building project.

We appreciate that requests for further information may seem somewhat frustrating and onerous, however the building consent can only be granted when building code compliance is clearly demonstrated.

Building consent processing has been suspended pending receipt & consideration of the above information. Please be assured that your application will be given priority attention once this information is received.

If you have any queries please do not hesitate to contact me.

Regards



Jason Batt
Building Control Officer

HDC PROCEDURE	
Decision	Accept / Decline Pass / Fail
Procedure Type:	B/C PROCESSING
Reason	B/CODE COMPLIANCE NOT FULLY DEMONSTRATED.
Outcome	B/C CONSENT GRANTING SUSPENDED.
DATE: 2.3.09	BCO: J.P. Batt

KEY: ✓ INDICATES APPROVED.
X REJECTED

ACTION: SEND FIR #2 FOR ITEMS 2 & 7 & REFER TO SAME FOR NEXT PROCESSING STEP.

C Number 08-1589

FORM 301

Project NEW DWELLING

Name & Project Address P&D WING
568 WAITAREBE BEACH RDHOROWHENUA
DISTRICT
COUNCILBUILDING CONSENT PROCESSING SHEET
RESIDENTIAL / HABITABLE

Building Elements		Items to be Checked	Checked	Not Applicable	Comments Including Means of Verifying, Endorsements, Conditions & Requirements
General Information	PIM etc	Section 37: Resource Consent Cert / Attached	○		TO BE DETERMINED
		PIM Problems Resolved / Not Available / Attached to Consent	○		PIM FIR SENT 7.1.09 RE: PROVISION OF A CT & SCOPE OF EARTHWORKS TO BE INDICATED.
	Ownership	Property Ownership / CT	X		CT REQUIRED FOR LOT 16
		2+ Allotments: Sec 75 / Amalgamation		N/A	
		Any Consent Notices			
	Subdivision	Subdivision Conditions Certificate Issued			
	General	Any Protected Buildings or Trees		N/A	NONE IDENTIFIED.
		Any Special Flooding Issues			
		Wind Zone	✓		HIGH WIND ZONE
		Project Value Check	✓		182.9m ² - 440K
Site	Positioning	Siting	✓		
		Corrosion Zone 1 / Sea spray	✓		ZONE 1 EXPOSURE. 1km INLAND.
		Site Specific Requirement	✓		NO FIRE SAFETY ISSUES
	Location	Contours / Levels / Datum	✓		
		Proposed Building/s	✓		
		Existing Building/s		N/A	CLEAR UNDEVELOPED SITE.
		Any Easements			
	Engineering	Hazards on Site / S71			
		Section 72: Land Subject to Erosion, etc			
		Flood Prone Site MIN FFL....			
Specific Design	General	Ground Bearing	✓		TBC ON SITE. ASSUMED AVAILABILITY OF GOOD GROUND.
	Producer Statement	Engineer's Name and Qualifications	✓		PROPRIETARY SOFTWARE FOR RAFTERS & ACCREDITED MITEX FABRICATOR.
		PS1 or Similar, Format and Correctness	✓		REFER OVER FOR PROCEDURAL DECISION STAMP APPLIED TO PS'S.
		Producer Statement Scope	✓		B1 STRUCTURE. B2 COMPLIANCE MET. TRUSS & RAFTERS ONLY.
	Items Covered	All or Parts	✓		
Specification	Monitoring Schedule	Items Covered		N/A	ALL INSPECTIONS BY HNC
	Content	Correct / Up-to-date / Relevant	X		SEC 7403-3.3 CITES G13/AS3
Elevations		Claddings / Openings / Downpipes	✓		LINEX & TITAN CLADDING CLEARLY DEPICTED. DOWNPIPES SHOWN ON DRAINAGE PLAN.
Foundations	Concrete Foundations	Depth / Width	✓		180mm WIDE FOOTINGS x 300 DESP. FOUNDING DEPTH CONFORMS TO SEC 3.4.2 NZS3604
		Reinforcement / Cover	✓		2/D12 LONGITUDINAL & D10 TIES @ 600cc

Building Elements		Items to be Checked	Checked	Not Applicable	Comments Including Means of Verifying, Endorsements, Conditions & Requirements
Floors DAMP PROOF MEMBRANE - 0.25mm POLYTHENE UNDERSLAB INSULATION - 50mm S GRADE EPS ON TOP OF DPM FOR ENCAPSULATION. CONCRETE STRENGTH - 20MPa FOR ZONE 1 EXPOSURE.	Floor Levels	Masonry 150 (FGL) 100 (Paving) Other 225(FGL) 150 (Paving)	✓		F.F.L 315mm ABOVE G.L. ALLOWS FOR LANDSCAPING SCOPE.
	Concrete Slabs	Thickness / Loadbearing	✓		2 / 1012 LONGITUDINAL & RDTIES @ 600c TO THE SLAB.
		Compacted Fill / DPM	✓		SAND BLADED SUBGRADE
		Reinforcing - Mesh, Cover, Bars & Supports	✓		665 MESH WITH 30 TOP COVER & 300mm LAP TO D10 STAYERS.
		Tanking: Wall DPC: Top Edge Sealing	X		SEALING MECHANISM REQUIRED FOR NEW CAPTURED SLAB CONSTRUCTION
		Blockwork: Steel & Foundations 4229		N/A	NO MASONRY INVOLVED.
		Shrinkage Control	X		SUPPLEMENTARY REQ TO RE-ENTRANT CORNERS.
	Timber Floors (Including Decks)	Bearer Size, Span, Spacing		N/A	FUTURE DECK < 1.0m DROP OFF DOES NOT FORM PART OF THIS APPLICATION.
	(Including Decks)	Joist Size, Span, Spacing			
		Load Bearing Walls on Floors. Distance to Supports			
		Lateral Support or Blocking			
		Sub Floor Insulation & Protection			
		Flooring Material			
		Ground Clearances & Ventilation			
Roofing REUSE ROOF BRACING TO CONFORM TO SEC 10.3.4.4 NZS3604:1999	Roofing	Pile Foundations		N/A	NO PILED FOUNDATION WORK. DECK EXCLUDED FROM THIS APPLICATION.
		Pile Size & Spacing			
		Pile to Bearer Fixings			
		Subfloor Bracing			
		Pitch / Roofing Underlay	✓		3-8° PITCH THERMAKRAFT 215 S/S U/LAY.
		Roof: Truss Design & Layout	✓		MITEK TRUSS DESIGN RECALCULATES WITH PLANS
		Rafters and Framing	✓		H240 63 HYDRO RAPPERS @ 900c.
Framing TRIMMING STUDS NOT SPECIFIED TO CONFORM TO FIG 8.5 & TABLE 8.5 NZS3604:1999 CONFIRM ROUNDS BATTENS MECHANICAL FIXED TO CONFORM TO TRUSS BOTTOM CHORD DISTANT CRITERIA.	Timber Framing	Point Loads	X		SOLAR PANEL UNIT LOADINGS NOT SHOWN
		Roof Bracing	X		3 PAIRS ROOF PLANE BRACING WILL SERVE 1500mm max
		Roof Gutters	✓		CONTINUOUS GALVANNEAL CUTTERING
		Skillion Roofs		N/A	TECHNICALLY A FLAT ROOF AS PITCH < 10°
		Flat Roofs / Substrate and Membrane	✓		NO MEMBRANES INVOLVED. LOW PITCH LONG RUN VESSECK ROOFING.
		Roof Penetrations and Flashings	X		TV PENETRATION, LARGE FLASHING & AFRAY FLASHING - LONGITUDINAL & TRANSVERSE FOR 3-8° TRANSITION
		Timber Quality (Grade / Treatment)	✓		CONFORMS TO NZS3604:1999 & NZS3602:2003. H3 HYDRO RAPPERS.
		Stud Height, Size, Spacing	✓		CONFORMS TO NZS3604:1999 FOR LOAD CONDITIONS
		Plate Fixings	✓		
		Truss to Plate Fixings	✓		
Framing		Bottom Plate DPC	✓		THERMAKRAFT MIRAPLACK
		Lintel and Beam Size, Span	✓		
		Lintel Point Loads		N/A	UNIFORMLY DISTRIBUTED LOADINGS.
		Lintel and Beam Fixings	✓		
		Post Fixings, Top & Bottom	✓		
		Beam Size & Fixing (eg Verandahs)	✓		
		Wall Bracing & Calculations	✓		CALCS & DISTRIBUTION SATISFY SYSTEM CRITERIA
		Wall / Ceiling Insulation	✓		CONFORMS TO SCHEDULE METHOD.
		Ceiling Framing / Battens	✓		G16 ROUNDS BATTENS @ 600c
		Purlin Size, Span, Spacing	✓		
Purlin Fixings	✓				
	Ridge Beams and Support		N/A	MAUDPITCH ROOF FORM	

Building Elements		Items to be Checked	Checked	Not Applicable	Comments Including Means of Verifying, Endorsements, Conditions & Requirements
		Lower Level Deck Framing & Floor		N/A	DECK EXCLUDED FROM THIS APPLICATION. EXEMPT AS < 1.0m HIGH.
		Upper Storey Floor Framing		N/A	
		Upper Level Deck Framing		N/A	
	Claddings	Type Claddings	✓		
		Risk Matrix	✓		
		Cavity	✓		
Cavity	Flashings	Wall, Windows, Junctions, Parapet etc	✓		
		Building Wrap & Flexi Tape	✓		THERMAKRAFT COVERUP. ALUMINUM TAPE SYSTEM
		Cladding / Control Joints	✓		COMPOSITE CLADDING JOINTS - SEE MARGIN
Internal Finishes	Internal Wet Areas	Linings	✓		
		Showers / Tanking	✓		
Plumbing & Drainage	Water System	Potability of Water Supply	✓		
		HWC and Valving inc Temp Valves	✓		
	Solar Water Heater	Installation and Valving to NZS4614	X		AZZURO SOLAR BOOSTER PANEL DESIGN
		Producer Statement (from D2 out of COP Solar Heaters) Attached		N/A	
	Waste Pipes	G13 or AS3500	✓		
		Fixtures per Waste	✓		
		Waste Pipes, Size/Gradient	✓		
		Waste Venting, Antisiphonage	✓		
	Drainage	Drain Size, Gradient, Depth, Cover	✓		
		Waste water disposal design & Horizon's approval.		N/A	DN 32 PUMPING LINE TO NETWORK CONNECTION.
		Loading on Existing System		N/A	
		Downpipes & Stormwater Disposal	✓		
Blockwork	Block Walls	Design / Reinforcing		N/A	NO MASONRY INVOLVED.
	Openings	Lintels		N/A	
General Items	Ventilation	General	✓		
	Stairways	Landings / Handrails / Safety Barriers		N/A	NO STAIRWAYS. EXTERNAL DECK ONLY.
		Anti-Slip D1/AS1/Table 2	✓		
		Stair Dimensions / Pitch		N/A	
		Handrails		N/A	
		Head Clearance		N/A	
	Windows / Doors	Glazing, Light & visual awareness.			
		Opening Restrictors			
	Upper Decks	Construction		N/A	SINGLE LEVEL DWELLING.
		Step Down to Deck			
		Drainage & Gutters			
		Stormwater Overflow Relief			
		Substrate			
		Decking Material			
General Items	Smoke Alarms	Type / Location	X		EXTEND SMOKE DETECTION TO ESCAPE ROUTES
		Fire Separation / Travel	✓		DECK < 2.0m - PG SH
	Gas Appliances	Safety Precautions (Shields)		N/A	NO GAS APPLIANCES.

Building Elements		Items to be Checked	Checked	Not Applicable	Comments Including Means of Verifying, Endorsements, Conditions & Requirements
		etc)		N/A	ENERGY SOURCE IS ELECTRIC.
		Ventilation		N/A	
Fires	Location	Location in Building	✓		ENVIRO PELLET STOVE
	Manufacturers Instructions	Instructions Provided	✓		FULLY DETAILED INSTALLATION INSTRUCTIONS.
	Second Hand Appliances	Age of Appliance & Safety Report		N/A	
Alternative Solutions		Items Identified	✓		TITAN FACADE PANEL & LINEA W/BBS
		Appeals and Test Results	✓		
External Works	Retaining Walls	Siting / Surcharge		N/A	
		Footings & Construction		N/A	
		Subsoil Drainage		N/A	
	Ground Works	Surface Water Control		N/A	
		Any Excavation Works & Fill	X		SCOPE OF CUT & FILL NOT DEFINITIVE
		Driveway Construction	✓		200mm THICK ROLLED BASE COURSE

Signed:

P. Bata

Dated:

13.2.09

HDC PROCEDURE

Decision

Accept

Decline

Pass / Fail

Procedure Type: B/C PROCESSING

B/CODE COMPLIANCE NOT

Reason FULLY DEMONSTRATED.

B/C CONSENT GRANTING

Outcome SUSPENDED.

DATE:

16.2.09

BCO:

P. Bata

NB: REFER TO FIR LETTER FOR NEXT PROCESS STEP.

HDC PROCEDURE KEY

✓ Compliance Verified

X Failed Item

O Outstanding Planning Matter

N/A Not relevant to Proposal

Use as applicable

Producer Statement – Technical basis for structural design methodology contained in designIT for houses –New Zealand.

DesignIT for houses, New Zealand has been developed by Timberbuilt Pty Ltd for Carter Holt Harvey Wood Products Ltd to assist designers select appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey (including hySPAN and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings falling within the scope and limitations of NZS 3604.

Timberbuilt certifies that the design methodology used for the software includes compliance with the loading and general design requirements contained within AS/NZS 1170:2002 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

Serviceability and other criteria for design have been selected using the most up to date information available from joint Australian/New Zealand standards technical committees to ensure designIT solutions correspond to performance levels implied by design solutions given in NZS 3604:1999 (Acceptable Solution B1/AS1, 4.1).

For the nominated application/s and subject to the limitations on span and loading, the specified product and/or stress grade in the size given will comply with the structural requirements of the New Zealand Building Code, provided the installation is in accordance with the details provided or referred and/or product literature or NZS 3604, as appropriate.

References:

NZS 3603:1993 Timber Structures Standard.

NZS 3604:1999 Timber Framed Buildings.

AS/NZS 1170:2002 Structural design actions, Parts 0, 1 and 2.

AS 1684.1 – 1999 Residential timber framed construction. Part 1: Design criteria.

AS 1720.1 – 1997 Timber structures. Part 1: Design methods.

2nd July, 2007

For further information or advice please contact either of the following:

Software/design information

Timberbuilt Pty Ltd

58a Whiteside Rd., Clayton. Victoria. Australia. 3168.

Telephone Free call 1800 808 131. Telephone (613) 9543 3733.

Facsimile Facsimile (613) 9543 3766.

Email: Email: designit@timberbuilt.com.au

Product/design information

Carter Holt Harvey Wood Products

173 Captain Springs Road, Onehunga, Auckland

Telephone 0800 808 131

Facsimile 0800 808 132

Email: designit@chh.co.nz

Specifier details:

Specifier:	Russell Petersen		
Business name:	Plans.Co.Nz		
Address:			
Phone:	Mobile:	Facsimile:	

Project & Site details:

Project:	SIGNATURE HOMES	Ref. no.: 08-576
At (address):		
For (owner/s):	PAUL & DEBBIE WING	
Wind Zone:	HIGH	

MEMBER DESIGN DETAILS

Member 1

1) Member code and description R1 - Common rafters

2) Design inputs

Span	5.0 m - single
Maximum rafter spacing	600 mm
Roof mass	40 kg/m ²
Lateral restraint condition	Bottom edge restrained by ceiling / ceiling battens at 600 crs max.
Serviceability criteria	AS 1684.1-1999

3) Member specification

Size, stress grade/product	Use HJ240 63 hyJOIST
----------------------------	----------------------

4) Installation requirements

Support and tie-down - Details R10, R11, R13 (4/35 x 3.15 FH nails per end) & R14 (4/35x3.15 FH nails/multigrip tab), supporting member J5 or better.

Member 2

1) Member code and description

R2 - Common rafters

2) Design inputs

Span	5.5 m - single
Maximum rafter spacing	900 mm
Roof mass	40 kg/m ²
Lateral restraint condition	Bottom edge restrained by ceiling / ceiling battens at 600 crs max.
Serviceability criteria	AS 1684.1-1999

3) Member specification

Size, stress grade/product	Use HJ240 63 hyJOIST
----------------------------	----------------------

4) Installation requirements

Support and tie-down - Details R10, R11, R15 (3/35 x 3.15 FH nails per end) & R14 (4/35x3.15 FH nails/multigrip tab), supporting member J5 or better.

HDC PROCEDURE	
Decision	Accept / Decline Pass / Fail
Procedure Type: P/S ASSESSMENT	
PROPRIETARY SOFTWARE USED.	
Reason CONFORMS TO POLICY 507	
APPROVED FOR B/CONSENT	
Outcome	GRANTING
DATE: 29.1.09	BCO: J.P. Bata

RAFTER DESIGN RECOVERIES WITH ARCHITECTURAL DESIGN. DESIGN INPUTS CHECKED. FORM 312 NOT REQUIRED FOR THIS P/S TYPE.

CARTERS Manufacturing

Producer Statement : Page 1

Job: FP2264

Client: Signature Homes
Phone:

Site: Wing
Lot 16 The Beach Farm
Waitarere

Description:
Building Consent No.:
MITek 20/20 Engineering 4.5.116

MITek New Zealand Ltd.

Phone:
Printed: 08:41:09 11 Nov 2008

PRODUCER STATEMENT for MITek 20/20™ TRUSS DESIGN

The MITek 20/20™ truss design program has been developed by MITek New Zealand Ltd for the design of GANG-NAIL® timber roof, floor and attic trusses in New Zealand. The truss designs computed by MITek 20/20™ are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Verification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution to satisfy the requirements of Clause B1 of the Building Code.

This producer statement covers the MITek 20/20™ truss design and the structural performance of the GANG-NAIL plate.

On behalf of MITek New Zealand Ltd, and subject to:

- All proprietary products meeting their performance specification requirements
- The provision of adequate roof bracing and overall building stability
- Correct selection and placement of fixings
- Correct input of Truss Design Data below
- The design being undertaken by suitably trained personnel
- The truss design being carried out in accordance with MITek 20/20 User Terms and Conditions,

I believe on reasonable grounds that the trusses, if constructed in accordance with the MITek 20/20™ truss design and shop drawings, will comply with the relevant provisions of the Building Code.

MITek New Zealand Ltd holds a current policy of Professional Indemnity Insurance no less than \$500,000.

On behalf of MITek New Zealand Ltd,

In Ung Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MITek New Zealand Ltd

MITek 20/20™ TRUSS DESIGN DATA

The MITek 20/20™ computer design for this job is based on the following design parameters entered into the program. The GANG-NAIL Fabricator shall ensure that these job details are current and relevant to the project for the design of the trusses.

Job Details

Importance Level : 2

Roof Truss

Timber Group: MSG45H1H3

Pitch: 8.000 deg

Std Overhang: 600 mm

Roof

Ceiling

Wind

Material: Galv Iron .5mm

Material: Gib Board 12mm

Area: High (44.0 m/s)

Dead Load: 0.210 kPa

Dead Load: 0.200 kPa

Pressure Coeff: Cpe = varies; Cpi = -0.30, 0.20

Restraints: 900 mm centres

Restraints: 600 mm centres

Live Load: Q_{ur} = 0.250 kPa

Live Load: Q_c = 1.400 kN

Q_c = 1.100 kN

The timber for these trusses shall be standard gauged and treated to the requirements of NZS 3602:2003. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in "closed environment", as defined by NZS3604:1999 Section 4.

Truss List

Legend: * = detail only, ? = input only, —T= failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
EN01	1	2290	8.000	900
EN02	1	2300	8.000	900
T01	6	6700	8.000	900
T02	4	6100	8.000	900
T03	3	2400	8.000	900
T04	3	4000	8.000	900
T04A	1	4000	8.000	900

Total quantity : 19

HDC PROCEDURE	
Decision	Accept / Decline
	Pass / Fail
Procedure Type: P/S ASSESSMENT	
ACCREDITED FABRICATOR.	
Reason CONFORMS TO POLICY 507.	
APPROVED FOR	
Outcome B/CONSENT GRANTING.	
DATE: 29.1.09 BCQ P.P. BOTA	

FORM 312 NOT REQUIRED FOR THIS P/S TYPE.

The computer design input has been carried out by:

Name of Computer Operator: Jenny Corbett

Qualifications and Title: Truss Detailer

Signed:

CARTERS

A Division of Carter Holt Harvey

Dated: Tuesday, 11 November 2008

Truss Suppliers

Auckland

Company Name	Address	WebSite	Contact
Dayle ITM	713 Rosebank Road AVONDALE P O Box 71 048 ROSEBANK		Phone: 09 828 9791 Fax: 09 828 5407
TimberWorld Ltd	2 - 8 Bay Park Place P O Box 34 269 BIRKENHEAD		Phone: 09 483 8428 Fax: 09 483 8422
Independent Frame & Truss	P O Box 152 DRURY		Phone: 09 264 1742 Fax: 09 264 1743
Akarana Timbers Ltd	28 Trugood Drive EAST TAMAKI P O Box 51 286 PAKURANGA		Phone: 09 274 9845 Fax: 09 274 7353
Carters Manufacturing	66 Harris Road EAST TAMAKI	Link	Phone: 09 272 7200 Fax: 09 273 6800
Dysart Manufacturing	88 Merton Road P O Box 18 087 GLEN INNES	Link	Phone: 09 521 3609 Fax: 09 521 9264
Benchmark Industrial	48 Munroe Road P O Box 104 075 LINCOLN NORTH		Phone: 09 833 6364 Fax: 09 832 2613
Able Timber Supplies Ltd	29a Hobill Ave MANUKAU P O Box 57 069 OWAIRAKA		Phone: 09 263 6065 Fax: 09 263 6061
Pole Timber & Hardware Ltd	122 Wiri Station Road MANUKAU P O Box 98 751 STH AKL MAIL CENTRE		Phone: 09 262 0790 Fax: 09 263 6130
Pukekohe Timber	52 Station Road PUKEKOHE		Phone: 09 238 3678 Fax: 09 238 0655 sales@puketimber.co.nz
PlaceMakers Frame & Truss	53 McLaughlins Road WIRI P O Box 97 824 STH AKL MAIL CENTRE	Link	Phone: 09 250 0300 Fax: 09 279 5780

[Back to Regions](#)

BUILDING CONSENT LAYOUT

CARTERS
MANUFACTURING

National Support Office
Auckland
Ph (09) 273 6804

JOB No **FP2264**

Client: Signature Homes
Job Name: Wing
Address: Lot 16 The Beach Farm
Waitamare

Pitch: 8° 3"
Roof Material: Iron
Soffit Overhang: varies
Wind Area: High
Snow Load: 0.0 kPa

Trusses And Rafter At 900 Centres
Unless Stated Otherwise.

This layout is to be read in conjunction
with the Architectural plans.

DRAWN BY Jenny Corbett

DATE 11/11/08 PAGE 1 of 2

BUILDING CONSENT INFORMATION

These layouts and associated design
statements are provided as a means
of showing compliance with NZBC
and may be used for Building Consent
Application purposes only. This is a
Buildable layout which may have some
dimensional changes completed at the
time of truss manufacture.

As to be Built roof truss layouts, truss
fixing details, point load notification,
and a Producer Statement for the
design of the roof trusses will be
provided to the Local Authority at
the time of manufacture.

All walls shown on this layout are
considered to be load bearing.

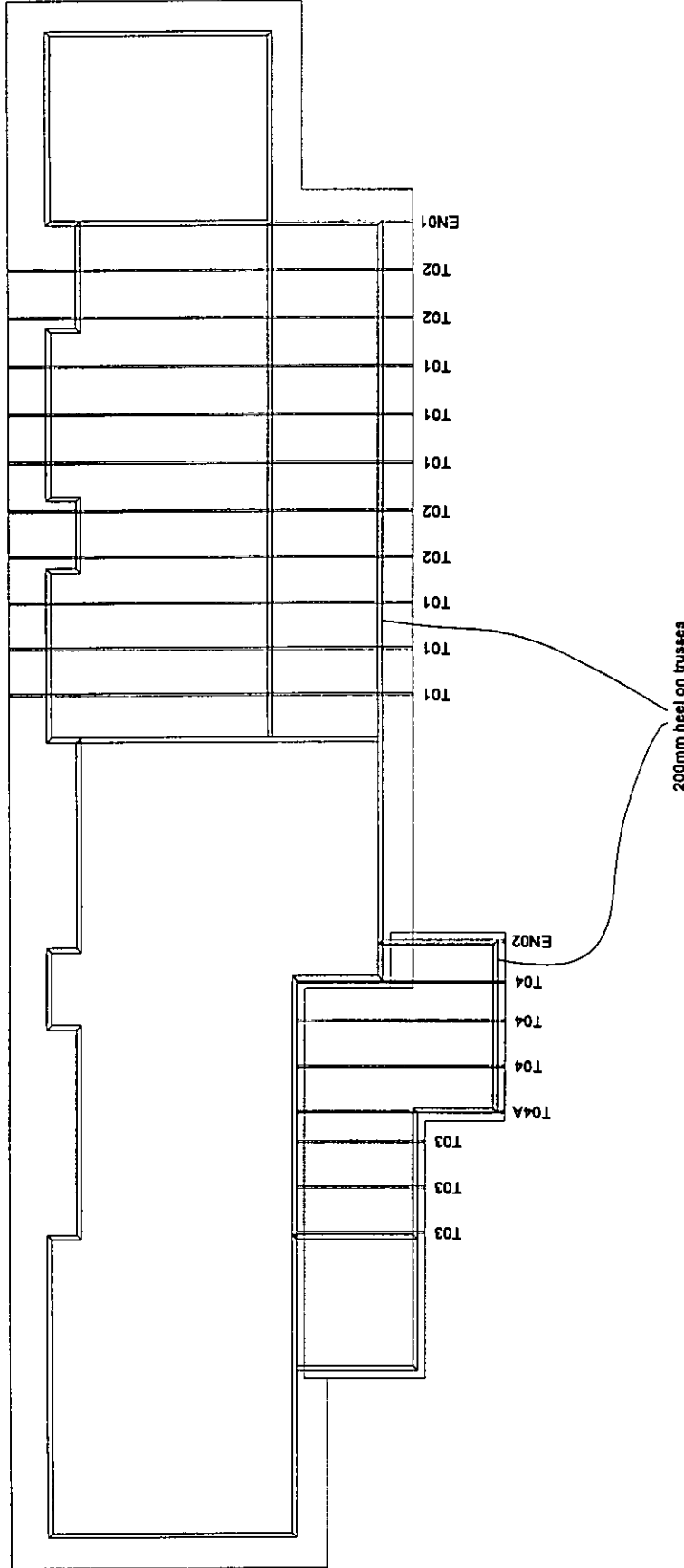
These layouts and associated design
statements are valid only if the job is
manufactured by CARTERS.

TRUSS FIXINGS

Truss to Top Plate - 2 wire dogs
Truss to Truss - Joist Hanger
or alternatively as specified by
CARTERS on the Final Layout



See Page 2 for Dimensions
and Point Load notification



CARTERS

JOB No FP2264

Client: Signature Homes
Job Name:Wing
Address: Lot 18 The Beach
Walterre

Pitch: 8° 3°
Roof Material: Iron
Soffit Overhang: varies
Wind Area: High
Snow Load: 0.0 kPa

Trusses And Rafters AJ 900 Centres Unless Stated Otherwise.

This layout is to be read in conjunction with the Architectural plans.

DRAWN BY Jenny Corbett

DATE	11/11/08	PAGE 2 of 2
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These lintels have been sized using the GANGLAM 05/2005 and FLITCH BEAM 12/2007 selection manuals from Mitek NZ Ltd.

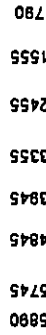
hySPAN, hyONE and hy90 lintels have been sized using designIT v3.2.4NZ software or selection manuals, hySPAN Edition 2, hyONE 04/2008 and hy90 Edition 1, as provided by CHH futurebuild.

Unless otherwise stated the timber grade for all linings is MSG8. Linings not shown are to be selected as per NZS3604 1998.

All walls shown on this layout are considered to be load bearing.

[illegible]

See Page 1 for
Labelled Truss Layout





Alternative Solution Assessment

Product Name: LINEA BEVEL BACKED FIBRE CEMENT WEATHERBOARDS FOR APPLICATION TO DIRECT FIXED CONSTRUCTION.

Initial Assessing Officer: JASON BATT

Date: 22/2/08

Building Consent Application No. 08/1589 Address 568 WAITABERE BCH RD.

Job Specific Assessing Officer: JASON BATT Date: 11.2.09

Instructions:

Beside each place a tick ✓ to verify each item or cross X as rejection, refusal, or unacceptability and N/A if not applicable. Write descriptions where required or appropriate. If the product data is not current a new Product assessment will need to be carried out.

Brief description of the alternative solution:

Bevel backed fibre cement weatherboard cladding system for direct fixed construction with application to residential & light commercial type buildings not exceeding 12 points on the E2/AS1 risk matrix calculated in accordance with table 2 E2/AS1.

Features / Items to be Checked			
Scope Described	✓	Building Code Clauses Identified	✓
Calculations Appropriate and Project Specific	N/A	Test Methods Appropriate and Project Specific	✓
Compliance Document Comparison	✓	BRANZ & JAMES HARDIE ACCREDITED LABORATORY TESTING.	
Name the Document: E1/AS1 & E2/AS1.			
Certified Product or Method Comparison	✓		
Name the Product or Method: HARDIPLANK & TIMBER BEVELBACKED WEATHERBOARDS.			
Determination Comparison	N/A		
Determination Number:			
Trade Literature Used	✓		
Name Document: LINEA WEATHERBOARD TECHNICAL SPECIFICATION 2007.			
Appraisal Certificate	✓		
Certificate Number: 446-2005 & AMENDMANT 2007.			
In-Service History:			
A comparatively new product. No in service performance testing data available. Analogous to JH weatherboards in respect of composition, finish & maintenance regime that is indicative of likely long term performance outcomes.			

Assessment of Site Conditions:

Situated in NZS3604:1999 wind zones up to & including very high.

Earthquake zone A.

Corrosion zone assessment for zone 1 & sea spray zone exposures.

Site to comply with E1/AS1 – Surface Water with adjacent finished ground to slope away from the building for inherently dry through to inherently wet sites.

Floor to ground clearances to comply with NZS3604:1999 & bottom of cladding shall comply with sec' 9.1.3 E2/AS1.

Expert Opinion/Advice:

Branz opinion that if designed, used, installed & maintained in accordance with the statements & conditions of the Appraisal Certificate compliance with the performance criteria of NZBC clauses B1-Structure, B2-Durability, C3- Spread of Fire, E2-External Moisture & F2-Hazardous Building Materials will be met.

List the Supporting Information Provided:

Branz Appraisal Certificate # 446-2005 & Amendmant 2007.

James Hardie Linea Weatherboard Technical Specification August 2007.

List Special Inspections Required:

Annual standard inspection regime for other direct fixed weatherboard cladding systems & 90 days maximum after installation to verify application of the latex exterior paint system to validate the product warranty.

Peer Review Comment If Applicable: N/A

General Comment:

Moisture management system for wall apertures, penetrations, junctions, connections, window & door sills, heads & jambs analogous to E2/AS1 Linea incorporates a construction mechanism that facilitates any excess moisture present at completion of construction to dissipate without permanent building element damage to meet NZBC clause E2.3.6 criteria. The Linea direct fixed cladding system has widespread industry approval with the product backed by a 25 yr manufacturer's warranty & is deemed fit for purpose.

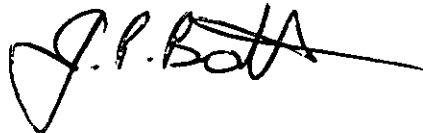
Basis of Decision:

Application of expertise & professional judgement as a designated technical leader has facilitated the decision making process based on the commentary above. Compliance with the 4D'S principle of weather tightness (Deflection, drainage, drying & durability) has been qualified for approval on condition that the installation & maintenance regime is in strict accordance with the manufacturer's technical specifications. This system carries wide spread industry approval with extensive nationwide installations.

Currency of Product Data checked: Yes – Websites checked.

I am satisfied on reasonable grounds that the alternative solution proposed above complies with the performance provisions of clauses B1, B2, C3, E2 & F2 of the Building Code.

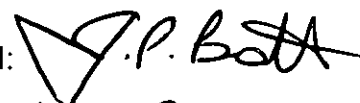
Initial Assessing Officer: JASON BATT Signed:



Position: BUILDING CONTROL OFFICER & DESIGNATED TECHNICAL LEADER Date: 22.2.08

Job Specific Assessing Officer JASON BATT

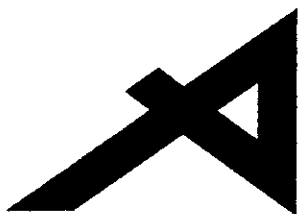
Signed:



Position: BCO & T/L

Date 11.2.09

Outcome: Approved.



BRANZ Appraised
Appraisal No.446 [2005]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
CERTIFICATE
No. 446 (2005)**

This Certificate replaces BRANZ
Appraisal Certificate No. 446 (2004)
issued 23 February 2004.

Amended 6 March 2007.

**LINEA®
WEATHERBOARD**

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Product

1.1 Linea® Weatherboard is a bevel-backed fibre cement weatherboard, which is designed to be used as part of an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

1.2 The weatherboards are applied direct to the external wall framing over a building wrap and incorporate secondary seals behind all internal and external corners, head and sill flashings for window and door penetrations as well as air seals to wall penetrations. The cladding is finished with a latex paint system.



Scope

2.1 Linea® Weatherboard has been appraised as an external wall cladding for buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- constructed with timber framing complying with the NZBC; and,
- with a risk score of 0-12, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

2.2 Linea® Weatherboard must only be installed horizontally on vertical surfaces.

2.3 Linea® Weatherboard is appraised for use with aluminium window and door joinery that is installed with vertical jambs and horizontal heads and sills. (The Appraisal of Linea® Weatherboard relies on the joinery meeting the requirements of NZS 4211 for the relevant Building Wind Zone.)

(Note: Linea® Weatherboard can be used to provide structural bracing and fire resistance rated construction, but these aspects have not been assessed by this Certificate and are outside its scope.)

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Linea® Weatherboard if designed, used, installed and maintained in accordance with the statements and conditions of this Certificate, will meet the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Linea® Weatherboard meets the requirements for loads arising from self-weight, earthquake, wind, human impact and creep (i.e. B1.3.3 (a), (f), (h), (j) and (q)). See Paragraphs 9.1 - 9.3.

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years. Linea® Weatherboard meets this requirement. See Paragraphs 10.1 and 10.2.

Clause C3 SPREAD OF FIRE: Performance C3.3.5. Linea® Weatherboard meets this requirement. See Paragraph 12.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. Linea® Weatherboard meets this requirement. See Paragraphs 14.1 - 14.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Linea® Weatherboard meets this requirement and will not present a health hazard to people.

3.2 This Certificate appraises an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

4.1 Linea® Weatherboards are produced with a smooth face and are pre-primed with an acrylic primer on the front face and both edges. The weatherboards are 16 mm thick and are available 135 mm, 150 mm and 180 mm wide. All boards are supplied 4200 mm long.

4.2 Linea® Weatherboards are manufactured from reduced density cellulose fibre cement formulation. The boards are formed, cut to length and then cured by high-pressure autoclaving. After autoclaving, a bevel is cut on the back face of the weatherboards, the front corner at the bottom of the board is chamfered and the ends are tongue and grooved for jointing. Linea® Weatherboards are manufactured to meet the requirements of AS/NZS 2908.2.

Accessories

4.3 Accessories used with Linea® Weatherboard which are supplied by James Hardie New Zealand Ltd are:

- Linea® Trim - a 16 mm thick fibre cement trim manufactured from a reduced density cellulose fibre cement formulation. Linea® Trim is pre-primed with an acrylic primer on the front face and both edges, and is available in sizes of 135 mm and 180 mm wide by 4200 mm long, and 84 mm and 100 mm wide by 2600 mm long.
- Z-flashings - boxed corner Z-flashing for use with Linea® Trim boxed corners. The Z-flashing is available in grey uPVC in 2700 mm lengths.
- External and internal corner mouldings - chromate treated aluminium external box corner, 90° internal corner 'W' mould and 135° internal corner 'W' mould. The mouldings are available in 2700 mm lengths.
- Corner soakers - 90° soakers are available for 135 mm, 150 mm and 180 mm Linea® Weatherboards. The soakers are available in chromate treated aluminium, copper and stainless steel.

4.4 Accessories used with Linea® Weatherboard which are supplied by the building contractor are:

- Building wrap - paper or wrap complying with NZBC Acceptable Solution E2/AS1, Table 23, or breather-type membranes covered by a valid BRANZ Appraisal Certificate for use as wall wraps.
- Flexible sill, head and jamb flashing tape - flexible flashing tapes complying with NZBC Acceptable Solution E2/AS1, Paragraph 4.3.1.1, or flexible flashing tapes covered by a valid BRANZ Appraisal Certificate for use around window and door joinery openings.
- Joinery sill and head flashings - folded from aluminium or galvanised steel to suit the window or door trim opening. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1, Table 20 for durability requirements.

- Planted sill and scribes - timber treated to Hazard Class H3.1, pre-primed before installation.
- Window and door trim cavity air seal - air seals complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.6, or self-expanding, moisture cure polyurethane foam air seals covered by a valid BRANZ Appraisal Certificate suitable for use around window, door and other wall penetration openings.
- Flexible sealant - sealant complying with NZBC Acceptable Solution E2/AS1, or sealant covered by a valid BRANZ Appraisal Certificate for use as a weather sealing sealant for exterior use.
- Linea® Weatherboard fixings - 40 x 2.8 mm flat head hot-dip galvanised Hardiflex nails or stainless steel ring shank Hardiflex nails (for concealed nailing), and 60 x 3.15 mm jolt head hot-dip galvanised nails or stainless steel ring shank nails (for face nailing).
- Linea® Trim fixings - 60 x 3.15 mm or 75 x 3.15 mm hot-dip galvanised jolt head nails and stainless steel ring shank jolt head nails.

(Note: Stainless steel fixings must be Grade 316 and hot-dip galvanising must comply with AS/NZS 4680).

Paint System Specification

4.5 Paint systems are not supplied by James Hardie Building Products and have not been assessed, therefore are outside the scope of this Certificate.

4.6 All exposed faces, including top edges at sills and all bottom edges of Linea® Weatherboard, Linea® Trim and accessories must be finished with a latex exterior paint system complying with any of Parts 7, 8, 9, or 10 of AS 3730.

Handling and Storage

5.1 Handling and storage of all materials supplied by James Hardie Building Products or the building contractor, whether on site or off site, is under the control of the building contractor. Linea® Weatherboards must be stacked flat, off the ground and supported on a level platform. They must be kept dry at all times either by storing under cover or providing waterproof covers to the stack. Care must be taken to avoid damage to edges, ends and surfaces. Weatherboards must always be carried on edge.

5.2 Accessories must be stored so they are kept clean, dry and undamaged. All accessories must be used within the maximum storage period recommended by the manufacturer.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Linea® Weatherboard. The Technical Literature must be read in conjunction with this Certificate. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Certificate must be followed.

Design Information

Framing

Timber Treatment

7.1 Timber wall framing behind Linea® Weatherboards must be treated as required by NZS 3602.

Timber Framing

7.2 Studs must be provided at maximum 600 mm centres. Nogs must be fitted flush between the studs at maximum 1200 mm centres.

7.3 Timber framing must comply with NZS 3604 or be to a specific design using NZS 3603 and NZS 4203. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604.

7.4 Timber framing must have a maximum moisture content of 24% at the time of the cladding application. *(If weatherboards are fixed to framing with a moisture content of greater than 24% problems may occur at a later date due to excessive timber shrinkage.)*

7.5 Timber wall framing must have a maximum moisture content of 18% before the weatherboards are painted.

General

8.1 At ground level the bottom edge of Linea® Weatherboards must be kept clear of paved surfaces, such as footpaths, by a minimum of 100 mm and unpaved surfaces by 175 mm in accordance with NZBC Acceptable Solution E2/AS1, Table 18. The ground clearances to finished floor levels as set out in NZS 3604 must be adhered to.

8.2 At deck or low pitch roof/wall junctions, the bottom edge of Linea® Weatherboards must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35 mm in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.6.

8.3 All buildings must have barriers to airflow in the form of interior linings with all joints stopped, or alternatively, unlined gables and walls must incorporate a rigid sheathing or an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. Where rigid sheathings are used, the fixing length must be increased by a minimum of the thickness of the sheathing.

8.4 Where Linea® Weatherboards abut other cladding systems, designers must detail the junction to meet their own requirements and the performance requirements of the NZBC. Details not included within the Technical Literature have not been assessed and are outside the scope of this Certificate.

Structure

Mass

9.1 The mass of the 135 mm wide Linea® Weatherboard when installed on the wall is 24.9 kg/m² at equilibrium moisture content (EMC). The mass of the 150 mm wide board is 25.7 kg/m² at EMC and the mass of the 180 mm wide board is 23.9 kg/m² at EMC. Linea® Weatherboard is therefore considered a light wall cladding in terms of NZS 3604.

Impact Resistance

9.2 Linea® Weatherboards will resist human impacts likely to be encountered in normal residential use. The likelihood of impact damage to the cladding when used in light commercial situations should be considered at

the design stage, and appropriate protection such as the installation of bollards and barriers provided for vulnerable areas.

Wind Zones

9.3 Linea® Weatherboard is suitable for use on buildings situated in all Building Wind Zones of NZS 3604, up to, and including Very High. *(For the scope limitations of buildings covered by this Certificate, refer to Paragraph 2.1.)*

Durability

Serviceable Life

10.1 Linea® Weatherboard installations are expected to have a serviceable life of at least 50 years provided the paint coating system is maintained in accordance with this Certificate to ensure the Linea® Weatherboards and fixings remain dry in service. Linea® Weatherboards must be painted within 3 months of fixing.

10.2 Areas of geothermal activity and coastal locations can be very corrosive to fasteners, especially coastal locations within distances of up to 500 metres of the sea including harbours, or 100 metres from tidal estuaries and sheltered inlets in some instances. These coastal locations are defined in NZS 3604 as Sea Spray Zone and Zone 1. To achieve a 50 year serviceable life in Sea Spray Zones and areas of geothermal activity, Linea® Weatherboard must be fixed with stainless steel fasteners. To achieve a 50 year serviceable life in Zone 1, Linea® Weatherboard must be fixed with stainless steel or protected hot-dip galvanised steel fasteners. Fasteners outside the Sea Spray Zone, Zone 1 and areas of geothermal activity may be hot-dip galvanised steel.

Maintenance

11.1 Regular maintenance is essential for the Linea® Weatherboards to continue to meet the NZBC durability performance provision and to maximise their serviceable life.

11.2 Annual inspections must be made to ensure that all aspects of the cladding system, including the paint coating system, flashings and any sealed joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Sealant and paint coatings must be repaired in accordance with the sealant or paint coating manufacturer's instructions.

11.3 Regular cleaning (at least annually) of the paint coating surface is recommended to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Paint systems must be recoated at approximately 5-10 yearly intervals in accordance with the paint manufacturer's instructions.

11.4 Minimum ground clearances as set out in this Certificate must be maintained at all times during the life of the cladding. *(Failure to adhere to the minimum ground clearances given in this Certificate and the Technical Literature will adversely affect the long term durability of Linea® Weatherboards.)*

Control of External Fire Spread

12.1 Linea® Weatherboard is suitable for use where a non-combustible material is specified. When Linea® Weatherboard is finished with a paint coating of not more than 1.0 mm in thickness, it is suitable for use as an external wall cladding in all building Purpose Groups in accordance

with NZBC Acceptable Solution C/AS1 Part 7, Paragraph 7.11.2(a).

Outbreak of Fire

13.1 When Linea® Weatherboards are finished with a paint coating of not more than 1.0 mm in thickness, clearance separations from chimneys and flues are not required. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated from chimneys and flues in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

External Moisture

14.1 Linea® Weatherboards, when installed in accordance with this Certificate and the Technical Literature will prevent the penetration of moisture that could cause undue dampness or damage to building elements.

14.2 Linea® Weatherboards allow excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet code compliance with Clause E2.3.6.

14.3 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for all joints, penetrations and junctions. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature. Weathertightness details that are developed by the designer are outside the scope of this Certificate and are the responsibility of the designer for compliance with the NZBC.

Internal Moisture

15.1 NZBC Acceptable Solution E3/AS1 Paragraph 1.1.1(a) requires a minimum wall R-value of 1.5 for framed cavity wall construction and therefore the wall frame cavity must be insulated.

Water Vapour

15.2 Linea® Weatherboard is not a barrier to the passage of water vapour, and when installed in accordance with this Certificate will not create or increase the risk of moisture damage resulting from condensation.

Installation Information

Installation Skill Level Requirements

16.1 Installation of Linea® Weatherboard and accessories supplied by James Hardie New Zealand Ltd and the building contractor must be completed by tradespersons with an understanding of bevel-back weatherboard installation, in accordance with instructions given within the Linea® Weatherboard Technical Literature and this Certificate.

System Installation

Building Wrap and Flexible Sill and Jamb Tape Installation

17.1 The selected building wrap and flexible sill and jamb tape system must be installed by the building contractor in accordance with the wrap and tape manufacturer's instructions prior to the installation of the Linea® Weatherboards. Particular attention must be paid to the installation of the building wrap and sill and jamb flashing tapes around window and door openings to ensure a continuous seal is achieved and all exposed timber in the opening is protected.

Linea® Weatherboard Installation

17.2 Linea® Weatherboards may be cut on site by power saw. Holes and cut-outs may be formed by drilling a number of holes around the perimeter of the opening required and tapping out the centre with a hammer, or by using a hole saw.

17.3 Weatherboards must be dry prior to installation. Before the weatherboards are installed, cut ends and the back face of the bottom course must be sealed with an acrylic sealer to reduce the absorbency of the fibre cement.

17.4 Linea® Weatherboards must be installed starting at the bottom of the wall. A cant strip (H3.1 treated timber or fibre cement) must be fixed behind the bottom course of weatherboards to ensure the weatherboards are set at the correct angle. The cant strip must be continuous around the perimeter of the building. The bottom course of weatherboards must overhang the bottom plate by a minimum of 50 mm.

17.5 Before the weatherboards are installed, the corner detail must be prepared to suit the selected option, e.g. external box corner, corner soaker. The necessary flashings must be installed before commencing weatherboard fixing.

17.6 The first course of weatherboards must be full length, i.e. 4200 mm and commence from an external corner. Jointing of Linea® Weatherboards is made off the stud using the pre-cut tongue and groove joint. Tongue and groove joints may be located centrally between the studs, but must be no closer than 100 mm to the edge of a stud. A bead of sealant must be applied to the front side of the tongue before the corresponding board is inserted. Subsequent courses of weatherboards must be installed so that the tongue and groove joints are staggered by 600 mm minimum from joints in the previous course.

17.7 Linea® Weatherboards must have a minimum lap of 30 mm, and should be set out so as near to a full board as possible will finish under and over windows and doors and at the top of the wall. A storey rod can be used to accurately position weatherboard courses.

17.8 Linea® Weatherboards must be fixed to each stud using concealed fixings behind the lap of the boards or face nailing, except that face nailing must be provided at all corners and vertical edges of openings.

17.9 Concealed fixing must be carried out using 40 x 2.8 mm hot-dip galvanised or stainless steel Hardiflex nails depending on the location - see Paragraph 10.2. Nails must be fixed 25 mm from the top edge of the board and must be driven flush with the board surface.

17.10 Face nailing must be carried out using 60 x 3.15 mm hot-dip galvanised or stainless steel jolt-head nails depending on the location - see Paragraph 10.2. Nails must be fixed 15 mm up from the bottom of the board and punched a maximum of 2 mm below the surface of

the board. When stainless steel nails are used, the top board at each lap must be pre-drilled.

17.11 Linea® Weatherboards can be hand or gun nailed. Nails must not be closer than 25 mm to the end of the board when hand nailing, or closer than 50 mm when gun nailing.

(Note: Gun nailing must only be used for concealed nailing.)

Aluminium Joinery Installation

17.12 Aluminium joinery and associated head and sill flashings must be installed by the building contractor in accordance with the Technical Literature. A 7.5 mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and air seal can be installed after the joinery has been secured in place.

17.13 After installing the window and door joinery, Linea® Trim, planted sills and scribes may be installed in accordance with the Technical Literature to provide additional weatherproofing for the joinery/weatherboard junction.

Inspections

17.14 The Technical Literature must be referred to during the inspection of Linea® Weatherboard installations by building consent authorities and territorial authorities.

Finishing

17.15 The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. Linea® Weatherboards and trim must be clean and dry before commencing painting.

Health and Safety

18.1 Cutting of Linea® Weatherboard must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.

18.2 When power tools are used for cutting, grinding or forming holes, health and safety measures as set out in the Technical Literature must be observed because of the amount of dust generated.

18.3 Safe use and handling procedures for Linea® Weatherboard and the components that make up the cladding system are provided in the relevant manufacturer's Technical Literature.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

19.1 The following testing has been completed by BRANZ:

- BRANZ expert opinion on NZBC E2 code compliance for Linea® Weatherboard was based on testing and evaluation of all details within the scope and as stated within this Certificate. Linea® Weatherboard was tested to AS/NZS 4284 with a BRANZ-designed extension. The testing was completed in three stages; the first being the standard AS/NZS 4284 test, the second being the modified AS/NZS 4284 test with defects introduced in the test panel, and the third being the modified AS/NZS 4284 test with the internal linings and building wrap removed. The testing assessed the performance of the foundation detail, window head,

jamb and sill details, internal and external corners. In addition to the weathertightness test, the details contained within the Technical Literature have been reviewed, and an opinion has been given by BRANZ technical experts that the system will meet the performance levels of NZBC Acceptable Solution E2/AS1 for direct fixed weatherboard claddings.

- Uniform wind face load tests to simulate wind pressures on 12 mm thick Linea® Weatherboards were carried out by BRANZ, and the results were used in assessing 16 mm thick Linea® Weatherboard.
- Cone Calorimeter testing to determine the peak rate of heat release and total heat release of Linea® Weatherboard was completed by BRANZ. The testing was carried out in accordance with AS/NZS 3837.

19.2 Linea® Weatherboards have been tested by a James Hardie NATA accredited laboratory in accordance with AS/NZS 2908.2. The testing covered: soak-dry, bending strength, warm water soaking, heat/rain, freeze/thaw and apparent density. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

19.3 Testing has been carried out by James Hardie Building Products to determine the modulus of rupture and inter-laminar bond strength of carbonated and non-carbonated Linea® Weatherboard. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

20.1 Weathertightness, structural, fire and durability opinions have been provided by BRANZ technical experts.

20.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

20.3 The manufacturer's Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

21.1 The manufacture of Linea® Weatherboard has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

21.2 The quality of materials, components and accessories supplied by James Hardie New Zealand Ltd is the responsibility of James Hardie New Zealand Ltd. The quality control system of James Hardie New Zealand Ltd has been assessed and registered as meeting the requirements of ISO 9001: 2000 by Telarc Limited, Registration Number 409.

21.3 Quality on site is the responsibility of the installer.

21.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of Linea® Weatherboard and accessories in accordance with the instructions of James Hardie New Zealand Ltd.

21.5 Building owners are responsible for the maintenance of Linea® Weatherboard in accordance with the instructions of James Hardie New Zealand Ltd.

Sources of Information

- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 2908.2: 2000 Cellulose-cement products - Flat sheet.
- AS/NZS 3837: 1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter.
- AS/NZS 4284: 1995 Testing of building facades.
- AS/NZS 4534: 1998 Zinc and zinc/aluminium-alloy coatings on steel wire.
- AS/NZS 4680: 1999 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles.
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber Structures Standard
- NZS 3604: 1999 Timber framed buildings.
- NZS 4203: 1992 General structural design and design loadings for buildings.
- NZS 4211: 1985 Specification for performance of windows.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 amendment



In the opinion of BRANZ, Linea® Weatherboard is fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided it is used, designed, installed and maintained as set out in this Certificate.

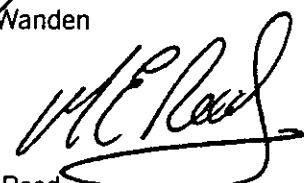
The Appraisal Certificate is issued only to the Certificate Holder, James Hardie New Zealand Ltd, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. The Certificate Holder:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ


J B Warden

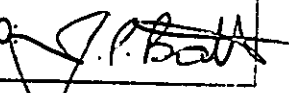

M E Reed

Amendment No. 1, dated 6 March 2007.

The Appraisal Certificate has been amended to update the Certificate holders name; to remove reference to E2/AS1 Third Edition June 2004; to update the Technical Literature reference, and to amend Paragraphs 8.3, 8.4 and 14.1.

Date of issue: 4 February 2005

TITAN FACADE PANEL ALTERNATIVE SOLUTION.

HDC PROCEDURE	
Decision	☒ Accept / Decline Pass / Fail
Procedure Type:	ALTERNATIVE SOLUTION ASSESSMENT.
Reason	FULLY DOCUMENTED DESIGN SOLUTION. CONFORMS TO POLICY 506 USING COMPLIANCE METHOD 2.
Outcome	APPROVED FOR BUILDING CONSENT GRANTING
DATE:	11.2.09 BCO: 

THE TITAN FACADE PANEL CLADDING SYSTEM IS A FULLY DOCUMENTED DESIGN SOLUTION BACKED BY A 15YR PRODUCT WARRANTY & HAS A CURRENT BOMZ APPRAISAL CERTIFICATE. THE ARCHITECTURAL DESIGN RECONCILES WITH THE JH (JAMES HARDIE) TECHNICAL SPECIFICATIONS DATED MARCH 2007. FORM 313 NOT REQUIRED FOR A PROVEN CLADDING SOLUTION WITH NATIONWIDE USE. APPLICATION OF EXPERTISE & PROFESSIONAL JUDGEMENT AS A DESIGNATED TECHNICAL LEADER HAS FACILITATED THE DECISION MAKING PROCESS BASED ON THE COMMENTARY ABOVE.



BRANZ
APPRAISED

SPECIFY WITH
CONFIDENCE

BRANZ Appraisals

Technical Assessments of
products for building and
construction

BRANZ
APPRAISAL
CERTIFICATE
No. 467 (2005)

**TITAN® &
EXOTEC®
FAÇADE PANEL
RAINSCREEN**

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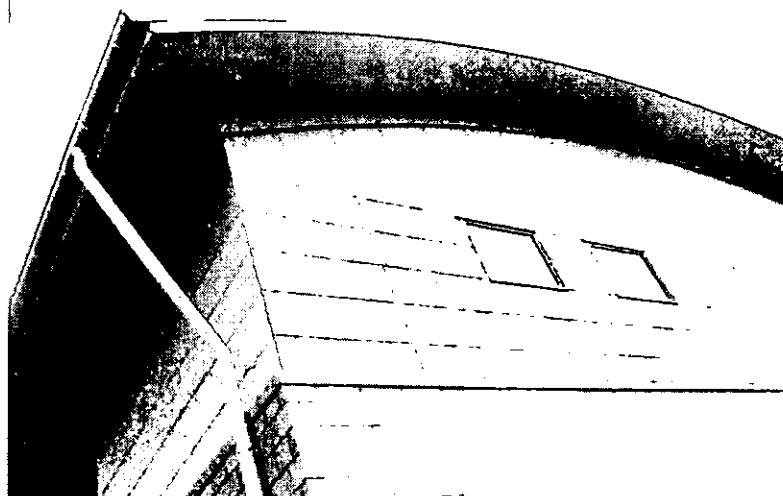
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1.1 Titan® & ExoTec® Façade Panel Rainscreen is a negative expressed joint cladding system for specific design buildings of timber frame and timber frame infill construction.

1.2 The system consists of a rigid air barrier (RAB), timber battens to form a cavity, weather seal tapes, horizontal joint socket and Titan® and ExoTec® façade panels. The Titan® and ExoTec® façade panels are finished with a latex paint system.

1.3 The system incorporates a primary and secondary means of weather resistance (first and second line of defence) against water penetration by separating the façade panels from the rigid air barrier with a nominal 20 mm cavity. The cavity allows for any occasional ingress of water that may get past the external skin to drain to the exterior of the building, and any remaining moisture to dry by evaporation.



Spec 10

2.1 Titan® & ExoTec® Façade Panel Rainscreen has been appraised as an external wall cladding system for buildings within the following scope:

- category I to V buildings as defined in NZS 4203, except that housing and communal residential buildings that fall within the scope limitations of NZBC Acceptable Solution E2/AS1 Third Edition June 2004, Paragraph 1.1 are excluded; and,
- constructed with timber framing, or timber frame infill complying with the NZBC; and,
- subjected to maximum wind pressures for structural and weathertightness design of 1.0 kPa Serviceability Limit State (SLS) and 1.5 kPa Ultimate Limit State (ULS) where studs are at maximum 600 mm centres, and 3.0 kPa SLS and 4.5 kPa ULS where studs are at maximum 400 mm centres; and,
- where the maximum seismic displacement under serviceability conditions is 10 mm; and,
- where the cavity is drained and ventilated at every 10 m maximum; and,
- with a rigid air barrier installed at the back of the cavity.

2.2 All buildings incorporating Titan® & ExoTec® Façade Panel Rainscreen must be subject to specific engineering and weathertightness design. Building designers are responsible for the frame design and for the incorporation of the Titan® & ExoTec® Façade Panel Rainscreen into their design in accordance with the instructions of James Hardie Building Products.

2.3 Titan® & ExoTec® Façade Panel Rainscreen must only be installed to vertical flat surfaces.

2.4 Window and door joinery installations in the Titan® & ExoTec® Façade Panel Rainscreen system must be subject to specific weathertightness design. Building designers are responsible for verifying the performance of the joinery installation details. *(The Appraisal of Titan® & ExoTec® Façade Panel Rainscreen relies on the joinery being the subject of specific engineering design with regards to wind load and deflection for the design wind pressure.)*

Readers are advised to check the validity of this Certificate by referring to the Valid Certificates listing on the BRANZ website, or by contacting BRANZ.

2.5 The system must be installed using detailing as set out in the Technical Literature.

(Note: The Titan[®] & Exotec[®] Façade Panel Rainscreen system can be used to provide structural bracing and fire resistance rated construction, but these aspects have not been assessed by this Certificate and are outside its scope.)

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Titan[®] & Exotec[®] Façade Panel Rainscreen if designed, used, installed and maintained in accordance with the statements and conditions of this Certificate, will meet or contribute to meeting the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Titan[®] & Exotec[®] Façade Panel Rainscreen meets the requirements for loads arising from self-weight, earthquake, wind, human impact and creep [i.e. B1.3.3 (a), (f), (h), (j) and (q)]. See Paragraphs 9.1 – 9.6.

Clause B2 DURABILITY: Performance B2.3.1 (h), 15 years. Titan[®] & Exotec[®] Façade Panel Rainscreen meets this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. Titan[®] & Exotec[®] Façade Panel Rainscreen meets this requirement. See Paragraphs 14.1 – 14.6.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Titan[®] & Exotec[®] Façade Panel Rainscreen meets this requirement and will not present a health hazard to people.

3.2 This Certificate appraises an Alternative Solution in terms of New Zealand Building Code Compliance.

4.1 System components and accessories for Titan[®] & Exotec[®] Façade Panel Rainscreen which are supplied by James Hardie New Zealand Ltd are:

Fibre Cement Sheets

- Titan[®] façade panels are medium density fibre cement produced with a smooth face and are sealed with an acrylic primer on the front and back face and all four edges. The sheets are 9 mm thick and are available 1190 mm wide by 2400, 2700 and 3000 mm long.
- Exotec[®] façade panels are high density compressed fibre cement produced with a smooth face and are sealed with an acrylic primer on the front and back face and all four edges. The sheets are 9 mm thick and are available 1190 mm wide by 1800, 2400 and 3000 mm long.
- RAB sheets are produced with a smooth face and are sealed with an acrylic primer on the front face and all four edges. The sheets are 5.5 mm thick and are available 1200 mm wide by 2400 and 3000 mm long.
- The Titan[®] and Exotec[®] façade panels and RAB sheets are manufactured from cellulose fibre cement. The sheets are formed, cut to length and then cured by high-pressure autoclaving. They are manufactured to meet the requirements of AS/NZS 2908.2.

Accessories

- Cavity batten packer – 3 mm thick by 40 mm wide fibre cement manufactured to meet the requirements of AS/NZS 2908.2. The packers are available in 1200 mm lengths.
- Aluminium socket – manufactured from Grade 5005

aluminium alloy. It is extruded 1.2 mm thick by 82 mm wide with a 9 mm wide T-lip located 45 mm down from the top edge. The socket is available in 2400 and 3000 mm lengths.

- Inseal[®] 3259 Tape – black, compressible, medium density PVC (Polyvinyl Chloride) closed-cell foam. The foam is coated on one face with pressure sensitive acrylic adhesive. The other face is covered by a silicone release paper. The tape is 1.5 mm thick and is supplied in rolls 50 and 80 mm wide and 50 m long.
- Inseal[®] 3109/Butyl Tape – 1 mm thick black Butyl rubber membrane with 6 x 9 mm Inseal[®] 3109 adhered along each edge of one face with an acrylic adhesive. Inseal[®] 3109 is compressible, black, low density PVC foam. The tape is supplied in rolls 50 and 80 mm wide and 12 m long.
- Cavity vent strip – uPVC, available in 2700 mm lengths.

4.2 Accessories used with Titan[®] & Exotec[®] Rainscreen which are supplied by the building contractor are:

- Cavity battens – nominal 50 mm wide by 25 mm thick (minimum finished size of 45 mm wide by 18 mm thick) timber treated to Hazard Class H3.1.
- Timber packers – nominal 50 mm wide by 25 mm thick (minimum finished size of 45 mm wide by 18 mm thick) timber treated to Hazard Class H3.1.
- Joinery flashings – folded from aluminium or galvanised steel to specific weathertightness design to suit the window or door trim opening. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1 Third Edition June 2004, Table 20 for durability requirements.
- Horizontal drained joint flashing – folded from aluminium or galvanised steel to specific weathertightness design. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1 Third Edition June 2004, Table 20 for durability requirements.
- Flexible sealant – sealant covered by a valid BRANZ Appraisal Certificate for use as a weather sealing sealant for exterior use.
- RAB sheet fixings – 40 x 2.8 mm hot-dip galvanised flat head Hardiflex nails.
- Cavity batten fixings – 40 x 2.8 mm hot-dip galvanised flat head Hardiflex nails.
- Titan[®] façade panel fixings – 65 x 10g Grade 316 stainless steel wood screws, or 60 x 3.15 mm hot-dip galvanised or Grade 316 stainless steel, ring shank Hardiflex nails. *(Note: The screw head must be minimum 9 mm diameter.)*
- Exotec[®] façade panel fixings – 65 x 10g Grade 316 stainless steel wood screws. *(Note: The screw head must be minimum 9 mm diameter.)*

Paint System Specification

4.3 All exposed façade panel surfaces (including panel edges) must be finished with a latex exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730. Proprietary paint systems, including fillers have not been assessed, and are outside the scope of this Certificate.

Handling and Storage

5.1 Handling and storage of all materials supplied by James Hardie New Zealand Ltd and the building contractor, whether on or off site, is under the control of the building contractor. The Titan[®] and Exotec[®] façade panels and RAB sheets must be stacked flat, off the ground and supported on a level platform. They must be kept dry at all times either by storing under cover or providing waterproof covers to the stack. Care must be taken to avoid damage to edges, ends and surfaces. Sheets must always be carried on edge.

5.2 Cavity battens and other accessories must be stored so they are kept clean, dry and undamaged. All accessories must be

used within the maximum storage period recommended.

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Titan[®] & ExoTec[®] Façade Panel Rainscreen. The Technical Literature must be read in conjunction with this Certificate. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Certificate must be followed.

Framing

Timber Treatment

7.1 Timber wall framing behind the Titan[®] & ExoTec[®] Façade Panel Rainscreen system must be treated as required by NZS 3602.

Timber Framing

7.2 Timber framing must be minimum No. 1 framing grade in accordance with NZS 3631. The building designer is responsible for the framing design using wind pressures calculated in accordance with NZS 4203 considering local factors. Some guidance is given within the Technical Literature.

7.3 Nominal 75 mm wide studs must be provided at all vertical RAB sheet and façade panel edges. (This can also be achieved by nailing two nominal 50 mm wide studs together.)

7.4 Timber framing must have a maximum moisture content of 24% at the time of the RAB sheet application. (If RAB sheets are fixed to framing with a moisture content of greater than 24% problems may occur at a later date due to excessive timber shrinkage.)

Fibre Cement Sheet Setout

7.5 All vertical and horizontal RAB sheet edges must be supported and fixed directly to the wall framing. At the base of the wall, the RAB sheet must hang 8 mm below the supporting framing.

7.6 All vertical Titan[®] and ExoTec[®] façade panel edges must be supported and fixed through the cavity battens to the wall framing. At the base of the wall, the Titan[®] and ExoTec[®] panels must hang 50 mm below the supporting framing.

General

8.1 Punchings in the cavity vent strip provide a minimum ventilation opening area of 1000 mm² per lineal metre of wall.

8.2 At ground level, the bottom edge of the Titan[®] & ExoTec[®] Façade Panel Rainscreen system must be kept clear of paved surfaces, such as footpaths, by a minimum of 100 mm and unpaved surfaces by 175 mm in accordance with NZBC Acceptable Solution E2/AS1 Third Edition June 2004, Table 18. The ground clearances to finished floor levels as set out in Table 18 must be adhered to at all times.

8.3 The rainscreen must be drained every 10 m maximum. Horizontal Titan[®] & ExoTec[®] façade panel joints at intermediate floor levels, or sheet joints between floor levels may be formed using the aluminium socket to create a negative expressed non-drained joint.

8.4 The aluminium socket must not be allowed to come into contact with treated timber battens that contain copper (e.g. CCA, copper azole or ACQ). The socket must be separated from the battens by the fibre cement packer.

8.5 Where the system abuts other cladding systems, the building designer must detail the junction to meet their own requirements and the performance requirements of the NZBC. These details are outside the scope of this Certificate.

Structure

Mass

9.1 The mass of the Titan[®] & ExoTec[®] Façade Panel Rainscreen system is approximately 22 kg/m² at equilibrium moisture content.

Impact Resistance

9.2 The system will resist human impact loads likely to be encountered. The likelihood of damage to the system from other soft and hard body impacts should be considered at the design stage, and appropriate protection such as the installation of hollards and harriers provided for vulnerable areas.

Wind Loading

9.3 The system is suitable for use when subjected to maximum wind pressures of 1.0 kPa Serviceability Limit State (SLS) and 1.5 kPa Ultimate Limit State (ULS) where studs are at 600 mm centres, and 3.0 kPa SLS and 4.5 kPa ULS where studs are at 400 mm centres.

Seismic Loading

9.4 The system is suitable for use where the maximum seismic displacement is 10 mm under serviceability conditions.

RAB Sheet Fixing

9.5 The RAB sheets must be fixed to the wall framing (studs and nogs) at maximum 300 mm centres. The fixings must be installed a minimum of 12 mm from the edge of the sheet.

Titan[®] and ExoTec[®] Façade Panel Fixing

9.6 Titan[®] and ExoTec[®] façade panels must be fixed through the cavity battens to the wall framing at maximum centres as specified in Table 1. The fixings must be installed a minimum of 18 mm from the edge of the sheet.

Table 1: Titan[®] and ExoTec[®] Façade Panel Fixing Centres

Façade Panel	Maximum Stud Spacing (mm)	Fixing Type	Maximum Fixing Centres to Edge of Sheet (mm)	Maximum Fixing Centres to Body of Sheet (mm)
Titan [®]	600	60 x 3.15 mm Hardiflex nail	200	250
Titan [®] and ExoTec [®]	600	65 x 10g wood screw	200	300
Titan [®]	400	60 x 3.15 mm Hardiflex nail	150	150
Titan [®] and ExoTec [®]	400	65 x 10g wood screw	200	200

Durability

Serviceable Life

10.1 Provided the Inseal[®] 3259 tape and Inseal[®] 3109 foam component of the Inseal[®] 3109/Butyl Tape is not exposed to the weather or ultra-violet (UV) light for a total of more than 30 days; and provided the system is maintained in accordance with this Certificate, and the Titan[®] and ExoTec[®] façade panels and fixings are continuously protected by a weathertight coating

and remain dry in service, Titan⁺ & ExoTec⁺ Façade Panel Rainscreen is expected to have a serviceable life of at least 15 years. If the Inseal⁺ 3259 tape or Inseal⁺ 3109 foam component of the Inseal⁺ 3109/Butyl Tape is exposed to the weather or UV light for a total of more than 30 days, then it must be replaced with new material.

Maintenance

11.1 Regular maintenance is essential for Titan⁺ & ExoTec⁺ Façade Panel Rainscreen installations to continue to meet the NZBC durability performance provision and to maximise the serviceable life of the system.

11.2 Annual inspections must be made to ensure that all aspects of the cladding system, including the paint coating system, flashings, weather seal tapes and any sealed joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Sealant, paint coatings and the like must be repaired in accordance with the sealant or paint coating manufacturer's instructions.

11.3 Regular cleaning (at least annually) of the paint coating surface is required to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Paint systems must be recoated at approximately 5-10 yearly intervals in accordance with the paint manufacturer's instructions.

11.4 Minimum ground clearances as set out in this Certificate and the Technical Literature must be maintained at all times during the life of the system. *(Failure to adhere to the minimum ground clearances given in this Certificate and the Technical Literature will adversely affect the long term durability of the Titan⁺ & ExoTec⁺ Façade Panel Rainscreen system.)*

Control of External Fire Spread

12.1 Titan⁺ & ExoTec⁺ Façade Panel Rainscreen is suitable for use where a non-combustible material is specified. When Titan⁺ and ExoTec⁺ façade panels are finished with a paint coating of not more than 1.0 mm in thickness, they are suitable for use as an external wall cladding in all building Purpose Groups in accordance with NZBC C/AS1 Part 7, Paragraph 7.11.2(a).

Outbreak of Fire

13.1 When Titan⁺ & ExoTec⁺ Façade Panel Rainscreen is finished with a paint coating of not more than 1.0 mm in thickness, clearance separations from chimneys and flues are not required. However, when used in conjunction with, or attached to heat sensitive materials, e.g. Inseal⁺ 3259 Tape and Inseal⁺ 3109/Butyl Tape, the heat sensitive material must be separated from chimneys and flues in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

External Moisture

14.1 The Titan⁺ & ExoTec⁺ Façade Panel Rainscreen system has been tested in accordance with the requirements of AS/NZS 4284 up to 4.5 kPa ULS (refer to Paragraph 2.1). This test method is designed to verify the performance of commercial building facades. *(Titan⁺ & ExoTec⁺ Façade Panel Rainscreen has not been tested in accordance with the requirements of the housing and communal residential building test method, NZBC Verification Method E2/VM1.)*

14.2 Titan⁺ & ExoTec⁺ Façade Panel Rainscreen, when installed in accordance with this Certificate and the

Technical Literature, prevents the penetration of moisture that could cause undue dampness or damage to building elements.

14.3 The cavity must be sealed off from the roof and sub-floor space to meet code compliance with NZBC Clause E2.3.5.

14.4 Titan⁺ & ExoTec⁺ Façade Panel Rainscreen allows excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet code compliance with NZBC Clause E2.3.6.

14.5 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for all joints, penetrations and junctions. Weathertightness details that are developed by the designer are outside the scope of this Certificate and are the responsibility of the designer for compliance with the NZBC.

14.6 The use of Titan⁺ & ExoTec⁺ Façade Panel Rainscreen where there is a designed cavity drainage path for moisture that penetrates the cladding, does not reduce the requirement for junctions and penetrations to remain weather resistant.

Installation Skill Level Requirements

15.1 Installation of Titan⁺ & ExoTec⁺ Façade Panel Rainscreen components and accessories supplied by James Hardie New Zealand Ltd and the building contractor must be completed by tradespersons with an understanding of cavity construction and fibre cement installation, in accordance with the instructions given within the Titan⁺ & ExoTec⁺ Façade Panel Rainscreen Technical Literature, the building designers documentation and this Certificate.

System Installation

Rigid Air Barrier (RAB)

16.1 RAB sheets may be cut on site by power saw. Holes and cut-outs may be formed by drilling a number of holes around the perimeter of the opening required and tapping out the centre with a hammer, or by using a hole saw.

16.2 RAB sheets must be dry prior to installation. Before the sheets are installed, cut edges and any penetrations in the sheet must be sealed with an acrylic primer.

16.3 At the base of the wall, the RAB sheet must hang minimum 8 mm below the supporting framing. The RAB sheets must be fixed directly to the wall framing at maximum 300 mm centres with 40 x 2.8 mm hot-dip galvanised flat head Hardiflex nails. The nails must not be closer than 12 mm from the edge of the sheet.

16.4 Vertical joints in the RAB must be installed with a 2 mm gap between the sheets over nominal 75 mm wide studs. A minimum 10 mm gap must be left at all horizontal RAB sheet joints. The horizontal gap between the sheets must be flashed with 80 x 1.5 mm Inseal⁺ 3259 Tape, 1.0 mm thick by 80 mm wide Butyl rubber or 0.55 mm thick galvanised steel or aluminium. Joints in the RAB sheets do not need to be in line with joints in the façade panels.

16.5 Penetrations through the air barrier must be sealed against the RAB sheets to ensure the integrity of the air barrier is retained.

Inseal® 3259 Tape

16.6 Prior to the installation of the cavity battens, all vertical joints in the RAB sheets and at internal and external corners must be covered with Inseal® 3259 Tape. The tape is applied directly from the roll leaving the release liner in place to prevent stretching of the tape. The tape is applied directly to the RAB sheet by pressing firmly along the entire tape to obtain maximum benefit of the pressure sensitive adhesive and to ensure a continuous seal. The release liner is removed only when the cavity battens are ready to be installed.

16.7 Inseal® 3259 Tape installed over vertical RAB sheet joints must always be covered by a cavity batten.

Cavity Battens

16.8 Cavity battens must be installed over the RAB sheets to the wall framing. The battens must be fixed in place with 40 x 2.8 mm hot-dip galvanised flat-head Hardiflex nails at maximum 400 mm centres.

16.9 Double battens must be installed behind all vertical Titan® and ExoTec® façade panel joints. At horizontal aluminium socket joints, 125 mm long vertical timber packers must be installed at 100 mm centres along the line of the joint to support the aluminium socket.

Inseal® 3109/Butyl Flashing Tape and Cavity Batten Packer

16.10 Before installation of the façade panels, Inseal® 3109/Butyl Tape must be installed behind the vertical panel joints to weatherproof the negative expressed joint. Before fixing in place, the tape must be unrolled, cut to length and allowed to 'relax'. The tape is temporarily fixed in position over the cavity battens by stapling to the battens through the outside edge of the Butyl membrane.

16.11 Cavity batten packers must be fixed to the face of all cavity battens and timber packers that do not have Inseal® 3109/Butyl Tape installed over them.

Aluminium Socket

16.12 The aluminium socket must be adhered to the back face of the façade panel. This should be completed on the ground prior to the panel's installation. The socket is installed with the T-lip positioned against the top edge of the façade panel and is adhered to the panel with two continuous beads of sealant.

Titan® and ExoTec® Façade Panel Installation

16.13 Titan® and ExoTec® façade panels may be cut on site by power saw. Holes and cut-outs may be formed by drilling a number of holes around the perimeter of the opening required and tapping out the centre with a hammer, or by using a hole saw.

16.14 Titan® and ExoTec® façade panels must be dry prior to installation. Before the panels are installed, cut edges, any damaged pre-primed factory edges and any penetrations in the panel must be sealed with an acrylic primer.

16.15 The bottom row of façade panels must overhang the bottom plate by a minimum of 50 mm. Vertical negative expressed joints are formed over the Inseal® 3109/Butyl Tape by leaving a 10 mm gap between the sheet edges. Horizontal negative expressed joints are formed by leaving a 10 mm gap between horizontal façade panel edges over the aluminium socket.

16.16 Horizontal drained joints are formed by the installation of a Z flashing which bridges the cavity and allows for cavity drainage. A 10 mm gap must be maintained between the top of the Z flashing and the underside of the façade panel above.

16.17 Titan® façade panel fixing must be carried out using 65 x 10g wood screws or 60 x 3.15 mm hot-dip galvanised or stainless steel, ring shank Hardiflex nails. ExoTec® façade panel fixing must be carried out using 65 x 10g wood screws. The fixings must not be closer than 18 mm from the edge of the panel and at vertical panel joints must penetrate through the outer edge of the Inseal® 3109/Butyl Tape beyond the line of the foam seal.

16.18 Nail fixings must be driven flush with the panel surface. Screw fixings must be countersunk 1.5-2.0 mm below the panel surface.

Joinery Installation

16.19 Window and door joinery and associated flashings, air seals etc must be installed by the building contractor in accordance with the building designer's details.

Inspections

16.20 The Technical Literature must be referred to during the inspection of Titan® & ExoTec® Façade Panel Rainscreen installations by building consent authorities and territorial authorities.

Finishing

16.21 Titan® and ExoTec® façade panels must be coated within 3 months of fixing.

16.22 Countersunk screw fixings must be filled with an exterior grade epoxy filling compound recommended for use with the selected paint system. The stopping of screw fixings is for aesthetic purposes only. The quality of finish on the Titan® and ExoTec® façade panels is dependant on the quality of finishing materials used, and applicator workmanship.

16.23 The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. Titan® and ExoTec® façade panels must be clean and dry before commencing painting.

Health and Safety

17.1 Cutting of the RAB sheets and Titan® and ExoTec® façade panels must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.

17.2 When power tools are used for cutting, grinding or forming holes, health and safety measures as set out in the Technical Literature must be undertaken because of the amount of dust generated.

17.3 Safe use and handling procedures for the RAB sheets, Titan® and ExoTec® façade panels and the components that make up the cladding system are provided in the relevant manufacturer's Technical Literature.

The following is a summary of the technical investigations carried out:

Tests

18.1 BRANZ expert opinion on NZBC E2 code compliance for Titan® & ExoTec® Façade Panel Rainscreen was based on testing and/or evaluation of all details within the scope of this Certificate. The Titan® & ExoTec® Façade Panel Rainscreen system was tested by BRANZ to AS/NZS 4284 with a design wind pressure of 1.1 kPa Serviceability Limit State. The testing was completed in two stages; the first being the static AS/NZS 4284 test, the second being the dynamic AS/NZS 4284 test. The testing assessed the performance of the foundation detail, window head.

jamb and sill details, vertical negative expressed joint, horizontal negative expressed joints, horizontal drained joint and internal and external corners. In addition to the weathertightness test, the details contained within the Technical Literature have been reviewed, and an opinion has been given by BRANZ technical experts that the system will meet the performance requirements of the New Zealand Building Code External Moisture Clause E2, Third Edition June 2004, when used within the scope of this Certificate.

18.2 Titan[®] & ExoTec[®] Façade Panel Rainscreen has been tested by an IANZ accredited laboratory in accordance with AS/NZS 4284 with a design wind pressure of 3.3 kPa Serviceability Limit State. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

18.3 Testing has been carried out by James Hardie New Zealand Ltd to determine the performance of the Titan[®] & ExoTec[®] Façade Panel Rainscreen system under negative suction pressure. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

19.1 Structural and durability opinions have been given by BRANZ technical experts.

19.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

19.3 The Technical Literature for Titan[®] & ExoTec[®] Rainscreen has been examined by BRANZ and found to be satisfactory.

Quality

20.1 The manufacture of RAB sheets and Titan[®] façade panels by James Hardie New Zealand Ltd has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

20.2 The manufacture of ExoTec[®] façade panels by James Hardie Australia Pty Ltd has not been assessed by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

20.3 The quality of materials, components and accessories supplied by James Hardie New Zealand Ltd is the responsibility of James Hardie New Zealand Ltd. The quality control system of James Hardie New Zealand Ltd has been assessed and registered as meeting the requirements of ISO 9001: 2000 by Telarc Limited, Registration Number 409.

20.4 The quality of materials, components and accessories supplied by James Hardie Australia Pty Ltd is the responsibility of James Hardie Australia Pty Ltd. The quality control system of James Hardie Australia Pty Ltd has been assessed and registered as meeting the requirements of ISO 9001: 2000 by SAI Global Limited, Certificate No. QEC0034.

20.5 Quality on site is the responsibility of the installer.

20.6 Designers are responsible for the building design, including weathertightness design of penetrations, and building contractors are responsible for the quality of installation of the Titan[®] & ExoTec[®] Façade Panel Rainscreen components and accessories in accordance with the instructions of James Hardie New Zealand Ltd.

20.7 Building owners are responsible for the maintenance of Titan[®] & ExoTec[®] Façade Panel Rainscreen in accordance with the instructions of James Hardie New Zealand Ltd.

Sources of Information

- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 2908.2: 2000 Cellulose-cement products - Flat sheet.
- AS/NZS 4284: 1995 Testing of building facades.
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3604: 1999 Timber framed buildings.
- NZS 3631: 1988 New Zealand timber grading rules.
- NZS 4203: 1992 General structural design and design loadings for buildings.
- Approved Document for New Zealand Building Code External Moisture Clause E2, Building Industry Authority, Third Edition June 2004.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 Amendment.



In the opinion of BRANZ, Titan[®] & ExoTec[®] Façade Panel Rainscreen is fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided it is used, designed, installed and maintained as set out in this Certificate.

The Appraisal Certificate is issued only to the Certificate Holder, James Hardie New Zealand Ltd, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. The Certificate Holder:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ

P Robertson
Chief Executive

Date of issue: 5 May 2005

NEW ZEALAND
MARCH 2007

Titan[®]
FACADE PANEL

CLD[®]
STRUCTURAL CAVITY BATTEN



 **James Hardie**

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WE VALUE YOUR FEEDBACK

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

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1 APPLICATION AND SCOPE

1.1 APPLICATION

The Titan® Facade Panel installed as per this specification provides a durable, expressed joint panel appearance for residential / commercial building facades. Titan Facade Panel cladding can be fixed over either timber frame or lightweight construction steel-framed wall. A wide range of colours can be used over Titan Facade Panels.

If you are a specifier

or other responsible party for a project ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

If you are an installer

Ensure that you follow the design, moisture management and associated details and material selection provided by the designer. All the details provided in this document must be read in conjunction with the specifier's specification.

Make sure your information is up to date

When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or you need more information, visit www.jameshardie.co.nz or Ask James Hardie™ on 0800 808 868.

1.2 SCOPE

This specification covers the use of Titan Facade Panel on buildings, where the maximum wind pressure exerted on the building facade is up to 2.5kPa (ULS).

This specification is intended for use by architects or designers / specifier and installers who may be involved with the specification of Titan Facade Panel, CLD® Structural Cavity Battens and their installation. The specification must be read in conjunction with the figures provided at the rear of this document and project specific drawing / specifications.

1.3 DETAILS

Various typical Titan Facade Panel construction details are provided at the rear of this document. All dimensions shown are in millimetres unless noted otherwise. These details are also available in CAD file format and can be downloaded from our website at www.jameshardie.co.nz.

2 DESIGN

2.1 SPECIFIC DESIGN

For the use of Titan Facade Panel and CLD Structural Cavity battens outside the scope of this specification, the designer, architect or engineer must ensure that the relevant clauses of the New Zealand Building Code (NZBC) have been considered and the intent of their design meets the requirements of the NZBC. Project specific details are required to be developed if they are not covered in this literature.

2.2 COMPLIANCE

Titan Facade Panel and CLD Structural Cavity Battens installed as per this technical specification have been tested in a NATA accredited testing laboratory and complies with the requirements of Structure-B1, Durability-B2 and External Moisture-E2 Clauses of NZBC.

2.3 RESPONSIBILITY

The specifier or the other party responsible for the project is responsible for ensuring that the information and details included in this technical specification are suitable for the intended application.

The specifier shall accommodate the appropriate provisions required by the NZBC. Careful detailing of all penetrations through the building wrap/rigid air barrier is required and must be appropriately flashed and weatherproofed. The other materials and components that are used to manage moisture must be installed as per their manufacturers' instructions and comply with the requirements of the relevant standards and the NZBC.

The designer / specifier must ensure that all the reference documents and standards referred to in this document or during the design and construction process are current editions and are complied with. The designer must identify the moisture related risks associated with the particular building design. The design and construction must effectively manage the external moisture.

For the latest information in relation to designing for weathertightness refer to www.branz.co.nz and www.dbh.govt.nz websites.

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

2.4 SITE AND FOUNDATION

The site on which the building is situated must comply with E1 - 'Surface Water' Clause of NZBC. The grade of adjacent finished grade must slope away from the building to avoid any possibility of water accumulation in accordance to NZBC requirements.

For SED 'Specific Engineering Design' projects the foundation must be designed and certified by a qualified structural engineer and comply with all relevant codes, regulations and standards.

2.5 CLEARANCES

The bottom edge of claddings must comply with section 9.1.3 of 'E2 /AS1'. The floor must have a minimum clearance to paved or unpaved ground as required by NZS 3604. Titan Facade Panels must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604.

Titan Facade Panel must always maintain a clearance of 100mm from paved grounds and 175mm from unpaved grounds. On roofs and decks etc. a minimum clearance of 50mm must be maintained.

Do not install Titan Facade Panels such that it may remain in contact with standing water.

2.6 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design. Wall construction design must effectively manage moisture, considering both the interior and exterior environment of buildings, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled. Walls shall include those provisions as required by the NZBC Acceptable Solution 'E2/AS1- External Moisture'. In addition, all wall openings, penetrations, junctions, connections, windowsills, heads and jambs must incorporate appropriate flashings for waterproofing. The other materials, components and installation methods used to manage moisture in external walls, must comply with requirements of NZBC and any other regulations or standards applicable. For further guidance on designing for weathertightness refer to BRANZ Ltd. and the Department of Building and Housing (DBH) updates on the following websites respectively, www.branz.co.nz and www.dbh.govt.nz.

In addition, the following points must be considered:

- Flexible sealant in vertical panel joints must be applied as detailed in this technical specification.
- For projects within the scope of E2/AS1 where the walls are higher than two storeys, it is necessary to provide a horizontal flashing joint at the second floor level to drain the cavity.
- The installation of smoke chimneys, pipe penetrations and other fixtures etc. must not restrict the free flow of moisture to the exterior.

2.7 STRUCTURE

2.7.1 TIMBER FRAMING

For residential buildings the timber-framing must be provided in accordance with NZS 3604 (Timber Framed Buildings). When the framing is provided as per the specific engineering design, the framing stiffness must be equivalent to or more than the minimum stiffness requirements of NZS 3604.

For specific engineering design, refer to NZS 3603 and AS/NZS 1170 or NZS 4203 for framing design.

2.7.2 STEEL FRAMING

Steel-framed buildings must comply either with AS/NZS 3404 'Steel Structures Standard' or specific engineering design requirements. Refer to NZSH 3405 a standard developed by 'National Association of Steel Housing' for further information and guidance about steel framing.

2.7.3 WIND LOADING

Titan Facade Panel cladding installed as per this technical specification is suitable for use up to maximum wind pressures of 2.5kPa (uls).

2.8 STRUCTURAL BRACING

Titan Facade Panels installed as per this specification are not suitable to achieve structural bracing. However, bracing can be achieved by using RAB Board fixed direct to the framing or by using internal linings such as Villaboard® Lining or plasterboard.

2.9 FIRE RATED WALLS

A fire rating of up to 30 minutes can be achieved when using a RAB Board in lieu of a building wrap and installing Titan Facade Panels as per this specification. Ask James Hardie on 0800 808 868 for further information.

2.10 ENERGY EFFICIENCY

The R-Value of Titan Facade Panel walls constructed in accordance with this manual using bulk insulation, will comply with the Section 3.1-'Schedule Method' of NZS 4218 (Energy Efficiency — Small Building Envelope) required under Table 1. To meet these insulation requirements, bulk insulation as mentioned in Table 1 of this specification must be used. This calculation is based on a timber frame of 90 x 45mm and internal linings of James Hardie Villaboard Lining or plasterboard.

TABLE 1:

INSULATION CAPACITY		
Climate Zone*	R-Value Requirement*	Insulation Infill Requirement
1 & 2	1.5 m ² ° C/W	R1.8 Fibreglass batts
3	1.9 m ² ° C/W	R2.2 Fibreglass batts

*as defined in NZS 4218.

3 FRAMING

3.1 GENERAL

Titan Facade Panels can be installed to timber-framed or steel-framed structures. Fixing to any other framing material is subject to a specific engineering design.

- Stud spacing must not exceed 600mm c/c.
- Nog / dwang spacing must not exceed 800mm c/c when studs are at 600mm c/c.

Note: Titan Facade Panel fastener spacings are provided in Section 6.

3.2 TIMBER FRAMING

3.2.1 DIMENSIONS

A minimum 45mm stud width is required.

3.2.2 STRUCTURAL GRADE

Minimum No.1 Framing Grade or MSG6 grade timber is required for framing. The grading of timber must comply with NZS 3631 or AS/NZS 1748 standard requirements.

3.2.3 DURABILITY

The external framing must be treated to minimum H1.2 treatment. Higher treatment levels may be used but check for the compatibility

of treatment chemicals with other materials. Refer to NZBC Acceptable Solution B2/AS1 'Durability' for further information about the durability requirements.

For timber treatment and allowable moisture content information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round Sawn Timber) for minimum timber treatment selection and treatment requirements. Also refer to framing manufacturer's literature for further guidance on timber selection. Framing must be protected from moisture at site in accordance with the recommendations of the framing manufacturers.

Note: Refer to NZS 3602 for information about the allowable moisture content in timber framing.

3.2.4 FRAME CONSTRUCTION

The framing must be rigid and not rely on the cladding panel for stability.

All timber framing sizes and set-out must comply with NZS 3604 or specific engineering design requirements and as specified in this specification.

Note: It is recommended that the CLD Structural Cavity Battens be installed prior to plumbing, electrical and other services within the frame. This will prevent these services from being damaged by fasteners used to install the battens.

3.3 STEEL FRAMING

3.3.1 DIMENSIONS AND GAUGE

A 38mm minimum stud width is required. Framing members must be 0.55mm minimum to 1.6mm maximum BMT (Base Metal Thickness).

3.3.2 DURABILITY

The steel framing must have the appropriate level of coating to prevent corrosion and to comply with the durability requirements of NZBC.

3.3.3 FRAME CONSTRUCTION

Steel framing must comply either with NZS 3404 or with the specific engineering design for the project. Stud and batten spacing must not be more than what has been specified in this specification. Refer to framing manufacturer's specifications and also to NASH 3405 (a standard developed by NASH-National Association of Steel Framed Housing Inc.) for further guidance on steel frame.

3.4 SPECIAL FRAMING REQUIREMENTS

The following are special framing requirements for both timber and steel framing:

- Double studs are required at internal corners, refer to Figure 12.

3.5 TOLERANCES

In order to achieve the required performance and an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the relevant codes, manufacturer's specifications and design requirements. All framing shall be made flush.

4 PREPARATION

4.1 BUILDING WRAP

Building wrap must be provided as per the requirements of NZBC Acceptable Solution E2/AS1 'External Moisture' and NZS 3604. The building wrap must comply with Table 23 of E2/AS1 and AS/NZS 4200.1. The building wrap must be fixed in accordance with E2/AS1, NZS 3604 and AS/NZS 4200.2 'Pliable Building Membranes and Underlay – Installation' standard and the wrap manufacturer's recommendations.

Walls which are not lined on the inside face e.g. garage walls or gable ends must include an air barrier behind the cladding which complies with the requirements of NZBC Acceptable Solution E2/AS1 Table 23. RAB Board meets these requirements.

4.2 RIGID AIR BARRIER

For specific design projects where the wind pressures are higher than 1.5kPa (uls), RAB Board must be used instead of building wraps. Refer to RAB Board installation manual for information regarding its installation.

4.3 VENT STRIP

The James Hardie uPVC cavity vent strip must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. It is important that the openings in the vent strip are kept clear of obstructions to allow free drainage and ventilation of cavities. James Hardie uPVC vent strip has an opening area of 1000mm²/m length. Refer to Figure 4.

4.4 FLASHING

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to panel installation. Please refer to moisture management requirements in Clause 2.6. The building wrap or RAB Board must be appropriately taped around the penetrations and lapped/taped to flashings. Materials must be lapped in such a way that water tracks down to the exterior of a building. James Hardie will assume no responsibility for water infiltration within the wall due to poor installation of flashings or building wraps. The selected flashing materials must comply with the durability requirements of NZBC. For information refer to Table 20 of clause E2 of NZBC.

When using RAB Board the entire framing around window opening must be sealed with a flashing tape. The tape must be finished over the face of RAB Board. The flashing tapes like Protecto® tape by Protecto wrap or Aluband® by Thermakraft are recommended for use with RAB Board. Refer to tape manufacturer's literature for further information regarding their installation.

5 BATTEN INSTALLATION

5.1 CLD STRUCTURAL CAVITY BATTEN

The CLD Structural Cavity Batten is suitable to have Titan Facade Panel fixed into them. The battens are 2450mm long, 70mm wide and 19mm thick. The battens are fully sealed on all faces. Refer to the details for information about installation.

5.2 BATTEN LAYOUT

5.2.1 GENERAL

CLD Structural Cavity Battens must be fixed to the wall framing over building wrap or RAB Board. The smoother face of batten should face towards the cladding.

CLD Structural Cavity Battens are suitable to withstand wind pressures up to 2.5kPa (uls). For batten fixing, refer to section 5.4. Ensure the battens are straight and provide a flat surface to fix Titan Facade Panel to. Site cut ends of battens must be sealed on site with Dulux® Acraprime 501/1 sealer.

The battens are run continuously over the studs but they must not be run continuously over the floor joists. There must be a 15mm gap between the battens at floor joist level to allow for structural shrinkages and deflections. Refer to Figure 20.

CLD Structural Cavity Battens can be butt jointed over the studs within the floor height. The batten ends must be cut between 20° to 45° and be installed in a way that the butt joint deflects the moisture to the exterior. The ends must be sealed and jointed with the adhesive sealant before butting them together. Refer to Figure 14.

The designer must ensure that the CLD Structural Cavity Battens are not used in situations where design wind pressures are above 2.5kPa (uls).

5.3 INTERMEDIATE SUPPORT

A nylon strap or galvanised wire must be used between the studs to restrain the insulation from bulging into the cavity, where the studs are spaced at 600mm c/c. When RAB Board is used or the studs are spaced at 400mm c/c, no intermediate support is required.

5.4 BATTEN FASTENERS

The CLD Structural Cavity Batten must be fixed to the framing as specified in Table 2. The fasteners must be driven at a minimum distance of 50mm from the batten ends.

TABLE 2

BATTEN FIXING				
Fixing Type	Framing	Wind Pressure kPa	Batten centres max. (mm)	Fixings centres max. (mm)
65mm x 2.8mm RoundDrive ring shank nail hot dip galv./ s. steel	Timber	Up to 1.5	600	300
		Up to 2.5	400	200
40mm x 9-10g Countersunk head steel screw class 3/4	Steel 0.55 to 1.6mm BMT	Up to 1.5	600	300
		Up to 2.5	400	200

For fastener durability information, refer to Clause 6.3 of this document.

6 PANEL INSTALLATION

6.1 GENERAL

Titan Facade Panel and CLD Structural Cavity Battens must be kept under cover whilst in storage or at sites and they must be dry at the time of their installation. All site cut panel edges must be sealed with Dulux Acraprime 501/1 or similar sealer compatible with the finish coat before installation. It is recommended to fix from the centre of the panel and work outwards. The straightness of timber framing is essential to achieve the flatness on panel surface. Ensure that panels are hard against the battens to avoid drumminess.

Apply a continuous 6mm thick bead of Bostik 'Seal N Flex -1' adhesive sealant to the face of CLD Structural Cavity Batten to adhere the Titan Facade Panel to it.

6.2 TITAN FACADE PANEL INSTALLATION

The Titan Facade Panels are fixed to CLD Structural Cavity Battens using one of the following fixings specified in Table 3:

TABLE 3

TITAN FACADE PANEL FIXING

Types of fixings to be used with adhesive sealants	Suitable up to Wind Pressure kPa (uls)	Fixing to CLD Structural Cavity Battens c/c (mm)
C-25 'T'- Head stainless steel brad nail	1.5	150
25 x 2.5mm annular threaded fibre cement nail	2.5	200
25mm x 8-15g OR Pan / Wafer head exposed screw class 3/4	2.5	200
25mm x 10g counter sunk screw class 3/4 or stainless steel	2.5	200

6.2.1 T-HEAD BRAD NAILS

A combination of stainless steel T-head brad nail and Bostik 'Seal N Flex -1' adhesive sealant provides a fast and efficient method of panel installation. It also minimises the preparation required before painting the panels. T-head brad nails are fired using the brad nail guns. The brad nails must be driven flush with the panel surface.

This fixing method is only suitable for projects within the scope of NZS 3604.

Note: Do not use this fixing method in specific engineering design (SED) wind zones.

Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' adhesive sealant to the face of CLD Structural Cavity Batten first then fix the panel with T-head brad nails securing the panel in place while the adhesive cures. Use Paslode C-25 304 stainless steel brad nails.

The edge distance required for fixing T-head brad nails is 10mm. Refer to Figure 5.

6.2.2 FIBRE CEMENT NAILS

Titan Facade Panel can be installed using a 25mm x 2.5mm annular threaded fibre cement nail. These nails must be driven flush with the panel surface. Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' adhesive sealant over the CLD Structural Cavity Batten before fixing Titan Facade Panels. Refer to section 6.3 for the durability requirements.

The edge distance required for fixing fibre cement nails is 12mm. Refer to Figure 7.

6.2.3 COUNTERSUNK SCREWS

Titan Facade Panels must be pre-drilled on the ground before installation using a JH counter sunk drill bit. A 25mm x 10g countersunk screw is suitable for this installation method. The screw head must be countersunk to a depth of 2mm maximum below the Titan Facade Panel surface. Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' adhesive sealant over the CLD Structural Cavity Batten before fixing the Titan Facade Panels.

The typical edge distance required for screw fixing is 18mm. Refer to Figure 9.

The counter sunk screw holes are flush finished with two part epoxy filler. Allow epoxy to cure then prime over. Ensure the epoxy manufacturer's recommendations are followed. Sand the epoxy to a smooth finish with 100-120 grit sandpaper.

6.2.4 EXPOSED HEAD SCREWS

Exposed head screws, e.g. pan, wafer and hex head fasteners may be colour coated to match the panel finish. Use a 25mm x 8-15g screw.

Titan Facade Panels must be pre-drilled with a masonry drill bit. Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' flexible sealant over the CLD Structural Cavity Batten before fixing the Titan Facade Panel over it.

The edge distance required for fixing screws is 18mm.

A nylon washer must be used under the exposed screw heads for sealing against the Titan Facade Panel surface. Refer to Figure 11.

6.3 FASTENER DURABILITY

Fasteners must comply with the minimum durability requirements of the NZBC. The NZS 3604 specifies the requirements for fixing materials to be used in relation to exposure zones and are summarised in Table 4.

Fasteners must be fully compatible with other materials they are to be in contact with, to ensure the durability of complete assembly.

For steel framing ensure that the fasteners used are compatible with steel framing.

Contact fastener manufacturers for more information.

TABLE 4

EXPOSURE CONDITIONS & NAIL SELECTION PRESCRIBED BY NZS 3604

Nail Material		
Sea Spray Zones*	Zone 1 outside sea spray zone and Zones 2-4 & Geothermal hot spots	Bracing — All Zones
Grade 316 Stainless	Hot-dipped galvanised or 316 stainless	Grade 316 Stainless

*(Zone 1 areas where local knowledge dictates that increased durability is required, appropriate selection shall be made)

Also refer to the NZBC Acceptable Solution 'E2/AS1' Table 20 and 22 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

6.4 ADHESIVE SEALANT

A polyurethane adhesive sealant 'Seal 'N' Flex 1' manufactured by Bostik has been tested and must be used as per this specification. Apply a 6mm continuous bead of this adhesive sealant over the face of CLD Structural Cavity Batten before fixing Titan Facade Panel.

7 JOINTS

Titan Facade Panels are fixed keeping a 10mm nominal gap between panels at vertical and horizontal joints.

7.1 VERTICAL JOINT

CLD Structural Cavity Batten is fixed over the studs and a vertical joint is formed over the batten. A 10mm gap is required between the panels to form a vertical expressed joint. After the installation of panels to CLD Structural Cavity Battens, the joints must be sealed with a flexible sealant. Refer to Figure 5, 7, 9 & 11.

7.2 HORIZONTAL JOINT

Aluminium 'T' socket or a Z flashing is used to form a horizontal joint between the panels.

When using a 'T' socket, it is cut to suit the exact width of each panel. Two 6mm thick continuous beads of adhesive sealant are run over the bottom (short) portion of 'T' socket. Refer to Figure 19. The socket is glued to the upper rear face of panel. The 'T' lip sits over the top edge of lower Titan Facade Panel.

When a horizontal joint using a 'T' socket is formed at the floor joist level, a cavity batten flashing is required at the CLD Structural Cavity Batten joint. Refer to Figure 20.

At internal and external corner a CLD Structural Cavity Batten corner flashing is used. Refer to Figure 21.

7.3 EXTERNAL AND INTERNAL CORNERS

Two CLD Structural Cavity Battens are fixed in the corners to facilitate the fixing of Titan Facade Panel to battens on each side. Refer to Figure 12 & 13.

A 10mm gap is required between the Titan Facade Panels to form a vertical expressed joint at corners. Ensure the correct batten panel orientation for panel installation and a continuous bead of adhesive sealant is applied between CLD Structural Cavity Battens. Refer to Figure 12 & 13.

8 FINISHES

8.1 PAINTING

Painting of Titan Facade Panel is mandatory to meet the durability requirements of NZBC and 15 year James Hardie product warranties. Titan Facade Panels must be dry and free of any dust or grime before painting. The panels must be painted within 90 days of their installation.

Titan Facade Panels are pre-primed and are suitable for site applied acrylic paints. Pre-finished panels can also be installed using exposed head fasteners.

For site-applied finishes, James Hardie recommends a minimum of two coats of acrylic paint. Follow the paint manufacturer's recommendations to prepare the surface and to adequately cover the sanded smooth fillers applied over the concealed fixings, see Clause 8.3.

In order to seal cut edges or sanded patches, Dulux AcraPrime 501/1 acrylic primer or a similar product should be applied. The primer should be compatible with the paint to be used.

8.2 FLEXIBLE SEALANT

Sealant used must comply with the relevant requirements of NZBC. Application and use of sealants must comply with the manufacturer's instructions. Check with the sealant manufacturer prior to coating over sealant. Some sealant manufacturers do not recommend coating over their product.

8.3 EPOXY FILLERS

All countersunk screw holes must be filled with a two part epoxy e.g. Nuplex Faring Cream or a similar epoxy filler. The screw holes must be clean and dry before they are filled with epoxy. Always refer to the epoxy manufacturer recommendation before use.

9 STORAGE AND HANDLING

Titan Facade Panel, CLD Structural Cavity Batten and RAB Board must be laid flat on a smooth level surface. Edges and corners must be protected from chipping. To ensure optimum performance, store panels under cover and keep dry prior to fixing. If the sheets become wet, allow them to dry thoroughly before fixing. Do not carry sheets or CLD Structural Cavity Battens on the flat, carry in the vertical position to avoid excessive bending.

10 MAINTENANCE

It is the responsibility of the specifier to determine normal maintenance requirements to maintain the effectiveness of the cladding. The extent and nature of maintenance required will depend on the geographical location and exposure of the building. As a guide, it is recommended that the basic normal maintenance tasks shall include, but not be limited to:

- Washing down exterior surfaces every 6-12 months*
- Re-coating exterior protective finishes*
- Regular inspection and repair if necessary of the facade panels, sealants, Butyl and Inseal® strips etc.
- Cleaning out gutters, down pipes and overflow pipes as required
- Pruning back vegetation which is close to or touching the building as well as ensuring the NZBC ground clearance requirements are maintained especially where gardens are concerned.
- The clearance between the bottom edge of the Titan Facade Panel cladding and the finished/unfinished ground must always be maintained.
- Refilling the countersunk holes where the cracks start appearing in the paint film around epoxy fillers or where fastener head through becomes significant.

**Refer to the paint manufacturer for washing down and recoating requirements related to ongoing paint performance.*

11 PRODUCT INFORMATION

11.1 MATERIAL

Titan Facade Panel and RAB Board are high quality autoclaved medium density fibre cement products manufactured by James Hardie. The basic composition is Portland cement, ground sand, cellulose fibre and water. The products are easily identified by the name Titan or RAB written on the rear face. Titan Facade Panel is sealed and primed on the face and RAB Board is face sealed.

CLD Structural Cavity Battens are manufactured using a low density fibre cement formulation. The basic composition is Portland cement, ground sand, cellulose fibre, water and proprietary additives. The battens are factory sealed on all sides.

Titan Facade Panels, RAB Board and CLD Structural Cavity Battens are manufactured to AS/NZS 2908.2 'Cellulose-Cement Products' Part 2 (ISO 8336 'Fibre-Cement Flat Sheet'). James Hardie New Zealand is an ISO 9001 'Telarc' certified manufacturer. Titan Facade Panel and RAB Board and CLD Structural Cavity Battens are classified Type A, Category 3 in accordance with AS/NZS 2908.2 'Cellulose-Cement Products' standard.

The approximate mass of 9mm Titan Facade Panel is 13kg/m². For panel sizes see Table 8.

11.2 DIMENSIONAL PROPERTIES

Titan Facade Panel sizes and tolerances have been outlined in the following table.

TABLE 5

TITAN FACADE PANEL PROPERTIES	
Properties	Equilibrium Condition
Thickness	9mm
Approx. Moisture Content	3% - 5%
Width Tolerance	+/- 1mm
Length Tolerance	-4mm
Thickness Tolerance	-0.2/+0.4mm
Diagonal Difference	+/- 3mm
Approx. Mass	13kg/m ²
Width	1190mm
Length	2400mm, 2700mm or 3000mm

RAB Board sizes are given in Table 8.

11.3 DURABILITY

Titan Facade Panel, RAB Board and CLD Structural Cavity Batten installed and maintained as per this technical specification will meet the durability requirement for claddings as per 'B2 - Durability' clause of NZBC.

11.3.1 RESISTANCE TO MOISTURE/ROTTING

Titan Facade Panel, RAB Board and CLD Structural Cavity Batten has demonstrated resistance to permanent moisture induced deterioration (rotting) by passing the following tests in accordance with AS/NZS 2908.2:

- Water Permeability (Clause 8.2.2)
- Warm Water (Clause 8.2.4)
- Heat Rain (Clause 6.5)
- Soak Dry (Clause 8.2.5)

11.3.2 FIRE INDICES

Titan Facade Panel is suitable where non-combustible materials are required. The Titan Facade Panel has been tested by CSIRO and has the following Early Fire Hazard Indices (tested to AS 1530 Part 3).

TABLE 7

EARLY FIRE HAZARD INDICES	
Ignition Index	0
Flame Spread Index	0
Heat Evolved Index	0
Smoke Developed Index	0-1

Note: Zero is the best possible result.

11.3.3 ALPINE REGIONS

In regions subject to freeze/thaw conditions, Titan Facade Panel, RAB Board and CLD Structural Cavity Battens must not be in direct contact with snow and/or ice build up for extended periods, e.g. external walls in alpine regions be cleared from snowdrifts over winter. These products have been tested for resistance to frost in accordance with AS/NZS 2908.2 Clause 8.2.3.

12 SAFE WORKING PRACTICE

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain sand, a source of respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'Score and Snap' knife, fibre cement shears or, where not feasible, use a HardiBlade® Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods — never dry sweep. For further information, refer to our installation

instructions and Material Safety Data Sheets available at www.jameshardie.co.nz FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES

CUTTING OUTDOORS

1. Position cutting station so that wind will blow dust away from user or others in working area.
2. Use a dust reducing circular saw equipped with HardiBlade® Saw Blade and HEPA vacuum extraction

SANDING/DRILLING/OTHER MACHINING

When sanding, drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.

IMPORTANT NOTES:

1. NEVER use a power saw indoors
2. NEVER use a circular saw blade that does not carry the HardiBlade® logo
3. NEVER dry sweep – Use wet suppression or HEPA Vacuum
4. NEVER use grinders
5. ALWAYS follow tool manufacturer's safety recommendations

P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

WORKING INSTRUCTIONS

Refer to Recommended Safe Working Practices before starting any cutting or machining of product.

HARDIBLADE® SAW BLADE

The HardiBlade® Saw Blade used with a dust-reducing saw fitted with HEPA vacuum filter is ideal for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.



HOLE-FORMING

For smooth clean cut circular holes:

- Mark the centre of the hole on the sheet.
- Pre-drill a 'pilot' hole.
- Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.



For irregular holes:

- Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.
- Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.

HANDLING AND STORAGE

All materials should be stored to avoid damage, with edges and corners of the panels protected from chipping.

Panels must be protected from rain during transport and storage. Panels must be laid flat undercover on a smooth level surface clear of the ground to avoid exposure to water or moisture etc. Titan Facade Panel, RAB.Board and CLD Structural Cavity Batten are resistant to permanent water damage when installed as directed, and must only be installed in a dry state.

When handling Titan Facade Panels, carry panels on the edge taking care not to chip edges and corners.

Refer to the current installation manual for recommended Safe Working Practices.

QUALITY

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

13 PRODUCT AND ACCESSORIES

TABLE 8:

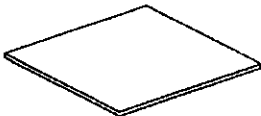
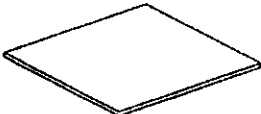
TITAN FACADE PANEL INFORMATION					
PRODUCT	DESCRIPTION	SIZE			
	Titan Facade Panel A square edge panel for expressed jointed building facades. Titan Facade Panel is primed with a distinctive primer, which accepts a wide range of paint finishes. The panel must be installed with the primed side facing outwards.	Thickness (mm)	Width (mm)	Length (mm)	Product Code
		9	1190	2400	403023
		9	1190	2700	403022
		9	1190	3000	403021
	RAB Board RAB Board is used as a rigid air barrier. It has green colour sealer applied over one face. Installed with green side facing out.	Thickness (mm)	Width (mm)	Length (mm)	Product Code
		5.5	1200	2400	402980
		5.5	1200	3000	402981

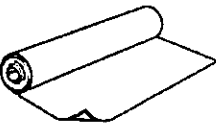
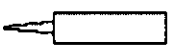
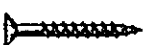
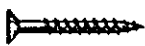
TABLE 9:

ACCESSORIES/TOOLS SUPPLIED BY JAMES HARDIE			
	DESCRIPTION	QUANTITY/SIZE (APPROX)	PRODUCT CODE
	CLD Structural Cavity Batten 19mm thick fibre cement cavity batten installed over RAB Board or a building wrap. Titan Facade Panels are fixed to the battens.	19 x 70mm, 2450mm long Pack of 48 battens	403870
	Aluminium 'T' socket T socket is used to form a horizontal negative joint.	2400mm and 3000mm	304103 304105
	HardiBlade® Saw Blade Diamond tip 185mm diameter fibre cement circular saw blade. Spacers not included.	Each	300660
	James Hardie Countersunk Tungsten Carbide drill bit 9mm Countersinking bit.	Each	300567
	Annular Threaded nail 25 x 2.5mm nail.	500gm	300390
	Nylon washer Neoprene washer is used to between the panel and screw head for weathertightness.	1,000 per pack	302761
	CLD Batten Flashing Aluminium Used to flash the battens normally at floor joist levels.	Pack of 20	304651
	CLD Batten Corner Flashing Aluminium Used to flash the battens around corners at floor joist levels.	Pack of 20	304652
	Inseal 3259 Tape For sealing the vertical joints of RAB Board.	50mm x 50m Roll	300767
		80mm x 50m Roll	300769
	uPVC Vent Strip 32.5mm x 18mm wide x 3000mm	25 per pack	302490

TABLE 10:

ACCESSORIES/TOOLS NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with Titan Facade Panel, RAB Board and CLD Structural Cavity Batten. James Hardie does not supply these products and does not provide a warranty for their use. Please contact component manufacturer for information on their warranties and further information on their products.

PRODUCT	DESCRIPTION
	Building wrap Must comply with Table 23 of E2/AS1
	Flexible Window Opening Flashing Tape A flexible self-adhesive tape used in preparation of a window. Refer to the window installation section in this manual for more information. e.g. Protecto or Aluband® by Thermakraft Protecto: 0800 776 9727 Thermakraft: 0800 806 595
	RAB Board Joint Sealing tape The tape to be used to seal RAB Board vertical joints. Protecto or Aluband® by Thermakraft Protecto: 0800 776 9727 Thermakraft: 0800 806 595
	Titanium Drill Bit Used to pre-drill clearance holes for exposed head screws.
	Epoxy Flush Sealing (2 Part) Countersunk head screws are flush sealed using Nuplex Fairing cream or similar epoxy.
	Joint Adhesive Sealant 'Seal N Flex-1' Polyurethane adhesive sealant manufactured by BOSTIK for applying between the panels and battens. Refer to section 7 for more information. BOSTIK: AKL: (09) 579 6253, WGTN: (04) 567 5119, CHCH: (03) 366 2583.
	Flexible Sealant Required to seal the vertical joints. Fosroc MS or similar.
FASTENERS	
	Countersunk Screw 25mm x 10g countersunk screws (Class 3/4 or stainless steel) for fixing of Titan Facade Panels to CLD Structural Cavity Battens.
	Pan Head Fasteners 25mm x 8-15g pan head screws (Class 3/4) for fixing of Titan Facade Panels to CLD Structural Cavity Battens.
	Wafer Head Fasteners 25mm x 8-15g wafer head screws (Class 3/4). For fixing of Titan Facade Panels to CLD Structural Cavity Battens.
	C-25 Stainless Steel Brad Nails 304SS brad nails used to install Titan Facade Panels to the CLD Structural Cavity Battens with adhesive polyurethane sealant. Paslode: (09) 477 3000
	Countersunk Screw 40mm x 9-10g Class 3/4 for fixing CLD Structural Cavity Batten to steel framing.
	65 x 2.87mm Round Drive Ring Shank Nail For fixing CLD Structural Cavity Battens to the framing. Paslode: (09) 477 3000
PROTECTO WRAP , ALUBAND®, DULUX ACRAPRIME ,TYVEK® FLEXWRAP™ ARE TRADEMARKS REGISTERED TO THEIR MANUFACTURES.	

14 DETAILS

Various details outlined in the following table are available on Pages 15 to 30

DETAILS		
DESCRIPTION	FIGURE	PAGE
Framing Setout	Figure 1	15
Batten Fixing Setout	Figure 2	15
Sheet Fixing Setout	Figure 3	16
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Intermediate Stud Fixing Using 'T' Head Brad Nails	Figure 6	17
Alternate Vertical Expressed Joint Using Annular Threaded Nails	Figure 7	18
Alternate Intermediate Stud Fixing Using Annular Threaded Nails	Figure 8	18
Alternate Vertical Expressed Joint Using Countersunk Screws	Figure 9	19
Alternate Intermediate Stud Fixing Using Countersunk Screws	Figure 10	19
Alternate Vertical Expressed Joint Using Exposed Screws	Figure 11	20
Internal Corner	Figure 12	20
External Corner	Figure 13	21
Jointing of CLD Structural Cavity Batten	Figure 14	21
Window Sill	Figure 15	22
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Soffit Detail	Figure 18	23
Mid Floor Aluminium Socket Joint	Figure 19	24
'T' Socket Joint At Floor Joist	Figure 20	25
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Drained Flashing Joint At Floor Joist	Figure 22	27
Enclosed Deck	Figure 23	28
One Piece Apron Flashing Joint	Figure 24	28
Roof to Wall Junction Detail	Figure 25	29
Parapet Flashing	Figure 26	29
Meter Box At Sill	Figure 27	30
Meter Box At Jamb	Figure 28	30
Meter Box At Head	Figure 29	31
Socket Joint Detail At Window Head	Figure 30	32
'T' Socket Joint At Window Head	Figure 31	33

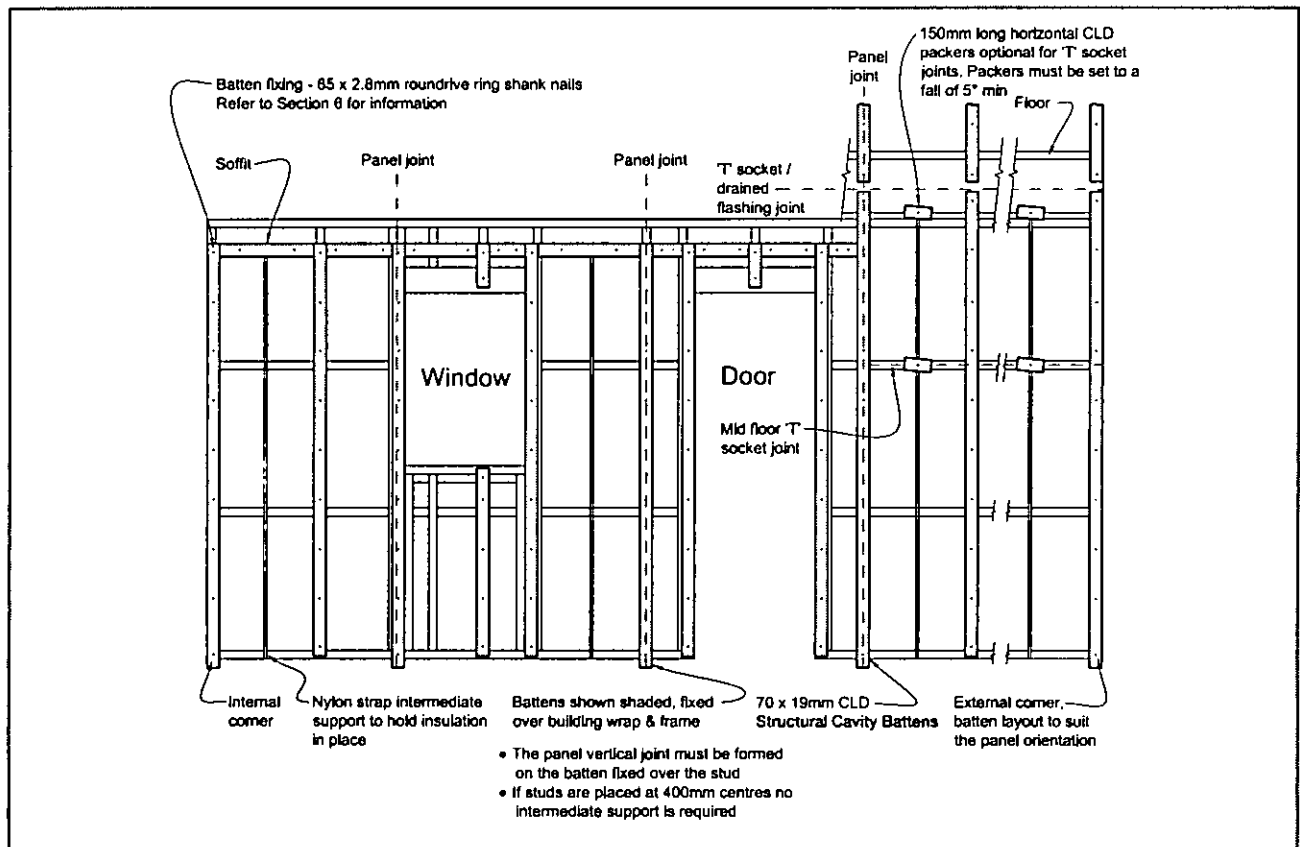


FIGURE 1: FRAMING SETOUT

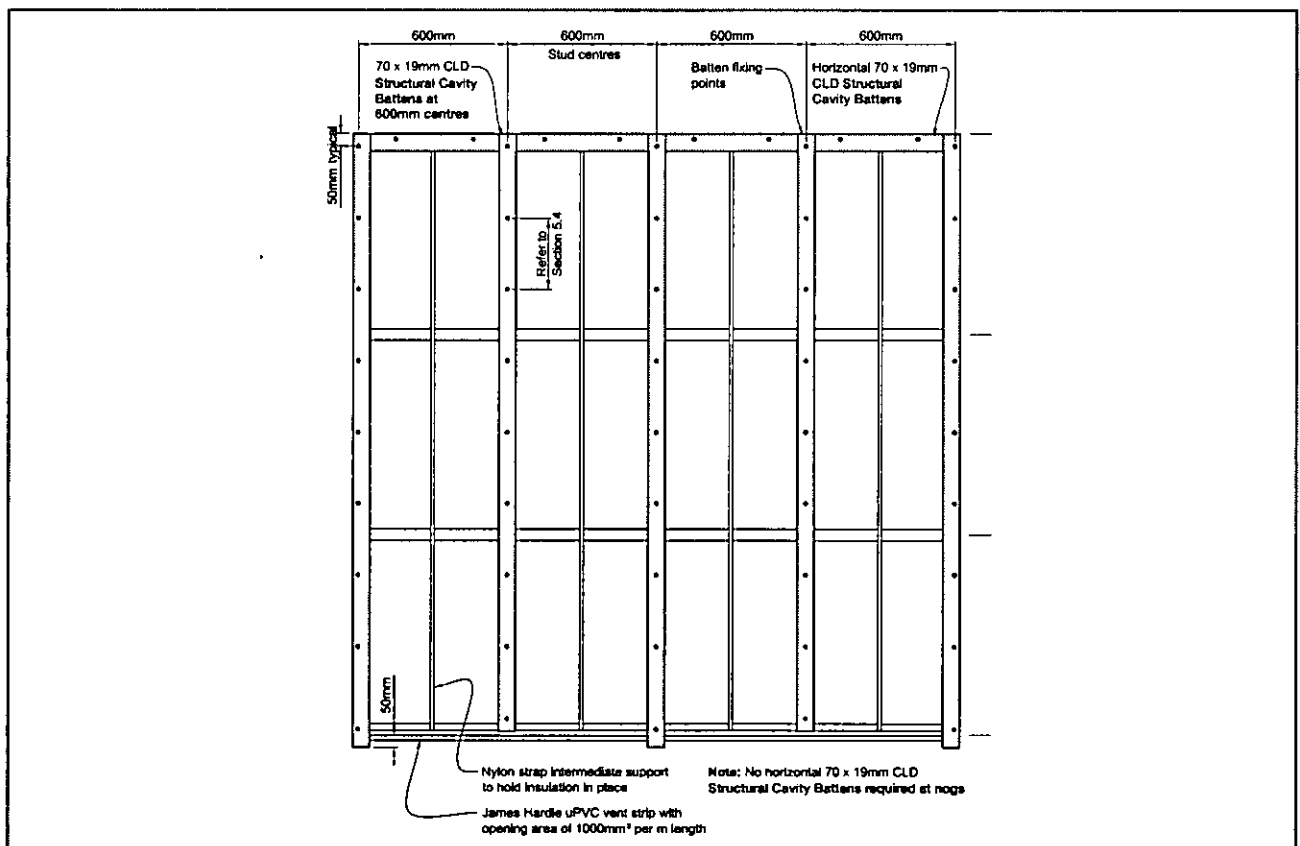


FIGURE 2: BATTEN FIXING SETOUT

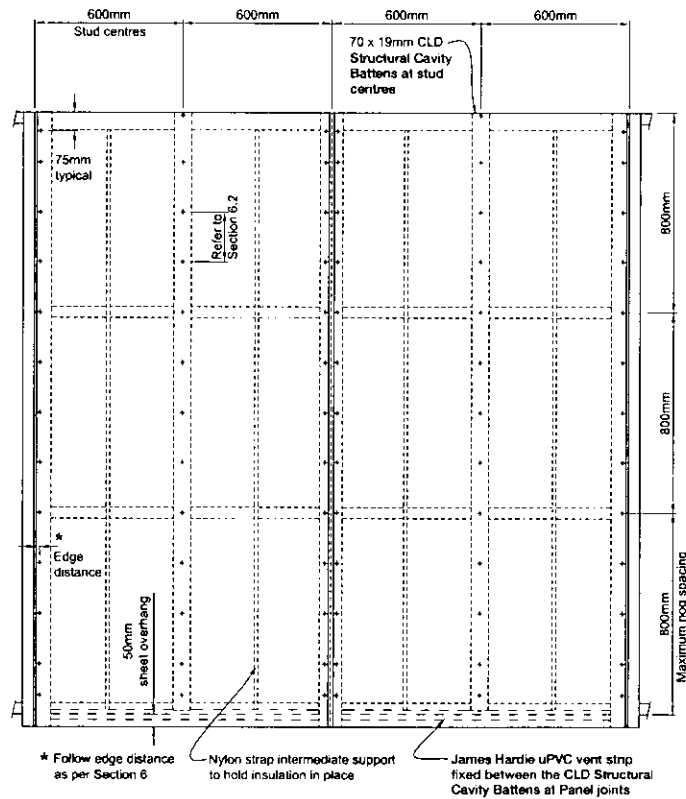
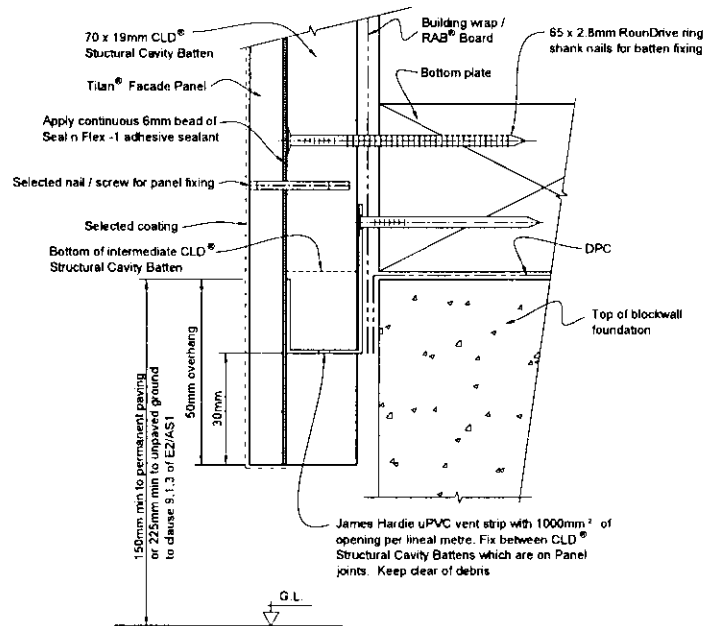


FIGURE 3: SHEET FIXING SETOUT



Notes:

- Check panel extends past bottom plate as specified in Architects specification (50mm min).
- uPVC Vent strip must remain level and secure during construction. Cut and fix uPVC vent strip between CLD Structural Cavity Battens fixed under the panel joints.
- Check vent strip is free from site debris.
- Refer to Table 3 for Titan Facade Panel fixing options.

FIGURE 4: FOUNDATION DETAIL

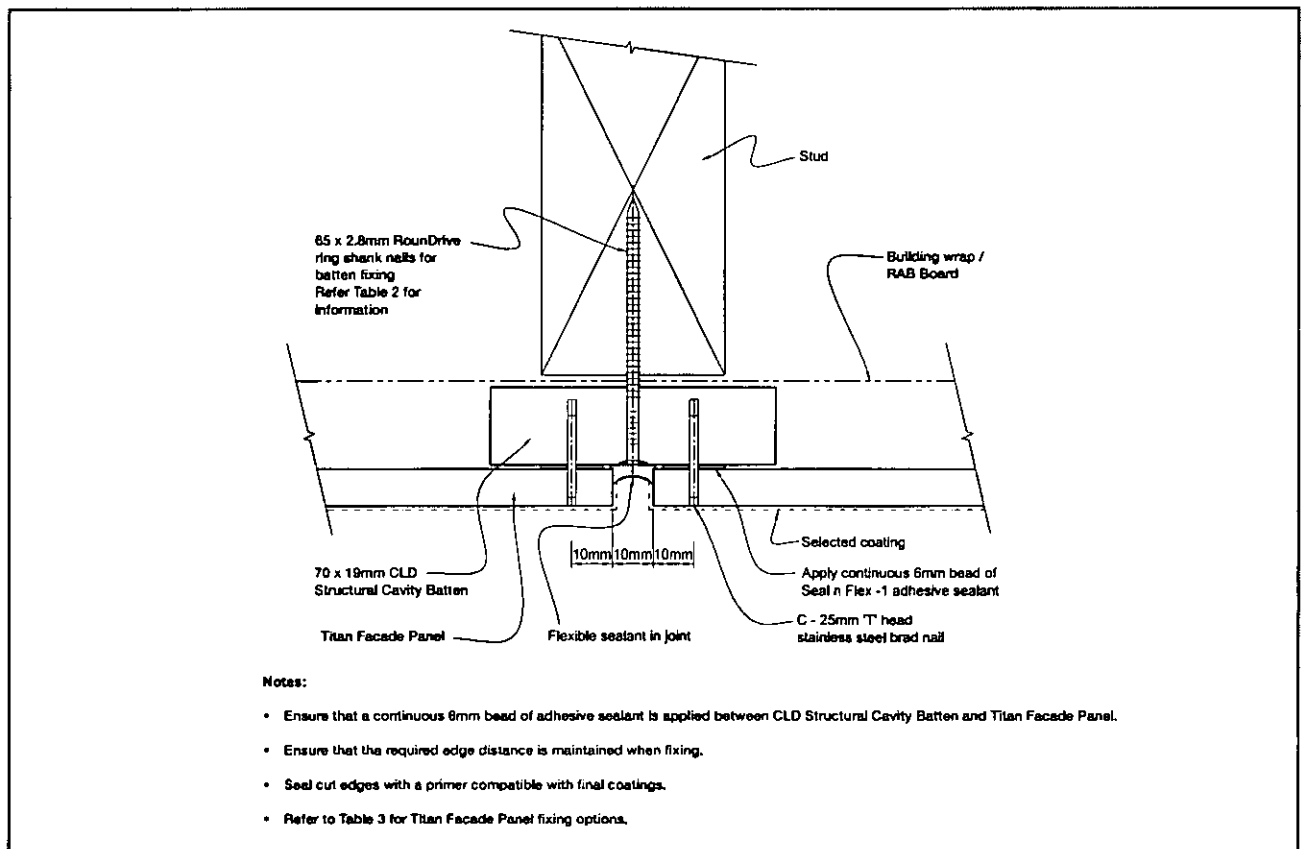


FIGURE 5: VERTICAL EXPRESSED JOINT USING 'T' HEAD BRAD NAILS

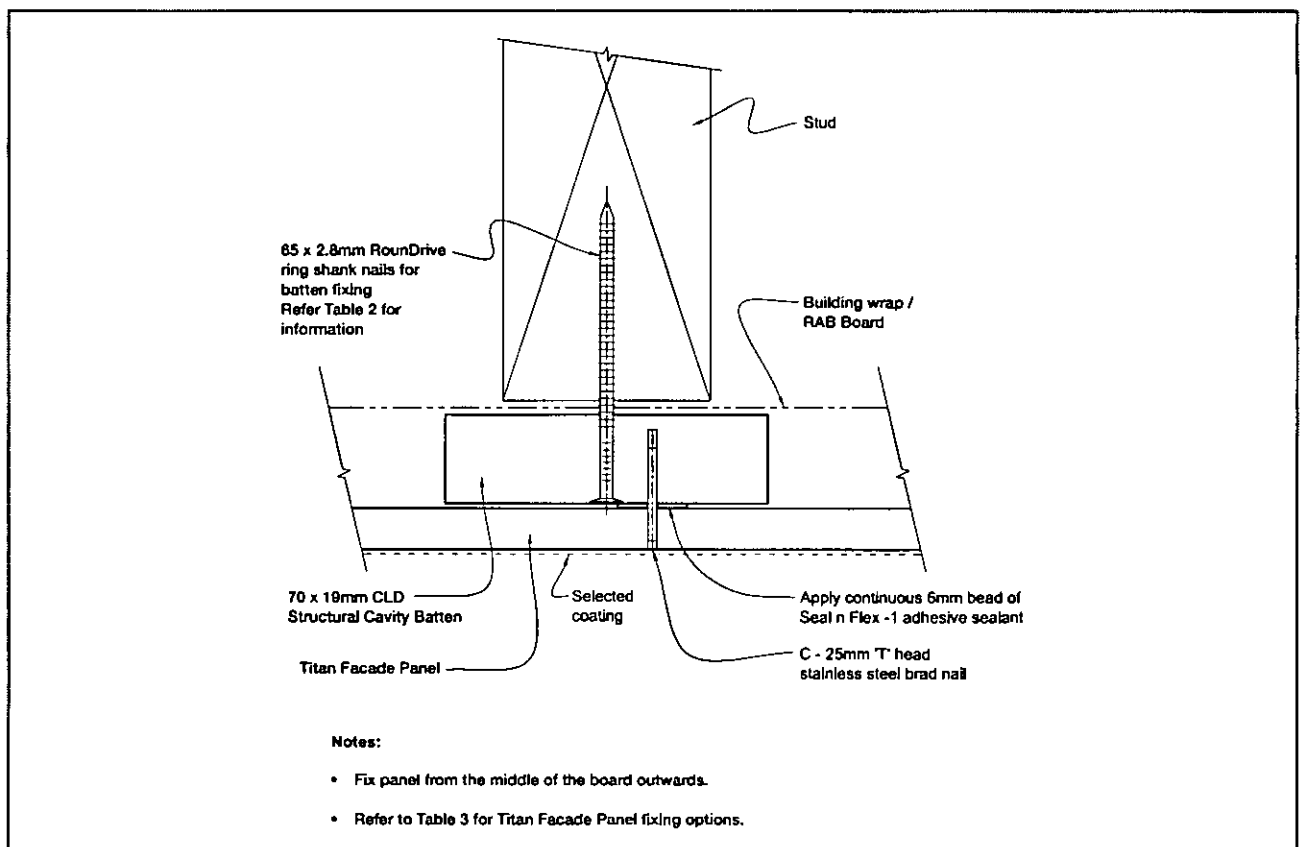


FIGURE 6: INTERMEDIATE STUD FIXING USING 'T' HEAD BRAD NAILS

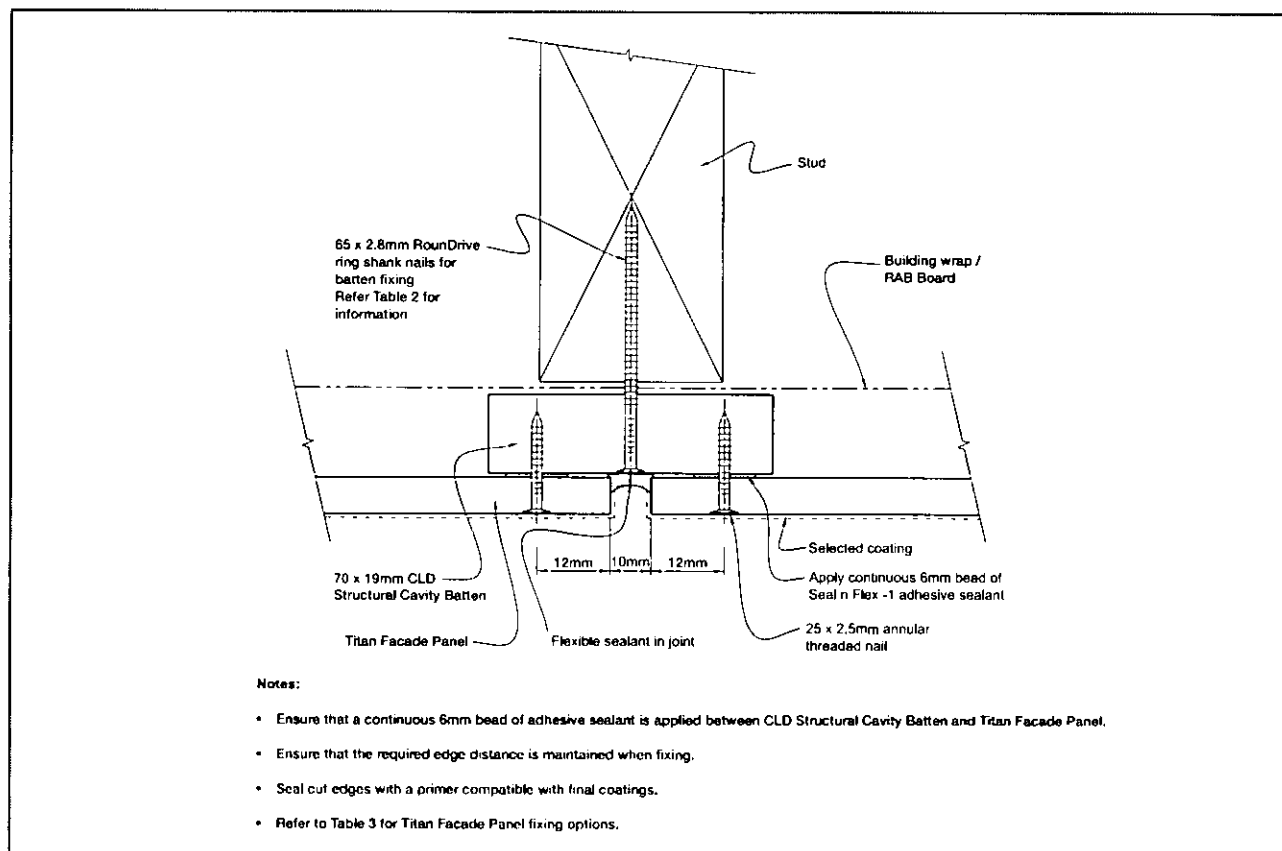


FIGURE 7: ALTERNATE VERTICAL EXPRESSED JOINT USING ANNULAR THREADED NAILS

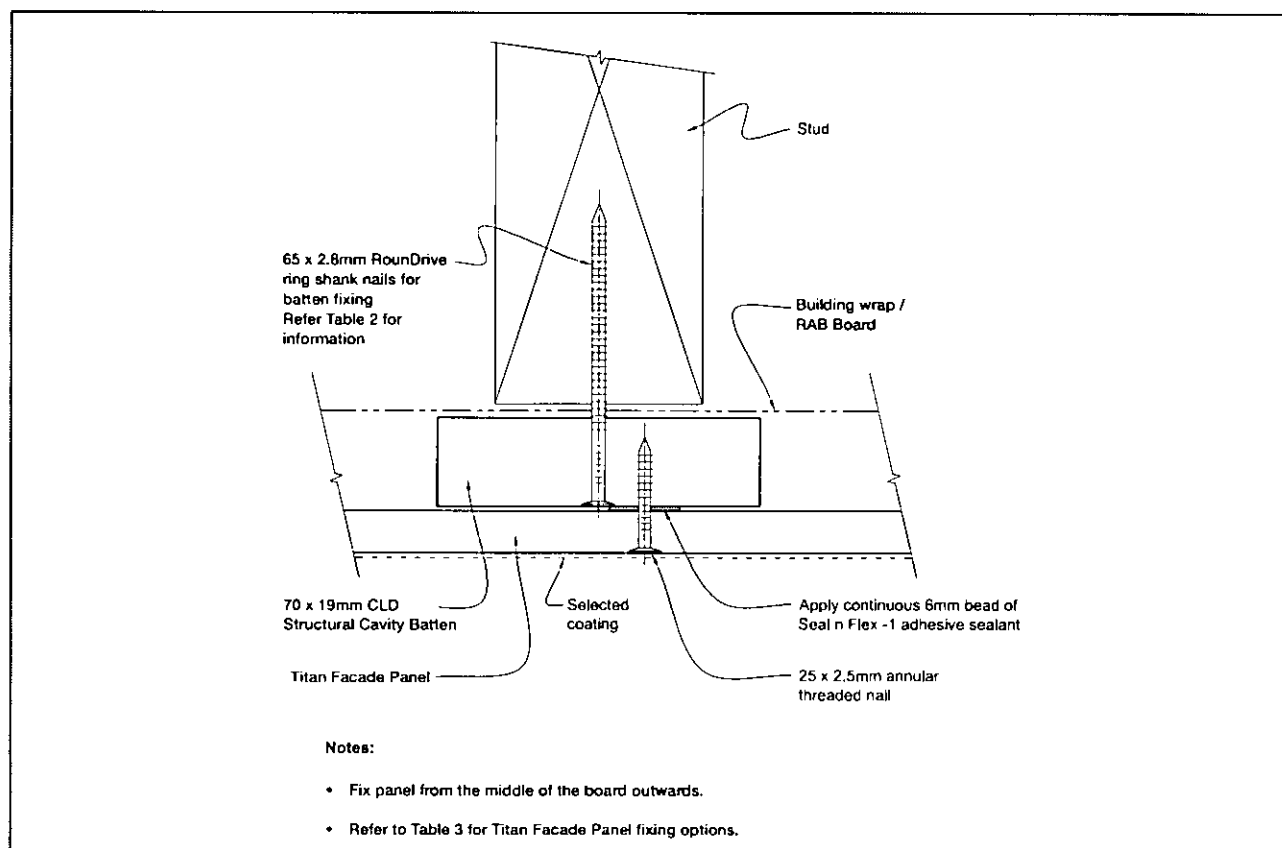


FIGURE 8: ALTERNATE INTERMEDIATE STUD FIXING USING ANNULAR THREADED NAILS

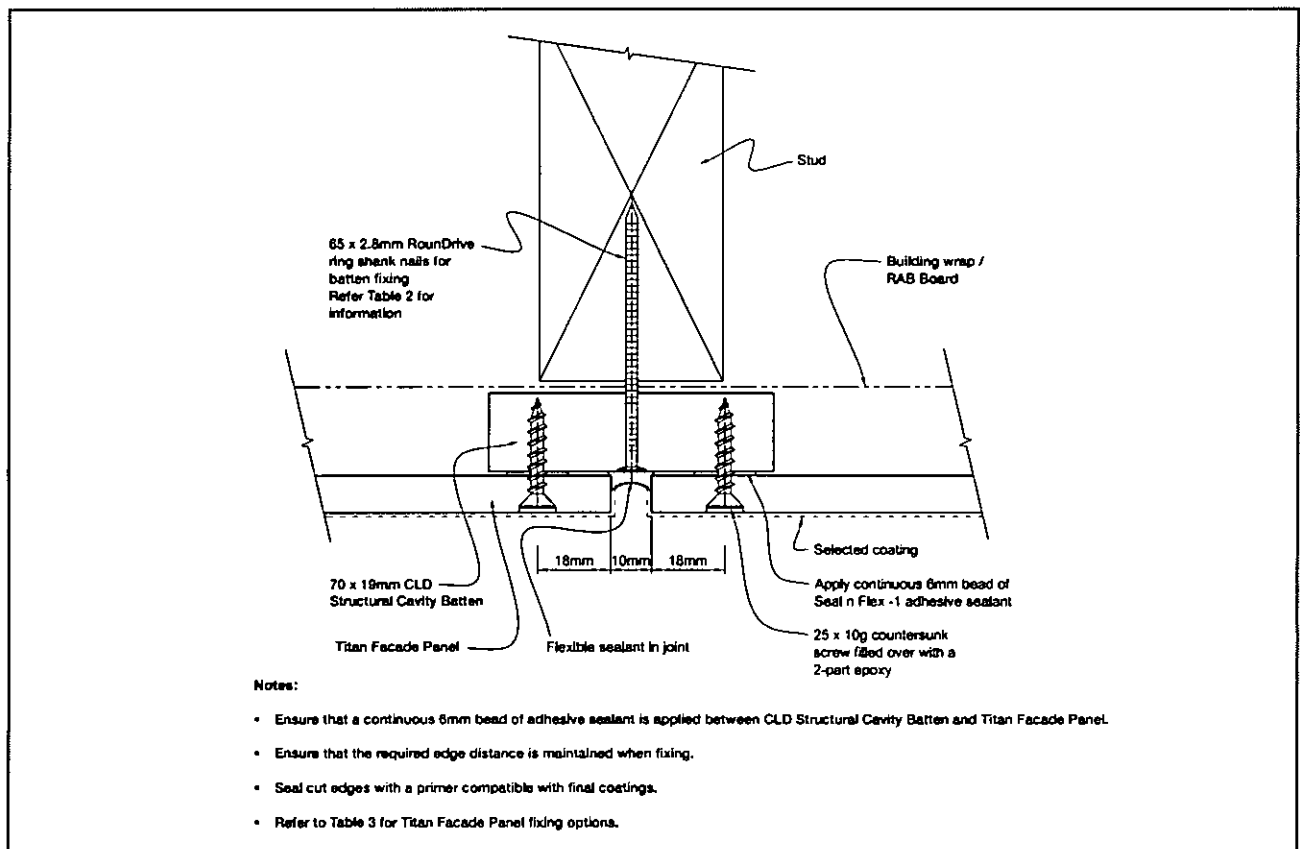


FIGURE 9: ALTERNATE VERTICAL EXPRESSED JOINT USING COUNTERSUNK SCREWS

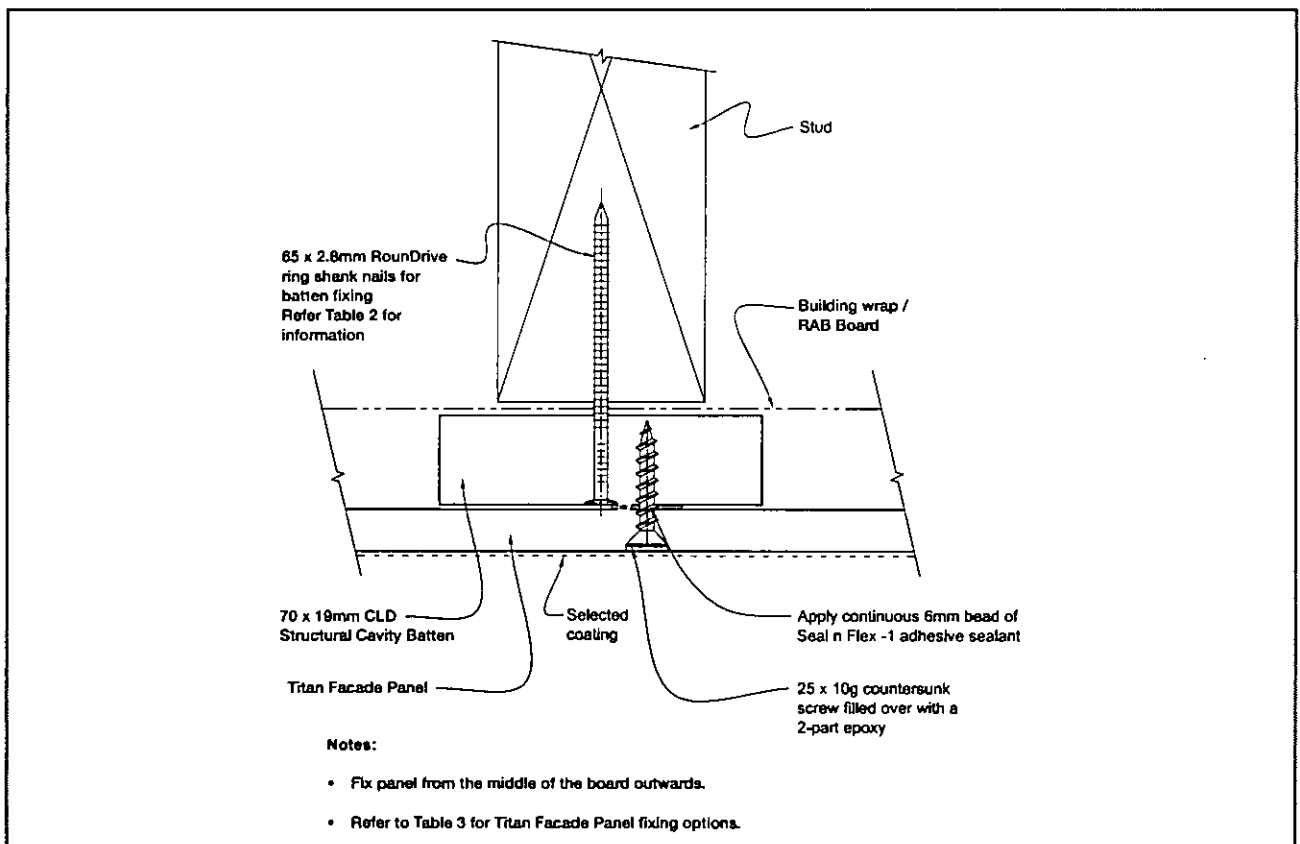


FIGURE 10: ALTERNATE INTERMEDIATE STUD FIXING USING COUNTERSUNK SCREWS

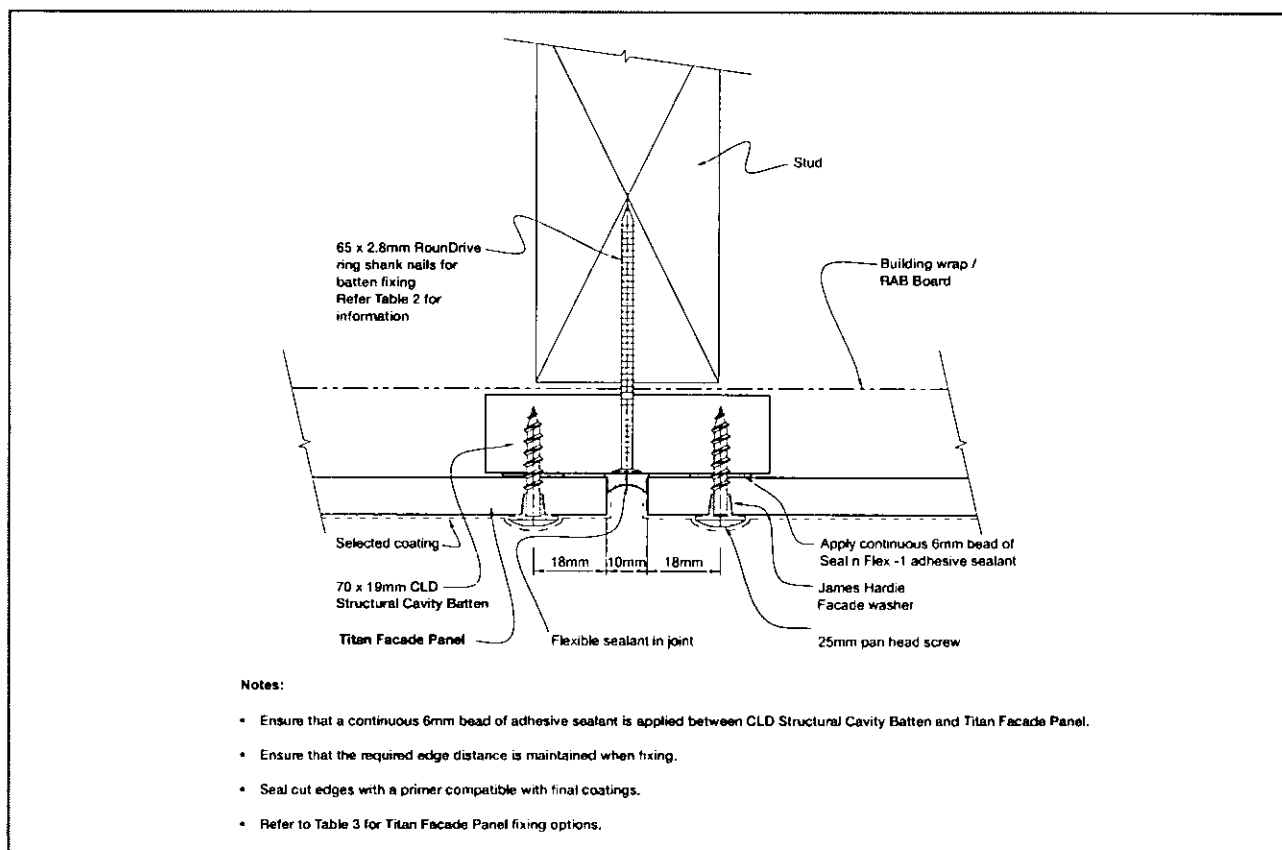


FIGURE 11: ALTERNATE VERTICAL EXPRESSED JOINT USING EXPOSED SCREWS

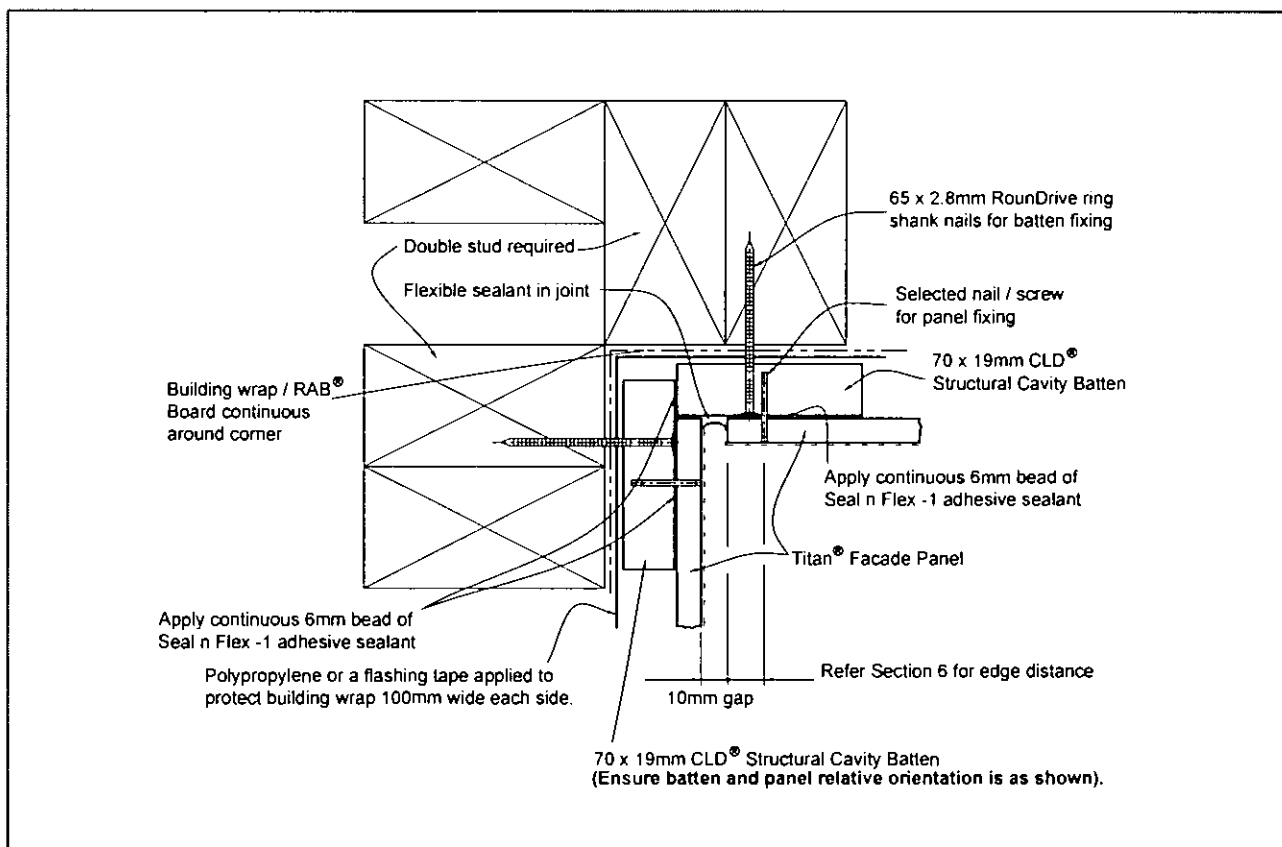


FIGURE 12: INTERNAL CORNER

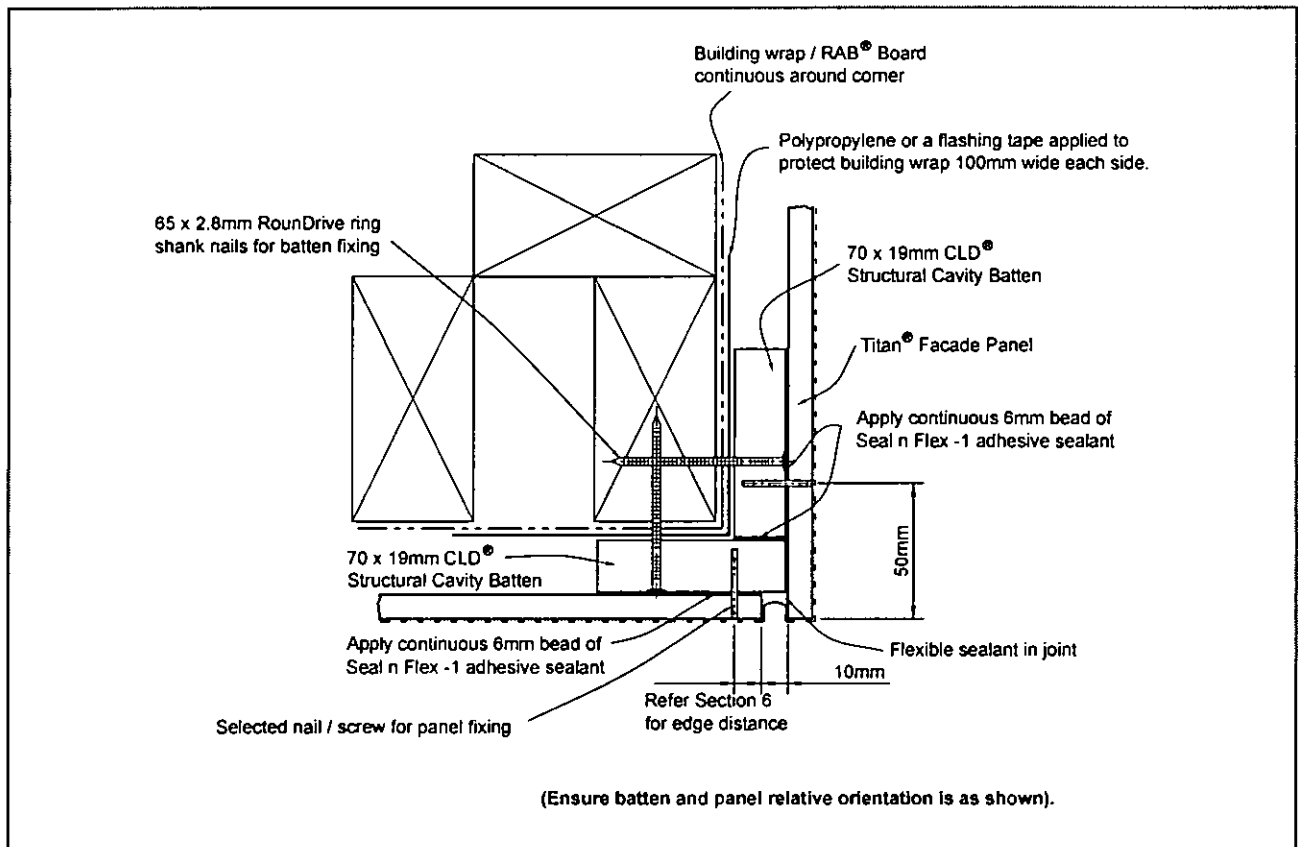


FIGURE 13: EXTERNAL CORNER

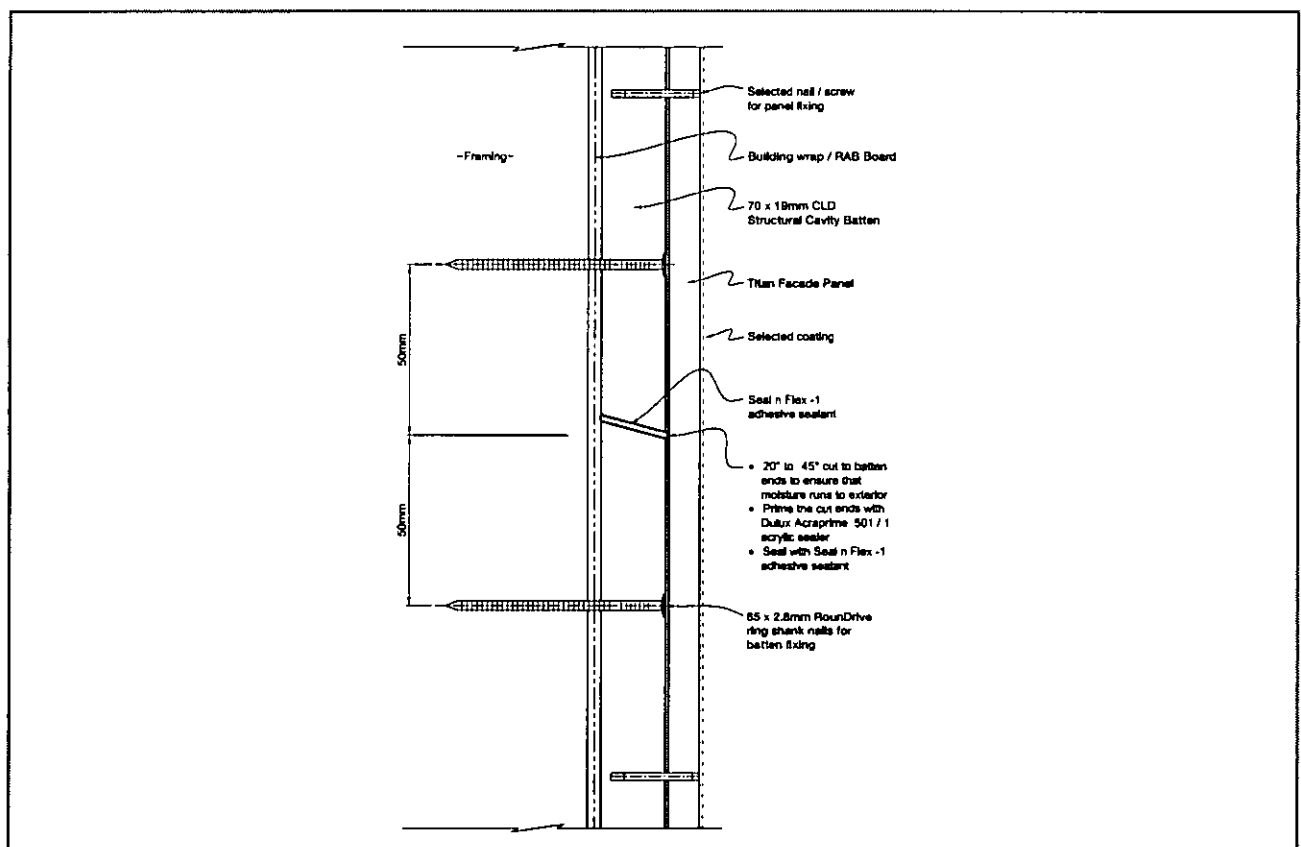


FIGURE 14: JOINTING OF CLD STRUCTURAL CAVITY BATTEN

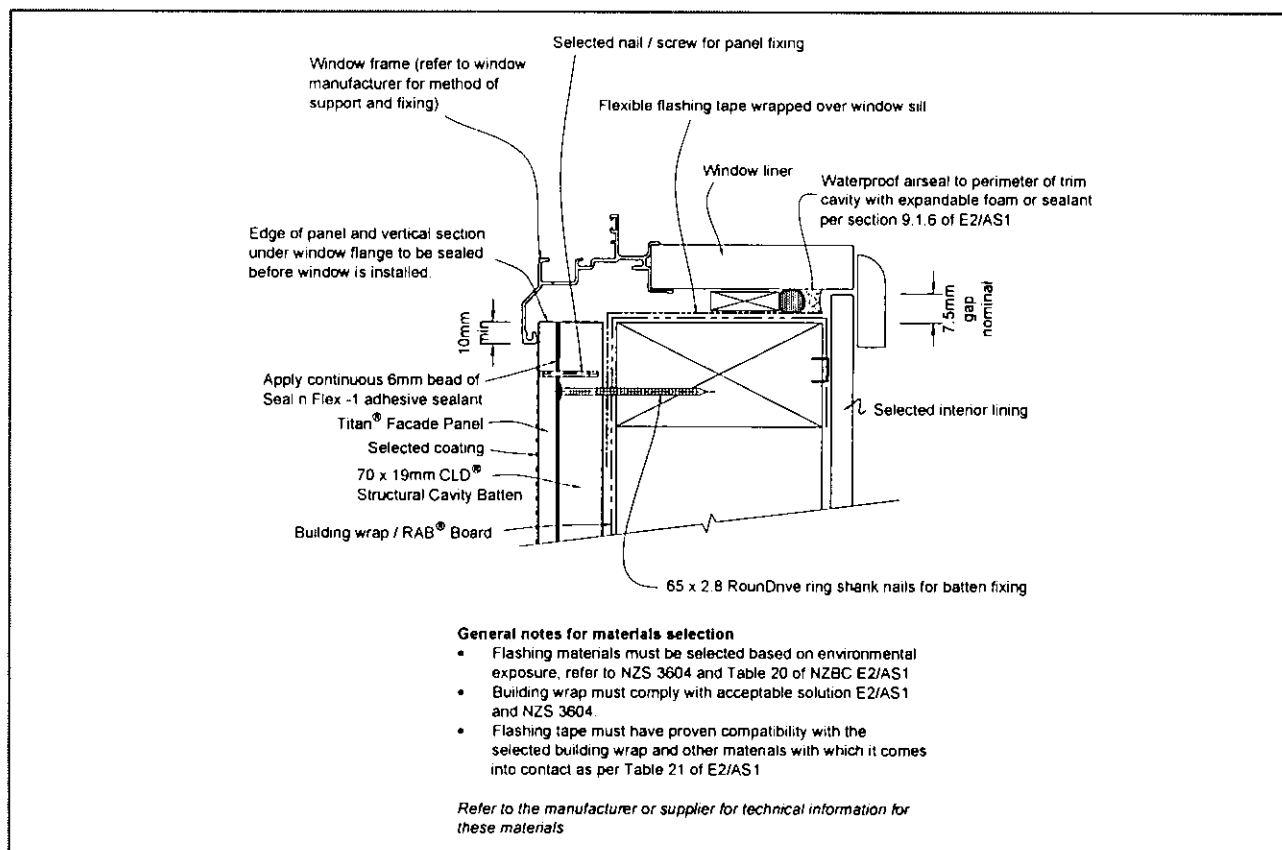


FIGURE 15: WINDOW SILL

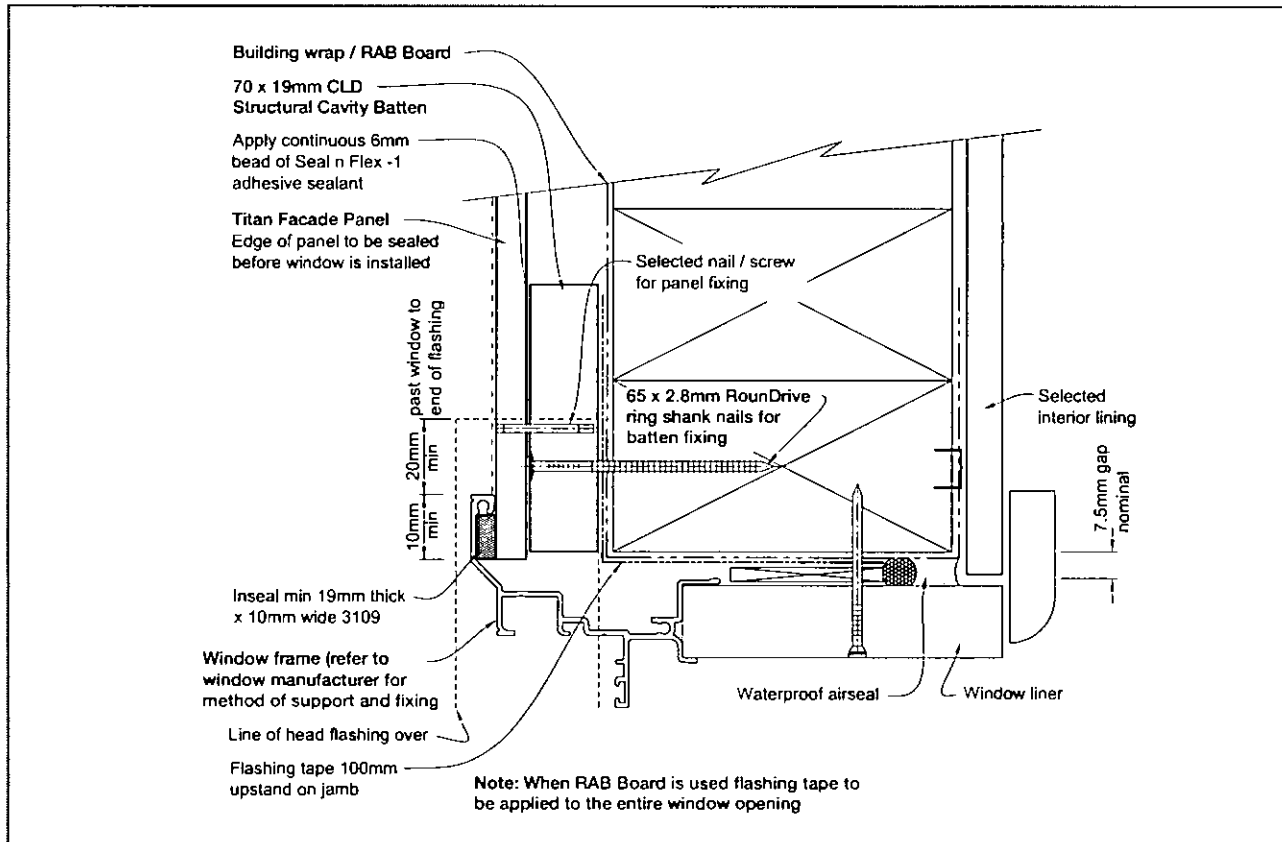


FIGURE 16: WINDOW JAMB

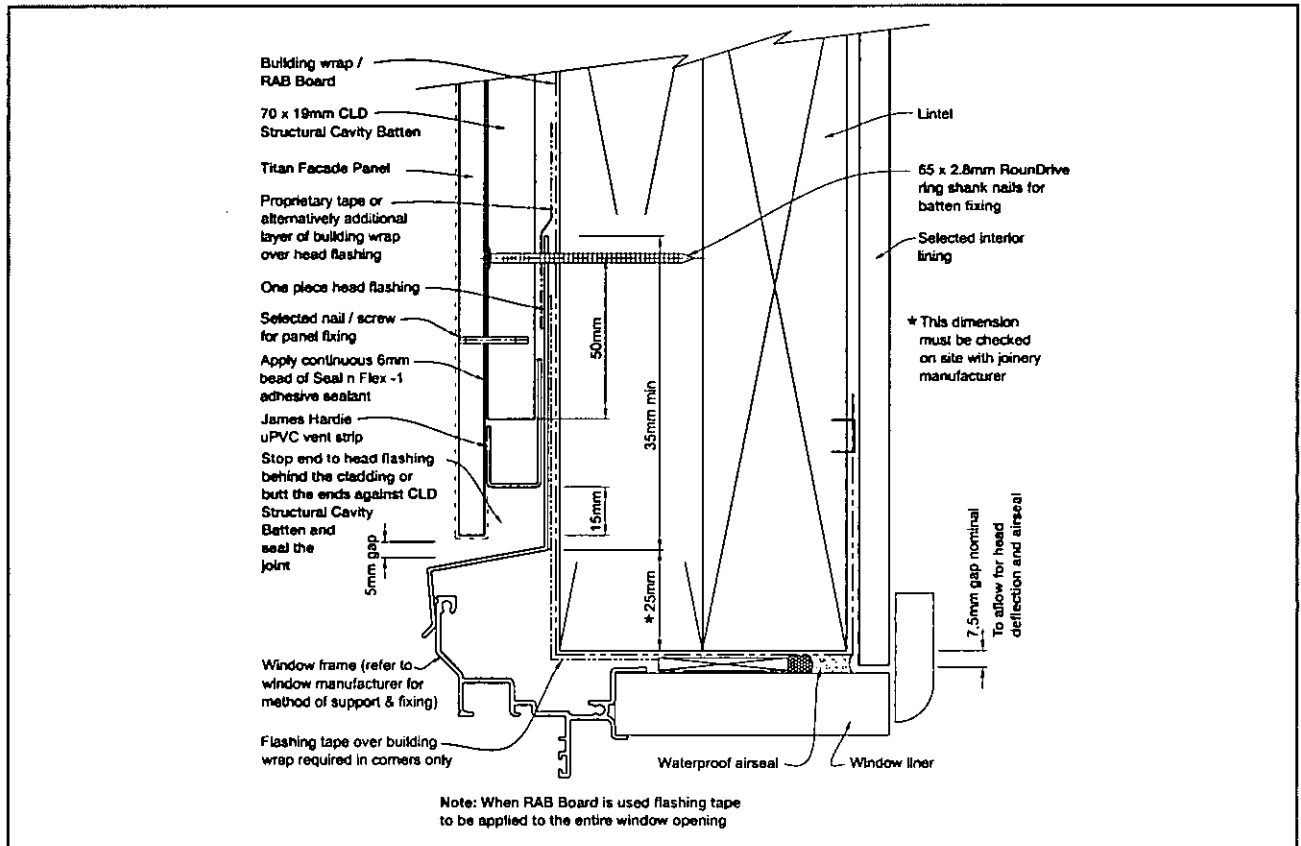


FIGURE 17: WINDOW HEAD

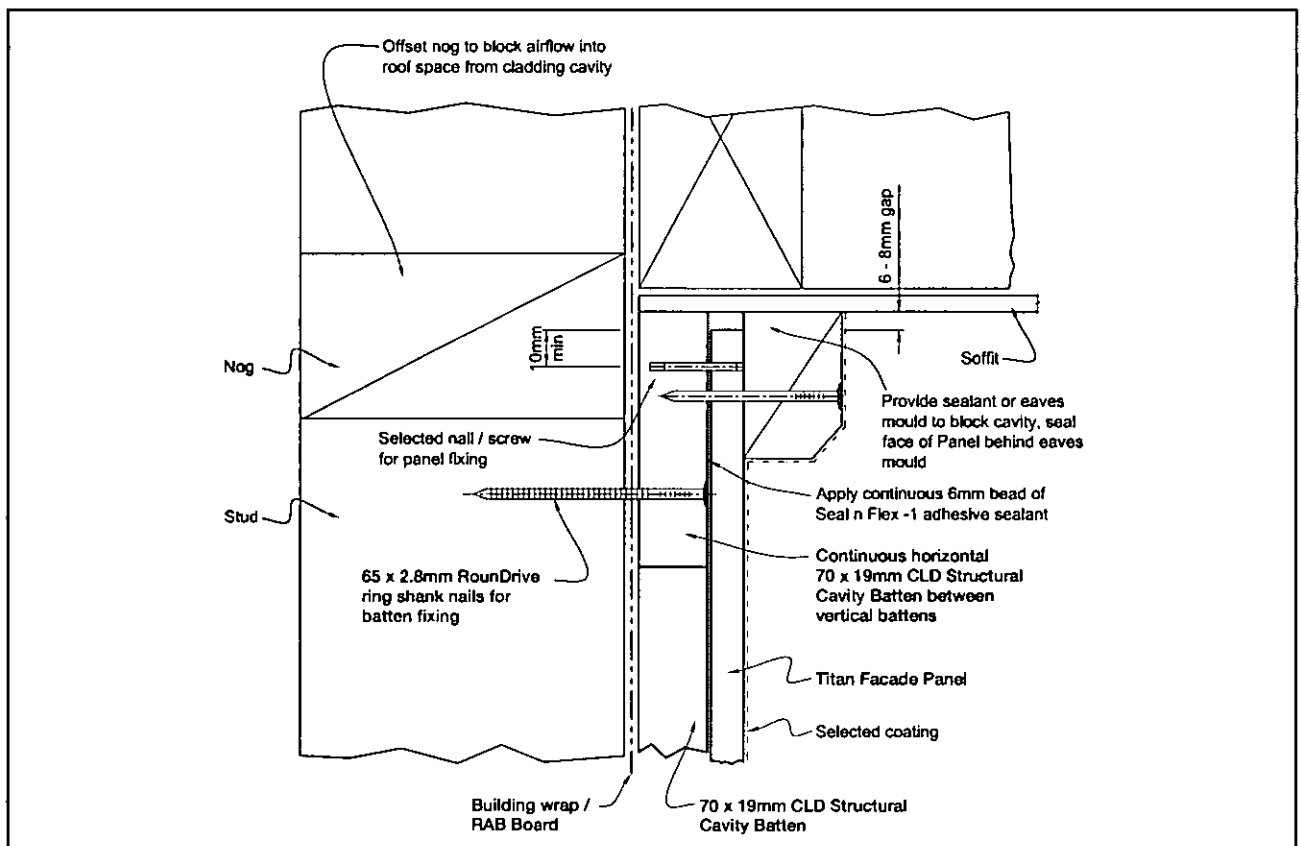
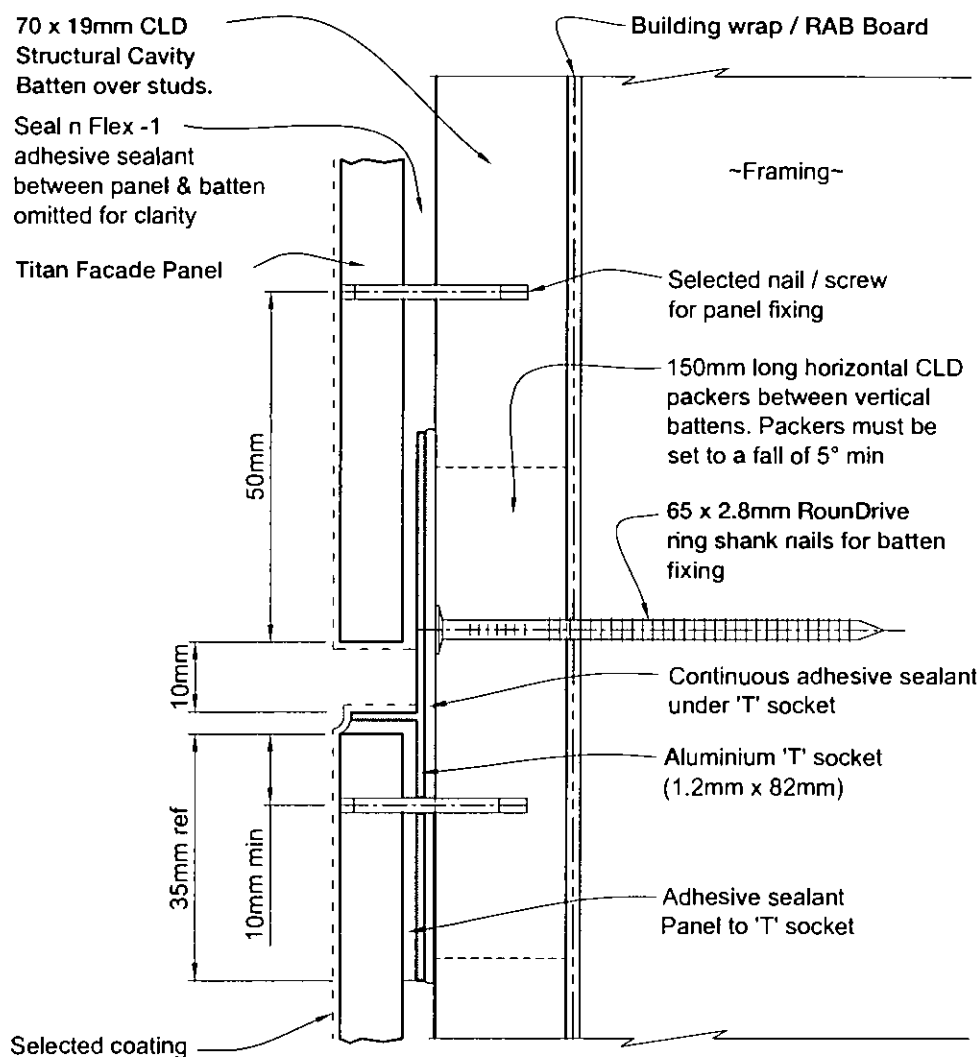


FIGURE 18: SOFFIT DETAIL



Step 1

- Ensure that building wrap / RAB Board is in place.

Step 2

- 70 x 19mm CLD Structural Cavity Battens to be installed over the studs.
- Nylon strapping intermediate support to be provided to hold insulation in place between studs.

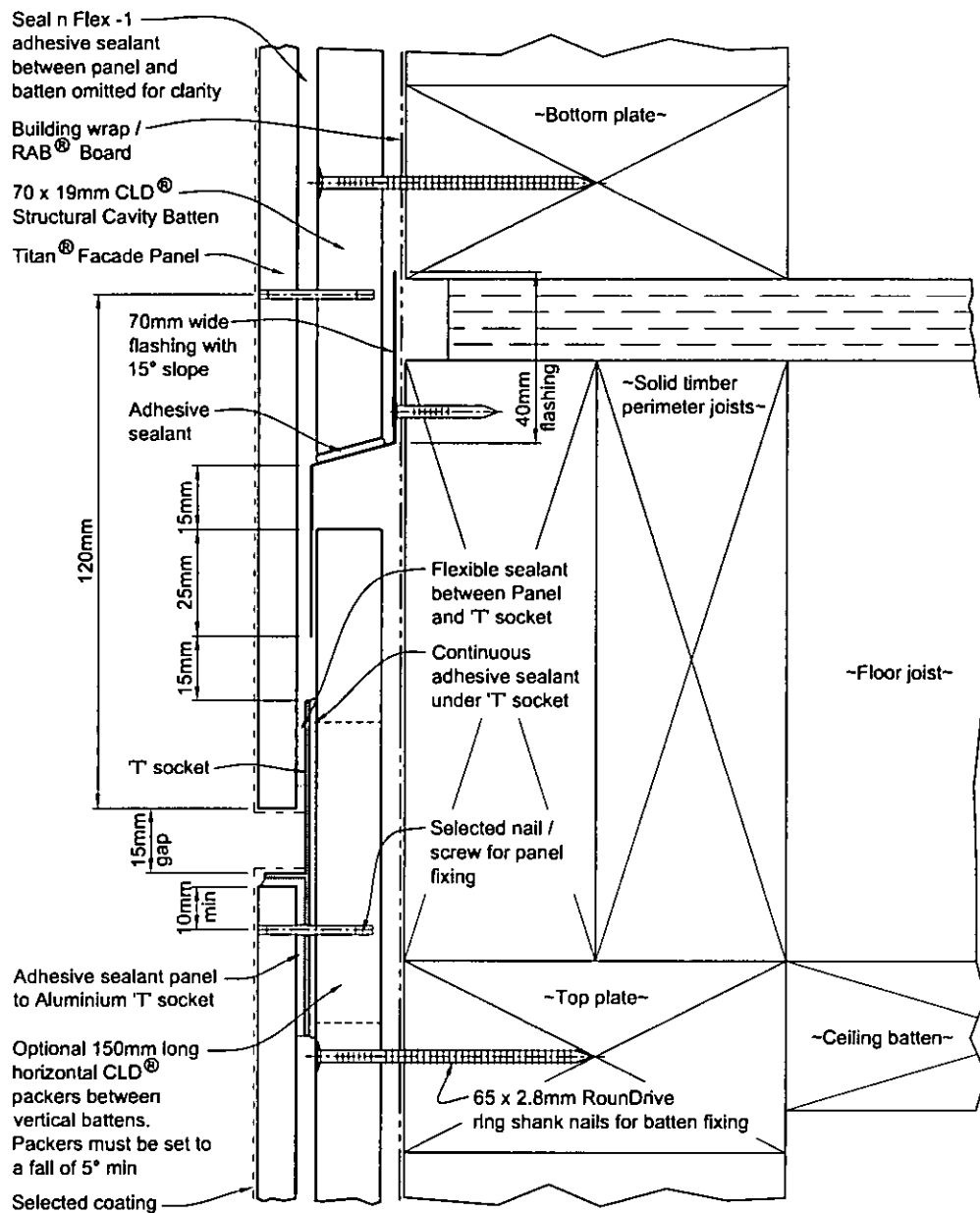
Step 3

- Install the lower panel complete with aluminium 'T' socket
- Install the upper panel keeping a 10mm gap

Notes:

- The Aluminium 'T' socket can be glued onto the back of the sheet on the ground. Apply two 6mm thick lines of adhesive sealant on the bottom portion of the 'T' socket to seal. Take care to ensure continuous seal is formed between panel and 'T' socket.
- The sealant must continue between socket flange and top panel edge.
- The 'T' socket must be sealed using adhesive sealant to the CLD Structural Cavity Batten.
- For edge distance of fixings refer to Section 6.

FIGURE 19: MID FLOOR ALUMINIUM SOCKET JOINT



Step 1

- Check Architects specification to confirm the type of horizontal joint required.

Step 2

- Check fixing centres and edge distances.
- Cut edges need to be primed on site.

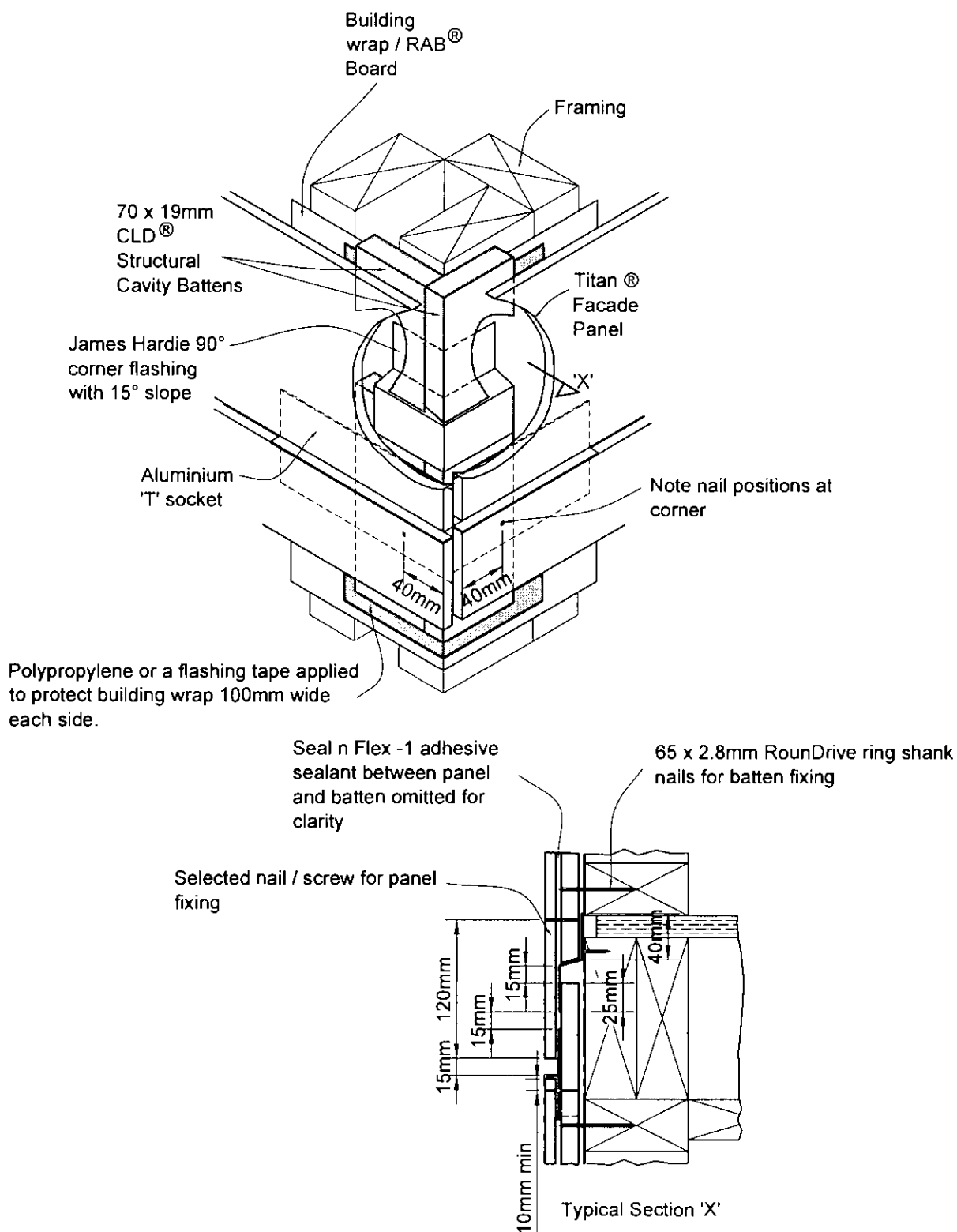
Step 3

- Flash the horizontal gap between battens with batten flashing and seal as shown.
- Aluminium 'T' socket to be cut flush to the vertical edges of panels and should start below the batten flashing.

Step 4

- Do not fix panels or battens into floor joists.
- For edge distance of fixings refer to Section 6.

FIGURE 20: 'T' SOCKET JOINT AT FLOOR JOIST



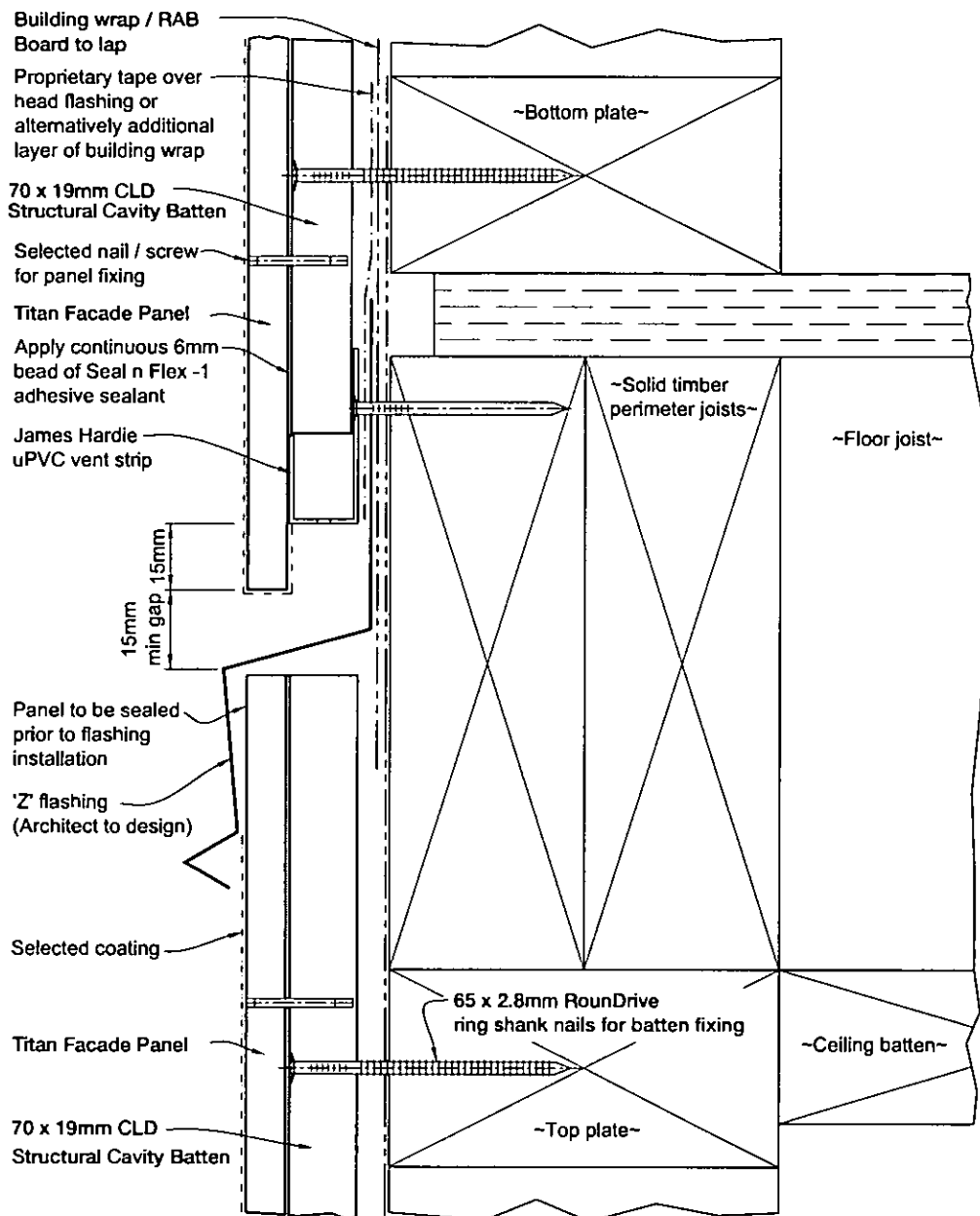
Note:

Socket joint at floor joist for internal corner may be formed using the same James Hardie 90° corner flashing.

Refer to Figure 14 for fixing of Aluminium 'T' socket.

For edge distance of fixings refer to Section 6.

FIGURE 21: 'T' SOCKET JOINT AT FLOOR JOIST CORNER



Step 1

- Check Architects plans for the type of flashing to be used.

Step 2

- Check fixing centres and edge distances.
- If top fixings are to be hidden by the Z flashing they will need to be fixed and sealed before the Z flashing is installed.
- Cut edges need to be primed with Acraprime sealer or similar.

Step 3

- When 50 year durability is required refer Table 20 E2/AS1.

Step 4

- The flashing to be placed in the centre of the floor joists. Do not fix CLD Structural Cavity Battens or panels into floor joists.

FIGURE 22: DRAINED FLASHING JOINT AT FLOOR JOIST

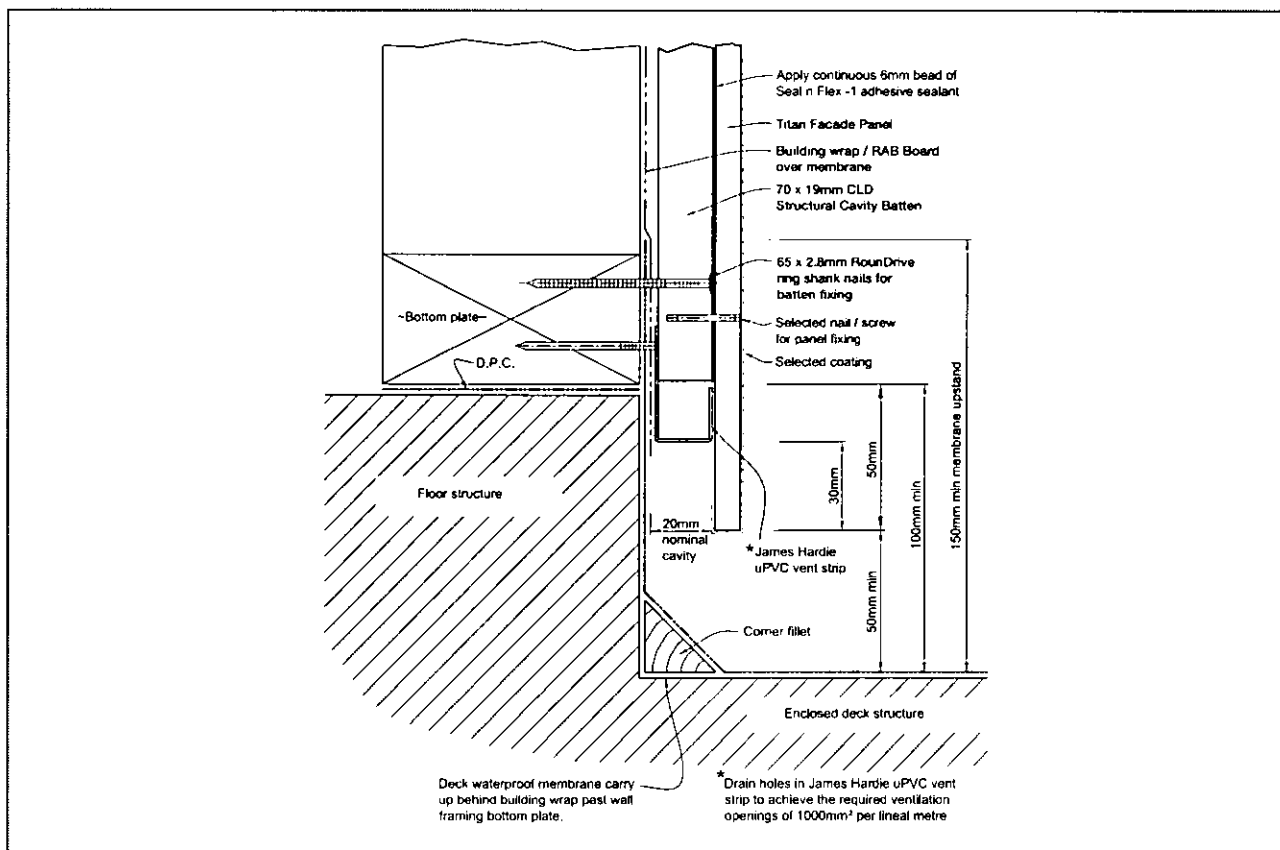


FIGURE 23: ENCLOSED DECK

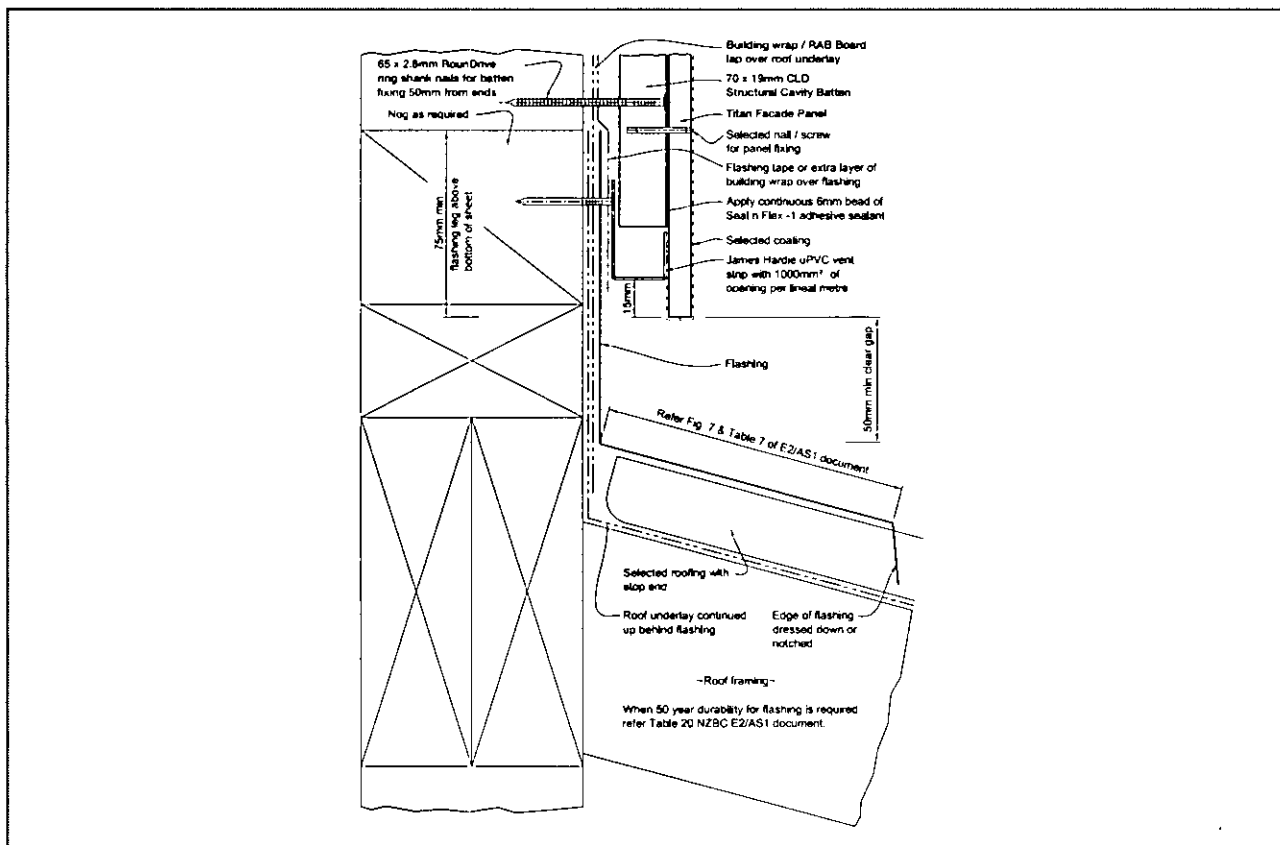


FIGURE 24: ONE PIECE APRON FLASHING JOINT

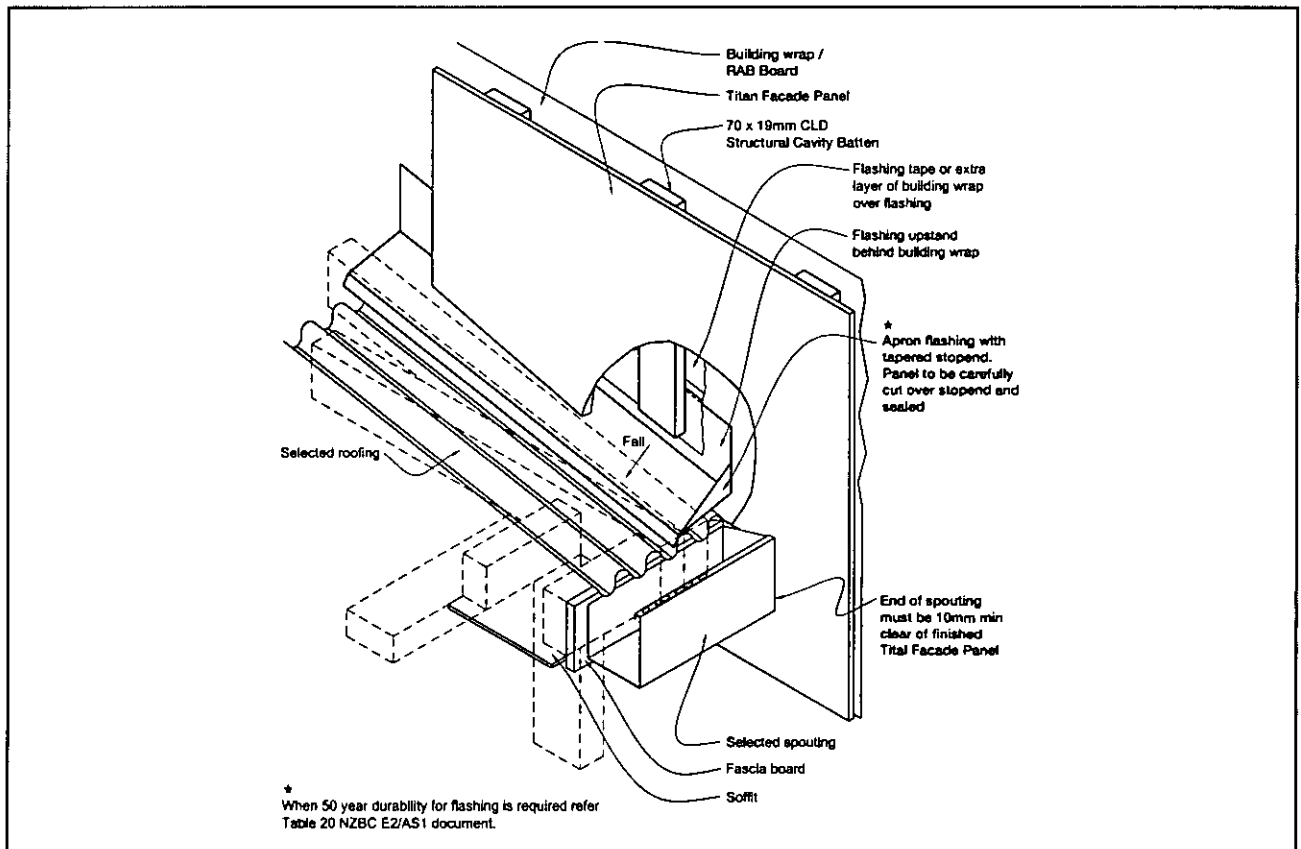


FIGURE 25: ROOF TO WALL JUNCTION DETAIL

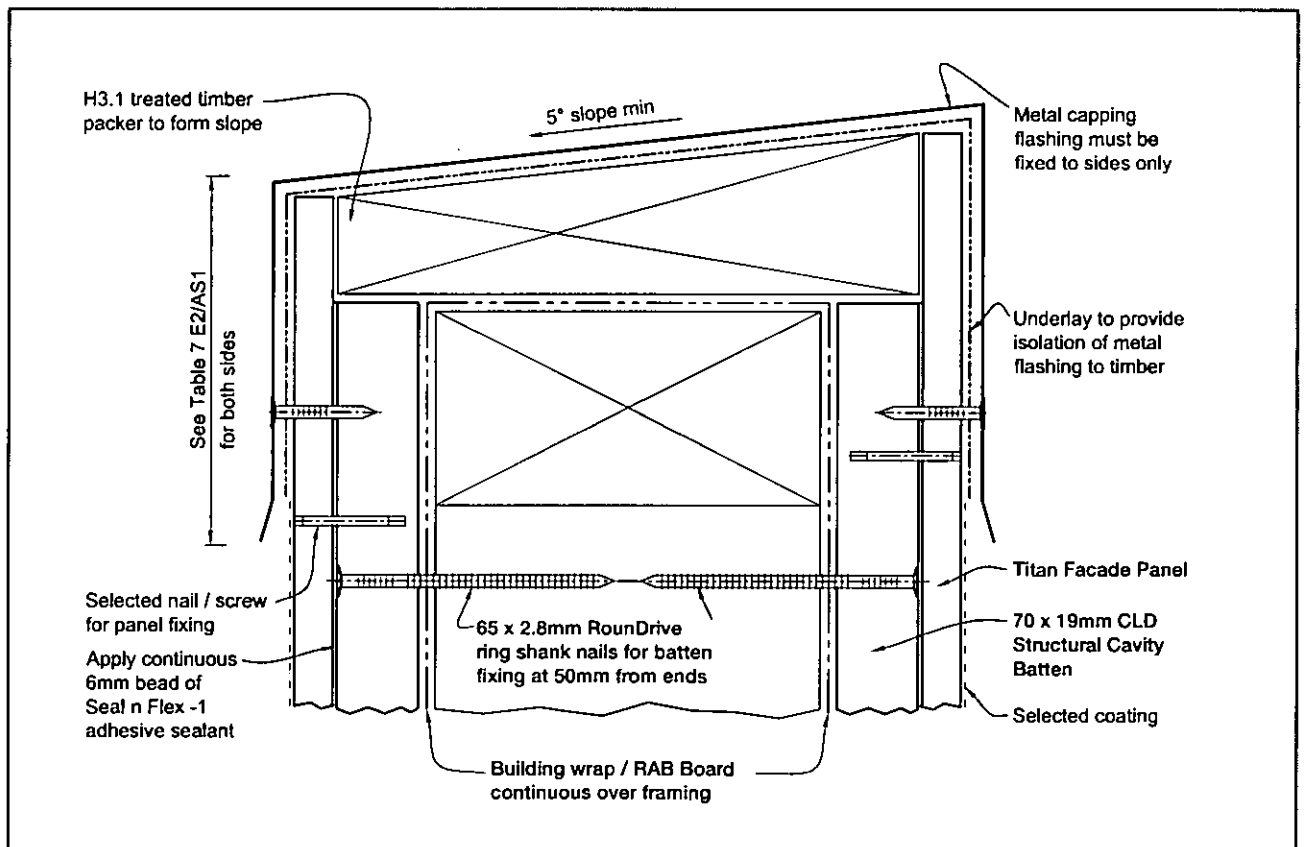


FIGURE 26: PARAPET FLASHING

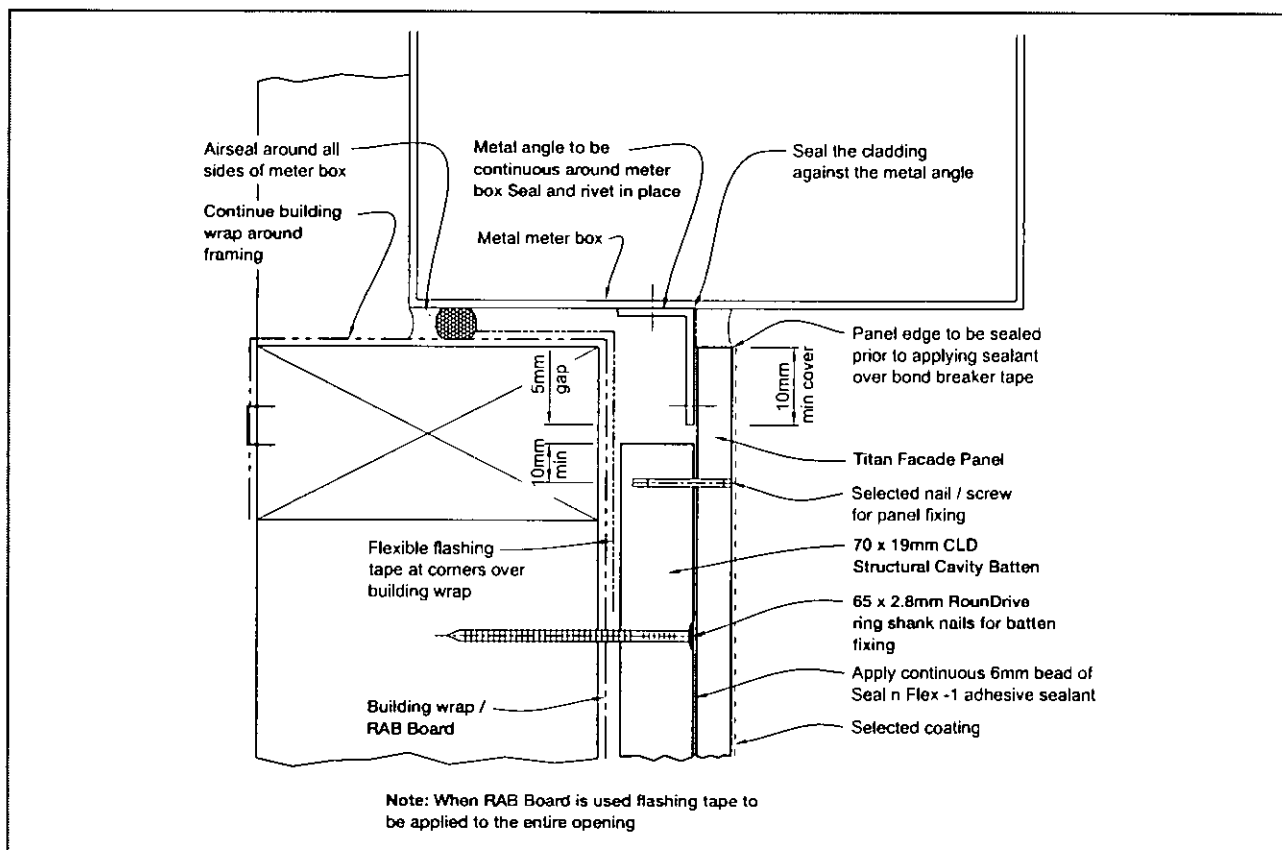


FIGURE 27: METER BOX AT SILL

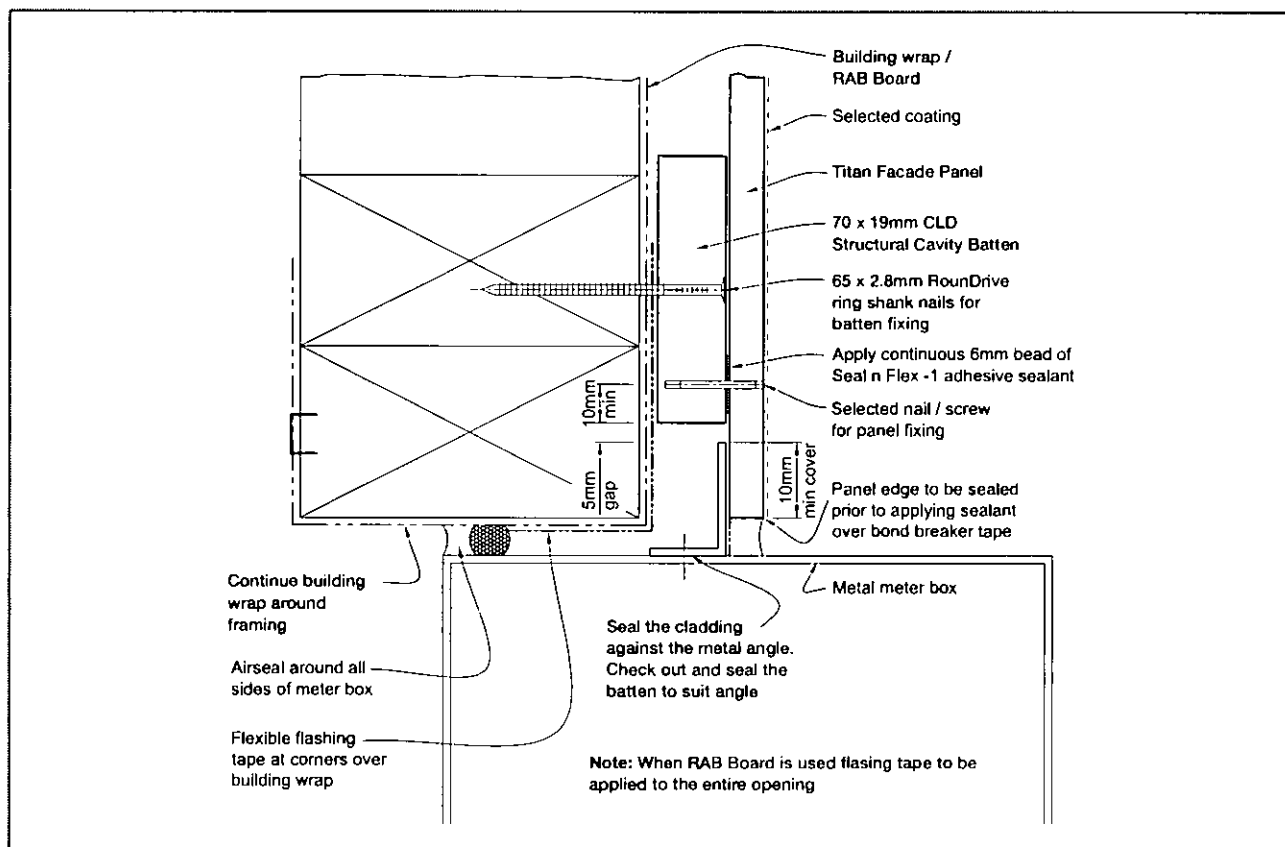


FIGURE 28: METER BOX AT JAMB

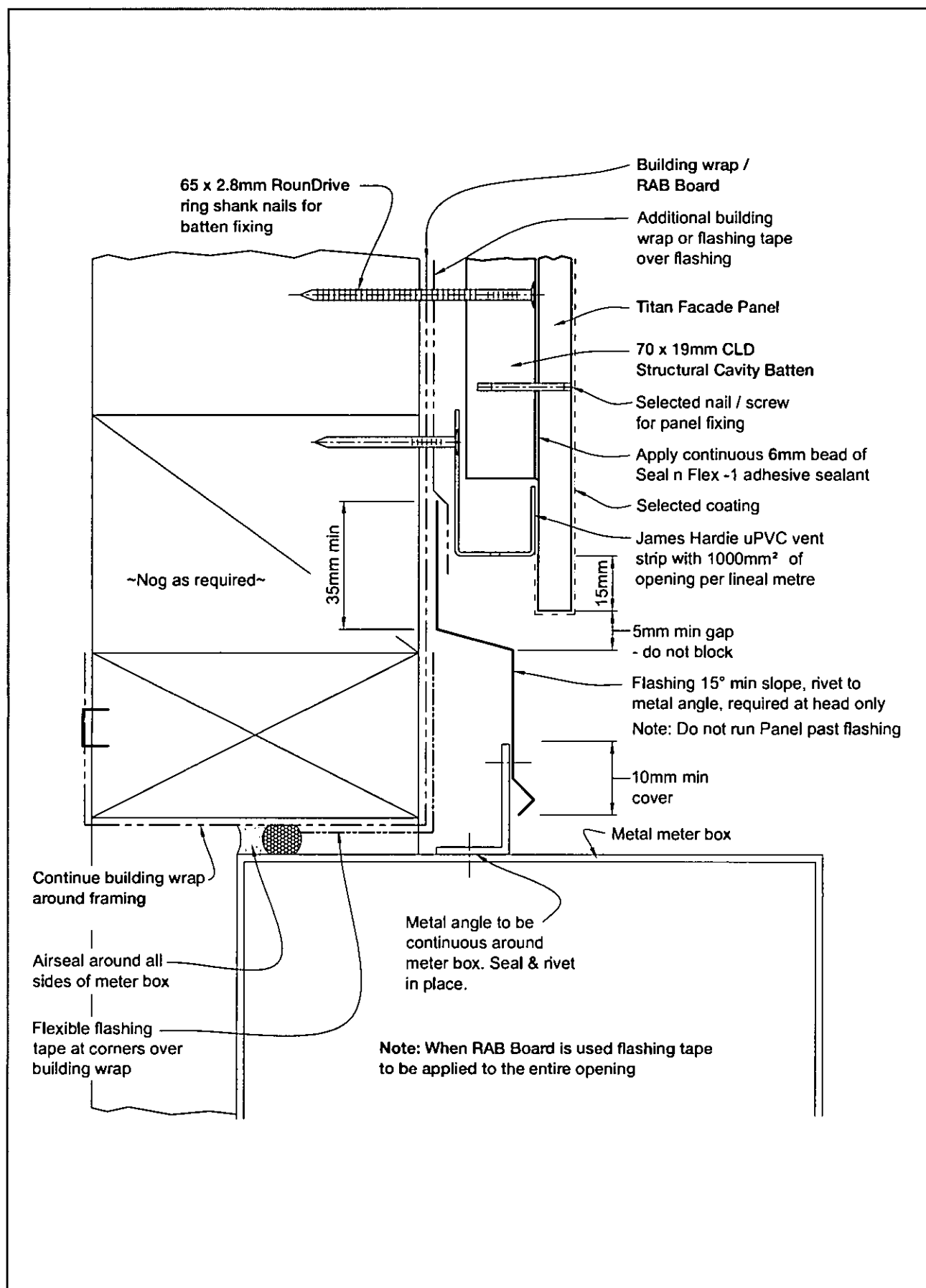


FIGURE 29: METER BOX AT HEAD

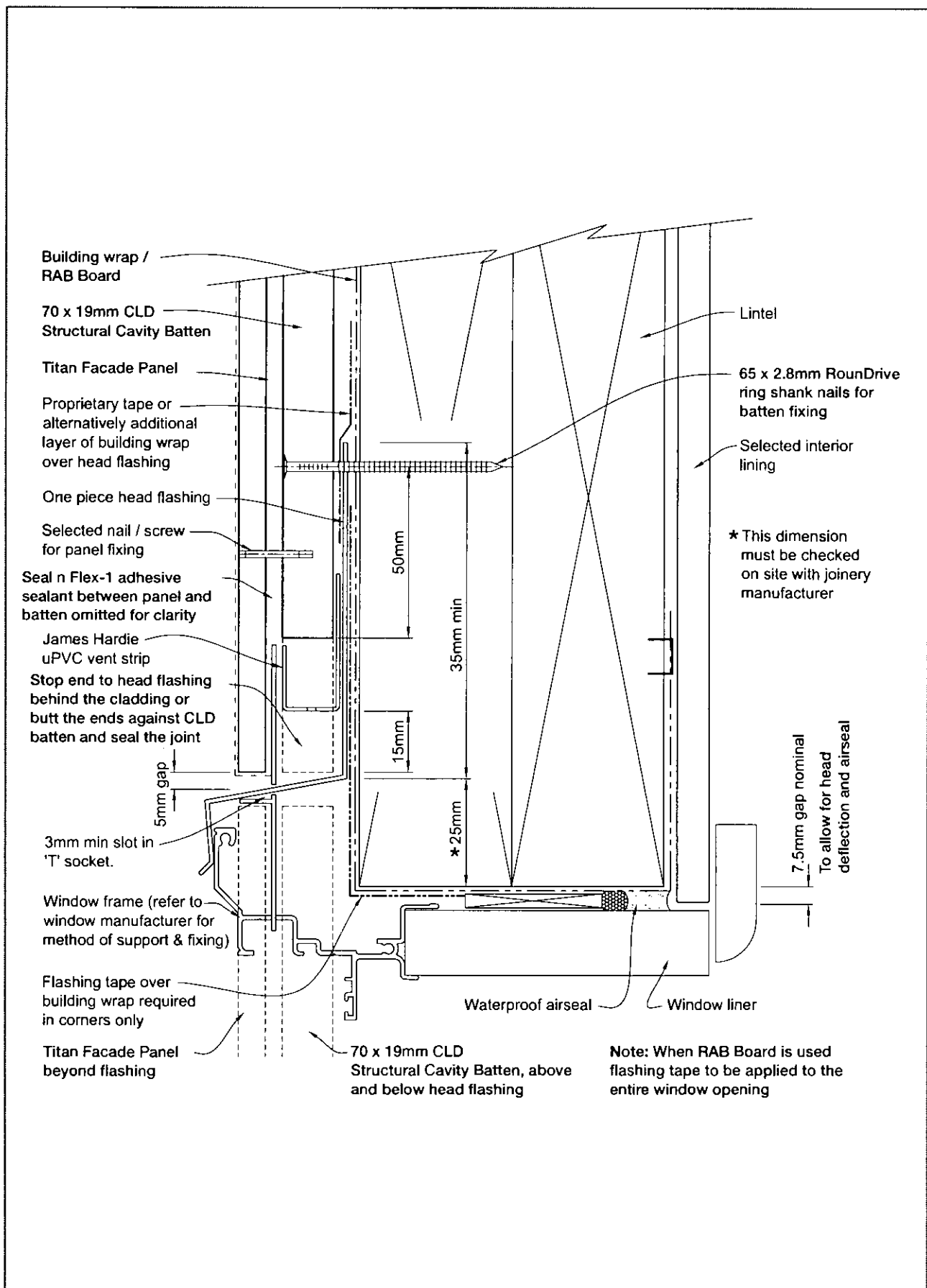


FIGURE 30: SOCKET JOINT DETAIL AT WINDOW HEAD

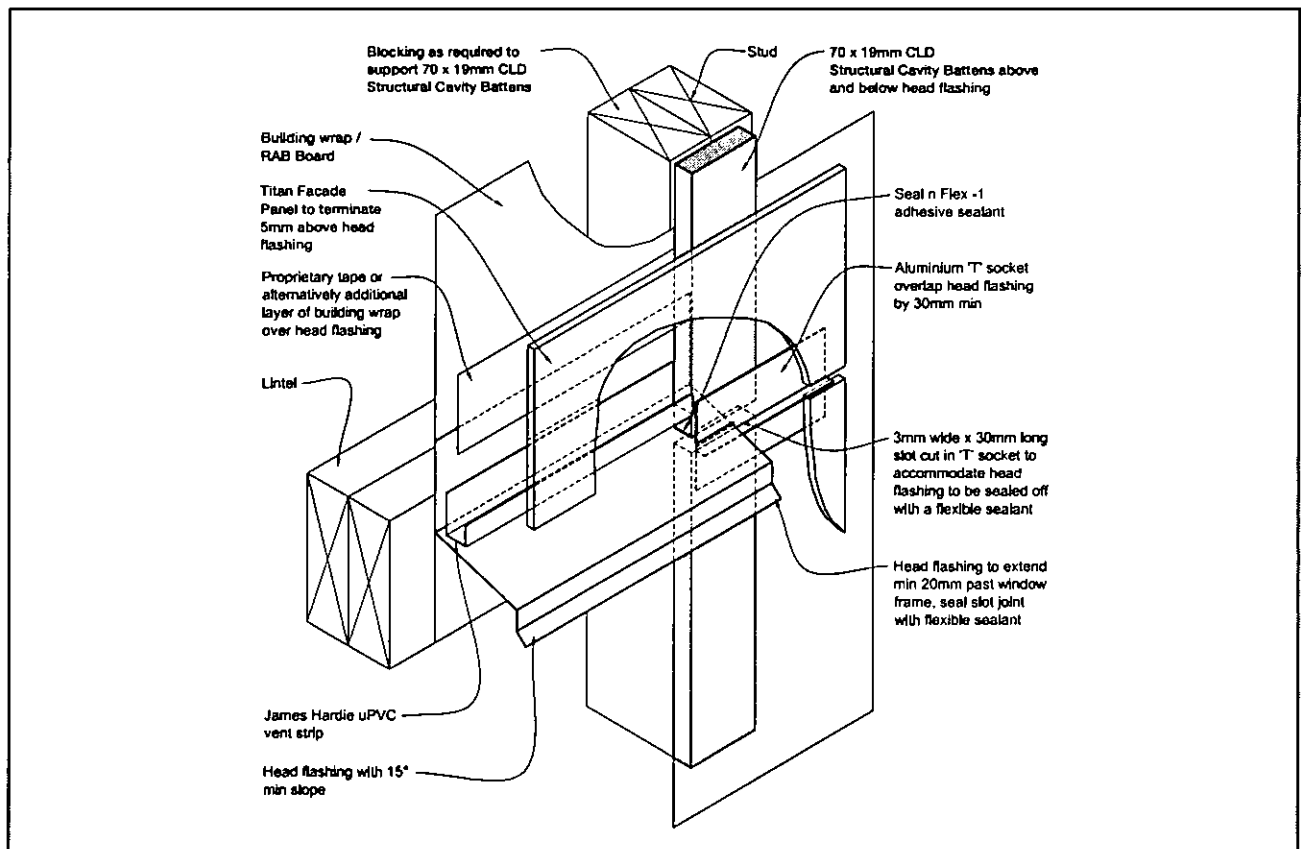


FIGURE 31: 'T' SOCKET JOINT AT WINDOW HEAD

15 WARRANTY

Titan®
FACADE PANEL

CLD®
STRUCTURAL CAVITY BATTEN

RAB®
BOARD

PRODUCT WARRANTY

MARCH 2007

WARRANTY: James Hardie New Zealand Limited ("James Hardie") warrants for a period of 15 years from the date of purchase that the Titan® Facade Panel, RAB® Board and CLD® Structural Cavity Batten (the "Product"), will be free from defects due to defective factory workmanship or materials and, subject to compliance with the conditions below, will be resistant to cracking, rotting, fire and damage from termite attacks to the extent set out in James Hardie's relevant published literature current at the time of installation. James Hardie warrants for a period of 15 years from the date of purchase that the accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials.

Nothing in this document shall exclude or modify any legal rights a customer may have under the Trade Practices Act or otherwise which cannot be excluded or modified at law.

CONDITIONS OF WARRANTY: The warranty is strictly subject to the following conditions:

- (a) James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation;
- (b) this warranty is not transferable;
- (c) the Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including coating and jointing systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice;
- (d) the project must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("NZBC"), regulations and standards;
- (e) the claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product;
- (f) James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces);
- (g) all warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law;
- (h) if meeting a claim under this warranty involves re-coating of Products, there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.

DISCLAIMER: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. James Hardie has tested the performance of the Titan® Facade Panel, RAB® Board and CLD® Structural Cavity Batten when installed in accordance with the Titan® Facade Panel and CLD® Cavity Batten technical specification, in accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design) James Hardie shall not be liable for the recommendations made in its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie installation manual are suitable for the intended project and that specific design is conducted where appropriate.

Ask James Hardie™
Call 0800 808 868
www.jameshardie.co.nz



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**HOROWHENUA
DISTRICT
COUNCIL**

126-148 Oxford Street
Private Bag 4002
Levin
Telephone 06 366 0999
Facsimile 06 366 0977
Email enquiries@horowhenua.govt.nz
www.horowhenua.govt.nz



DIRECT CREDIT TO H.D.C.
ACCOUNT: ?

WING.

Building Consent No:

PIM No:

Valuation or Property No:

08/1589

08/1590

1479004300

Received By Mail



Application For Project Information Memorandum and/or Building Consent

SUPPORT SERVICES

Section 33 or Section 45, Building Act 2004

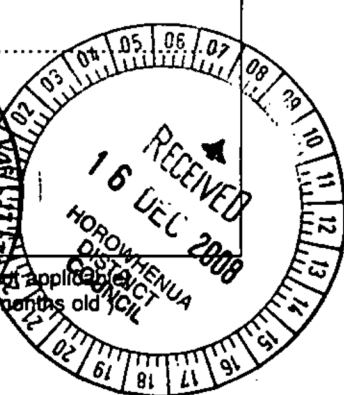
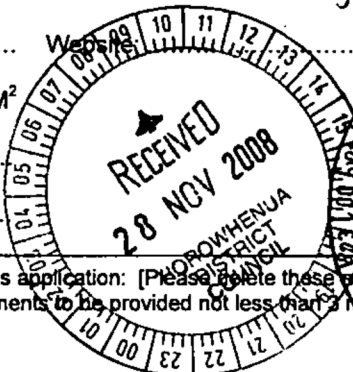
The Building:	The Owner:
Street Address: <u>Beach Road</u> <u>Waitarere Beach</u>	Name: <u>Paul & Debbie Wing</u>
Legal Description: Lot: <u>3</u> DP: <u>50712</u>	Contact Person: <u>c/o - Signature Homes</u>
Building Name: [If applicable] <u>Wing Residence</u>	Mailing Address: <u>187 Broadway Ave</u> <u>Palmerton North</u>
Location within site/block: <u>Lot 16</u>	Street Address: <u>As above</u>
Number of levels: <u>Single</u>	Ph: <u>06 3593939</u> Mob:
Level/Unit No: [If applicable] <u>N/A</u>	Fax: <u>06 3593949</u> After hrs:
Area: [Floor area of building work] <u>182.90</u> M ²	Email: <u>Scrambie@signature.co.nz</u>
Current Use: <u>N/A</u>	Website: <u>06 3593939</u>
Year first constructed [If applicable] <u>N/A</u>	

The following evidence of ownership is attached to this application: (Please delete those not applicable)

- I. Certificate of Title (Consent Notices and Easements to be provided not less than 3 months old)
- I. Lease Agreement
- II. Agreement for Sale and Purchase
- III. Other

First Point of Contact: (Who do we contact in respect of this consent)	
Name: <u>Signature Homes Ptn Mth</u>	Ph: <u>06 35 93939</u> Mob:
Contact Person: <u>Steve Crombie</u>	Fax: <u>06 35 93949</u> After hrs:
Mailing Address: <u>187 Broadway Ave</u> <u>Palmerton North</u>	Email: <u>Scrambie@signature.co.nz</u>
	Website:

4410

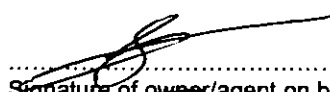


Application:

I request that you issue a: [Delete what is inapplicable]

- I. ~~Project Information Memorandum~~
- I. ~~Building Consent~~
- II. Project Information Memorandum and Building Consent ✓

for the building work described in this application.


Signature of owner/agent on behalf of and with the authority of the owner

Date: 26/11/08

The Project:

Description of building work: New single level 182.9m² residence

Will the building work result in a change of use: Yes (No)

If yes provide details of the new use: N/A

Intended life of the building if less than 50 years: years

Building Consent numbers of those building consents previously issued for this project: N/A

Estimated value of building work including GST: \$ 440,000.00

Project Information Memorandum:

The following matters are involved in the project: [Delete if inapplicable]

Subdivision

New or altered connections to public utilities

New or altered access for vehicles

Disposal of stormwater and waste water

~~Alterations to land contours~~

~~New or altered locations and/or external dimensions of buildings~~

~~Building work over or adjacent to any road or public place~~

Other matters known to the applicant that may require authorisations from the territorial authority as listed below:

~~Building work over existing drains or sewers or in close proximity to wells or water mains~~

N/A

Building Consent Section Cont.

Plumbing & Drainage, Dimensions,
Elevations, Sections A & B,
Sections C & D, Bracing, Bracing
Details, Roof Plan, Entry Porch,
Window schedule, Foundation Details,
Cladding Liner, Cladding Details Cont,
Cladding Liner Cont, Meter Box
Flashings, Cladding Titan, Cladding
Titan Cont, Cladding Titan Cont,
Cladding Titan Cont, Cladding
Titan Cont, E3 Details, Electrical
Plan, Ventilation Schedule, Solatube
info.

322

Building Consent:

The following plans and specifications are attached to this application:

Specifications, GIB Bracing Calc, Truss Rod Statement, Design IT, Pellet stove info, Waste water report, site plan, services location plan, floor plan, slab plan

The building work will comply with the building code as follows:

Clause	Means of Compliance	Waiver/Modification required
B132	AS 1	
E1233	AS 1	
F237	AS 1	
G1234	AS 1	
G7,8,9,10	AS 1	
G12313	AS 1	

Compliance Schedule: [Delete if inapplicable]

The specified systems and features for this building are as follows:

The following specified systems and features are being altered, added to, or removed in the course of the building work:

There are no specified systems or features in this building:

Attachments:

The following documents are attached to this application: [✓]

Plans and Specifications	✓	Development Contribution Notice	
Project Information Memorandum		Certificate attached to PIM	
Copies of other Authorisations		Other	

Restricted Building Work and Licensed Building Practitioners:		
Restricted Building Work:	Licensed Building Practitioner:	Licence No:
	Name:	
	Address:	
	Phone:	
	Name:	
	Address:	
	Phone:	
	Name:	
	Address:	
	Phone:	
	Name:	
	Address:	
	Phone:	

BCA Office Use Only:	Fees:	\$
Receipt Number:	Building Consent:	
Date of Receipt:	PIM	
Receiving Officer:	Building Levy	
Date application received:	BRANZ Levy	
Date application accepted:	Inspections	
	Vehicle Crossing	
	Sewer Connection	
	Stormwater Connection	
	Water Connection	
	Development contribution levy	
	Other	
	Total:	

Restricted Building Work and Licensed Building Practitioners:		
Restricted Building Work:	Licensed Building Practitioner:	Licence No:
Builder ✓	Name: Karacrombie Enterprises Address: Broadway Ave P.N. Phone:	
Plumber	Name: Henrys Plumbing Address: Phone:	
Drainlayer	Name: O'Hagans Contracting Address: 2011 Palmerston North Phone: 3292522	
Electrician	Name: Laser Electrical Address: 61 Warwick St, Feilding Phone: 063239595	
	Name: Address: Phone:	

BCA Office Use Only:	Fees:	\$
Receipt Number:	Building Consent:	
Date of Receipt:	PIM	
Receiving Officer:	Building Levy	
Date application received:	BRANZ Levy	
Date application accepted:	Inspections	
	Vehicle Crossing	
	Sewer Connection	
	Stormwater Connection	
	Water Connection	
	Development contribution levy	
	Other	
	Total:	



**PIM/Building Consent
Application Checklist
PRE-VET**

Building Category **① 2-3**

Project Address: Waiwera Beach Road

Contact Name and Telephone: Steve Crombie

Interviewing Officer/s: C. WHITEFIELD Date: 2/12/08

All checkboxes are to be completed with a tick, a cross or N/A as appropriate. The meaning of each of these notations is set out at the top of each section of the checklist.

Building Officer

Application Documentation - Check each of questions 1 – 11 below. Mark the checkbox with a tick if the answer is yes, a cross if the answer is no, and N/A if the question is not applicable to the building work for which consent is sought.

1	Application type: ☐ PIM ☐ BC ☒ Combination PIM & BC (tick appropriate box)	
2	If the application is for Residential work, are two sets of plans and specifications provided?	✓
3	If the application is for Commercial work are three sets of plans and specifications provided?	
4	Is the Legal Description stated?	✓
5	Certificate of Title: (Including Consent Notices and Easements) <u>NO ENCUMBRANCES PROVIDED</u>	✗
6	Is the application form signed and dated?	✓
7	Is the description of work accurate?	✓
8	Is the value of work correct?	✓
9	Have Compliance details been completed on application form? <u>Now Included</u>	✗
10	Have all trades peoples' details been filled out (back page)? <u>" "</u>	✗
11	Is the application form completed & correct? <u>Yes</u>	✗

Site & Foundations – Check each of questions 12 – 16. Mark the checkbox with a tick if the answer is yes, a cross if the answer is no, and N/A if the question is not applicable to the building work for which consent is sought. Comment where necessary in the space provided.

12	Does the site plan include contours/spot levels, finished floor levels and the wind zone designation?	✓
13	Has due regard been given to sloping sites to mitigate potential erosion from stormwater and surface water runoff?	✓
14	If the fill depth exceeds 600mm, is the detail of the specific engineering design of the foundations as per NZS 3604:1999 – 7.5.3.1?	✓
15	Is concrete slab shrinkage control joint provision & free joint details for slab dimension > 24m as per NZS 3604:1999 – 7.5.8.3?	✓
16	Is 25 Mpa concrete specified for exposed applications with sea spray zone exposure?	✓

Specifications - Check each of questions 17 – 18. Mark the checkbox with a tick if the answer is yes, a cross if the answer is no, and N/A if the question is not applicable to the building work for which consent is sought. Comment where necessary in the space provided.

17	Do the plans & specifications fully reconcile?	✓
18	Are all generic type specifications scheduled for project specific selections and has all superfluous information been removed?	✓

Structure - Check that each of items 19 – 27 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.

19	A comprehensive timber grade & treatment schedule.	✓
20	A comprehensive element of structure (framing) & fixing schedule for fixings not covered by the fabricator.	✓
21	Truss design certification & layout plan with due regard to any point loaded lintels. A preliminary design will suffice for the application. <u>located in Specification</u>	✓

22	Lintel schedule & associated fixing details.	✓
	<i>Located in Specification</i>	
23	Roof framing & bracing plan.	✓
24	Floor joist & solid blocking layout plan with due regard to blocking along subfloor brace lines @ 1.8m cc max' including edge paired joints, & wall frame support.	h
25	Skillion roof details with provision for 25mm minimum clearance to the insulation & roof underlay.	✓
	H3.1 minimum timber treatment level for enclosed flat roof framing (Pitch < 10 degrees) as per NZS 3602:2004-1D.2.	✓
26	Valley boards shall be treated for H3.1 minimum as per NZS 3602:2003-1D.4.	h
27	Deck design & bracing as > 2.0m wide.	h
Bracing - Check that each of items 28 – 33 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
28	Wall bracing revision for wings or blocks.	h
29	Bracing revision for brace line spacing > 6.0m which is outside the scope of NZS3604:1999.	h
30	A bracing assessment for removal of the internal walls.	h
31	Deck bracing as > 2.0m wide.	h
32	Bracing revision for elements abutting a shower or bath to ensure that the long term structural integrity of the sheet brace is not compromised.	h
33	Ceiling diaphragm details.	h
Insulation - Check that each of items 34 – 35 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
34	Insulation thermal resistance ratings 'R' values.	✓
35	Where the external glazing exceeds 30% of the total wall area specific design is required as per NZS 4218:2004 using either the calculation or modelling method.	h
Plumbing & Drainage - Check that each of items 36 – 48 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
36	Onsite stormwater disposal design with soak pits to be sized on catchment areas & percolation rates using a rainfall intensity of 70mm per hour or specific meteorological data from NIWA etc.	✓
	<i>As Water Storage Tank</i>	
37	A copy of the Horizon's Regional Council approval of the wastewater disposal system.	h
	<i>Not Required, discharges to Sewer</i>	
38	Hot & cold water service pipe type & sizing.	h
39	HWC type, seismic restraint & valve train arrangement.	✓
40	Plumbing & drainage plan revision @ 1:100 scale with all pipe types, sizes, grades & ventilation provision.	✓
41	Fixture discharge pipes > 3.5m require separate venting as per table 5 – G13/AS1.	✓
42	Soil fixtures shall meet the venting requirements of table 5 – G13/AS1.	✓
43	An isometric layout of first floor plumbing fixtures & identification of the system type.	h
44	Potable water supply details incl the pressure fixtures & identification of the system type.	✓
45	Internal gutter sizing to E1/AS1 & details of the rain head with overflow provision.	h

46	A cross section of the internal gutter & rainhead. The substrate support frame shall not exceed 400mm (max' span) as per E2/AS1 8.5.5.1(C).	☒
47	Down pipe sizing calculations	☒
48	Water tank overflow design with due regard to erosion of sloping sites where applicable.	☒
<i>See Water Tank</i> External Building Envelope - Check that each of items 49 – 54 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
49	Risk matrix calculations as per E2/AS1.	☒
50	Comprehensive details of the external building envelope flashing systems for roof, wall, junctions, penetrations with due regard to cover dimensions as per E2/AS1 or similar.	☒
51	Roof flashing design as per E2/AS1 or similar with all cover dimensions to be specified.	☒
52	Stucco control joint layout plan @ 4.0m cc max & control joints shall be incorporated above & below all vertical jambs where there is an induced weakness. The control joint layout shall be incorporated into the elevations.	☒
53	Skylight design with due regard to the low pitch & water catchment.	☒
54	Internal gutter sizing to E1/AS1 & details of the rain head with overflow provision.	☒
<i>See Water Tank</i> Access Routes - Check that each of items 55 – 58 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
55	Walking surface slip resistance schedule of finishes to D1/AS1 table 2 or similar.	☒
56	Stair handrail design with a graspable profile to D1/AS1.	☒
57	Smoke detector layout plan.	☒
58	Details of decks, steps, ramps & apron slabs with due regard to thresholds, falls, cladding clearance etc.	☒
Specific Engineering Design - Check that each of item 59 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
59	Specific engineering design for works outside the scope of NZS 3604 1999 & an associated PS1-Design. The specific engineering design shall be incorporated into the architectural drawings & specifications.	☒
Solid Fuel Heaters - Check that each of item 60 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
60	Wood burner make, model & specifications. The wood burner shall be an approved type as per the MFE (Ministry for the Environment) list or specific test data confirming that the particulate discharge & thermal efficiency rating meets the performance criteria of AS/NZS 4013:1999 for a site less than 2 hectares.	☒
<i>Pellet Fire</i> Internal Environment - Check that each of items 61 -63 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
61	Internal laundry/bathroom ventilation & moisture control.	☒
62	Wet area details including splash backs. (E3/AS1 extracts or similar with due regard to penetrations such as shower roses).	☒
63	Smoke detector layout plan.	☒
External Joinery & Safety from Falling - Check that each of items 64 - 65 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		

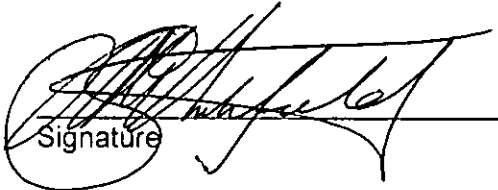
64	External joinery & glazing schedule & unit support details with due regard to ventilation rates (Net openable area – 5% of floor area minimum) & natural light (window area not less than 10% of floor area).	/
65	First floor opening windows that encroach the 760mm exclusion zone (NZBC F4-4.02) & with a drop off height greater than 1.0m require restrictor devices to limit the maximum opening dimension to 100mm.	/
Warranties - Check that items 66 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
66	A schedule of warranties offered where applicable for roof & wall claddings including monolithic systems, external joinery, roof lights, membranes (roof, deck & wet areas) & tanking with due regard to the exposure zone classification	✓
Building Act Provisions - Check that items 67 - 71 is present and complete. Mark the checkbox with a tick if present and complete, a cross if not present or not complete, and N/A if the item is not applicable to the building work for which consent is sought.		
67	Project management plan details for protection of the public.	✓
68	Fire safety & accessibility design in accordance with section 112 of the Building Act 2004.	/
69	Fire safety & accessibility design.	/
70	Application of section 115 of the Building Act 2004 to this project for works constituting a change of use.	/
71	Application of section 363 of the Building Act 2004 to this project.	/
72	Is a swimming pool part of the application YES (NO)	

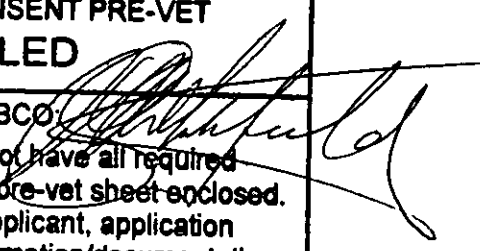
DECISION RECORD

If all documents are present and correct, and the application is acceptable for lodgement, stamp below with "PASSED" stamp, sign and arrange lodgement.

If the application is not acceptable for lodgement, stamp below with 'FAILED' stamp. List all items which failed, sign and return all documentation and a copy of this checklist to the client. Place original of this checklist in the holding file on the Building shelf.

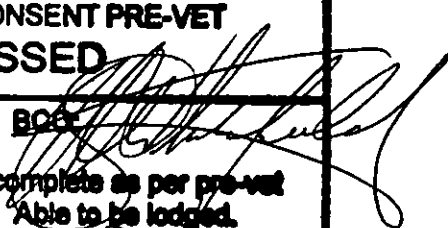
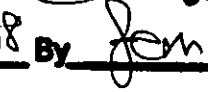
Stamp:


Signature

HOROWHENUA DISTRICT COUNCIL BUILDING CONSENT PRE-VET FAILED
DATE: 2/12/08 BCC: 
Application does not have all required documentation as per pre-vet sheet enclosed. Copy passed to applicant, application retained awaiting information/documentation

List of failed items (circle applicable numbers)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	

HOROWHENUA DISTRICT COUNCIL BUILDING CONSENT PRE-VET PASSED
DATE 16/12/08 BCC: 
All documentation complete as per pre-vet sheet enclosed. Able to be lodged.
Lodged on 18/12/08 By 



MiTek New Zealand Ltd.

HOME OF GANG-NAIL® BUILDING SYSTEMS

ESTIMATED 8 Hours Processing ONLY.
EXTRA HOURS.

SENT OUT 2 FIR LETTERS. 1 1/2 HOURS
COURTE FIR. 2 CLAW B/C. 2 HOURS.

2 AMENDMENTS AT 1 HOUR EACH

LODGE MENT + CONSENT ISSUING. 1 HOUR.

1 EXTRA INSPECTION CARRIED OUT.

TO PAY EXTRA.
\$5.40.



GANG-NAIL®



LUMBERLOK®



BOWMAC®

Auckland Office: 40 Neales Road, East Tamaki, P.O. Box 58-014
Greenmount, New Zealand. Phone 0-9-274 7109, Fax 0-9-274 7100

Christchurch Office: 20 Kotzikas Place, Sockburn, P.O. Box 8387
Riccarton, New Zealand. Phone 0-3-348 8691, Fax 0-3-348 0314

www.mitekznz.co.nz

CALCULATION

1.	Previously paid (B + E) (Page 1)	\$ 1,980.
2.	Time Record (A + B + C) (from Page 4)	\$ 2,520.
	TO Be Paid	\$ <u>5.40</u>

Note: *

- If (1) is Higher than (2) - Refund Applicant for Difference
- If (2) is Higher than (1) - Invoice Applicant for Difference

Application Number: 2008/1589/021



HOROWHENUA DISTRICT COUNCIL

19 December 2008

126-148 Oxford Street

Private Bag 4002

Levin 5540

Telephone 06 366 0999

Facsimile 06 366 0977

Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

Dear Sir/Madam

Acknowledgement of Receipt of Project Information Memorandum And/Or Building Consent

Thank you for your application for the proposed construction of a single storey 3 bedroom dwelling and installation of an Enviro Evolution Pallet Stove at 568 Waitarere Beach Road, LEVIN RURAL 5574.

Your application has been lodged onto our system on 19 December 2008, and the following number has been allocated to the application for future reference 2008/1589/021.

We are currently checking your application to ensure we have all the information we require to properly assess your proposal, and a decision should be made within 20 working days from the date of lodgement, unless further information is still required.

You are advised that any granting of a Building Consent for a household unit (which includes relocated dwellings and 'granny/family flats') may require payment of a Development Contribution to the Council. The amount of the contribution varies according to the area within which the dwelling will be located, as indicated on the table below. In the event your application does require payment of a Development Contribution, you will be advised of the amount payable in due course, and an invoice will be sent to you. Payment of this contribution will be required on receipt of invoice. Council can withhold the Code Compliance Certificate for the consented works if the Development Contribution has not been paid in full. A payment plan is available – please contact the Accounts Receivable Officer for further information.

	Levin	Waitarere Beach	Foxton	Foxton Beach	All Other Areas
Water	\$2,376	-	\$1,611	\$1,611	-
Stormwater	-	-	-	\$ 851	-
Wastewater	\$2,302	\$1,497	\$4,719	\$4,719	-
Roading	\$2,086	\$2,086	\$2,086	\$2,086	\$2,086
Community Infrastructure	\$1,268	\$1,268	\$1,268	\$1,268	\$1,268
Reserves	\$1,515	\$1,515	\$1,515	\$1,515	\$1,515
Total	\$9,547	\$6,366	\$11,199	\$12,050	\$4,869

NOTE: All fees exclude G.S.T

* Commercial and Industrial Development Contributions differ from the table above, please contact Council

If you have any further enquiries relating to this matter do not hesitate to contact us quoting the above allocated number.

Yours sincerely

J E Molloy
Support Officer
Environment and Regulatory Services

Application Number: 2008/1589/021



**HOROWHENUA
DISTRICT
COUNCIL**

126-148 Oxford Street

Private Bag 4002

Levin 5540

Telephone 06 366 0999

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Email enquiries@horowhenua.govt.nz

www.horowhenua.govt.nz

19 December 2008

Waitarere Rise Limited
C/- Signature Homes
187 Broadway Avenue
Palmerston North 5301

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Acknowledgement of Receipt of Project Information Memorandum And/Or Building Consent

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Yours sincerely

J E Molloy
Support Officer
Environment and Regulatory Services

**HOROWHENUA
DISTRICT
COUNCIL**

Address: 540 Waialeale Beach Road		Job no:		
Date: 11/12/04	Building Category	1	2	3

[illegible]

PLANS				SITE PLAN		
Number of sets required 2	✓			1:100 1:200 or 1:500	YES	NO N/A
SPECIFICATIONS				Legal description	YES	NO N/A
Number of sets required 2	✓			Site area	YES	NO N/A
BRACING CALCULATIONS				Private drainage	YES	NO N/A
Subfloor/ Deck (2 sets required)				Public drainage showing depth of drains, manholes etc.	YES	NO N/A
Wall (per floor)	✓			Dimensions – 3 minimum	YES	NO N/A
STRUCTURAL ENGINEERING				Existing and proposed buildings	YES	NO N/A
Number of sets supplied (2 required)				North point	YES	NO N/A
Beam layout plan	YES	NO	N/A	Contours, datum	YES	NO N/A
Connection details	YES	NO	N/A	Finished floor level	YES	NO N/A
Producer statement	YES	NO	N/A	Retaining walls	YES	NO N/A
GEOTECHNICAL ENGINEERING				Extent of cut and fill	YES	NO N/A
Number of sets supplied (2 required)				Site coverage	YES	NO N/A
Site plan	YES	NO	N/A	Parking and vehicle access	YES	NO N/A
Soils analysis/report	YES	NO	N/A	Protected trees	YES	NO N/A
Producer statement	YES	NO	N/A	HWC (gas)	YES	NO N/A
				Water meter (if applicable)	YES	NO N/A
E2 RISK MATRIX – 1 PER PAGE/ELEVATION				FLOOR PLAN		
• North	YES	NO	N/A	Room use denoted	YES	NO N/A
• South	YES	NO	N/A	Window size and position	YES	NO N/A
• East	YES	NO	N/A	Fixtures and fittings	YES	NO N/A
• West	YES	NO	N/A	Solid fuel heating	YES	NO N/A
				HWC	YES	NO N/A
CROSS-SECTIONS				Wall bracing - height, position, type	YES	NO N/A
Minimum of one along the length	YES	NO	N/A	FOUNDATION PLAN		
Minimum of one across the width	YES	NO	N/A	Timber floor		
Details to include:				Pile size, centres, treatment	YES	NO N/A
Footing size	YES	NO	N/A	Footing size	YES	NO N/A
Subfloor ventilation and insulation	YES	NO	N/A	Bracing layout, type and position	YES	NO N/A
Foundations steel – size and centres	YES	NO	N/A	Joists and bearers	YES	NO N/A
Wall insulation	YES	NO	N/A	Concrete floor		
Wall framing - sizes, centres, treatment, height	YES	NO	N/A	Dimensions, bays, mesh size, plumbing fixtures, point load pads, slab thickenings, etc.	YES	NO N/A
Masonry and slab	YES	NO	N/A	Specific design (raft)	YES	NO N/A
Cladding	YES	NO	N/A	ROOF FRAMING PLAN		
Cavity and battens	YES	NO	N/A	Pitched roof	YES	NO N/A
Building paper	YES	NO	N/A	Ridge beam, rafters, purlins, building paper, insulation	YES	NO N/A
Stairs - tread, rise, pitch, height	YES	NO	N/A	Eaves	YES	NO N/A
Decks and balconies	YES	NO	N/A	Pergola	YES	NO N/A
Linings and finishes	YES	NO	N/A	Trussed Roof	YES	NO N/A
Ceiling insulation	YES	NO	N/A	Truss type	YES	NO N/A
ELECTRICAL PLAN				Point loads identified	YES	NO N/A
Smoke detectors	YES	NO	N/A	Roof bracing	YES	NO N/A
Mechanical light and ventilation	YES	NO	N/A		YES	NO N/A
ELEVATIONS				WEATHERTIGHTNESS - FLASHING DETAILS		
• North	YES	NO	N/A	Windows	YES	NO N/A
• South	YES	NO	N/A	Balconies	YES	NO N/A
• East	YES	NO	N/A	Parapets	YES	NO N/A
• West	YES	NO	N/A	Decks	YES	NO N/A

Wall cladding	☒ YES	☐ NO	☐ N/A	Roof and wall junctions	☒ YES	☐ NO	☐ N/A
Roof cladding	☒ YES	☐ NO	☐ N/A	More than one cladding	☒ YES	☐ NO	☐ N/A
Finished floor levels	☒ YES	☐ NO	☐ N/A	Pergola	☐ YES	☐ NO	☒ N/A
Height in relation to boundary	☐ YES	☐ NO	☒ N/A	Other penetrations	☐ YES	☐ NO	☒ N/A
Maximum building height	☐ YES	☐ NO	☒ N/A				
DECK CONSTRUCTION				SOLID FUEL HEATING			
Foundation plan	☐ YES	☐ NO	☐ N/A	Specifications	☒ YES	☐ NO	☐ N/A
Pile size, centers, treatment	☒ YES	☐ NO	☐ N/A	Construction details	☒ YES	☐ NO	☐ N/A
Bearer size, span, treatment	☐ YES	☐ NO	☐ N/A	Floor plan	☒ YES	☐ NO	☐ N/A
Joist size, centers, treatment	☐ YES	☐ NO	☐ N/A	Energy source	☒ YES	☐ NO	☐ N/A
Detail at junction of house	☐ YES	☐ NO	☐ N/A	Smoke Detectors	☒ YES	☐ NO	☐ N/A
FENCING OF SWIMMING POOLS				OUTBUILDINGS			
Pool construction details	☐ YES	☐ NO	☒ N/A	Foundation plan	☐ YES	☐ NO	☒ N/A
Pool specification	☐ YES	☐ NO	☒ N/A	Cross-section	☐ YES	☐ NO	☒ N/A
In-ground or above-ground	☐ YES	☐ NO	☒ N/A	Wall bracing	☐ YES	☐ NO	☒ N/A
Fencing and gate plan	☐ YES	☐ NO	☒ N/A	Roof framing	☐ YES	☐ NO	☒ N/A
Fencing/construction details	☐ YES	☐ NO	☒ N/A	Elevations	☐ YES	☐ NO	☒ N/A
Floor plan if house forms fencing	☐ YES	☐ NO	☒ N/A	Drainage	☐ YES	☐ NO	☒ N/A
Backflow	☐ YES	☐ NO	☒ N/A	Engineer design	☐ YES	☐ NO	☒ N/A

Building Consent
Compliance with the Building Code
TO BE FILLED OUT BY APPLICANT



The following plans and specifications are attached to this application:

[tick boxes applicable]

- ☐ specifications
 ☐ calculations
 ☐ plans
☐ producer statement
 ☐ other *please specify*

[All plans and specifications must meet the minimum requirements set out in the regulations or required by the building consent authority]

The building work will comply with the Building Code as follows:

Clause [which of the following clauses will be involved in the proposed work?]	Means of Compliance [refer to the relevant compliance(s) or details of alternative solution in the plans and specifications]	Proposed Inspections [state means of inspection. Note PS4 or certification may be required]
☒ B1 Structure	☒ B1/AS1 ☐ NZS3604 ☐ AS/NZS1170 ☐ NZS4229 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ B2 Durability	☒ B2/AS1 ☐ NZS3101 ☐ NZS3602 ☐ NZS3604 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ C1-4 Fire	☐ C/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ D1 Access routes	☒ D1/AS1 ☐ NZS4121 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ D2 Mechanical installations for access	☐ D2/AS1 ☐ NZS4332 ☐ EN81 ☐ EN115 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ E1 Surface water	☒ E1/AS1 ☐ AS/NZS3500.3 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ E2 External moisture	☒ E2/AS1 ☐ Specific design and testing	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ E3 Internal moisture	☒ E3/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ F1 Hazardous agents on Site	☐ F1/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ F2 Hazardous building materials	☐ F2/AS1 ☐ NZS4223 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ F3 Hazardous substances etc	☐ F3/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ F4 Safety from falling	☐ F4/AS1 ☐ FSP Act ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ F5 Construction and demolition hazards	☒ F5/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ F6 Visibility in escape routes	☐ F6/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ F7 Warning systems	☒ F7/AS1 ☐ AS/NZS1668 ☐ NZS4512 ☐ NZS4515 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ F8 Signs	☐ F8/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☒ G1 Personal hygiene	☒ G1/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>
☐ G2 Laundering	☐ G2/AS1 ☐ Other <i>[specify]</i>	☐ Council ☐ Engineer ☐ Other <i>[specify]</i>

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Clause (which of the following clauses will be involved in the proposed work?)	Means of Compliance (refer to the relevant compliance(s) or details of alternative solution in the plans and specifications)	Proposed Inspections (state means of inspection. Note PS4 or certification may be required)
☐ G3 Food preparation and prevention of contamination	☒ G3/AS1 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ G4 Ventilation	☒ G4/AS1 ☐ AS1668.2 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ G5 Interior environment	☒ G5/AS1 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☐ G6 Airborne and impact sound	☐ G6/AS1 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ G7 Natural light	☒ G7/AS1 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☐ G8 Artificial light	☐ G8/AS1 ☐ NZS6703 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ G9 Electricity	☒ G9/AS1 ☐ Other [specify]	☐ By certification only
☒ G10 Piped services	☒ G10/AS1 ☐ NZS5216 ☐ Other [specify]	☐ By certification only
☒ G11 Gas as an energy source	☒ G11/AS1 ☐ Other [specify]	☐ By certification only
☒ G12 Water supplies	☒ G12/AS1 ☐ AS/NZ3500.1 ☐ AS/NZ3500.4 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ G13 Foul water	☒ G13/AS1 ☐ G13/AS2 ☐ G13/AS3 (AS/NZ3500.2 Modified) ☐ BS5572 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☐ G14 Industrial liquid waste	☐ G14/AS1 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ G15 Solid waste	☒ G15/AS1 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]
☒ H1 Energy efficiency	☒ H1/AS1 ☐ NZS4218 ☐ NZS4243 ☐ ALF Design Manual ☐ NZS4214 ☐ Other [specify]	☐ Council ☐ Engineer ☐ Other [specify]

Waiver/modification to the NZ Building Code required for the following parts of code:
--

PIM and Building Consent Application Notes – Guidance on Means of Compliance

The new PIM and Building Consent Application requires the applicant to state, for each relevant building code clause, what the means of compliance is.

The building code clauses and acceptable solutions to each are listed below.

Alternative solutions may also be proposed, and must be accompanied with supporting documentation demonstrating compliance.

To help you identify the relevant code clauses, a few scenarios are presented below, with the typical means of compliance.

Installation of a freestanding or inbuilt fire appliance

- **B1 structure** : B1/AS1 with alterations to framing for the flue penetrations complying with NZS3604.
- **B2 durability** : B2/AS1 particularly important where second hand fires or flues are to be re-used (refer to the minor work checksheet for detail).
- **C1 outbreak of fire** : C/VM1 manufacturers usually test their appliances to NZS2918.
- **E2 external moisture** : E2/AS1 for the flashing of the flue penetration.
- **F7 warning systems** : F7/AS1 smoke detectors within 3 metres of bedroom doors.

Construction of a deck over 1m high with access stairs

- **B1 structure** : B1/AS1 construction and framing generally complies with NZS3604 or where the deck is over 3m high, specifically engineer designed using AS/NZS1170.
- **B1 structure** : B1/AS2 for timber barriers. Other barriers require specific engineering design to AS/NZS1170.
- **B2 durability** : B2/AS1 with timber members are treated in accordance with NZS3602 and fixings to NZS3604.
- **D1 access routes** : D1/AS1 for stair dimensions, slip resistance and handrails.
- **E2 external moisture** : E2/AS1 particularly detailing the junction between deck and house.
- **F4 safety from falling** : F4/AS1 as an area frequented by children under 4 years.
- **F7 warning systems** : F7/AS1 smoke detectors within 3 metres of bedroom doors.

Construction of a garage or other non-habitable accessory building

- **B1 structure** : B1/AS1 with timber construction to NZS3604, masonry construction to NZS4229 or specific design to AS/NZS1170. Proprietary garages are specifically designed.
- **B2 durability** : B2/AS1 with timber treated to NZS3602, and fixings to NZS3604. Cladding used as bracing in proprietary garages is required to be durable for the life of the building.
- **C1 outbreak of fire** : C/AS1 requires that walls within 1m of boundaries to be fire rated to a minimum of 15 mins. Designers should specify systems that have been tested to C/VM1.
- **E1 surface water** : E1/AS1 for stormwater drainage, using E1/VM1 where discharge to a soakpit is proposed. Show drainage from paved driveways.
- **E2 external moisture** : E2/AS1 for ground clearances, and sizing of downpipes.

✓ SPECIFIED SYSTEMS INCLUDED IN PROJECT – BOTH EXISTING & PROPOSED Please tick appropriate boxes		
☐	SS1	Automatic systems for fire suppression
☐	SS2	Automatic or manual warning systems for fire or other dangers
☐	SS3	Electromagnetic or automatic doors or windows
☐	SS4	Emergency lighting systems
☐	SS5	Escape route pressurisation systems
☐	SS6	Riser mains for use by fire services
☐	SS7	Automatic back-flow preventers connected to a potable water supply
☐	SS8	Lifts, escalators, travelators, or other systems for moving people or goods within buildings
☐	SS9	Mechanical ventilation or airconditioning systems
☐	SS10	Building maintenance units providing access to exterior and interior walls of buildings
☐	SS11	Laboratory fume cupboards
☐	SS12	Audio loops or other assistive listening systems
☐	SS13	Smoke control systems
☐	SS14	Emergency power systems for, or signs relating to, a system or feature specified in any of the SS1 – SS13 systems above
☐	SS15	Other fire safety systems or features ie: final exits, fire separations, signs, or systems for communicating evacuation information
☐	SS16	Cable cars (Includes residential)
SPECIFIED SYSTEM DETAILS INCLUDING SPECIFIC TYPE & INSPECTION, MAINTENANCE AND REPORTING PROCEDURES ARE TO BE INCLUDED WITH THE BUILDING CONSENT DOCUMENTS SUBMITTED		

N/A

15th December 2008

Mr G Whitefield
Horowhenua District Council
Private Bag 4002
Levin
5540

RE: Building consent for Waitarere Beach Road

Dear Sir,

Please find enclosed our re-submitted building consent application for the Wing residence at the Waitarere Beach Farm.

We have made the following amendments as noted.

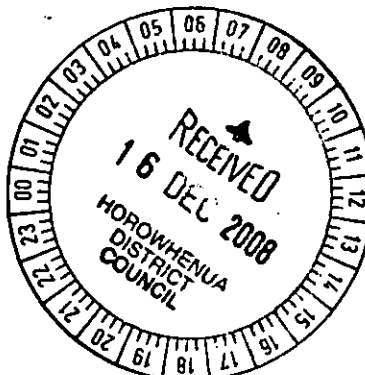
- 1) Inclusion of compliance details
- 2) Trades people details filled out
- 3) A copy of Paul Siggs wastewater design report, please note the wastewater system is to be discharged to the council lateral and therefore does not need to be approved by Harold Barnett (Tim Taylor can confirm this).

If you have any queries regarding the above please do not hesitate to contact the writer.

Regards,



Steve Crombie
General Manger
Signature Homes Palmerston North





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Search Copy

R. W. Muir
Registrar-General
of Land

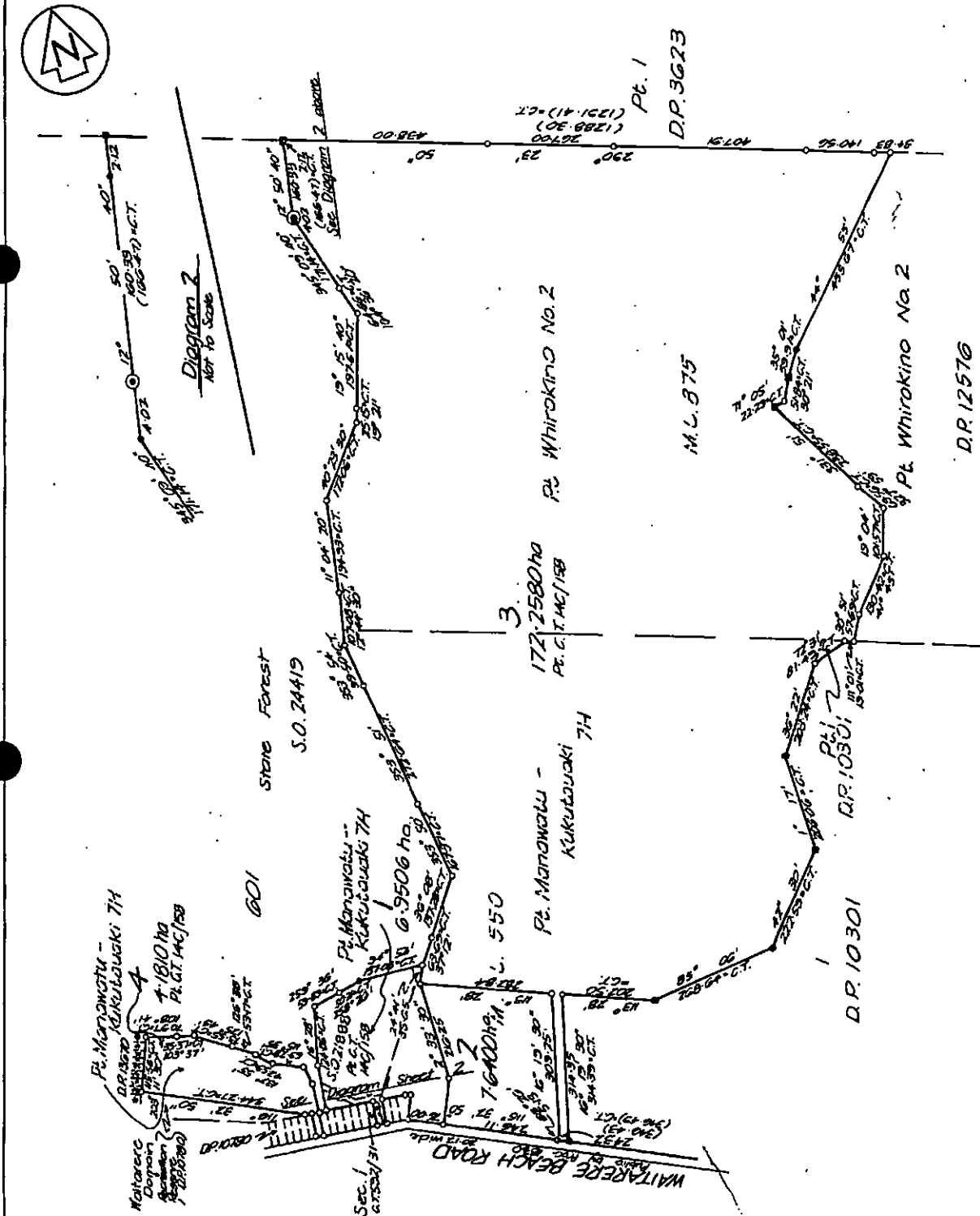
Identifier **WN20B/733**
Land Registration District **Wellington**
Date Issued 24 April 1980

Prior References
WN14C/158

Estate Fee Simple
Area 172.2580 hectares more or less
Legal Description Lot 3 Deposited Plan 50712
Proprietors
Waitarere Rise Limited

Interests

7710188.4 Mortgage to Bank of New Zealand - 5.3.2008 at 9:01 am
7723552.1 Mortgage to Allied Nationwide Finance Limited - 5.3.2008 at 9:08 am
7755815.1 Encumbrance to Horowhenua District Council - 19.3.2008 at 9:00 am



Sheet 1 of 2

LOCAL AUTHORITY: HAWKSWENIA COUNTY
Surveyed by: Easter and Company
Scale: 1:6000 Date: July 1979

LOTS 1 - 4
BEING SUBDIVISION OF PT. WHIRKINO NO.2, PT. MANAWATU-
KUKUTALAKI TH, LOT 21 DP101890, PT LOT 1 QR 10301
AND SECTION 1 BLOCK III MOUTERE S.D.

LAND DISTRICT ... WELLINGTON
SURVEY BLK. & DIST. ... III. MOUTERE
NZMS ... SHEET No.

1. **NAME OF INSTITUTE ORIGINATOR OF PROJECT**
 2. **PROJECT TITLE**
 3. **PROJECT NUMBER**
 4. **PROJECT STATUS**
 5. **PROJECT DESCRIPTION**
 6. **PROJECT OBJECTIVES**
 7. **PROJECT RESULTS**
 8. **PROJECT FUNDING**
 9. **PROJECT CONTACT**
 10. **PROJECT REVIEW**
 11. **PROJECT EVALUATION**
 12. **PROJECT RECOMMENDATIONS**
 13. **PROJECT CONCLUSIONS**
 14. **PROJECT REFERENCES**
 15. **PROJECT APPENDICES**
 16. **PROJECT GLOSSARY**
 17. **PROJECT INDEX**
 18. **PROJECT SUMMARY**
 19. **PROJECT ABSTRACT**
 20. **PROJECT INTRODUCTION**
 21. **PROJECT BACKGROUND**
 22. **PROJECT SCOPE**
 23. **PROJECT LIMITATIONS**
 24. **PROJECT ASSUMPTIONS**
 25. **PROJECT DEFINITIONS**
 26. **PROJECT ACRONYMS**
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中国医药

Registered Owner

Pursuant to a resolution of The Horsham County Council passed on the 11th day of July 1975, approving Paragraph 1 to Section 305 of the Local Government Act 1974, this survey plan and cartilage that the plan is in accordance with the requirements and provisions of the foregoing statutory scheme, the Common Council of The Horsham County Council has affirmed the same in the presence of:



P. P. Gordon
Councillor

C. H. Brown
Councillor

[Signature]
Candy Clerk

W. 2 36

In the matter of Land Transfer Act No. 50712
 and pursuant to section 305(1)(f) of the Local
 Government Act 1974, hereby certify that all the
 transactions shown on or referred to, the scheme
 plan of subdivision have been completed with
 the satisfaction of The Northern Territory Council.

Dated at LEVIN this 11th day of June
 1979

Total Area... 191,0290 ha
Comprised in 657,465/158 (AU)
2 532/34 (AU)

L. Stuart, Robertson, Foshier & Levin
 Registered Surveyors and holders of an unusual practicing certificate
 hereby certify that this plan was drawn from surveys executed
 by us or under our direction; that each title and Survey are correct
 and have been made in accordance with the regulations under the
 Surveyors Act 1845
 Dated at LEVIN
 this 17th day of October 1879
 S. Robertson
 J. Foshier

Field Book 334 69-76 Insects Book 368 69-70-71
 508 1968-69 2008 2175 2185
 Insects Maps 2180 2181 2182 2183 2185 2186
 015 6423 1034 1038 1257 6 13570 ALY 530 6 875
 Examined S. Telfs Corrected 11.30

Approved as to Survey
M. W. Huntington
(Chief Surveyor)
1713-180

Deposited this 22nd day of August 1980
 Notary Public and Registrar

File "Received 8-11-19...
Instructions

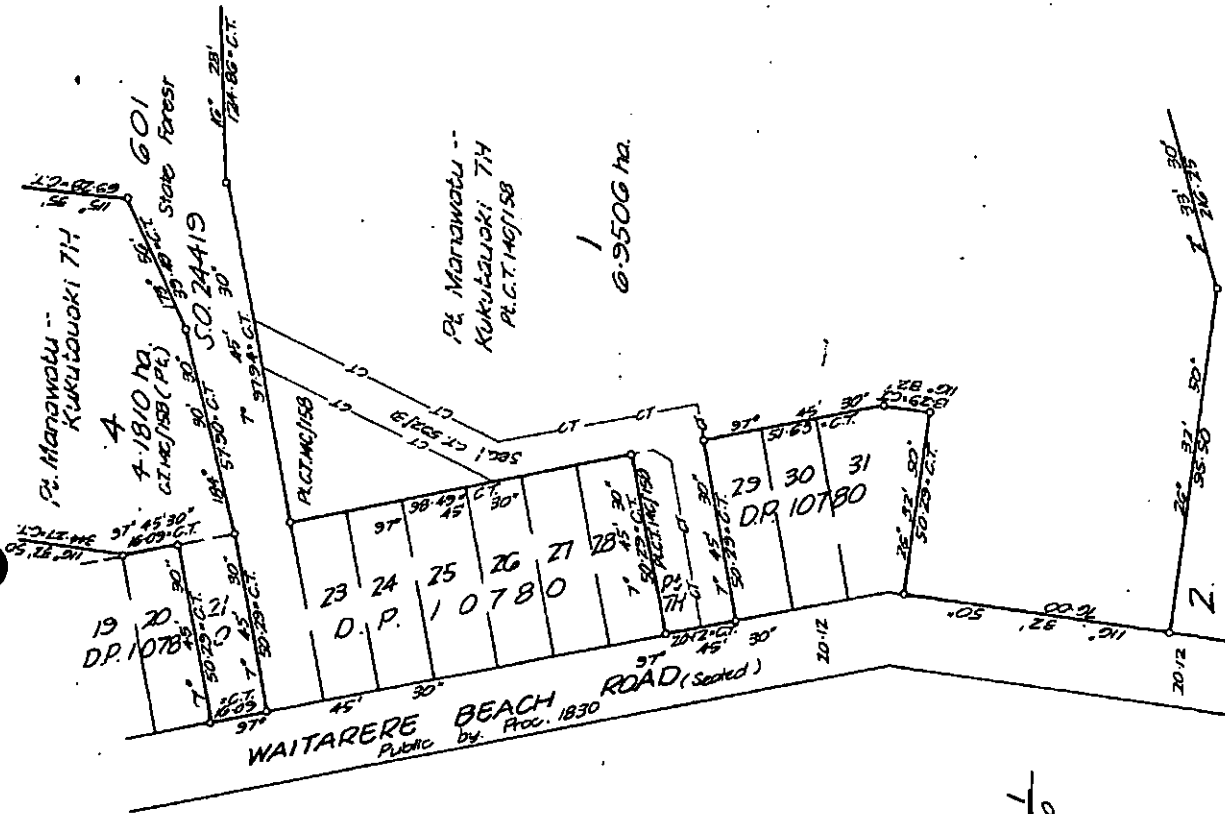


Diagram 1
Scale 1:1000

Sheet 2 of 2

LOCAL AUTHORITY HORIZONTELA COUNTY.
Surveyed by Foster and Company
Scale As shown Date JULY 1979

LOTS 1 - 4
BEING SUBDIVISION OF PT. WHIRIKINO NO.2, PT. MANAWATU -
KUKUTAIKI TH, LOT 21 D.P. 10780, PT. LOT 1 D.P. 10301
AND SECTION 1 BLOCK III MOUTERE S.D.

LAND DISTRICT WELLINGTON
SURVEY BLK. & DIST. III. MOUTERE
NIMS 261 SHEET NO. 524/12.4

Total Area 191.0296 ha.

Comprised in Cat. 140/158 (All)

9. 502/31. (All)

1. Stuart, Robert, Registered Surveyor and holder of an annual practicing certificate hereby certify that this plan has been made from surveys examined by me or under my direction, that both the plan and survey are correct and have been made in accordance with the regulations under the Surveyors Act 1968.
Dated at Wellington this 17th day of October 1979 Signature S.R. Stuart

Field Book 394, A 69-74, Transfer Book 368, 370-71
Reference Plans 368, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Approved as to Survey

M. A. Armstrong

Chief Surveyor

Deposited this 24th day of October 1979

As District Land Registrar

50712

Filed
Received 8-11-79
Instructions

SPECIFICATION

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

NEW HOUSE
SIGNATURE HOMES

BEACH RD
WAITARERE



OWNER: PAUL & DEBBIE WING

Job number: 08-576

Date: NOV 08

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2201 PREPARATION AND GROUNDWORK

1. GENERAL

This section deals with the clearance and excavation of the site area in preparation for footings and floor slabs.

1.1 DOCUMENTS

Documents referred to in this section are:

NZS 3604	Timber framed buildings
OSH	Approved code of practice for safety in excavation and shafts for foundations

1.2 SITE SAFETY

Provide adequate support for all excavations.

2. PRODUCTS

2.1 SAND FILL

Clean sand of such grading in particle size to achieve mechanical compaction to 90% maximum density.

2.2 HARD FILL

65mm stone and 20mm gap topping

2.3 FREE-DRAINING AGGREGATE

Scoria or crushed gravel graded 50 to 14 clean.

3. EXECUTION

3.1 EXCAVATION GENERALLY

Carry out excavation to the guidelines set by the OSH publication: Approved code of practice for safety in excavation and shafts for foundations.

3.2 BURNING OF MATERIALS

Burning of materials is not permitted on site.

3.3 SURFACE PREPARATION

Comply with NZS 3604, section 3.5, Site preparation. Remove all turf, vegetation, trees, topsoil, stumps and rubbish from the area to be built on.

3.4 STOCKPILE TOPSOIL

Stockpile excavated topsoil on site where directed. Keep separate from other excavated materials

3.5 GENERAL EXCAVATION

Trim ground to required profiles, batters, falls and levels. Remove loose material. Protect cut faces from collapse. Keep excavations free from water as much as practically possible.

3.6 FOUNDATION EXCAVATION

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

3.7 INADEQUATE BEARING

If bearing is inadequate then excavate further and backfill with material as follows. Confirm any changes with the territorial authority.

Below slabs on grade:	Hardfill compacted in 150 mm layers
Below footings:	10 MPa concrete
Service trenches:	Hardfill compacted in 150 mm layers

If excavation exceeds the required depths, backfill and compact to the correct level with material as listed.

3.8 GRANULAR BASE FOR SLABS

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

3.9 SURPLUS MATERIAL

Remove surplus and excavated material from the site if requested by the owner at an extra cost to themselves.

3101 CONCRETE

1. GENERAL

This section relates to formwork, reinforcement, concrete mixes and the placing of concrete.

1.1 DOCUMENTS

Documents referred to in this section are:

AS 1366.3	Rigid cellular plastics for thermal insulation - Rigid cellular polystyrene – Moulded (RC/PS – M)
NZS 3101.1	Concrete structures standard
NZS 3104	Specification for concrete production
NZS 3109	Concrete construction
NZS 3114	Specification for concrete surface finishes
NZS 3604	Timber framed buildings
AS/NZS 4671	Steel reinforcing materials

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

2. PRODUCTS

2.1 NORMAL CONCRETE

Normal concrete 17.5 MPa grade, maximum aggregate size 19 mm ready-mixed to NZS 3104. Provide delivery dockets listing mix and despatch details.

2.2 SITE CONCRETE

Special concrete 10 MPa with minimum water for workability, all materials and batching to NZS 3104: table 3.1, Prescribed mixes (P).

2.3 REINFORCEMENT

Bars to AS/NZS 4671. Grade 300E deformed, other than for ties, stirrups and spirals, unless shown otherwise on the drawings. Welded reinforcing mesh to AS/NZS 4671.

2.4 TYING WIRE

Mild drawn steel wire not less than 1.2 mm diameter.

2.5 SPACERS AND CHAIRS

Precast concrete or purpose made moulded PVC to approval. Where concrete spacer blocks are used in exposed concrete work use blocks matching surrounding concrete.

2.6 DAMP-PROOF MEMBRANE

0.25 mm minimum polyethylene to NZS 3604, clause 7.5.4, Damp-proof membrane.

2.7 CELLULAR POLYSTYRENE INSULATION

Proprietary expanded polystyrene (EPS) foam board to AS 1366.3.

3. EXECUTION

3.1 HANDLE AND STORE

Handle and store reinforcing steel and accessories without damage or contamination. Store on timber fillets on hard ground in a secure area clear of any building operation. Lay steel fabric flat.

Ensure reinforcement is clean and remains clean so that at the time of placing concrete it is free of all loose mill scale, loose rust and any other contamination that may reduce bonding capacity.

3.2 FALSEWORK AND FORMWORK

Use falsework and formwork of sufficient strength to retain and support the wet concrete to the required profiles and tolerances. Select formwork finish to produce the specified

finished quality. Ensure timber or plywood used for formwork is non-staining to the set concrete.

Securely fix and brace formwork sufficiently to support loads and with joints and linings tight enough to prevent water loss. Do not use tie wires or rods unless approved in writing by the owner.

Water blast to clean formwork. Keep formwork wet before concrete is placed.

3.3 INSTALL DAMP-PROOF MEMBRANE

Apply polythene membrane to prepared basecourse with 150 mm laps between sheets. Tape seal laps and penetrations with 50 mm wide pressure sensitive plastic tape. Refer to drawings for perimeter details.

3.4 INSTALL CELLULAR POLYSTYRENE INSULATION

Install EPS insulation system to manufacturer's requirements.

3.5 CUT AND BEND REINFORCEMENT

Cut and bend bars using proper bending tools to avoid notching and to the requirements of NZS 3109: 3.3 Hooks and bends. Minimum radii of reinforcement bends to NZS 3109: table 3.1, Minimum radii of reinforcement bends. Do not rebend bars. Where rebending is necessary, use a purpose built tool, proper preparation and preheating.

3.6 ADJUSTMENTS

Use a purpose built tool for on site bending and to deal with minor adjustments to steel reinforcement.

3.7 TOLERANCES, BENDING

To NZS 3109: clause 3.9, Tolerances for reinforcement.

3.8 SECURE REINFORCEMENT

Secure reinforcement adequately with tying wire and place, support and secure against displacement when concreting. Bend tying wire back well clear of the formwork. Spacing as dimensioned, or if not shown, to the clear distance minimums laid down in NZS 3109: clause 3.6, Spacing of reinforcement.

3.9 LAPPED SPLICES

Length of laps where not dimensioned on the drawings in accordance with the SELECTIONS. Increase laps of plain round steel by 100%. Provide laps only where indicated on the drawings. Tie all lapping bars to each other.

3.10 REINFORCEMENT COVER

Minimum cover to all reinforcing bars, stirrups, ties and spirals, as shown on the drawings. Where cover is not shown on drawings provide minimum cover to NZS 3101 part 1, table 3.6, Minimum required cover for a specified intended life of 50 years. Fix chairs for top reinforcement in slabs at 1.0 metre centres or to ensure adequate support. Cover tolerances to NZS 3109: clause 3.9, Tolerances for reinforcement.

3.11 CASTING IN

Build in all grounds, bolts and fixings for wall plates and bracing elements, holding down bolts, pipes, sleeves and fixings as required by all trades and as shown on the drawings, prior to pouring the concrete.

Do not use grounds exceeding 100 mm in length. Location and form of conduits to be approved in writing by the owner. Minimum cover 40 mm. Do not encase aluminium items in concrete. Do not paint steel embedded items more than 25 mm into the concrete encasement. Cut back form ties to specified cover and fill the cavities with mortar.

Form all pockets, chases and flashing grooves as required by all trades and as shown on the drawings.

Wrap all pipes embedded in concrete with tape to break the bond and to accommodate expansion. Do not embed pipes for conveying liquids exceeding a temperature of 50°C in concrete.

- 3.12 **CONSTRUCTION JOINTS**
Locate and construct as shown on the drawings or in accordance with NZS 3109: clause 5.6, 5.6.3 Type B.
- 3.13 **PRE-PLACEMENT INSPECTION**
Do not place concrete until all excavations, boxing and reinforcing have been inspected and passed by the Building Consent Authority.
- 3.14 **SURFACE FINISHES**
To NZS 3114: clause 105, Specification of finishes, as scheduled or as denoted on the drawings.
- 3.15 **EXPOSED CONCRETE**
Formwork linings and surface finishes as nominated for both fair face and concealed or exposed surfaces. Unless detailed, obtain written confirmation of the type and pattern of all joints.
- 3.16 **CONCRETE SURFACE TOLERANCES**
To NZS 3114: clause 104, Surface tolerances and clause 105, Specification of finishes, with the suggested tolerances becoming the required tolerances.
- 3.17 **PUMPING CONCRETE**
Set up and supervise pump operation, placing and compaction of the mix to NZS 3109: clause 7.4, Handling and placing and clause 7.6, Compaction Advise the ready-mix supplier of the type of pump and the slump required, in addition to the concrete grade, strength and quantity.
- 3.18 **COMPACTION**
Use power operated vibrators on foundations, vertical constructions and beams.
- 3.19 **RESIDENTIAL FLOOR SLABS**
Construct to NZS 3604: clauses 4.8 Concrete and 7.5, Concrete slab-on-ground floors in timber buildings. Lay to true and straight surfaces, screeded, floated and steel (manual or power) trowelled finish. Tolerance on flatness: maximum 3 mm gradual deviation over a 3 metre straight-edge, to NZS 3109: clause 104, Surface tolerances.
- 3.20 **SAW CUTS**
Cut slabs where indicated on the drawings and as required to control shrinkage cracking. Carry out cutting as soon as possible, without causing tear-out of aggregate and before shrinkage cracking has occurred, generally within 24 hours of pouring. Where saw cuts are made, cut out 100 mm of every second wire of the mesh for a length of 50 mm each side of the saw cut position. Saw cuts: $\frac{1}{3}$ slab depth or 30 mm minimum.
- 3.21 **SURFACE DEFECTS**
Make good surface defects immediately after forms are stripped. Make good hollows or bony areas with 1:2 mortar or plaster, finished to the same tolerances as the parent concrete. Fill any tie rod holes with 1:2 mortar.
- 3.22 **CURING OF CONCRETE**
Keep damp for not less than seven days. Ensure curing of slabs commences as soon as possible after final finishing, by the use of continuous water sprays, or ponding. Alternately, apply a curing membrane. Ensure any membrane used will not affect subsequent applied finishes.
- 3.23 **STRIKE FORMWORK**
Strike formwork without damaging or overloading structure. Do not remove formwork before the following minimum periods:

12 hours: Sides of beams, walls and columns

4 days: Slabs in beam and slab construction
(leave props under slab spans over 2 metres)
10 days: Props from under slab spans over 2 metres
18 days: Beams, soffits and slab spans over 5 metres

3.24 **CLEAN OUT**
Clean out saw cuts. Fill with cement grout where the floor will be covered with carpet or vinyl.

3.25 **REMOVE**
Remove all unused materials and all concrete and reinforcing debris from the site.

4. **SELECTIONS**

4.1 **DAMP-PROOF MEMBRANE**
Brand/type: 250 micro polythene

4.2 **CELLULAR POLYSTYRENE INSULATION**
Brand: TBA
Grade: S grade
Thickness: 50 mm

4.3 **REINFORCEMENT LAPS**
Where reinforcement laps are not shown on the drawings, lap as follows:

<u>Bar diameter</u>	<u>Grade 300E deformed</u>
10 mm	400 mm
12 mm	500 mm

4.4 **CONCRETE**
Normal concrete:
20.0 MPa: for footings and slab

Prescribed concrete:
10 MPa: Site concrete, bedding concrete and for setting posts

3801 CARPENTRY

1. GENERAL

This section relates to the supply and erection of light timber framing.

1.1 DOCUMENTS

Documents referred to in this section are:

AS/NZS 1328.1	Glued laminated structural timber - Performance requirements and minimum production requirements
AS/NZS 1748	Mechanically stress-graded timber
AS/NZS 2904	Damp-proof courses and flashings
AS/NZS 2918	Domestic solid fuel burning appliances - Installation
NZS 3602	Timber and wood-based products for use in building
NZS 3603	Timber structures standard
NZS 3604	Timber framed buildings
NZS 3631	New Zealand national timber grading rules
NZS 3640	Chemical preservation of round and sawn timber
AS/NZS 4347	Damp-proof courses and flashings - Methods of test
BRANZ Bulletin 368:	Preventing moisture problems in timber framed skillion roofs
BRANZ Bulletin 453:	Fasteners selection

1.2 DIMENSIONS

All timber sizes except for battens are actual minimum dried sizes.

2. PRODUCTS

2.1 TIMBER FRAMING, TREATED

Species, grade and in service moisture content to NZS 3602 and treatment to NZS 3640. Either mechanically stress graded to AS/NZS 1748, or visual grading to NZS 3631.

2.2 LAMINATED TIMBER

Radiata pine laminations to NZS 3606, table 1; treated as required by NZS 3602, to the requirements of NZS 3640, with special attention to Appendix B "Specification advisory notes". Supply weather resistant sealed.

2.3 TIMBER TRUSSES

Moisture content: 16% at supply.

2.4 NAILS

Steel, stainless steel and galvanized steel of pattern to suit the location and to BRANZ Bulletin 453 Fasteners selection.

2.5 BOLTS AND SCREWS

Steel, stainless steel and galvanized steel of pattern to suit the location and to BRANZ Bulletin 453 Fasteners selection.

2.6 NAIL PLATES

Stainless steel and/or galvanized steel toothed or nailed plates to the plate manufacturer's design for the particular locations as shown on the drawings.

2.7 CONNECTORS

Galvanized steel connectors and structural brackets to the connector manufacturer's design for particular locations shown on drawings.

2.8 POLYETHYLENE DPC

Polyethylene film to AS/NZS2904 and embossed on both sides. Thickness 500 microns minimum, manufactured for use as a damp-proof course and concealed flashings to doors and windows.

- 2.9 **BITUMINOUS IMPREGNATED DPC**
Heavy Kraft impregnated with high grade bitumen and coated with higher heat resistant bitumen to AS/NZS 2904 and AS/NZS 4347.
3. **EXECUTION**
- 3.1 **EXECUTION GENERALLY**
To NZS 3603 and NZS 3604 except as varied in this specification. Execution to include those methods, practices and processes contained in the unit standards for the National Certificate in Carpentry and the National Certificate in Joinery (cabinetry, exterior joinery, stairs).
- 3.2 **SEPARATION**
Separate all timber framing timbers from concrete, masonry and brick by: -
- a full length bituminous damp-proof membrane overlapping timber by at least 6 mm; or
- a 12 mm minimum free draining air space
- 3.3 **ATTENDANCE**
Provide and fix blocks, nogs, openings and other items as required by other trades.
- 3.4 **MOISTURE CONTENT**
Maximum allowable equilibrium moisture content (EMC) for non air-conditioned or centrally heated buildings for framing to which linings are attached.
Framing at erection: 24% maximum
Framing at enclosure: 20% maximum
Framing at lining: 16% maximum
- 3.5 **SET-OUT**
Set out framing in accordance with the requirements of NZS 3604 and as required to support sheet linings and claddings.
- 3.6 **FRAMING WALLS**
Frame to required loading and bracing complete with lintels and nogs, all fabricated and fastened to NZS 3604, section 8, Walls.
- 3.7 **FRAMING ROOFS**
Frame to required loading and bracing complete with valley boards, ridge boards and purlins. Design and fit roof trusses complete with anchorage. All fabricated and fastened to NZS 3604, section 9, Posts and 10, Roof framing.
- 3.8 **FRAMING CEILINGS**
Frame to required loading and bracing complete with battens set out to support ceiling lining. All fabricated and fastened to NZS 3604, section 13, Ceilings. Trim for openings in ceilings and hatches to NZS 3604 section 13.3, Openings in ceilings.
- 3.9 **INSTALLING WALL WRAPS AND UNDERLAYS**
Refer to WALL CLADDING and THERMAL INSULATION for the installation of wall wraps and underlays.
- 3.10 **DPC TO TIMBER**
Lay bituminous DPC under the bottom plate of all timber framed walls on concrete, in a single layer with 50 mm overlaps at joints to provide a waterproof barrier.
- 3.11 **INSTALL PROPRIETARY FIREPLACE**
Prepare for the installation as detailed and as required by the manufacturer. Install strictly in accordance with AS/NZS 2918 and the manufacturer's stated and detailed requirements.
4. **SELECTIONS**
Use all or some of the following schedules when there is insufficient information included on the drawings. Refer to NZS 3602 table 1 Requirements for wood-based building components..., for more detailed information.

4.1	EXTERIOR WALL FRAMING			
	<u>Member</u>	<u>Species</u>	<u>Grade</u>	<u>Treatment</u>
	Exterior walls:	Radiata pine	MSG8	H1.2
4.2	ROOF FRAMING			
	<u>Member</u>	<u>Species</u>	<u>Grade</u>	<u>Treatment</u>
	Trusses:	Radiata pine	As designed	H1.2
	Rafters:	hyJOITS		H3
	Purlins:	Radiata pine	MSG6	H1.2
4.3	LAMINATED VENEER LUMBER (LVL)			
	<u>Member</u>	<u>Brand</u>		<u>Type</u>
	Rafters:	hyJOIST		240x63
4.4	INTERIOR FRAMING			
	<u>Member</u>	<u>Species</u>	<u>Grade</u>	<u>Treatment</u>
	Non structural walls:	Radiata pine	MSG8	H1.2
	Structural and braced walls:	Radiata pine	MSG8	H1.2
4.5	INTERIOR FINISHING TIMBERS			
	<u>Member</u>	<u>Species</u>	<u>Grade</u>	
	Architraves:	Radiata pine	Dressing	
	Skirtings:	Radiata pine	Dressing	
4.6	DPC			
	Brand/Type:	Bituminous		

4102T THERMAKRAFT WRAPS, UNDERLAYS AND DPC

1. GENERAL

This section relates to the application of Thermakraft Industries (NZ) Ltd DPC, underfloor foil insulation, wall wraps and roofing underlays.

Documents

1.1 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC	E2/AS1 External moisture
AS 1530	Methods for fire tests on building materials, components and structures
NZS 2295	Pliable, permeable building underlays
AS/NZS 2904	Damp-proof courses and flashings
NZS 3604	Timber framed buildings
NZS 4200	Pliable building membranes and underlays
AS/NZS 4347	Damp-proof courses and flashings – Methods of test
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire
BRANZ	Appraisal Certificate No. 356
BEAL	Thermakraft Cover-up breather-type building membrane
	Appraisal C403 Thermakraft Aluband window sealing tape and Aluband corner moulded piece system
NZMRM	NZ Metal Roof and Wall Cladding – Code of Practice

Documents listed above and cited in the clauses that follow are part of this specification. However this specification takes precedence in the event of it being at variance with the cited document.

1.2 MANUFACTURER'S DOCUMENTS

Thermakraft documents relating to work in this section are:
Thermakraft product manual and technical data sheets.

Copies of the above literature are available from:

Web: www.thermakraft.co.nz
Telephone: 0800 806 595

1.3 MANUFACTURERS WARRANTY

Warrant this work under normal environmental and use conditions against failure of materials and execution. Thermakraft Industries Ltd warrant their wall wraps and roofing underlays to meet the durability of the cladding up to 50 years.

1.4 ABBREVIATIONS

The following abbreviations are used in this specification.

BEAL	Building Elements Assessment Laboratory.
NZMRM	New Zealand Metal Roofing Manufacturers Inc.
NASH	National Association of Steel Framed Buildings

1.5 INTERPRETATION

Wall underlay used in this specification has the same meaning as building wraps in NZS 3604 and NZBC E2/AS1.

Requirements

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified materials, or associated products, components or accessories.

- 1.7 **INSTALLATION SKILL LEVELS**
Installers to be experienced in the installation of **Thermakraft** products and familiar with **Thermakraft** Industries technical literature and the NZMRM NZ Metal Roof and Wall Cladding – Code of Practice.

2. **PRODUCTS**

Materials

DPC

- 2.1 **EMBOSSSED POLYETHYLENE**
Supercourse 500 hi-impact polyethylene film to AS/NZS2904 and embossed on both sides. Thickness 500 microns minimum, manufactured for use as a damp-proof course and concealed flashings to doors and windows and complying with BRANZ Appraisal Certificate No. 329.
- 2.2 **HEAVY KRAFT BITUMINOUS COATED AND POLYMERIC FILM LAMINATE**
Thermakraft MirraBlack DPC, an encapsulated bitumen and bitumen saturated kraft with high strength polymeric film, complying with BRANZ appraisal certificate no. 560.

Wall wraps / underlay

- 2.3 **POLYETHYLENE BREATHER TYPE MEMBRANE**
Thermakraft Cover-Up high tensile coated polyolefin woven into sheet form with micro sized pores that allow the membrane to breathe with a fire retardant flammability index of 1, tested to AS 1530. To comply with BRANZ appraisal certificate No. 356.

Roofing underlay

- 2.4 **BITUMINOUS SELF-SUPPORTING ROOFING UNDERLAY**
Thermakraft 215 bituminous self-supporting roofing underlay tested to NZS 2295.

Accessories

- 2.5 **WINDOW DOOR SEALING SYSTEM**
Thermakraft Aluband system consists of aluminium faced bituminous window sealing tape, **Thermakraft Aluband** corner moulded polyethylene (PE) piece, used in conjunction with the **Thermakraft Aluband** hand tool to ensure proper adhesion and a tight fit into corners. See **Thermakraft** Data Sheet 312 for installation details and BEAL Appraisal C403.
- 2.6 **TAPE**
Thermakraft tapes to compliment the underlay. Pressure sensitive aluminium foil tapes for joining foil insulation and vapour barriers. **Thermakraft Aluband** tape can be use to repair damaged bituminous building papers.

3. **EXECUTION**

Conditions

- 3.1 **GENERAL REQUIREMENTS**
To NZS 3604 Section 11 Table 11.1 Underlays; and NZBC E2/AS1 Table 23 Properties of Roof Underlays and Building Wraps; and **Thermakraft** Industries technical literature.
- 3.2 **STORAGE**
Store building underlays and accessory materials, under conditions that ensure no deterioration or damage. Store rolls in an upright position on a smooth floor and protected from sunlight, UV radiation and moisture.
- 3.3 **INSPECTION**
Before starting work, check that the framing will allow work of the required standard. Carry out remedial work identified before laying underlay.

Application DPC

3.4 DPC TO TIMBER

Lay DPC under the bottom plate of all timber / steel framed walls on concrete, in a single layer with 50 mm overlaps at joints to provide a waterproof barrier. Refer to SELECTIONS for type.

Application – Wraps / wall underlay

3.5 WALL UNDERLAY

Fix horizontally to outside face of framing in true alignment, with succeeding sheets overlapping 150 mm. Fix to Thermakraft Industries requirements. Scribe neatly around penetrations and openings to leave no gaps. Tape all penetrations. Keep clean, undamaged and without visible weather deterioration until closed in.

Application - Roofing underlay

3.6 BUILDING PAPER ROOF UNDERLAY

Lay horizontally across the trusses starting at the gutter line with succeeding sheets in true alignment and lapping 150 mm. Scribe around and fit neatly to all penetrations. Avoid prolong exposure by installing the roof immediately. Installation to comply with NZBC E2/AS1 clause 8.1.5.1.

Completion

3.7 CLEAN UP

Clean up as the work proceeds.

3.8 LEAVE

Leave work to the standard required by following procedures.

3.9 REMOVE

Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 DPC

Type: **Thermakraft Mirrabalck DPC**

4.2 WALL WRAPS / UNDERLAYS – ABSORBENT CLADDING

Type: **Thermakraft Cover-Up polyethylene fire retardant breather type membrane**

4.3 ROOFING UNDERLAYS

Type: **Thermakraft 215 bituminous self-supporting breather type building paper**

Accessories

4.4 WINDOW/DOOR SEALING SYSTEM

Type: **Thermakraft Aluband Window Sealing System (comprising of Aluband Corner Moulded Piece and Aluband Window Sealing Tape).**

4201HW JAMES HARDIE WEATHERBOARD CLADDING

1. GENERAL

This section relates to the supply and fixing of the following fibre cement products:

- James Hardie Linea® Weatherboard cladding
- James Hardie selected soffit lining

Documents

1.1 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC E2/AS1	External moisture, 9.0 Wall claddings
NZBC E2/VM1	Weathertightness
AS/NZS 1170.2	Structural design actions - Wind actions
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber framed buildings
NZS 4203	General structural design and design loadings for buildings

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.2 MANUFACTURER'S DOCUMENTS

James Hardie documents relating to work in this section are:

Linea® Weatherboard technical specification
James Hardie Weatherboards technical specification
Eaves and Soffit Linings installation manual
BRANZ Appraisal certificate No. 447 (2005) Linea® Weatherboard cavity construction

Copies of the above literature are available at

Web: www.jameshardie.co.nz

Telephone: Ask James Hardie™ on 0800 808 868

The BRANZ appraisal is available at www.branz.co.nz.

Requirements

1.3 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

Performance

1.4 FIXINGS, WIND

Design and use the fixings appropriate for the wind zone (R) and topographical classification (T) of this site and building height; as required by James Hardie technical specification and the wind loads on various wall areas as given by NZS 4203 or AS/NZS 1170.

2. PRODUCTS

Materials

2.1 BUILDING WRAP

Waterproof, breather type to NZBC E2/AS1, Table 23: Properties of roof underlays and building wraps.

2.2 LINEA® WEATHERBOARDS

James Hardie Linea® Weatherboards, 16 mm thick, pre-primed, manufactured from a reduced density cellulose fibre cement formulation and cured by high pressure

autoclaving, manufactured to AS/NZS 2908.2, tested to NZBC E2/VM1 for weathertightness and complying with the NZBC.

2.3 SOFFIT LINING

James Hardie 4.5 mm Hardisoffit® Lining, manufactured from treated cellulose fibre, Portland cement, sand and water and cured by high pressure autoclaving manufactured to AS/NZS 2908.2.

Components

2.4 GALVANIZED NAILS

60 mm x 3.15 mm diameter jolt head

75 mm x 3.15 mm diameter jolt head

2.5 SOFFIT JOINTERS AND CAPPING MOULDS

Extruded PVC jointer, 2 way jointer, capping and scotia mould.

Accessories

2.6 SEALANT

Fosroc MS sealant or similar. Refer to James Hardie technical specifications for application requirements.

3. EXECUTION

Conditions

3.1 STORAGE

Take delivery of weatherboards dry and undamaged in pallets and lay horizontally on a smooth level surface. Protect edges and corners from damage and cover to keep dry until fixed.

3.2 HANDLING

Avoid distortion and contact with potentially damaging surfaces. Carry weatherboards in vertical position. Do not drag weatherboards across each other, or across other materials. Protect edges, corner and surface finish from damage.

3.3 SUBSTRATE

Do not commence work until the substrate is of the standard required by James Hardie for the specified finish; plumb, level and in true alignment. Moisture content of timber framing must not exceed the requirements specified by NZS 3602 to minimise shrinkage and movement after sheets are fixed.

Application - generally

3.4 FIX BUILDING WRAP

Run and fix building wrap in full height rolls to wall framing, with fixing and end laps to NZS 3604 and the wrap manufacturer's requirements and with the wrap not damaged in any way.

3.5 PENETRATIONS AND FLASHINGS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:

- Building wrap appropriately incorporated with penetration and junction flashings.
- Materials lapped in a way that water tracks down to the exterior face of the building wrap.
- Wall cladding underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames and other penetrations
- Claddings neatly finished off to all sides of openings
- Installation of flashings (those required to be installed prior to installation of penetrating elements).

- 3.6 **INSTALL LINEA® WEATHERBOARDS**
Cut weatherboards to required lengths and fit joints off-stud using tongue and groove ends. Fit internal corners and weatherboards as per Linea® Weatherboard technical specifications. Fit and fix external corners and joint soakers as required.
- 3.7 **INSTALL FLASHINGS**
Install flashings at all wall openings, penetrations, junctions, connections, window sills, heads and jambs to NZBC E2/AS1.
- 3.8 **INSTALL SOFFIT SHEETS**
Cut sheets dry and scribe fit to fully support all edges and joints. Nail and insert PVC fasteners to James Hardie requirements. Fit complete with jointers and capping moulds. Refer to Eaves and Soffits technical specification.

Completion

- 3.9 **REPLACE**
Replace all damaged or marked elements.
- 3.10 **LEAVE**
Leave work to the standard required for following procedures.
- 3.11 **REMOVE**
Remove debris, unused materials and elements from the site.

4. SELECTIONS

- 4.1 **BUILDING WRAP**
Brand/type: Thermakraft Coverup
Flashing tape: Thermakraft Aluband

Linea® Weatherboards

- 4.2 **LINEA® WEATHERBOARDS**
Brand/type: James Hardie Linea® Weatherboard
Thickness: 16 mm
Width: 150 mm
- 4.3 **LINEA® WEATHERBOARD CORNERS**
Type: Mitred
Soaker type: Stainless Steel

Soffits

- 4.4 **SOFFIT SHEETS**
Brand/type: Hardisoffit Lining
Type: 4.5mm
Jointer type: PVC

4231HF JAMES HARDIE FACADE CLADDING

1. GENERAL

This section relates to the supply and fixing of Titan® Facade Panel rainscreen.

Related work

1.1 RELATED SECTIONS

Refer to JAMES HARDIE WEATHERBOARD CLADDING for Linea™ Weatherboards and James Hardie Weatherboards.

Refer to PAINTING section for the protective coating required to meet the NZBC durability requirements.

Documents

1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC E2/AS1	External moisture, 9.0 Wall claddings
AS/NZS 1170.2	Structural design actions - Wind actions
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber framed buildings
NZS 4203	General structural design and design loadings for buildings
AS/NZS 4284	Testing of building facades

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.3 MANUFACTURER'S DOCUMENTS

James Hardie documents relating to work in this section are:

Titan® Facade Panel/ExoTec® Facade Panel Rainscreen technical specification
Titan® Facade Panel/CLD® Structural Cavity Batten technical specification
HardiFlex® Sheet technical specification
Eaves and Soffit Linings technical specification
BRANZ Appraisal certificate No. 467 (2005) Titan® & ExoTec® Facade Panel Rainscreen

Copies of the above literature are available

Web: www.jameshardie.co.nz

Telephone: Ask James Hardie™ on 0800 808 868.

Requirements

1.4 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

Performance

1.5 FIXINGS, WIND

Design and use the fixings appropriate for the wind zone (R) and topographical classification (T) of this site and building height; as required by NZS 3604 and the wind loads on various wall areas to NZS 4203 or AS/NZS 1170.

2. PRODUCTS

Materials

2.1 BUILDING WRAP

Breather type to NZBC E2/AS1, Table 23: Properties of roof underlays and building wraps.

- 2.2 **RIGID AIR BARRIER**
James Hardie RAB® Board 5.5 mm thick, manufactured from treated cellulose fibre, Portland cement, sand and water, cured by high pressure autoclaving manufactured to AS/NZS 2908.2 and face sealed.
- 2.3 **EXTERIOR STRUCTURAL CAVITY BATTENS**
James Hardie CLD® Structural Cavity Batten, 2450mm long, 70mm wide and 19mm thick manufactured from treated cellulose fibre, Portland cement, sand and water. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2. James Hardie CLD® Structural Cavity Battens are suitable to carry the load of Titan® Facade Panel cladding. James Hardie Titan® Facade Panel and CLD® Structural Cavity Batten installed as per the James Hardie technical specification have been tested in a NATA accredited testing laboratory and complies with requirements of NZBC Sections B1, B2 and E2. The battens have both faces and all edges presealed.
- 2.4 **EXTERIOR CAVITY VERMIN-PROOFING**
Perforated uPVC, with upstands.
- 2.5 **EXOTEC FACADE PANEL**
James Hardie ExoTec® Facade Panel, high density autoclaved sheet, 1190 mm wide x 9 mm thick manufactured from treated cellulose fibre, Portland cement, sand and water. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2. BRANZ appraised and tested to AS/NZS 4284 for weathertightness. Both faces and all edges presealed.
- 2.6 **TITAN FACADE PANEL**
James Hardie Titan® Facade Panel, medium density autoclaved sheet, 1190 mm wide x 9 mm thick manufactured from treated cellulose fibre, Portland cement, sand and water. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2. BRANZ appraised, tested to AS/NZS 4284 for weathertightness. Both faces and all edges presealed.

Components

- 2.7 **FASTENER TYPE**
Fasteners to minimum durability requirements of the NZBC. Refer to NZS 3604, Section 4 Durability, for requirements for fixing's material to be used in relation to the exposure conditions.

Refer to NZBC E2/AS1, Table 20, Material selection, and Table 21, Compatibility of materials in contact, for selection of suitable fixing materials and their compatibility with other materials.
- 2.8 **NAIL / SCREWS, CLD® STRUCTURAL CAVITY BATTEN FIXING**
Hot dip galvanized 65 mm x 2.8 mm RoundDrive ring shank nail for fixing to timber framing. 40 mm x 9-10g countersunk head steel screw (Class 3 or 4) for fixing to steel framing
- 2.9 **NAIL/SCREWS, TITAN FACADE PANEL FIXING TO CLD® BATTEN**
Titan® Facade Panel fixing to CLD® Structural Cavity Batten.
Stainless Steel C-25 'T' Head brad nail for wind pressure up to 1.5Kpa.
For wind pressures up to 2.5Kpa (select one of the following):
25 mm x 2.5 mm annular threaded fibre cement nail.
25 mm x 8-15g or pan / wafer head exposed screw (Class 3/ 4)
25mm x 10g countersunk screw (Class 3/ 4 or stainless steel)
- 2.10 **GALVANIZED NAILS**
Hot dip galvanized HardiFlex® nails for Titan® Facade Panel fixing
60 mm x 3.15 mm diameter for cavity construction.
- 2.11 **STAINLESS STEEL NAILS**
316 stainless steel HardiFlex® nails for Titan® Facade Panel fixing.

60 mm x 3.15 mm diameter for cavity construction.

- 2.12 **HORIZONTAL T SOCKET JOINTER**
Aluminium T socket manufactured from grade 5005 aluminium alloy.

- 2.13 **SOFFIT JOINTERS AND CAPPING MOULDS**
Extruded PVC jointer, 2 way jointer, capping and scotia mould.

Accessories

- 2.14 **SEALING STRIPS**
Inseal[®] 3259, 1.5 mm thick x 50 mm wide black compressible medium density closed cell foam tape.

Butyl rubber black membrane with a 6 mm x 9 mm Inseal 3109 adhered along each edge of one face with pressure sensitive acrylic adhesive. 50 mm wide for vertical joints and 80 mm wide for corners.

Polypropylene / Polyethylene flashing for internal and external corners used with CLD[®] structural cavity batten.

- 2.15 **ADHESIVE FOR CLD[®] STRUCTURAL CAVITY BATTEN**
Bostik 'Seal N Flex-1' to be applied continuous 6 mm thick bead(s) to the face of CLD[®] Structural Cavity Batten to adhere the Titan[®] Facade Panel.

- 2.16 **SEALANT**
Fosroc MS sealant or similar. Refer to the sheet manufacturer's technical literature for selection and use requirements.

3. EXECUTION

Conditions

- 3.1 **STORAGE**
Take delivery of battens and sheets dry and undamaged in pallets and lay horizontally on a smooth level surface. Protect edges and corners from damage and cover to keep dry until fixed.

- 3.2 **HANDLING**
Avoid distortion and contact with potentially damaging surfaces. Do not drag sheets across each other, or across other materials. Protect edges, corner and surface finish from damage.

- 3.3 **SUBSTRATE**
Do not commence work until the substrate is of the standard required for the specified finish; plumb, level and in true alignment. Moisture content of timber framing must not exceed the requirements specified by NZS 3602 to minimise shrinkage and movement after sheets are fixed.

For facade panel confirm that 75 mm framing for vertical joints and 125 mm nogs for horizontal joints have been correctly installed when using timber cavity battens.

- 3.4 **SEAL CUT ENDS, CLD[®] STRUCTURAL CAVITY BATTEN**
Site cut batten ends to be between 20 – 45 degrees and sealed with Dulux AcraPrime 501/1 sealer prior to installation with the butt joint deflecting moisture to the exterior.

- 3.5 **SEAL EDGES**
Seal site cut sheet edges prior to installation. Seal sheet edges around window and door openings, meter boxes and at other penetrations.

Application - generally

- 3.6 **FIX BUILDING WRAP**
Run and fix building wrap in full height rolls to wall framing, with fixing and end laps to NZS 3604 and the wrap manufacturer's requirements and with the wrap not damaged in any way.
- 3.7 **INSTALL DRAINED CAVITY WITH CLD® STRUCTURAL CAVITY BATTEN**
James Hardie uPVC vent strip to be fixed between the CLD® Structural Cavity Battens at the Titan® Facade Panel joints, install the vent strip as per Titan® and CLD® Structural Cavity Batten technical specification details.
- 3.8 **PENETRATIONS AND FLASHINGS**
Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:
- Building wrap appropriately incorporated with penetration and junction flashings.
 - Materials lapped in a way that water tracks down to the exterior face of the building wrap.
 - Wall cladding underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames and other penetrations
 - Claddings neatly finished off to all sides of openings
 - Installation of flashings (those required to be installed prior to installation of penetrating elements).

Install Titan®/ExoTec® Facade Panels

- 3.9 **RIGID AIR BARRIER (RAB) BOARD**
Fix the RAB board to studs and nogs with 40 mm x 2.8 mm HardiFlex® nails at 300 mm centres. The minimum distance of fixings from RAB board edges must be 12 mm. Refer to James Hardie Rainscreen technical specification, Table 3, Fixing durability, for durability requirements of fixings.
- 3.10 **RAINSCREEN HORIZONTAL JOINT**
Glue Aluminium 'T' Socket to the top of the back face of the lower panel. Do not allow fixings through the upper sheet to penetrate through the aluminium socket.
- 3.11 **CLD® STRUCTURAL CAVITY BATTEN**
Fix battens to all studs using 65 mm x 2.8 mm RounDrive ring shank nails for timber framing/ 40 mm x 9-10g countersunk head steel screw (Class 3 or 4) for steel framing at fixing centres as per James Hardie Titan® Facade Panel and CLD® Structural Cavity Batten technical specification, Table 2: Batten Fixing. Fasteners to be driven at a minimum distance of 50 mm from the batten ends. Refer to James Hardie Titan® Facade Panel and CLD® Structural Cavity Batten technical specification, Table 3 for durability requirements of fixings.
- 3.12 **TITAN® FACADE PANEL RAINSCREEN**
Fix Titan® Facade Panels to Timber Battens.

<u>Stud centres</u>	<u>Fixing type</u>	<u>Fixings to perimeter studs/nogs (maximum)</u>	<u>Fixings to intermediate stud (maximum)</u>
600 mm	60 mm x 3.15 mm ø HardiFlex® nail	200 mm	200 mm
600 mm	65 mm x 10g screw	200 mm	300 mm
400 mm	60 mm x 3.15 mm ø HardiFlex® nail	150 mm	150 mm
400 mm	65 mm x 10g screw	200 mm	200 mm

- 3.13 **TITAN® FACADE PANEL**
Fix Titan® Facade Panels to CLD® structural cavity battens.
Once adhesive sealant is applied to CLD® structural cavity battens fix Titan® Facade Panels with selected fixings at maximum centres as per Table 3 and details to James Hardie Titan® Facade Panel and CLD® Structural Cavity Batten technical specification.

- 3.14 **EXOTEC® FACADE PANEL RAINSCREEN OVER TIMBER CAVITY BATTENS**
Fix ExoTec® Facade Panels to timber cavity battens. ExoTec® facade panels must only be screw fixed.

<u>Stud centres</u>	<u>Fixing type</u>	<u>Fixings to perimeter studs/nogs (maximum)</u>	<u>Fixings to intermediate stud (maximum)</u>
600 mm	65 mm x 10g screw	200 mm	300 mm
400 mm	65 mm x 10g screw	200 mm	200 mm

- 3.15 **EXOTEC® FACADE PANEL RAINSCREEN OVER STEEL TOP HAT SECTIONS**
Fix ExoTec® Facade Panels to Top Hat steel sections as per Table 4 of James Hardie ExoTec® Facade Panel Top Hat Rainscreen technical specification.

3.16 **FIXING GENERALLY**

All panel edges must be supported. The screws must be driven perfectly tight against the panels so that there is no movement between the panels and framing. Use a hand screw driver to finally tighten all screws. The minimum edge distance as per technical specification must be maintained when fixing screws or nails through the rainscreen panels. When countersunk screws are used the screw head must be set between 1.5 mm minimum to 2.0 mm maximum below the panel surface.

Use James Hardie countersinking drill bit to drill holes in the panel. The drill speed must be set between 400 and 560 rpm.

3.17 **FINISHING SITE CUT EDGES**

Any penetrations as well as site cut sheet edges must be sealed with an appropriate sealer that is compatible with the finishing coat.

3.18 **FINISHING SEALANTS**

Apply and use of sealants to manufacturer's instructions. Check with sealant manufacturer prior to coating over sealants.

3.19 **FINISHING SCREW FILLER**

Fill all countersunk screw holes with an epoxy filler. The countersunk holes must be clean and dry before they are filled. Ensure that the screws are perfectly tight and there is no movement between the panel and framing before the holes are filled. Use Nuplex Fairing Cream or a similar product for this purpose. Refer to the epoxy manufacturer recommendation before use.

3.20 **FINISHING GENERAL**

Refer to PAINTING for protective coating system. Panels must be coated within 90 days of installation.

Soffits

3.21 **INSTALL SOFFIT SHEETS**

Cut sheets dry and scribe fit to fully support all edges and joints. Nail and insert PVC fasteners to James Hardie requirements. Fit complete with jointers and capping moulds. Refer to Eaves and Soffit Linings technical specification.

Completion

3.22 **REPLACE**

Replace all damaged or marked elements.

3.23 **LEAVE**

Leave work to the standard required for following procedures.

3.24 **REMOVE**

Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 BUILDING WRAP

Brand/type: Thermakraft Coverup
Flashing tape: Thermakraft Aluband

4.2 RIGID AIR BARRIER

Brand/type: James Hardie RAB® Board
Thickness: 5.5 mm

4.3 CLD® STRUCTURAL CAVITY BATTENS

Brand/type: James Hardie CLD® Structural Cavity Batten
Thickness: 19 mm

4.4 TITAN FACADE PANELS

Brand/type: James Hardie Titan® Facade panel
Thickness: 9 mm

4.5 SOFFIT SHEETS

Brand/type: James Hardie
Thickness: 4.5 mm
Jointer: PVC

4301 PROFILED METAL ROOFING

1. GENERAL

This section relates to the supply and installation of profiled sheet roofing, complete with all roof underlays and accessories to create a watertight roof.
It is not suitable for applications where safety mesh is required.

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC E2/AS1	External moisture
	4.0 Flashings
	8.0 Roof claddings
	8.1 General
	8.4 Profiled metal
AS 1397	Steel sheet and strip - hot-dipped, zinc-coated, or aluminium/zinc-coated
NZS 3403	Specification for hot-dipped galvanized corrugated steel sheet for building purposes
NZS 3604	Timber framed buildings
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire
NZMRM	NZ Metal roof and wall cladding - Code of practice

1.2 ABBREVIATIONS

The following abbreviations are used throughout this part of the specification:

BMT	Base metal thickness
NZMRM	New Zealand Metal Roofing Manufacturers Inc.

1.3 QUALIFICATIONS

Carry out roofing work using experienced, competent roofers familiar with the materials and techniques specified.

1.4 WIND AND EARTHQUAKE LOADINGS

Use fixings and methods capable of sustaining the loads appropriate to the area as set out in NZS 3604, section 5: Bracing design.

1.5 CO-ORDINATE

Co-ordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access and completion of the roof.

1.6 PERFORMANCE

Accept responsibility for the weather-tight performance of the completed roofing system, including all penetrations through the roof and junctions with walls and parapets.

1.7 WARRANTY

Warrant this work under normal environmental and use conditions against failure of weatherproofing and materials

Warranty period - materials: 5 years

Warranty period - execution: 5 years

Refer to the general section for the required form of WARRANTY AGREEMENT and details of when completed warranty must be submitted.

2. PRODUCTS

2.1 PROFILED METAL ROOFING

Steel sheet galvanized to NZS 3403, aluminium/zinc coated to AS 1397. Finish as specified. Accessories, cappings, flashings and fixings to match and to the roofing manufacturer's requirements.

2.2 UNDERLAY

Thermakraft 215 Self Supporting

- 2.3 **NAILS, SCREWS AND FASTENINGS**
Metal, size and pattern, to roofing manufacturer's requirements and complying with the relevant aspects of NZS 3604, section 4: Durability.
3. **EXECUTION**
- 3.1 **STORAGE**
Stack roofing and accessories on clean, level areas of the site and protect from damage and from weather until ready to fix in place. Avoid overloading roof structure when roofing materials are placed on the roof area prior to installation.
- 3.2 **SET-OUT**
Set out the planned layout before fixing commences, to ensure true lines and the correct relationship to module, grid and roof features.
- 3.3 **LAY ROOF UNDERLAY**
Lay and fix to NZBC E2/AS1: 8.1.5 Underlays, NZS 3604, section 11.2.2, Roof cladding underlays and the roofing manufacturer's requirements.
- 3.4 **LAY ROOFING, GENERALLY**
Take care to avoid damaging pre-finished roofing both during and after fixing. Wear only soft-soled shoes on the finished surface.
- 3.5 **CUT PROFILED METAL ROOFING**
Cut profiled metal roofing only with tools recommended by the roofing manufacturer. Fold ends and seal cut edges to the roofing manufacturer's requirements.
- 3.6 **INSTALL PROFILED METAL ROOFING**
Install profiled metal roofing and fix complete with all matching accessories, flashed to all roof features and penetrations; and in accordance with the requirements in the NZMRM NZ metal roofing and wall cladding code of practice, to NZBC E2/AS1: 8.0 Roof claddings and 8.4 Profiled metal.
- 3.7 **FIXINGS**
Refer to the roofing manufacturer's literature for fixing details and to NZS 3604 for fixings durability requirements.
- 3.8 **INSTALL COVERS AND FLASHINGS**
Install and fix as detailed and to the roofing manufacturer's details and to comply with NZBC E2/AS1: 4.0 Flashings, 5.0 Roof/wall junctions and 6.0 Parapets.
- 3.9 **PENETRATIONS**
Flash and overflash all penetrations through the roof.
- 3.10 **USE OF SEALANTS**
Select and use sealants only as recommended by the roofing manufacturer.
- 3.11 **COMPLETE**
Ensure the work is complete with all flashings, undercloaks, valleys, ridges and hips properly installed so the finished roof is completely weathertight.
- 3.12 **REMOVE FILINGS**
Remove metal filings from roofing surfaces at least daily.
- 3.13 **CLEAR**
Clear trade rubbish and unused materials from the roof and surrounds regularly during the work and at completion. Sweep down the completed roof and flush out spoutings, gutters and rainwater pipes, ensuring that metal filings, metal scraps and loose fixings are removed.
- 3.14 **REPLACE**
Replace damaged or marked elements. Remove unused materials from the site.

4. SELECTIONS

Materials

- 4.1 UNDERLAY
Brand/type: Thermkraft 215
- 4.2 PROFILED METAL ROOFING
Brand/type: Long-run Veedeck profile
Material: Zincalume
BMT: 40 mm
- 4.3 FLASHINGS
Metal/coating: Zincalume

4502 ALUMINIUM WINDOWS AND DOORS

1. GENERAL

This section deals with the manufacture, supply and installation of aluminium windows and doors and associated flashings.

1.1 RELATED SECTIONS

Refer to GLAZING for glazing for type and thickness.

1.2 DOCUMENTS

Documents referred to in this section are:

NZS 3604	Timber framed buildings
AS 3715	Metal finishing - Thermoset powder coatings for architectural applications
NZS 4223	Code of practice for glazing in buildings - Human impact safety requirements
WANZ	Aluminium Window Handbook
WANZ	Specification for powder coatings on architectural aluminium products
WANZ	Installation code for aluminium joinery products
WANZ	Window installation system: An Alternative Solution for the installation of Windows and doors

BRANZ Bulletin 349 Finishes for aluminium

1.3 CERTIFICATION

Provide a certificate from a laboratory accredited by International Accreditation of New Zealand that the windows and doors offered comply with the performance requirements of NZS 4211.

1.4 QUALIFICATIONS

Fabrication by a member of WANZ.

1.5 PERFORMANCE

The structural and weather-tight performance of the completed window installation, the glazing and infill panels is the responsibility of the window manufacturer.

2. PRODUCTS

2.1 WINDOW AND DOOR SECTIONS

Form all aluminium members from extruded sections. Folded sections are restricted to flashings and concealed members only.

2.2 FLASHINGS GENERALLY

Material, grade and colour of head flashings to match the window frames. Ensure that materials used for head, jamb and sill flashings are compatible with the window frame materials and fixings and cladding materials.

Components – for cavity systems

2.3 WANZ CAVITY CLOSER

Flashing device to close the cavity above the window or door unit to direct water that occasionally penetrates the wall cladding into the cavity spaces adjacent to the window.

2.4 WANZ SUPPORT BAR

Extruded aluminium support bar with built in drainage and ventilation to NZBC E2, to provide continuous support to the window unit.

2.5 WANZ SUPPORT ANGLE

Support angle for use with the sill pan for deeper claddings to transfer the weight of the window back to the frame.

Components

- 2.6 WINDOW HARDWARE**
Fasteners, stays, locks, vents and other hardware as scheduled. Refer to SELECTIONS for type and finish. Where hardware is not scheduled, use hardware from window manufacturer's standard range. Key alike all lockable window hardware able to be keyed alike.
- 2.7 DOOR HARDWARE**
Locks, bolts, door rollers, door restrictors, hinges and other hardware as scheduled. Refer to SELECTIONS for type and finish. Where hardware is not scheduled, use hardware from door manufacturer's standard range. Key alike all door locks able to be keyed alike.
- 2.8 SAFETY STAYS**
Stainless steel non releasable restrictors to limit window opening to NZBC F4/AS1, Table 2, Acceptable opening sizes for barriers.
- 2.9 FABRICATION SEALANT**
To the window manufacturer's requirements.
- 2.10 GLAZING TAPE AND GASKETS**
To the window manufacturer's requirements.
- 2.11 FIXINGS**
Ensure all fixings and bracketing are compatible with aluminium. Do not use electroplated zinc fasteners or brass fastenings.

Finishes

- 2.12 POWDER COATING FINISH**
To AS 3715 and WANZ Specification for powder coatings on architectural aluminium products. All finished surfaces to show uniformity of gloss and colour (to match approved sample) free of all coating defects.

3. EXECUTION

- 3.1 CONFIRM**
Confirm all framing openings on site for dimension, plumb and straightness prior to fabrication or ordering of aluminium joinery.
- 3.2 EXECUTION GENERALLY**
Execute all fabrication and installation work in accordance with the requirements of NZS 4211, WANZ Aluminium window handbook and WANZ Installation code for aluminium joinery products.
- 3.3 HARDWARE GENERALLY**
Factory fit all required and scheduled hardware. Account for all keys and deliver separately to the site manager.
- 3.4 HANDLING**
Avoid distortion of elements during transit, handling and storage. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement. Do not deliver to site any elements which cannot be immediately unloaded into suitable conditions of storage.
- 3.5 CORROSION PROTECTION**
Seal or suitably coat cut ends and holes drilled in aluminium before the frames are installed. Before fixing, apply bituminous coatings, slips or underlays between dissimilar metals in contact, or aluminium in contact with concrete.
- 3.6 CONFIRM PREPARATION OF WALL OPENINGS**
Confirm that wall openings have been prepared ready for the installation of all window and door frames. Do not proceed with the window and door installation until required preparatory work has been completed.

Required preparatory work includes the following:

- wall cladding underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames
- claddings neatly finished off to all sides of openings
- interior linings neatly trimmed ready for installation of jamb liners and completion of air seals to all sides of openings
- installation of flashings (those which are required to be installed prior to frames).

3.7 FIX FRAMES

Fix frames rigidly in place without distortion, to the window manufacturers and WANZ Aluminium window handbook requirements, plumb, true to line and face, weathertight and with all openings operating freely.

3.8 DRAINAGE

Provide anti-condensation channels to all sills. Sills to sashes and fixed lights to incorporate positive drainage to the exterior.

3.9 INSTALLATION GENERALLY

Fix to comply with the reviewed shop drawings and installation details including flashings and bedding compounds, pointing sealants and weathering sealants.

3.10 INSTALLATION CAVITY CONSTRUCTION

Install to WANZ Installation System details and drawings including WANZ cavity closers, support bars and support angles

Flashings and air seals

3.11 INSTALL FLASHINGS

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

Place all flashings so that the head flashing weathers the jamb flashings, which in turn weathers over the upstand of the sill flashing. Ensure that sill flashings drain to the outside air.

Except where window/door frames are recessed, ensure that head flashings over-sail jamb facings by 15 mm at each end.

3.12 COMPLETE AIR SEAL

Form an air-tight seal by means of proprietary expanding foam, compressible foam strips, or sealants used with backing rods, applied deep within the reveal to completely fill the gap between joinery and structural framing. Ensure that in combination with the internal linings a complete air seal is created.

Completion items

3.13 SEAL FRAMES ON SITE

Seal frames to each other and to adjoining structure and finishes, all as required by the window manufacturer and to make the installation weathertight. Do not seal the junction between the sill member and the cladding or sill flashing which must remain open.

3.14 PROTECTIVE COVERINGS

Retain protective coverings and coatings and keep in place during the fixing process. Provide protective coverings and coatings where required to prevent marking of surfaces visible in the completed work and to protect aluminium joinery from following trades. Remove protection on completion.

3.15 SAFETY

Indicate the presence of transparent glasses for the remainder of the contract period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface. Masking tape must not be used for this purpose.

- 3.16 **MANIFESTATIONS**
To NZS 4223.3, 303.1: Manifestation (making glass visible).
- 3.17 **TRADE CLEAN**
Clean off or remove safety indicators at completion of the building.
- 3.18 **CLEAN FRAMES**
On completion clean down both sides of window and door frames using the methods required by the window and door manufacturer.
- 3.19 **CONFIRM**
Confirm the proper operation of hardware and operating systems on completion of the installation and again at completion of the contract works.
4. **SELECTIONS**
- 4.1 **WIND ZONE**
Building wind zone: HIGH
- Materials**
- 4.2 **WINDOWS AND DOORS TYPE**
Manufacturer: TBA
- 4.3 **WINDOW AND DOOR JAMB LINERS, TIMBER**
Timber species: Radiata Pine
Grade/treatment: H3.1
Thickness: 20mm
Finish: Paint

4701 THERMAL INSULATION

1. GENERAL

This section deals with materials installed, laid, hung or fitted as thermal insulation.

1.1 RELATED SECTIONS

Refer to CONCRETE for insulation under concrete slabs.

Refer to WRAPS, UNDERLAYS AND DPC for building wraps and roofing underlays.

Refer to ROOFING sections for roofing underlays.

1.2 DOCUMENTS

Documents referred to in this section are:

NZS 3602 Timber and wood-based products for use in building

NZS 4218 Energy efficiency – Small building envelope

AS/NZS 4534 Zinc and zinc/aluminium-alloy coatings on steel wire

2. PRODUCTS

2.1 GLASS FIBRE THERMAL INSULATING PADS

Glass fibres bonded with a thermosetting resin to form a rectangular insulating pad.

2.2 CELLULAR PLASTIC RIGID BOARD (EPS)

Expanded polystyrene foam board manufactured from fire retardant grade resin.

3. EXECUTION

3.1 STORAGE

Accept materials undamaged and dry and store in a location that protects them from the weather and damage. Avoid distortion, stretching, puncturing and damage to edges of sheet materials. Do not use damaged sheets.

3.2 HANDLING

Wear protective clothing as necessary and when handling, avoid delamination or distortion of the rectangular form. Maintain full thickness unless compression is an installation system requirement.

3.3 INSPECTION

Before starting installation of blankets and pads, check that the location and framing are free from moisture, that the cavities are not interconnected and that mesh, building papers and vapour barriers are in place.

3.4 INSTALL INSULATION

Lay, install, fit and fix to NZBC H1/AS1: 2.0 and to the insulation manufacturer's requirements. Install in housing to NZS 4218.

3.5 FIT GLASS FIBRE THERMAL INSULATING PADS

Friction fit insulating pads in place to completely fill the whole of the cavities. Carefully scribe cut insulating pads slightly oversize to maintain friction fit to each other, to smaller spaces and around penetrations. Leave no gaps between, and maintain full thickness of the insulating pads over the whole of the installation. Do not cover vents and leave a 150 mm gap around recessed light fittings and metal flues.

3.6 FIT EPS INSULATION – UNDER CONCRETE FLOORS

Lay EPS on damp proof membrane before pouring the concrete floor slab.
3.6 CLEAN UP
Clean up as the work proceeds, so no spare offcuts or any other matter or item remain behind claddings or linings.

Completion

3.8 CHECK WALL WRAPS AND ROOF UNDERLAYS

Ensure these are dry, clean, undamaged and free of debris before being covered.

3.9 LEAVE
Leave work to the standard required by following procedures.

3.10 REMOVE
Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 GLASS FIBRE INSULATION
Manufacturer/type: PINK BATTS

<u>Location</u>	<u>Type / R Value</u>
Ceiling	R3.2 min

Exterior walls & internal garage walls	R2.6 min
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4.2 CELLULAR PLASTIC RIGID BOARD (EPS)

Location:	Slab
Brand:	TBA
Thickness:	50 mm

5101 PLASTERBOARD LININGS

1. GENERAL

This section deals with the supply, fixing and jointing of gypsum plasterboard sheets and accessories to timber and steel framed walls and ceilings to form standard, bracing, fire-rated, wet area and sound rated systems.

1.1 DOCUMENTS REFERRED TO

Documents referred to in this section are:

AS 1397	Steel sheet and strip - hot-dipped, zinc-coated, or aluminium/zinc-coated
AS/NZS 2588	Gypsum plasterboard
AS/NZS 2589	Gypsum linings - Application and finishing
NZS 3604	Timber framed buildings
ASTM C630/C630M-96a	Water-resistant gypsum backing board
BRANZ technical paper P21	A wall bracing test and evaluation procedure

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.2 QUALIFICATIONS

Plasterboard fixers and stoppers to be experienced competent workers, familiar with materials and techniques specified. Submit evidence of experience on request.

Performance

1.3 INSPECTIONS AND ACCEPTANCE

Inspect the finished surface of the installed plasterboard:

- before applying sealer and
 - before applying finish coatings or decorative papers,
- so that after assessment of the type and/or angle of illumination and its effect on the completed decorative treatment, group approval and acceptance of the surface can be given.

1.4 BRACING REQUIREMENTS

Provide braced wall systems using bracing rated plasterboard sheet to meet the requirements of NZS 3604 when tested in accordance with BRANZ technical Paper P21: "A wall bracing test and evaluation procedure."

2. PRODUCTS

Materials

2.1 GYPSUM PLASTERBOARD

Gypsum plaster core encased in a durable face and backing paper formed for standard use to AS/NZS 2588.

2.2 GYPSUM PLASTERBOARD, WALL BRACING SYSTEMS

Gypsum plaster core encased in a durable face and backing paper bracing rated sheet to AS/NZS 2588.

2.3 GYPSUM PLASTERBOARD, WATER RESISTANT SYSTEMS

Gypsum plaster core containing a wax emulsion encased in a durable face and backing paper formed for standard and fire rated use to AS/NZS 2588 and for water resistance use to ASTM C630/C630M-96a.

Components

2.4 CEILING BATTENS, METAL

0.55 mm galvanized steel (275 g/m² zinc coating) battens and matching perimeter channels.

- 2.5 **SCREWS, TIMBER FRAME**
10 mm plasterboard: Type S gypsum screws 32 mm x 6 gauge
- 2.6 **EXTERNAL ANGLE**
Perforated.
- 2.7 **INTERNAL REINFORCING ANGLE**
Perforated.
- 2.8 **CONTROL JOINT**
With plastic protective tape.
- 2.9 **TAPE ON EDGE TRIMS**
Tape-on paper tape and galvanized steel trims and edges.
- 2.10 **EDGE PROFILES**
Pre-formed aluminium profiles, with perforated edge trims.
- Accessories**
- 2.11 **ADHESIVE**
Multi-purpose water based wallboard adhesive.
- 2.12 **JOINTING COMPOUNDS**
System match bedding compound and finishing compound. Refer to the sheet manufacturer's literature and follow their requirements on which compounds to use with which accessory and in which location, to achieve the required level of finish.
- 2.13 **TAPE**
System match reinforcing tape.
- Finishes**
- 2.14 **SKIMCOAT PLASTER**
Proprietary spray-on surface finish.
3. **EXECUTION**
- Conditions**
- 3.1 **HANDLE AND STORE**
Handle and store sheets and accessories in dry conditions stored indoors out of direct sunlight in neat flat stacks clear of the floor with no sagging and avoiding damage to ends, edges and surfaces. Reject damaged material.
- 3.2 **SUBSTRATE**
Do not commence work until the substrate is plumb, level and to the standard required by the sheet manufacturer's requirements.
- 3.3 **MOISTURE CONTENT**
Maximum allowable moisture content in accordance with NZS 3602 for:
Framing at lining: 16% for plasterboard linings
- 3.4 **PROTECT**
Protect surfaces, cabinetwork, fittings, equipment and finishes already in place from the possibility of water staining and stopping damage.
- 3.5 **LEVELS OF FINISH**
Provide the scheduled plasterboard surfaces to the levels of finish specified in AS/NZS 2589.

- 3.6 **LEVELS OF FINISH ACCEPTANCE**
Before commencing work, agree in writing upon the surface finish assessment procedure necessary to ensure that the levels of finish specified, along with the effect of the type and/or angle of illumination on them, are obtained and are acceptable.

- 3.7 **GENERAL REQUIREMENTS**
Leave a 10 mm gap at floor level. Do not break the face paper. Position sheets to a "touch fit" with no forcing or springing into place. Run sheets over doors and under and over window openings. Apply adhesive in daubs 25 mm diameter and 10 mm thick. Do not place daubs at sheet perimeters or under nail and screw fixings.

Application - fixing

- 3.8 **INSTALL CEILING BATTENS**
Install in accordance with the batten manufacturer's requirements.

- 3.9 **LINE CEILINGS AND WALLS**
Line ceilings and walls with the various sheets and fix to the sheet manufacturer's details and requirements, using tapered edge joints as far as possible.

- 3.10 **LINE WALLS**
Line walls up to 2700 mm high by the horizontal method and walls above 2700 mm high by the vertical method.

- 3.11 **END BUTT JOINTS**
When end butt joints are unavoidable, locate staggered off the framing, back block, fix and stop to the sheet manufacturer's details and requirements.

Application - bracing systems

- 3.12 **LINE BRACING WALLS**
Line walls with high density plasterboard sheet to form panels or systems, clout-washer and clout fixed to the sheet manufacturer's details. Do not fix bracing sheets until steel bracing and/or straps are in place.

Application - wet area systems

- 3.13 **LINE WET AREA WALLS**
Line walls strictly in accordance with the sheet manufacturer's requirements.

Application - finishing sections and trim

- 3.14 **FIX EXTERNAL ANGLE**
Fix full length to external corners with clouts at 100 mm centres each side staggered to the sheet manufacturer's details and requirements.

- 3.15 **FIX INTERNAL REINFORCING ANGLE**
Fix full length to internal corners with clouts at 100 mm centres each side staggered to the sheet manufacturer's details and requirements.

- 3.16 **FORM CONTROL JOINTS**
Provide at maximum 9 metre centres in long unbroken walls and 12 metre centres to ceilings to the sheet manufacturer's details and requirements. Fix control joint section into joint by staples at 150 mm both sides. Fill gap in voids with sound rated sealant. Remove plastic tape after stopping.

- 3.17 **FIX COVER MOULDS**
Fix to the sheet manufacturer's details and requirements and to the drawings supplied.

- 3.18 **FORM SQUARE STOPPED CORNERS**
Form taped reinforced square stopped ceiling-to-wall angles to the sheet manufacturer's requirements.

3.19 **INSTALL TAPE-ON TRIMS**
Install in accordance with the trim manufacturer's requirements.

3.20 **INSTALL SPECIAL EDGES AND BANDS**
Install in accordance with the edging manufacturer's requirements.

Finishing - stopping

3.21 **FORM JOINTS**
Fill recess with bedding compound, centre the reinforcing tape, apply a second coat of bedding compound followed by a coat of finishing compound. Allow to dry and lightly sand off, to the sheet manufacturer's details and requirements.

3.22 **STOPPING NAILS AND SCREWS**
Apply two successive coats of bedding compound and a coat of finishing compound to the sheet manufacturer's requirements.

3.23 **SQUARE STOPPED CORNERS**
Fill with bedding compound, centre reinforcing tape into internal angle and apply a coat of finishing compound and complete to the sheet manufacturer's details and requirements.

3.24 **EXTERNAL ANGLES**
Apply two coats of bedding compound followed by a coat of finishing compound to the sheet manufacturer's requirements.

3.25 **END BUTT JOINTS**
Fill, tape and coat as for tapered edge joints except that each stage is doubled in width.

3.26 **APPLYING SKIMCOAT PLASTER**
Apply spray-on surface finish in accordance with the sheet manufacturer's requirements.

Completion

3.27 **REPLACE**
Replace damaged sheets or elements.

3.28 **CLEAN DOWN**
Clean down completed surfaces to remove irregularities and finally sand down with fine paper to the sheet manufacturer's requirements, to leave completely smooth and clean to the standard required for following trades.

3.29 **REMOVE**
Remove debris, unused materials and elements from the site.

4. SELECTIONS

Plasterboard

4.1 STANDARD SYSTEMS

<u>Location</u>	<u>Plasterboard type / Lining requirements</u>	<u>Thickness</u>	<u>Finish level</u>
Walls	Standard plasterboard	10 mm	4
Ceilings	Standard plasterboard	13mm	4
Wet Areas	Water resistant plasterboard	10 mm	4

4.2 BRACING SYSTEMS

<u>Location</u>	<u>Plasterboard type / Lining requirements</u>	<u>Bracing rating / System specification</u>	<u>Finish level</u>
Refer bracing schedule	GIB Braceline	BL, GS1a, BL1a	4

4.3 CEILING BATTENS

Brand/type: 69x35 timber @ 400crs

6201 TILING

1. GENERAL

This section deals with the supply and setting of ceramic tiles to walls and floors, over concrete.

1.1 DOCUMENTS

Documents referred to in this section are:

AS 2358 Adhesives - For fixing ceramic tiles
AS 3740 Waterproofing of wet areas within residential buildings
AS 3958.1 Ceramic tiles, 3958 - Guide to the installation of ceramic tiles
BS 6431 Ceramic floor and wall tiles
BRANZ Good practice guide Tiling

1.2 QUALIFICATIONS

Carry out tiling work using competent tilers, experienced with the materials and techniques specified.

1.3 ADHESIVES COMPATIBILITY

Adhesives selected for use on proprietary substrates or waterproof membranes to have documented compatibility approval from the respective manufacturers.

1.4 SAMPLES

Submit samples of the tiles specified, sufficient to show the pattern and the range of colour finish.

2. PRODUCTS

2.1 TILES

To BS 6431, parts 1 to 23 inclusive.

2.2 LIQUID WATERPROOFING MEMBRANE

To AS 3740 Mapei Mapegum WPS or similar Mapei product.

2.3 CEMENT BASED SCREED

Mix of 3:1 Portland cement, wash-mix sand, gauged with liquid polymer additive to the tile manufacturer's requirements.

2.4 TILE ADHESIVE

To AS 2358.

2.5 GROUT

Cement based, compressible and to suit the particular location and use.

2.6 MOVEMENT CONTROL JOINT SEALANT

To BRANZ Good practice guide: Tiling, section 5.0, Detailing.
Mapei Band

3. EXECUTION

3.1 HANDLING AND STORAGE

Take delivery of packets of tiles undamaged and dry. Handle tiles with care to avoid chipping, soiling and damage. Store on hard level standings in non-traffic, non work areas that are enclosed, clean and dry.

3.2 CHECK TILES

Check tiles to ensure that they are as specified, from the same batch, of a consistent colour and pattern and sufficient to complete the work. Reject tiles that vary widely in colour or pattern. Reject tiles that are damaged.

- 3.3 **CONFIRM LAYOUT**
Before commencing work confirm the proposed layout of tiles and expansion joints and other visual considerations of the finished work.
- 3.4 **SETTING OUT**
Before commencing the setting out confirm the number and location of cut tiles. Minimise in number with no cut tiles less than half size and only at the perimeter of the work.
- 3.5 **SUBSTRATE**
Ensure that all services and accessories are in place and located to suit the tile layout, with the substrate required for tiling work. Commencement of the work means the substrate and environment are accepted by the tile layer as satisfactory.
- 3.6 **TEMPERATURE**
Do not carry out tiling where the ambient temperature is below 5°C, or onto a substrate with a temperature higher than 40°C.
- 3.7 **TILING GENERALLY**
Prepare surfaces and carry out the tiling work in accordance with AS 3958, part 1, as modified by BRANZ Good practice guide: Tiling.
- 3.8 **CONCRETE FLOORS PREPARATION**
Remove from the surfaces all contaminants such as paints, oils, release and curing compounds. Remove all projections, unevenness and loose material to leave a clean, dust and dirt-free surface.
- Remove all existing finishes down to the concrete. If the exposed concrete finish is not suitable then scabble the surface to expose the coarse aggregate.
- 3.9 **APPLYING LIQUID WATERPROOFING MEMBRANE**
Apply the selected liquid waterproof membrane system to the membrane manufacturer's requirements and in accordance with AS 3740 and to BRANZ Good tiling practice, 7.0 Waterproofing interior wet areas.
- Unenclosed shower cubicle
 To 1800 mm above floor and 300 mm above shower rose.
 To at least 1500 mm from shower rose.
 To the floor within 1500mm of the shower rose
- Bath with shower over and a screen for the shower
 To 1800 mm height around sides of bath.
- Bath
 To 150 mm minimum around the sides and along walls horizontally 150 mm minimum.
- Splashback to a vanity
 To 300 mm minimum up wall behind the vanity.
 To the floor level at least twice the width of the vanity and 500 mm min beyond it at each end.
- 3.10 **LAYING CEMENT SCREED**
Apply a proprietary cement slurry bond coat over the whole of the floor to the tile manufacturer's requirements. Mix and place a 40 mm thick mortar bed over the bond coat and firmly tamp, screed and compact to the required level. Form screeds with a deviation from plane of not more than 5 mm over 3 metres.
- In waterproofed areas where the cement screed has been laid over the waterproofing membrane, prepare the screed surface by applying a further waterproof coating before laying tiles.

- 3.11 **FALLS**
Form screeds in areas where water is used in significant amounts with a deviation from plane of not more than 5 mm over 3 metres. Unless otherwise specified form screeds with the following falls:
1 : 40 minimum For shower bases
- 3.12 **TILE FIXING GENERALLY**
Apply adhesive, prepare and fix tiles by the method required by the adhesive manufacturer and tap them firmly into place.
- 3.13 **TILE FIXING, CONCRETE, CEMENT-BASED ADHESIVE, THICK BED**
Apply and float thick bed cement-based adhesive to a maximum 6 mm bed thickness to the tile manufacturer's requirements. Rib surface with a notched trowel, press tiles and beat it into place with 3 mm joints, and to obtain required coverage of adhesive on the back of each tile.
- 3.14 **TILE FIXING, CONCRETE, CEMENT-BASED ADHESIVE, THIN BED**
Apply and float thin bed cement-based adhesive to a minimum 3 mm bed thickness to the tile manufacturer's requirements. Rib surface with a notched trowel, press tiles and beat it into place with 3 mm joints, and to obtain required coverage of adhesive on the back of each tile.
- 3.15 **GROUTING**
Remove spacers. Prepare joints, mix and apply proprietary grout and finish off to the grout manufacturer's requirements. Grout to finish uniform in colour, smooth and without voids, pinholes or low spots.
- 3.16 **MOVEMENT CONTROL JOINTS**
Minimum width of 6 mm, carried through tile and bedding. Where substantial movement is anticipated, carry through the rigid sheet to the structure. Install joints over expansion joints in structure, at junctions between different backgrounds, where abutting other materials, at storey heights horizontally and 3.0 metres vertically, at internal corners and at junctions with floors and columns.

Ensure joints are clean, formed, filled, and the sealant inserted to the sealant manufacturer's requirements.
- 3.17 **CLEAN**
Upon completion of setting and grouting, thoroughly sponge and wash the tiles to leave clean and free of blemish. Finally polish tiles with a clean dry cloth.
- 3.18 **REMOVE**
Remove unused materials from the site.
4. **SELECTIONS**
- 4.1 **TILES**
- | <u>Location</u> | <u>Brand</u> | <u>Pattern/code number</u> |
|-----------------|--------------|----------------------------|
| Bathrooms | | To be selected |
| Toilets | | |
| Kitchen | | |
| Entry | | |

6701 PAINTING

1. GENERAL

This section deals with decorative coating and sealing work on prepared surfaces.

1.1 DOCUMENTS

Documents referred to in this section are:

Health and Safety in Employment Act 1992

1.2 MANUFACTURER'S MANUALS

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

1.3 QUALIFICATIONS

Carry out work using competent and experienced painters and paperhangers.

1.4 HEALTH AND SAFETY

Refer to the requirements of the Health and Safety in Employment Act 1992 and if elimination or isolation is not possible, then minimise the hazards in this work.

2. PRODUCTS

2.1 PAINT

To the paint manufacturer's standards for exterior and/or interior primers, undercoats, sealers, stains, clear coatings, solvent-borne and water-borne paints.

2.2 GAP FILLERS

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

3. EXECUTION

3.1 INSPECT

Inspect surfaces for painting and report to the owner any that will not, after the preparatory work laid down by the paint manufacturer, allow work of the required standard. Confirm that all areas have adequate lighting and are sufficiently free of other construction activities to enable painting and/or paperhanging work to proceed.

3.2 PROTECT

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

3.3 REMOVE HARDWARE

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

3.4 PRIMING AND SEALING

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

3.5 ENVIRONMENTAL CONDITIONS

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

3.6 SELECTIONS

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

- 3.7 **SHARP EDGES, CRACKS AND HOLES**
Repair as required by the paint manufacturer.
- 3.8 **PREPARE SURFACES**
Prepare surfaces to be coated as required by the paint manufacturer. Make good all damage and defects.
- 3.9 **PAINT APPLICATION**
Apply paint by brush and/or roller to suit the location of the coating and to the paint manufacturer's requirements. Do not spray on site without express permission.
- 3.10 **DEFECTIVE WORK**
Correct defective work immediately. Recoating to follow the selected paint system's requirements.
- 3.11 **SCUFF BETWEEN COATS**
Scuff between all coats to remove any dust pick-up, protruding fibres and coarse particles.
- 3.12 **FINISHED PAINT SURFACES**
Finished paint surfaces to show uniformity of gloss and colour, with the correct thickness for each coat, and freedom from painting defects. Ensure finished work is clean and free of any disfigurement.
- 3.13 **CLEAN**
Clean adjoining surfaces, glass and fittings of any paint contamination.
- 3.14 **REPLACE**
Replace hardware without damage to the hardware or the adjoining surfaces.
- 3.15 **TAKE AWAY**
Take away from the site unused painting materials and equipment.

7101 HOT AND COLD WATER SYSTEM

1. GENERAL

This section relates to potable water supply connection to the project, and the installation of hot and cold water supply pipework, hot water cylinders and isolation valves.

Related work

1.1 RELATED SECTIONS

Refer to SANITARY FIXTURES, TAPWARE AND ACCESSORIES for sanitary fixtures and tapware selections.

1.2 DOCUMENTS

Documents referred to in this section are:

NZBC B2/AS1	Durability
NZBC G12/VM1	Water supplies
NZBC G12/AS1	Water supplies
NZBC H1/AS1	Energy Efficiency
AS/NZS 2642.2	Polybutylene pipe fittings Polybutylene pipe systems - Polybutylene (PB) pipe for hot and cold water applications
AS/NZS 2642.3	Polybutylene pipe systems - Mechanical jointing fittings for use with polybutylene pipes for hot and cold water applications
AS 2492	Cross Linked Polyethylene (PE-X) pipe for hot and cold water applications
AS/NZS 2537	Mechanical joining fittings for use with cross-linked Polyethylene (PE-X) fittings for hot and cold water applications
NZS 3501	Specification for copper tubes for water, gas and sanitation
NZS 4305	Energy efficiency domestic type hot water systems
DIN 8077	Polypropylene (PP-R) Pipe dimensions
DIN 8078	Polypropylene (PP-R) Pipes Types 1, 2 & 3, General Quality Requirements and Testing.
Plumbers, Gasfitters and Drainlayers Act 1976	

1.3 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:
Dux Industries Limited SecuraGold Technical Manual

Copies of the above literature are available from ~

Web: www.dux.co.nz
Email: dux@dux.co.nz
Telephone: (04) 567 8900
Facsimile: (04) 567 8904

1.4 QUALIFICATIONS

Plumbers to be experienced competent workers, familiar with the materials and the techniques specified. Carry out all work under the direct supervision of a plumber registered under the Plumbers, Gasfitters and Drainlayers Act 1976.

2. PRODUCTS

2.1 COPPER PIPE

To NZS 3501 complete with copper-alloy compression fittings or crox type joints and seal ring compression joints complete with fittings and accessories brand matched to the pipe manufacturer's requirements with durability to NZBC/AS1 Durability, Table 1 and NZBC G12/AS1 Water supplies Table 1.

2.2 POLYBUTENE-1 (PB) PIPE

Polybutene tubing to AS/NZS 2642.2 and AS/NZS 2642.3 complete with fittings and accessories brand-matched with durability to NZBC B2/AS1 Durability, table 1 and NZBC G12/AS1 Water supplies table1.

- 2.3 VALVES
Filter, non-return valve, cold water expansion valve, pressure relief or temperature valve, pressure relief valve and isolating valves to NZBC G12/AS1: Water supplies.
- 2.4 TEMPERING VALVE
Tempering valve to NZS 4617 to NZBC G12/AS1: Water supplies.

Materials - hot water heating appliances

- 2.5 ELECTRIC HOT WATER CYLINDER, MAINS PRESSURE
To NZS 4305, ceramic-coated steel thermal storage cylinder, insulated and complete with required fittings.

3. EXECUTION

- 3.1 HANDLE AND STORE
Handle and store pipes, fittings and accessories to avoid damage. Store on site, under cover on a clean level area, stacked to eliminate movement and away from work in progress.

Store tapware in a shelved, dry and securely locked area. Retain tapware in the manufacturer's original packaging, complete with all fixings and installation instructions. Label each unit separately with its space/fixture number to match.

- 3.2 EXECUTION GENERALLY
Generally carry out the whole of this work and tests to NZBC G12/VM1 or G12/AS1: Water supplies.

- 3.3 CORE HOLES AND SLEEVES
Review location and fit core holes and sleeves as needed throughout the structure in conjunction with the boxing, reinforcing and placing of concrete. Strip core holes and make good after installation of pipework.

- 3.4 CONCEAL
Conceal pipework within the fabric of the building unless detailed otherwise. Satin finish chrome plate exposed work, complete with matching ferrule at the surface penetration.

- 3.5 CORROSION
Separate all metals subject to electrolytic action from each other and from treated timber, concrete and other lime substances by space, painting of surfaces, taping, or separator strips.

- 3.6 THERMAL MOVEMENT
Accommodate movement in pipes resulting from temperature change by the layout of the pipe runs, by expansion joints and by sleeving through penetrations.

- 3.7 PIPE SIZE
Flow rates to each outlet to be no less than those given in NZBC G12/VM1 or G12/AS1: Water supplies, table 3, Acceptable flow rates to sanitary fixtures. Pipe size as determined in table 4, Tempering valve and nominal pipe diameters.

- 3.8 ELECTROLYTIC ACTION
Avoid electrolytic action by eliminating contact or continuity of water between dissimilar metals.

- 3.9 EXCAVATE
Excavate for the water main to a firm, even trench base in straight runs. Allow to backfill.

Application - jointing

- 3.10 JOINTING COPPER PIPE
Brazed pipe, fit alloy compression fittings, cross type joints and seal ring compression joints to NZBC G12/AS1: Water supplies.

- 3.11 JOINTING POLYBUTENE-1 PIPE
Metal crimped ring seal jointing to pipe system manufacturer's requirements.
- Application – pipework installation**
- 3.12 WATER SUPPLY CONNECTION
Provide back flow prevention to NZBC G12/AS1: Water supplies.
- 3.13 POTABLE WATER SUPPLY PIPEWORK INSTALLATION
From connection point, run pipes complete with all fittings, support and fixing, joins and install to manufacturers specifications. Size the pipes and branches in straight runs to deliver the acceptable flow rate to NZBC G12/VM1 or G12/AS1: Water supplies, table 3, Acceptable flow rates to sanitary fixtures at each outlet. Allow for the expected concurrent use of adjoining fixtures and size the piping layout to eliminate loss of pressure at any point by simultaneous draw-off. Pipework support spacing to be firmly fixed and buffered to eliminate noise and hammer, with preformed tee-connection take-offs and branches, with machine made 3 diameter bends, complete with necessary valves and fittings. Conceal pipework and pressure test before the wall linings are fixed.
- 3.14 HOT WATER PIPEWORK
Use a take-off spigot to give separate branches to each fitting, lay out pipes with support spacing to NZBC G12/VM1 or G12/AS1: Water supplies, table 7 Water supply pipework support spacing. Fix firmly and buffer to eliminate noise and hammer, with preformed tee-connection take-offs and branches, and preformed 3 diameter bends, complete with all necessary valves and fittings.
- Lag all pipes with rigid insulation to the manufacturer's requirements and G12/VM1 or G12/AS1: Water supplies.
- 3.15 EQUIPOTENTIAL BONDING
Earth metallic water supply pipe and metallic sanitary fixtures to NZBC G12/AS1: Water supplies: 9.0.
- 3.16 IN LINE FILTER
Install an in line filter immediately adjacent to the main isolating valve at the point of entry to the building, in an accessible position to allow for easy cleaning.
- Application - hot water systems**
- 3.17 INSTALLING HOT WATER PIPE INSULATION
Insulate all hot water pipes to NZBC H1/AS1 Energy Efficiency, AS/NZS 3500.5, 3.11.7 Insulation of piping and to the insulation manufacturer's instructions. Cut insulation sections tight between timber framing and tight between the webs of steel studs.
- 3.18 INSTALL ELECTRIC HOT WATER CYLINDERS AND BOILING CYLINDERS
Install where shown complete with all the necessary fittings to the cylinder manufacturer's requirements and in accordance with NZBC G12/AS1: 6.10. Valve-vented systems to NZS 4607.
- 3.19 INSTALL HOT WATER CYLINDER OVERFLOW TRAY
Install drained overflow tray to hot water cylinder to NZBC G12/AS1: Energy Efficiency.
- 3.20 INSTALL TEMPERING VALVE
Install 1 metre minimum from outlet of hot water cylinder and to manufacturer's instructions. Install copper pipework for 1 metre minimum downstream of tempering valve prior to connection of non-metallic pipework.
- 3.21 PENETRATIONS
Provide and fit collars and escutcheon plates to match the pipework at all penetrations through constructions.

Installation – valves

- 3.22 **INSTALLING APPLIANCE ISOLATING VALVES - CONCEALED**
Install isolating valves for appliances in accessible positions. Locate in adjacent cupboards and position to allow for easy connection and operation.

Completion

- 3.23 **LABEL**
Label all pipework with permanent adhesive markers at 3 metre minimum intervals.
- 3.24 **CLEAN IN LINE FILTER**
Clean all in line filters on completion of works.
- 3.25 **REPLACE**
Replace damaged or marked elements.
- 3.26 **LEAVE**
Leave work to the standard required by following procedures.
- 3.27 **REMOVE**
Remove debris, unused materials and elements from the site.

4. SELECTIONS

- 4.1 **POLYETHYLENE WATER MAIN**
Size: 25 mm outside diameter (i.e. DN 25 in AS/NZS 4130)
- 4.2 **COPPER PIPE**
Manufacturer: Plumbers choice
Nominal bore: 15 mm
Wall thickness: 1.02 mm
- 4.3 **POLYBUTENE PIPE**
Manufacturer: Dux
Brand: Secura Gold
Size: 20 mm

Hot water systems

- 4.4 **ELECTRIC HOT WATER CYLINDER, MAINS PRESSURE**
Brand: Rheem
Model size: 180L

Valves and accessories

- 4.5 **MAIN ISOLATING VALVE**
Location: Plumbers choice
Brand/type: TBA
- 4.6 **APPLIANCE ISOLATING VALVES - CONCEALED**
Appliance: Hot Water Cylinder, Dishwasher
Brand/type: Plumbers choice
- 4.7 **APPLIANCE ISOLATING VALVES - EXPOSED**
Appliance: Washing machine
Brand/type: Super Tub
- 4.8 **TEMPERING VALVE**
Location: HWC cupboard
Brand/type: Plumbers choice
- 4.9 **IN LINE FILTER**
Location: Plumbers choice
Brand/type: Plumbers choice

7103 SANITARY FIXTURES, TAPWARE & ACCESSORIES

1. GENERAL

This section deals with the supply and installation of sanitary fixtures, tapware and sanitary accessories.

Related work

1.1 RELATED SECTIONS

Refer to HOT AND COLD WATER SYSTEM for hot water cylinders.

Documents

1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC E3/AS1	Internal moisture
NZBC F2/AS1	Hazardous building materials
NZBC G1/AS1	Personal hygiene
	2.0 Fixture construction and installation
	3.0 Location of sanitary fixtures
NZBC G12/VM1	Water supplies
NZBC G12/AS1	Water supplies
NZBC G13/AS1	Foul water - sanitary plumbing
AS/NZS 1730	Washbasins
AS/NZS 2023	Baths for ablutionary purposes
AS/NZS 3500.2	Plumbing and drainage - sanitary plumbing and drainage
NZS 3662	Performance of showers for bathing
AS/NZS 3718	Water supply – tapware
NZS 4223	Code of practice for glazing in buildings – human impact safety requirements

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

Requirements

1.3 QUALIFICATIONS

Plumbers to be experienced competent workers, familiar with the materials and the techniques specified. Carry out all work under the direct supervision of a plumber registered under the Plumbers, Gasfitters and Drainlayers Act 1976.

2. PRODUCTS

2.1 SANITARY FIXTURES

Refer to Signature Homes specification.

2.2 TAPWARE

Refer to Signature Homes specification

2.3 SANITARY ACCESSORIES

Refer to Signature Homes specification

3. EXECUTION

Conditions – sanitary fixtures

3.1 QUALITY STANDARDS

Installation work to comply with NZBC G1/AS1, NZBC G12/VM1, NZBC G12/AS1, NZBC G13/AS1 and the fixture manufacturer's requirements.

3.2 SUBSTRATE

Ensure substrate and fixings will allow work of the specified standard.

- 3.3 **CO-ORDINATION**
Do not proceed if the points of supply and drainage services do not match the points of the fixtures without force or distortion.
- 3.4 **INSTALLATION REQUIREMENTS**
Install to NZBC G1/AS1, NZBC G12/VM1, NZBC G12/AS1, NZBC G13/AS1, NZBC E3/AS1 and to the fixture manufacturer's installation requirements for each component.
- 3.5 **PROVIDE SUPPORT**
Confirm fixing points needed for each unit and provide solid nogging at each fixing bracket location.
- 3.6 **INSPECTION**
Before starting the installation of proprietary items, check relevant spaces and wall and floor finishes for any condition that would not allow the proper installation of any unit. Do not proceed until such conditions have been remedied.
- Application – sanitary fixtures**
- 3.7 **INSTALLING VITREOUS CHINA FIXTURES**
Install to NZBC G1/AS1: Part 3, G12/AS1, G13/AS1 and AS/NZS 3500.2. Carry out preparatory and assembly work, including connections to supply and drainage services and the application of slurries and sealants in sequence. Fit the toilet pan in position, plumb, level, flush and rigid without stressing the attachment points of the component.
- 3.8 **INSTALLING WASHBASINS**
Install to NZBC G1/AS1, AS/NZS 1730. Set basins firmly to walls or vanities as detailed and to comply with NZBC E3/AS1. Connect through trap to the drainage system.
- 3.9 **INSTALLING VANITIES**
Install in accordance with the manufacturer's requirements. Seal top and upstand to wall surface to comply with NZBC E3/AS1.
- 3.10 **INSTALLING SHOWERS**
Install to NZBC G1/AS1 and to NZS 3662. Sit tray firmly in place as detailed, to levels shown and connect to drainage service, ready for following work. Lining materials and finishes to comply with NZBC E3/AS1.
- 3.11 **INSTALLING SHOWER CABINETS**
Install to NZBC G1/AS1 and to NZS 3662 and in accordance with cabinet manufacturer's details and requirements. Ensure that doors fit closely and accurately. Test for water egress around sides and base. Lining materials and finishes to comply with NZBC E3/AS1.
- 3.12 **INSTALLING SHOWER ENCLOSURES AND WALL LININGS**
Install in accordance with NZBC E3/AS1 and to the enclosure manufacturer's details and requirements.
- 3.13 **INSTALLING BATHS**
Install to NZBC G1/AS1. Set firmly in cradle with required points fully supported, level and flush. Connect to supply and drainage services.
- 3.14 **INSTALLING SINK BENCHES**
Install in accordance with manufacturer's/supplier's requirements. Connect to supply and drainage services.
- 3.15 **INSTALLING CISTERNS**
Fit firmly in place and connect the specified cisterns from the supply services through the flush pipes to the relative fixtures in the positions as detailed all plumb and level.

Application – tapware

- 3.16 **GENERAL**
Fit specified to AS/NZS 3718 in accordance with the manufacturer's requirements.
Maintain safe water temperatures to comply with NZBC G12/AS1.
- Installation – sanitary accessories**
- 3.17 **INSTALLING ACCESSORIES**
Fit specified fittings firmly in place at required dimensions relative to floor and adjoining appliances, all plumb and level.
- 3.18 **LOCATE**
Locate units at heights and/or locations shown on the drawings, or as required to comply with NZBC G1/AS1. For any dimension not shown or known, request direction before proceeding.
- 3.19 **CUTTING AND FITTING**
Where cutting and fitting of the substrate is necessary for installing any unit, carry out this work before the painting or finishing of that surface. Remove any hardware when required for painting, placing it in the packaging or carton originally supplied and returning it to the secure store until ready for re-installation.
- 3.20 **INSTALLING UNITS**
Install each unit in accordance with the proprietary fixture manufacturer's requirements, using the templates and tools supplied or recommended by them. Set units level, plumb and true to line and required location, with moving parts and actions freely and easily operating. Do not make any modifications to supplied units.
- 3.21 **INSTALLING BATH/ SHOWER SCREEN**
Install to NZBC F2/AS1 and NZS 4223 and to the product manufacturer's requirements. Set units level, plumb and true to line and required location, with moving parts and actions freely and easily operating. Do not make any modifications to supplied units.
- Completion**
- 3.22 **REPLACE**
Replace damaged or marked elements.
- 3.23 **PROTECTIVE COATINGS**
Leave fixtures, fittings and accessories clean and unblemished with stickers and protective coatings removed, with supply and drainage connections and all parts fully operating and working. Leave the whole of this work free of blemishes, undamaged and to the standard of finish required for following work.
- 3.24 **REMOVE**
Remove debris, unused materials and elements from the site.

7403 DRAINAGE

1. GENERAL

This section relates to the supply and laying of gravity foul water, stormwater and field drains.

1.1 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC B1/AS1	Structure – general, 6.0 Drains
NZBC E1/AS1	Surface water
	3.0 Drainage system materials and construction
NZBC G13/AS2	Foul Water – drainage
AS/NZS 1254	PVC pipes and fittings for storm and surface water applications
AS/NZS 1260	PVC pipes and fittings for drain, waste and vent applications
AS/NZS 1546.1	On-site domestic wastewater treatment units - Septic tanks
AS/NZS 1547	On site domestic wastewater management
AS/NZS 2032	Installation of PVC pipe systems
AS/NZS 2033	Installation of Polyethylene pipe systems
AS/NZS 2566.1	Buried Flexible Pipelines - Structural Design
AS/NZS 2566.2	Buried Flexible Pipelines - Installation
AS/NZS 3500.2	Plumbing and drainage - Sanitary plumbing and drainage
AS/NZS 3500.3	Plumbing and drainage - Stormwater drainage
AS/NZS 4671	Steel reinforcing materials
AS/NZS 5065	Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications
NZS 3107	Precast concrete drainage and pressure pipes
NZS 3104	Specification for concrete production
	Plumbers, Gasfitters and Drainlayers Act 1976

1.2 AS-BUILT DRAWINGS

Supply a 1:100 scale as-built drawing of drains and fittings to the territorial authority and to the owner on completion.

1.3 QUALIFICATIONS

Drainlayers to hold a current licence within the terms of the Plumbers Gasfitters & Drainlayers Act 1976 and be experienced, competent and familiar with the materials and techniques specified.

2. PRODUCTS

2.1 CONCRETE

17.5 MPa prescribed mix to NZS 3104.

2.2 REINFORCEMENT

Plain round and/or deformed steel bars, Grade 300 to AS/NZS 4671.

2.3 uPVC PIPES

uPVC Pipes bends, junctions, fittings and joints to AS/NZS 1254 and AS/NZS 1260.

2.4 GULLY TRAPS

To NZBC G13/AS2: 3.3 Gully traps, complete with grating.

2.5 DRAINAGE AND FILLING MATERIALS

Granular:	Clean gravel or crushed stone or a blend of these. Particle size from minimum 7 mm to maximum 20 mm.
Selected:	Fine grain soil or granular material suitable for bedding; excluding topsoil.
Ordinary:	Top soil or other excavated materials.

3. EXECUTION

- 3.1 **EXCAVATE**
Excavate for drains to a firm even base with correct gradients set in straight runs.
- 3.2 **MANUFACTURER'S REQUIREMENTS**
All drainage installations to the pipe and fitting manufacturer's requirements.
- 3.3 **DRAINAGE GENERALLY**
Carry out drainage work and tests to NZBC B1/AS1: 6.0. Lay uPVC pipe systems to relevant sections of AS/NZS 2032, NZS 2566.1 and AS/NZS 2566.2. Lay polyethylene pipes and fittings to relevant sections of AS/NZS 2033 and NZS 2566.1.
- 3.4 **LAY FOUL WATER DRAINS**
Lay drains in straight runs to correct gradients, to discharge into the network utility operator's sewer. Set inspection fittings on a concrete base.
- 3.5 **INSTALL GULLY TRAPS**
Set on concrete 50 mm above the surrounding ground or paving and brought up to protect the top of the fitting. Trowel off.
- 3.6 **LAY STORMWATER DRAINS**
Confirm the required location of downpipes and finished ground levels before commencing pipework. Set downpipe bends in concrete with the concrete brought up to protect the top of the bend from damage. Lay drains in straight runs to correct gradients to discharge into soak holes.
- 3.7 **FIELD TEST**
Field test drains for watertightness (UPVC to AS/NZS 2032 or AS/NZS 2566. 2 Appendix N) to the satisfaction of the territorial authority inspector.
- 3.8 **BACKFILL**
Backfill drain lines in 150 mm layers, well tamped but without disturbing the drains. Finish off with 150 mm of topsoil, slightly mounded above the finished ground line.

7404 WASTEWATER TREATMENT SYSTEM

1. GENERAL

This section relates to the installation and management of on-site domestic wastewater treatment systems.

Related work

1.1 RELATED SECTIONS

Refer to DRAINAGE for drainage

Documents

AS/NZS 1260	PVC-U pipes and fittings for drain, waste and vent application
AS/NZS 1547	On-site domestic wastewater management
AS 2439.2	Perforated plastics drainage and effluent pipe and fittings – Perforated effluent pipe and associated fittings for sewage applications
AS/NZS 3000	Electrical installations
AS/NZS 4130	Polyethylene (PE) pipes for pressure applications
NZBC G13	Foul Water

1.2 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:
HYNDS Environmental Wastewater Design Report

Copies of the above literature are available from
OR HYNDS Environmental

1.3 ABBREVIATIONS

O & M	Operation and maintenance
ETS	Evapo-transpiration–seepage

1.4 DEFINITIONS

Land application:	Means the application of effluent to areas of land for further treatment.
Wastewater:	Wastewater is defined as FOUL WATER in the New Zealand Building Code.

Requirements

1.5 OPERATION AND MAINTENANCE

Provide to the owner and regulatory authority, specific O & M guidelines for the on-site system as designed and installed. Refer to AS/NZS 1547 for basic technical information covering operation, maintenance and monitoring of on-site domestic wastewater systems.

1.6 DESIGN

Specific design of wastewater treatment system by the manufacturer or consulting engineer experienced in wastewater disposal.

1.7 STRUCTURE

Construct from durable materials, to be watertight, impervious to contamination from waste contained within and from groundwater, be capable of withstanding vertical, lateral and uplift loads, prevent direct flow of wastewater between inlet and outlet, avoid foul air and gases and provide access for the removal of waste contents.

1.8 QUALIFICATIONS

Work to be carried out by tradesmen experienced, competent and familiar with the materials and techniques specified.

Performance

1.9 PRODUCER STATEMENT

Provide a producer statement from a suitably qualified person for:
Design, Manufacture and installation of the system

Producer statements to be in the form required by the Building Consent Authority.

1.10 INSTALLATION CERTIFICATION

Certify the installation to AS/NZS 1547. The certificate to be issued to and held by the regulatory authority.

2. PRODUCTS

Components

2.1 AERATED WASTEWATER TREATMENT SYSTEM
Refer Engineers Reports

Accessories

2.2 UPVC PIPES AND FITTINGS
Unplasticised PVC pipe and fittings to AS/NZS 1260.

2.3 POLYETHYLENE PIPES AND FITTINGS
High density polyethylene pipe and fittings to AS/NZS 4130. Perforated pipe for dispersal in land application areas to AS 2439 part 2.

2.4 BEDDING, SURROUND AND FILLING MATERIALS
Granular: Clean gravel or crushed stone or a blend of these. Particle size from minimum 7 mm to maximum 20 mm.
Selected: Fine grain soil or granular material suitable for bedding and excluding topsoil, organic matter and rubbish.
Ordinary: Top soil or other excavated materials excluding organic matter and rubbish.

3. EXECUTION

Conditions

3.1 EXCAVATION
Open not more than 120 metres of trench at any one time. Excavated trench to a minimum width of pipe diameter plus 300 mm. Do not batter or cut the trench wider above the top of the pipe.

For deep excavation, trench width to be sufficient to provide safe access and to accommodate shoring to OSH requirements. Width of bottom of trench up to 300 mm above top of pipe to be pipe diameter plus 300 mm.

Maintain free of water and free of all falling material.

3.2 BEDDING
Place to NZBC G13/AS2: Foul water drainage, 5.0 Installation, figure 7, Bedding and backfilling, using compacted granular material to avoid differential settlement and to obtain longitudinal support of the pipe.

3.3 SURROUND AND BACKFILL
Place to NZBC G13/AS2: Foul water drainage, figure 7 Bedding and backfilling, using compacted granular material and compacted fill. Compact in layers not exceeding 100 mm.

3.4 SETTING OUT
Position on site wastewater treatment system to comply with local authority approval. Use string line, boning rod or laser equipment methods. Use surveying and levelling equipment to accurately set out design invert levels.

3.5 LAYING AND JOINTING
Lay in straight lines between changes of line or grade from the lower end of the drain with sockets pointing uphill. Set each pipe true to line and grade and each joint completed

before the next pipe is laid. Cap ends of uncompleted runs each day to prevent entry of foreign matter. Test drains and backfill progressively to minimise site disruption. Concrete cap trenches to drains with less than 375 mm cover.

3.6 LAYING FOUL WATER DRAINS

Lay the drainage system from soil stacks and gully traps, including access chambers, inspection chambers, bends, junction inspections, buchan traps and vents (fresh air inlets). Discharge into the network utility operator foul water system to their requirements.

3.7 DIFFERENTIAL SETTLEMENT

Provide flexible jointing, bedding and surrounding of pipes at junctions with manholes, foundation walls and other points where differential settlement may occur.

Application - fittings

3.8 INSTALL WASTEWATER TREATMENT SYSTEM

Install to manufacturer's requirements. In situations when flotation due to hydrostatic uplift from a high water table is possible, anchor the AWTS to manufacturer's instructions. Connect to pipe systems and electrical supply. Installation completed by manufacturer's licensed installer.

Application - connections

3.9 SEPTIC TANK DISPERSAL METHOD FOR LAND APPLICATION SYSTEM

The following systems to be verified by specific design:

- irrigation by subsurface drip, surface drip, or spray system

Carry out installation of system to comply with the design and to AS/NZS 1547. Place filter cloth above the distribution aggregate to prevent soil incursion.

3.10 PUMP

Install submersible high-head pump designed to carry screened effluent from septic tanks to dispersal field.

3.11 ELECTRICAL CONNECTION

Installation to AS/NZS 3000. Allow to connect up to the power socket as provided.

3.12 CONTROL AND ALARM SYSTEM

Install the control and alarm system in a weatherproof housing located in readily visible position.

Completion

3.13 REPLACE

Replace damaged or marked elements.

3.14 LEAVE

Leave work to the standard required by following procedures.

3.15 CLEAN

Clean and flush out the whole installation. Remove silt and debris.

3.16 REMOVE

Remove debris, unused materials and elements from the site.

4. SELECTIONS

Refer Engineers Report

Producer Statement – Technical basis for structural design methodology contained in designIT for houses –New Zealand.

DesignIT for houses, New Zealand has been developed by Timberbuilt Pty Ltd for Carter Holt Harvey Wood Products Ltd to assist designers select appropriate sizes of structural laminated veneer lumber products manufactured by Carter Holt Harvey (including hySPAN and hyJOIST) and other generic stress grades of timber, to be used as structural elements for the construction of buildings falling within the scope and limitations of NZS 3604.

Timberbuilt certifies that the design methodology used for the software includes compliance with the loading and general design requirements contained within AS/NZS 1170:2002 and with timber structural design in accordance with NZS 3603:1993 including Amendment 4 (Verification method B1/VM1, 6.1).

Serviceability and other criteria for design have been selected using the most up to date information available from joint Australian/New Zealand standards technical committees to ensure designIT solutions correspond to performance levels implied by design solutions given in NZS 3604:1999 (Acceptable Solution B1/AS1, 4.1).

For the nominated application/s and subject to the limitations on span and loading, the specified product and/or stress grade in the size given will comply with the structural requirements of the New Zealand Building Code, provided the installation is in accordance with the details provided or referred and/or product literature or NZS 3604, as appropriate.

References:

NZS 3603:1993 Timber Structures Standard.

NZS 3604:1999 Timber Framed Buildings.

AS/NZS 1170:2002 Structural design actions, Parts 0, 1 and 2.

AS 1684.1 – 1999 Residential timber framed construction. Part 1: Design criteria.

AS 1720.1 – 1997 Timber structures. Part 1: Design methods.

2nd July, 2007

For further information or advice please contact either of the following:

Software/design information

Timberbuilt Pty Ltd

58a Whiteside Rd., Clayton, Victoria, Australia. 3168.

Telephone Free call 1800 808 131. Telephone (613) 9543 3733.

Facsimile Facsimile (613) 9543 3766.

Email: Email: designit@timberbuilt.com.au

Product/design information

Carter Holt Harvey Wood Products

173 Captain Springs Road, Onehunga, Auckland

Telephone 0800 808 131

Facsimile 0800 808 132

Email: designit@chh.co.nz

Specifier details:

Specifier:	Russell Petersen		
Business name:	Plans.Co.Nz		
Address:			
Phone:	Mobile:	Facsimile:	

Project & Site details:

Project:	SIGNATURE HOMES	Ref. no.: 08-576
At (address):		
For (owner/s):	PAUL & DEBBIE WING	
Wind Zone:	HIGH	

MEMBER DESIGN DETAILS

Member 1

1) Member code and description R1 - Common rafters



SHERWOOD INDUSTRIES IS AN ENVIRONMENTALLY RESPONSIBLE COMPANY. THIS MANUAL IS PRINTED ON RECYCLED PAPER.

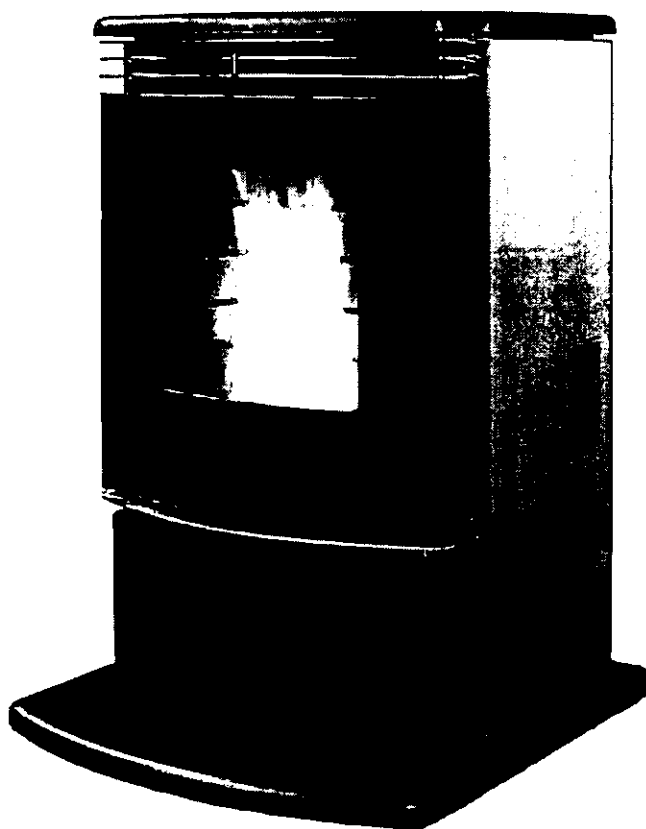
PLEASE KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE



PELLET STOVE

Evolution

OWNER'S MANUAL



Contact your building or fire officials about restrictions and installation inspection requirements in your area.



PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS PELLET-BURNING ROOM HEATER. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

50-1021

INSTALLATION

FRESH-AIR:

This Heater must have adequate air for proper combustion in the room that it is installed.

A Fresh-air intake is strongly recommended for all installations. Failure to install intake air may result in improper combustion as well as the unit smoking during power failures.

Outside fresh air is mandatory when installing this unit in airtight homes and mobile homes.

When connecting to an outside fresh air source, do not use plastic or combustible pipe. A 2" minimum (51 mm) ID (inside diameter) steel, aluminum or copper pipe should be used. It is recommended, when you are installing a fresh air system, to keep the number of bends in the pipe to a minimum.

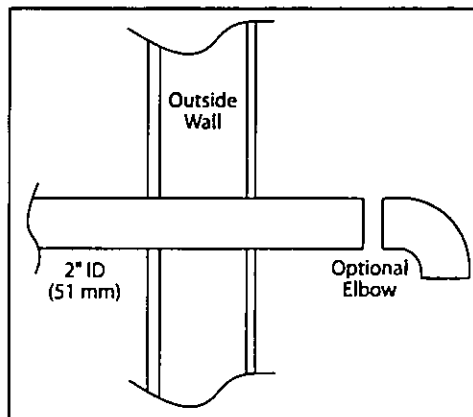


Figure 7: Outside Air Connection.

EXHAUST AND FRESH AIR INTAKE LOCATIONS:

The Exhaust Starter Tube can be installed 2 ways:

- Angled towards the center - Use a Tee with vertical for a "centered" vertical installation.
- Straight out the back - For horizontal thru the wall and up installation

EXHAUST Location:

Base of unit to center of flue	$10\frac{15}{16}"$	(278 mm)
Center of unit to center of flue	$1\frac{3}{8}"$	(35 mm)

FRESH AIR INTAKE.

Base of unit to center of intake	$8\frac{15}{16}"$	(227 mm)
Center of unit to center of intake	$4\frac{1}{8}"$	(105 mm)

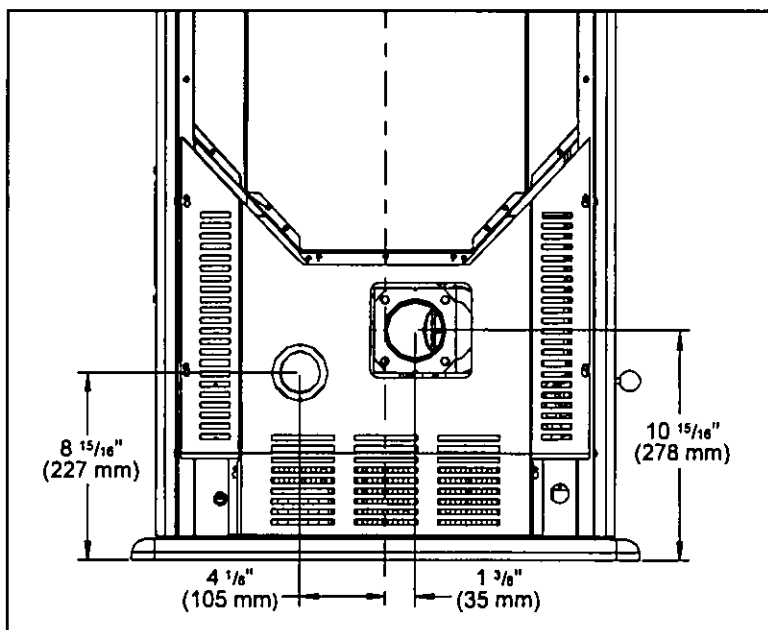


Figure 8: EF5 Inlet and Outlet Location.

INSTALLATION

APPLIANCE DIMENSIONS:

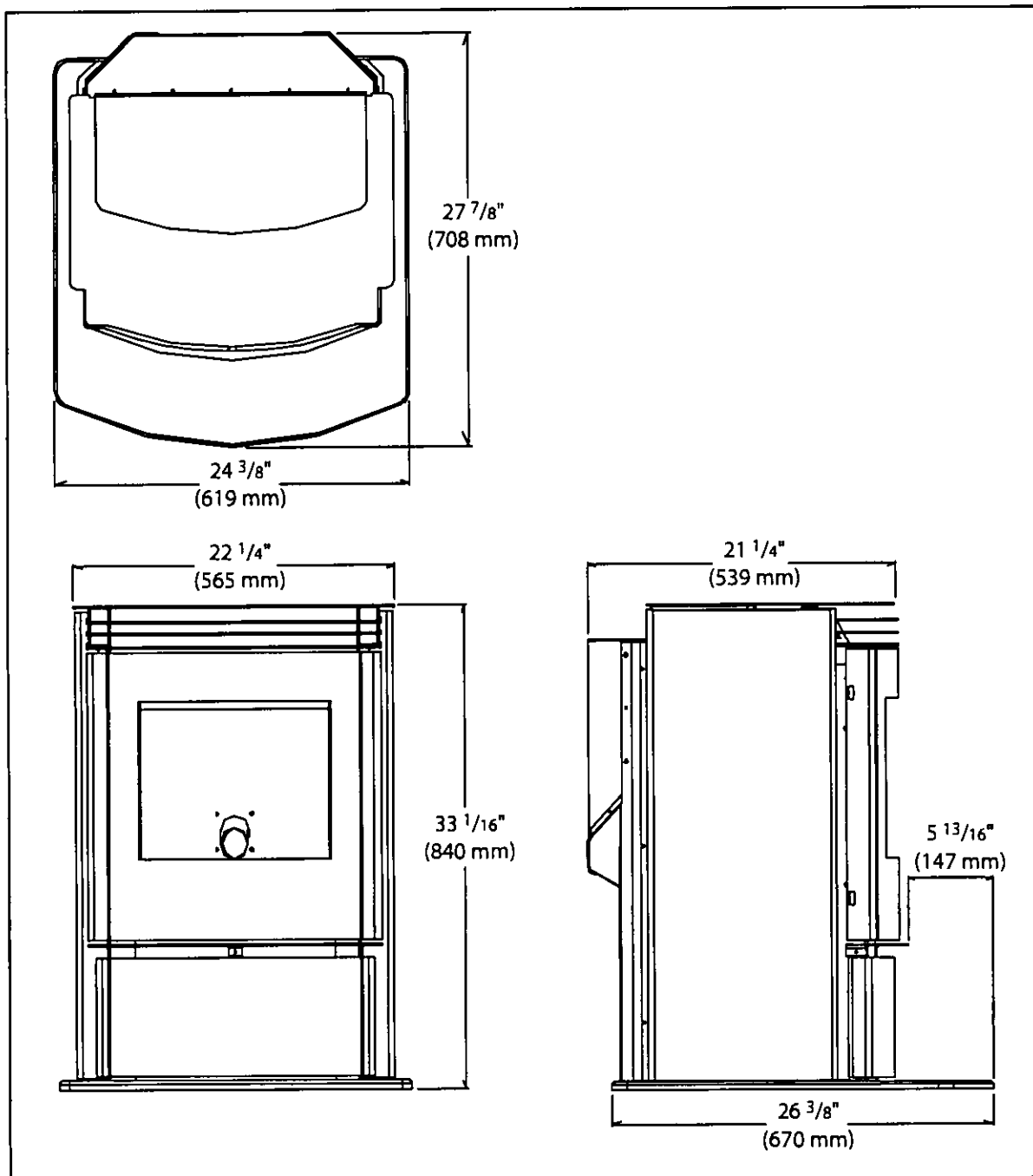


Figure 5: Dimensions of EF5.

INSTALLATION

CLEARANCES TO COMBUSTIBLES:

This unit can be installed on a combustible floor due to the built in pedestal hearth pad (for example linoleum, hardwood flooring). If this unit is to be installed onto a carpeted surface, a hearth pad must be used for stability.

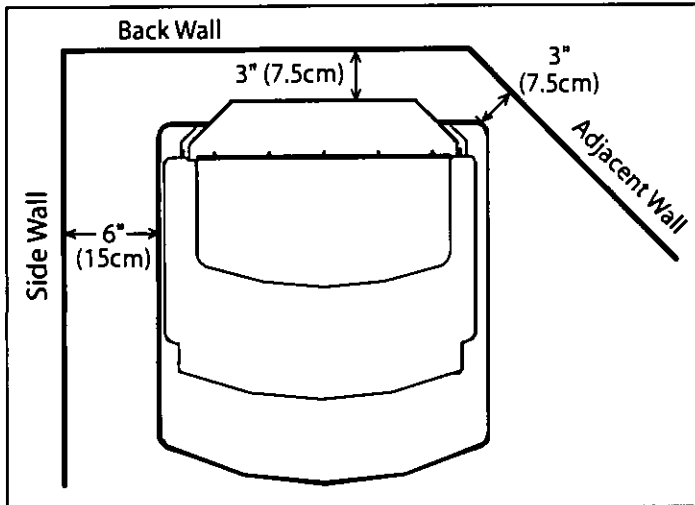


Figure 6: EF5 Clearance to Combustibles.

These dimensions are minimum clearances but it is recommended that you ensure sufficient room for serving, routine cleaning and maintenance.

Side wall to unit	6 inches	(15 cm)
Back wall to unit	3 inches	(7.5 cm)
Corner to unit	3 inches	(7.5 cm)

ALCOVE CLEARANCES:

This unit may be installed in an alcove. Maintain these clearances to combustibles.

Minimum Alcove width	48 inches	(122 cm)
Minimum Alcove height	48 inches	(122 cm)
Minimum Alcove depth	48 inches	(122 cm)

Install vent at clearances specified by the vent manufacturer.

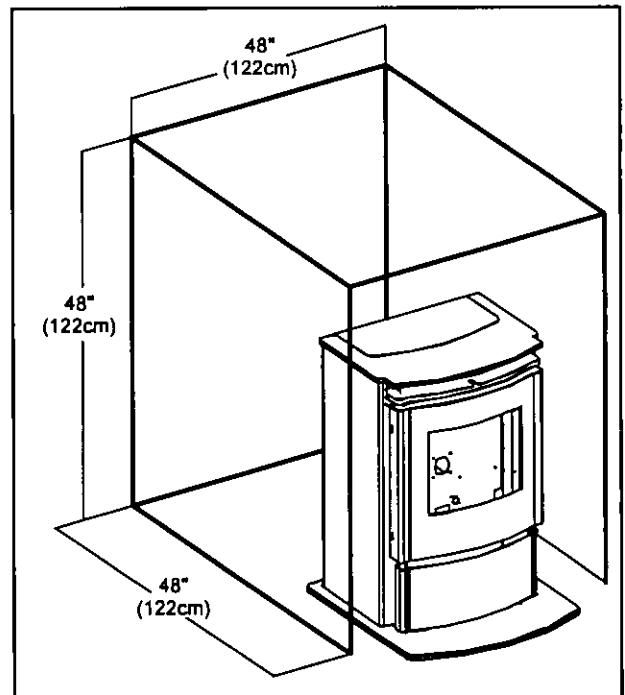


Figure 7: EF5 Minimum Alcove Size.

INSTALLATION

VENT TERMINATION REQUIREMENTS:

IT IS RECOMMENDED THAT YOUR PELLET STOVE BE INSTALLED BY AN AUTHORIZED DEALER/INSTALLER.

Table 1: Use in conjunction with Figure 9 for allowable exterior vent termination locations.

Letter	Minimum Clearance	Description
A	24 in (61 cm)	Above grass, top of plants, wood, or any other combustible materials.
B	48 in (122 cm)	From beside/below any door or window that may be opened.
C	24 in (61 cm)	From above any door or window that may be opened.
D	24 in (61 cm)	To any adjacent building, fences and protruding parts of the structure.
E	24 in (61 cm)	Below any eave or roof overhang
F	12 in (30 cm)	To outside corner.
G	12 in (30 cm)	To inside corner, combustible wall (vertical and horizontal terminations).
H	3 ft (91 cm) within a height of 15 ft (4.5 m) above the meter/regulator assembly	To each side of center line extended above natural gas or propane meter/regulator assembly or mechanical vent.
I	3 ft (91 cm)	From any forced air intake of other appliance
J	12 in (30 cm)	Clearance to non-mechanical air supply inlet to building, or the combustion air inlet to any appliance.
K	24 in (61 cm)	Clearance above roof line for vertical terminations.
L	7 ft (2.13 m)	Clearance above paved sidewalk or paved driveway located on public property.

1. Do not terminate the vent in any enclosed or semi-enclosed areas such as a carport, garage, attic, crawlspace, narrow walkway, closely fenced area, under a sundeck or porch, or any location that can build up a concentration of fumes such as stairwells, covered breezeway, etc.

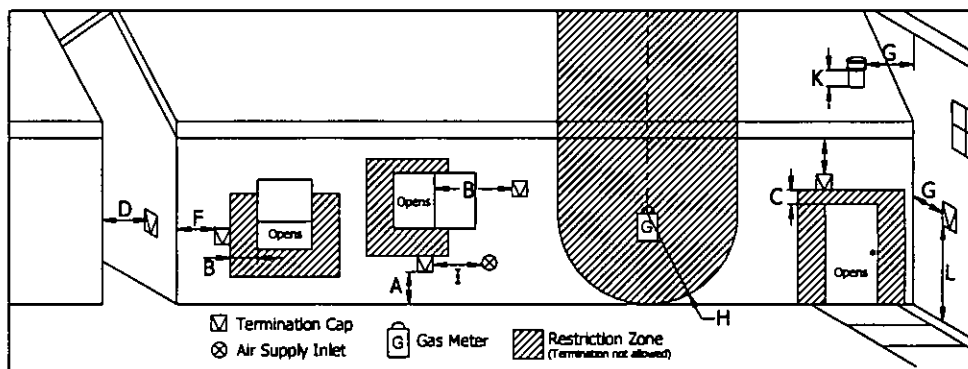


Figure 9: Use in conjunction with Table 1 for allowable exterior vent termination locations.

2. Vent surfaces can become hot enough to cause burns if touched by children. Non-combustible shielding or guards may be required.
3. Termination must exhaust above the inlet elevation. It is recommended that at least five feet of vertical pipe be installed outside when the appliance is vented directly through a wall, to create some natural draft to prevent the possibility of smoke or odor during appliance shut down or power failure. This will keep exhaust from causing a nuisance or hazard from exposing people or shrubs to high temperatures. In any case, the safest and preferred venting method is to extend the vent through the roof vertically.
4. Distance from the bottom of the termination and grade is 12" (30 cm) minimum. This is conditional upon the plants and nature of grade surface. The exhaust gases are hot enough to ignite grass, plants and shrubs located in the vicinity of termination. The grade surface must not be lawn.
5. If the unit is incorrectly vented or the air to fuel mixture is out of balance, a slight discoloration of the exterior of the house might occur. Since these factors are beyond the control of Sherwood Industries Ltd, we grant no guarantee against such incidents.

NOTE: Venting terminals shall not be recessed into walls or siding.

INSTALLATION

THROUGH WALL WITH VERTICAL RISE AND HORIZONTAL TERMINATION INSTALLATION- RECOMMENDED:

A 45° elbow with a rodent screen may be used in place of the termination cap (or stainless steel termination hood).

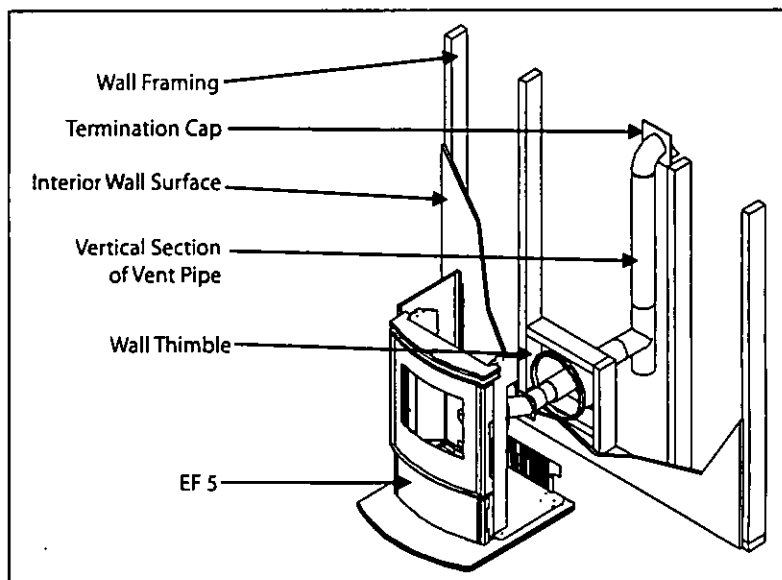


Figure 15: Venting horizontally with rise.

THROUGH CONCRETE WALL WITH VERTICAL RISE INSTALLATIONS:

A 45° elbow with a rodent screen may be used in place of the termination cap (or stainless steel termination hood).

Installation to use if there is a concrete or retaining wall in line with exhaust vent on pellet stove.

The termination must be 12 inches (30 cm) from the outside wall and 12 inches (30 cm) above the ground.

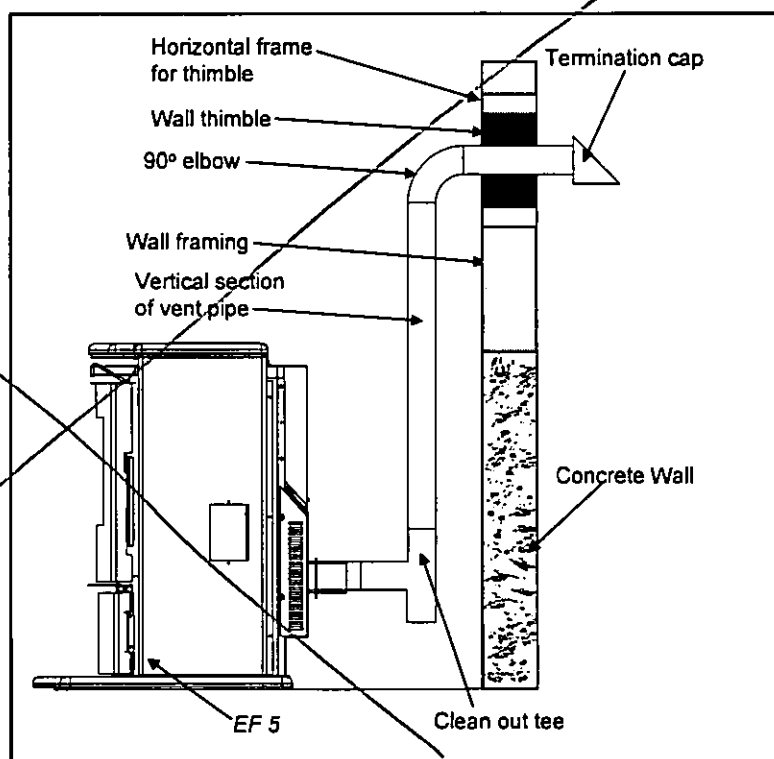


Figure 16: Venting with concrete wall behind unit .

2) Design inputs

Span	5.0 m - single
Maximum rafter spacing	600 mm
Roof mass	40 kg/m ²
Lateral restraint condition	Bottom edge restrained by ceiling / ceiling battens at 600 crs max.
Serviceability criteria	AS 1684.1-1999

3) Member specification

Size, stress grade/product	Use HJ240 63 hyJOIST
----------------------------	----------------------

4) Installation requirements

Support and tie-down - Details R10, R11, R13 (4/35 x 3.15 FH nails per end)
& R14 (4/35x3.15 FH nails/multigrip tab), supporting member J5 or better.

Member 2

1) Member code and description R2 - Common rafters

2) Design inputs

Span	5.5 m - single
Maximum rafter spacing	900 mm
Roof mass	40 kg/m ²
Lateral restraint condition	Bottom edge restrained by ceiling / ceiling battens at 600 crs max.
Serviceability criteria	AS 1684.1-1999

3) Member specification

Size, stress grade/product	Use HJ240 63 hyJOIST
----------------------------	----------------------

4) Installation requirements

Support and tie-down - Details R10, R11, R15 (3/35 x 3.15 FH nails per end)
& R14 (4/35x3.15 FH nails/multigrip tab), supporting member J5 or better.

CARTERS Manufacturing

Producer Statement : Page 1

Job: FP2264

Client: Signature Homes
Phone:Site: Wing
Lot 18 The Beach Farm
WaitarereDescription:
Building Consent No.:
MITek 20/20 Engineering 4.5.116

MITek New Zealand Ltd.

Phone:
Printed: 08:41:09 11 Nov 2008**PRODUCER STATEMENT for MITek 20/20™ TRUSS DESIGN**

The MITek 20/20™ truss design program has been developed by MITek New Zealand Ltd for the design of GANG-NAIL® timber roof, floor and attic trusses in New Zealand. The truss designs computed by MITek 20/20™ are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Verification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution to satisfy the requirements of Clause B1 of the Building Code.

This producer statement covers the MITek 20/20™ truss design and the structural performance of the GANG-NAIL plate.

On behalf of MITek New Zealand Ltd, and subject to:

- i) All proprietary products meeting their performance specification requirements
- ii) The provision of adequate roof bracing and overall building stability
- iii) Correct selection and placement of fixings
- iv) Correct input of Truss Design Data below
- v) The design being undertaken by suitably trained personnel
- vi) The truss design being carried out in accordance with MITek 20/20 User Terms and Conditions.

I believe on reasonable grounds that the trusses, if constructed in accordance with the MITek 20/20™ truss design and shop drawings, will comply with the relevant provisions of the Building Code.

MITek New Zealand Ltd holds a current policy of Professional Indemnity Insurance no less than \$500,000.

On behalf of MITek New Zealand Ltd,

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MITek New Zealand Ltd

MITek 20/20™ TRUSS DESIGN DATA

The MITek 20/20™ computer design for this job is based on the following design parameters entered into the program. The GANG-NAIL Fabricator shall ensure that these job details are current and relevant to the project for the design of the trusses.

Job Details

Importance Level : 2

Roof Truss

Timber Group: MSG45H1H3
Roof
Material: Galv Iron .5mm
Dead Load: 0.210 kPa
Restraints: 900 mm centres
Live Load: Q_r = 0.250 kPa
Q_c = 1.100 kN

Pitch: 8.000 deg
Ceiling
Material: Gib Board 12mm
Dead Load: 0.200 kPa
Restraints: 800 mm centres
Live Load: Q_c = 1.400 kN

Std Overhang: 600 mm
Wind
Area: High (44.0 m/s)
Pressure Coeff: C_{pe} = varies; C_{pi} = -0.30, 0.20

The timber for these trusses shall be standard gauged and treated to the requirements of NZS 3602:2003. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in "closed environment", as defined by NZS3604:1999 Section 4.

Truss List

Legend: * = detail only, ? = input only, — = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
EN01	1	2280	8.000	900
EN02	1	2300	8.000	900
T01	6	8700	8.000	900
T02	4	8100	8.000	900
T03	3	2400	8.000	900
T04	3	4000	8.000	900
T04A	1	4000	8.000	900

Total quantity : 19

The computer design input has been carried out by:

Name of Computer Operator: Jenny Corbett

Qualifications and Title: Truss Detailer

Signed:

CARTERS

A Division of Carter Holt Harvey

Dated: Tuesday, 11 November 2008

BUILDING CONSENT LAYOUT

CARTERS MANUFACTURING

National Support Office
Auckland
Ph (09) 273 6804

JOB No **FP2284**

Client: Signature Homes

Job Name: Wing

Address: Lot 16 The Beach Farm
Waitare

Pitch: 8° 3'

Roof Material: Iron

Soffit Overhang: varies

Wind Area: High

Snow Load: 0.0 kPa

Trusses And Rafter At 900 Centres
Unless Stated Otherwise.

This layout is to be read in conjunction
with the Architectural plans.

DRAWN BY Jenny Corbett

DATE 11/11/08 PAGE 1 of 2

BUILDING CONSENT INFORMATION

These layouts and associated design
statements are provided as a means
of showing compliance with NZBC
and may be used for Building Consent
Application purposes only. This is a
Buildable layout which may have some
dimensional changes completed at the
time of truss manufacture.

As to be Built roof truss layouts. Truss
fixing details, point load notification,
and a Producer Statement for the
design of the roof trusses will be
provided to the Local Authority at
the time of manufacture.

All walls shown on this layout are
considered to be load bearing.

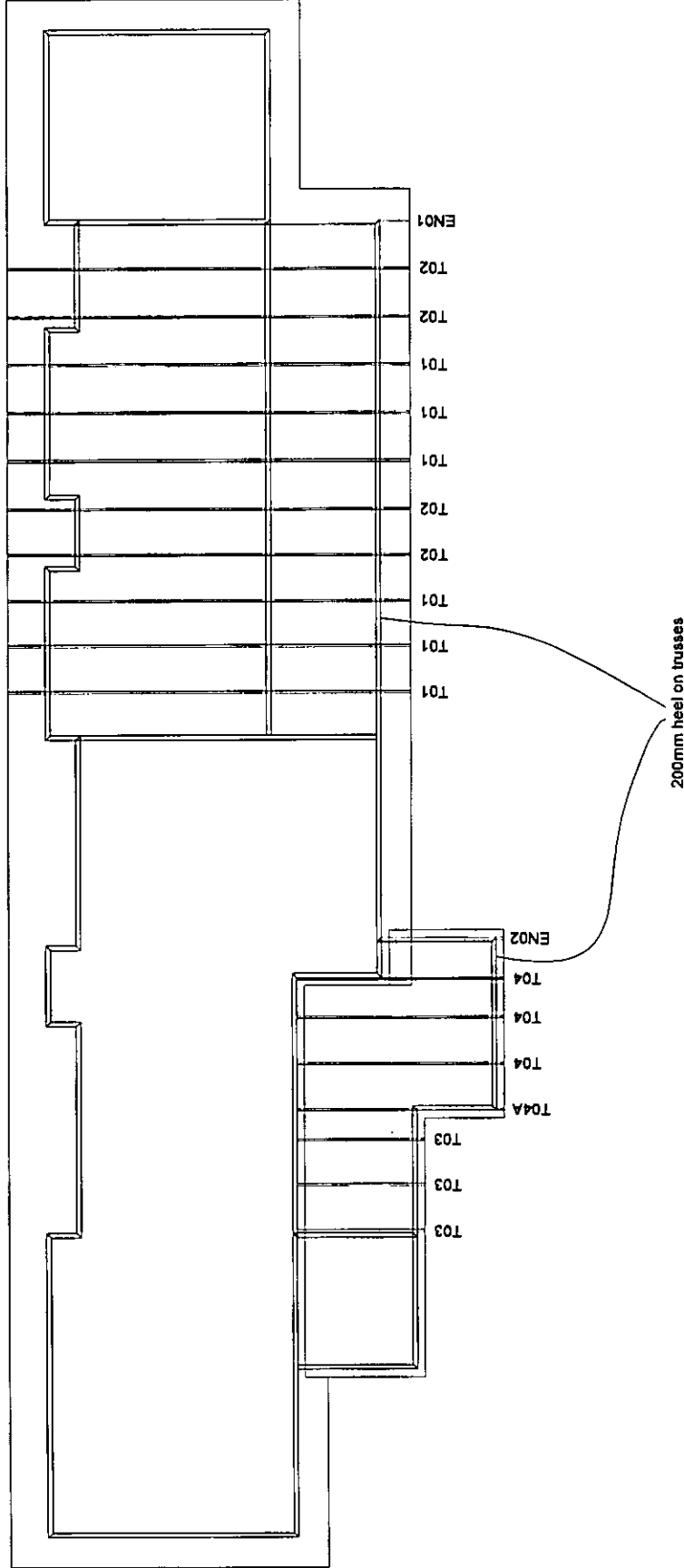
These layouts and associated design
statements are valid only if the job is
manufactured by CARTERS.

TRUSS FIXINGS

Truss to Top Plate - 2 wire dogs
Truss to Truss - Joist Hanger
or alternatively as specified by
CARTERS on the Final Layout



See Page 2 for Dimensions
and Point Load notification



GIB® Wall Bracing Calculation Sheet A

single storey

V85A

GIB® EzyBrace™

GIB® Bracing Systems, 2006

Job Details

Name	WING	
Street and Number	XXX	
Lot and DP Number		
City/Town/District	Waitarere	
Designer and date	RP	30/10/08
Company Name	Plans.Co.NZ	

Building Specification

Location of Storey	single	not applicable (single storey building) not applicable (slab)
Floor Loading	2 kPa	
Foundation Type	slab	
Building Height to Apex (m)	5	
Roof Height above Eaves (m)	2	
Stud Height (m)	3	
Cladding Weight (top or single)	light	
Cladding Weight (lower)	light	
Cladding Weight (subfloor)	light	
Roof Weight	light	
Roof Pitch (degrees)	0-25	
Room in Roof Space	no	
Building Length (m)	29.61	
Building Width (m)	9	
Gross Building Plan Area (m2)	182.9	

Building Location

Wind Zone	High	Earthquake Zone
Region	R1	A
Terrain	Coastal	
Exposure	Sheltered	
Topography	Moderate	

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	73 BUs/m
W across	n/a	63 BUs/m
Totals	subfloor	walls
W along	n/a	657 BUs
W across	n/a	1865 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	3.6 BUs/m2
Totals	subfloor	walls
E along	n/a	658 BUs
E across	n/a	658 BUs

V85A

GIB® Bracing Systems, 2006

Along									
Wall or Bracing Line	Bracing Elements provided							Wind	Earthq.
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	GIB®	BL1	1.3	3.4	0	115	106
		2	GIB®	BL1	0.8	3.5	0	69	63
line totals		3	GIB®	BL1	0.8	3.5	0	69	63
W	415	4	GIB®	BL1	1.3	3.5		111	103
EQ	383	5	GIB®	BL1	0.6	3.4		53	49
B	enter	1	GIB®	GS1a	5.8	2.8		373	323
		2	GIB®	GS1a	3.9	2.9		242	210
line totals		3		0	0	0		0	0
W	615	4		0	0	0		0	0
EQ	533	5		0	0	0		0	0
C	enter	1	GIB®	GS1a	4.6	2.6		318	276
		2		0	0	0		0	0
line totals		3		0	0	0		0	0
W	318	4		0	0	0		0	0
EQ	276	5		0	0	0		0	0
D	enter	1	GIB®	BL1	0.86	2.4	0	108	99
		2		0	0	0	0	0	0
line totals		3		0	0	0		0	0
W	108	4		0	0	0		0	0
EQ	99	5		0	0	0		0	0
E	enter	1		0	0	0		0	0
		2		0	0	0		0	0
line totals		3		0	0	0		0	0
W	0	4		0	0	0		0	0
EQ	0	5		0	0	0	0	0	0
F	enter	1		0	0	0		0	0
		2		0	0	0		0	0
line totals		3		0	0	0		0	0
W	0	4		0	0	0		0	0
EQ	0	5		0	0	0		0	0
G	enter	1		0	0	0		0	0
		2		0	0	0		0	0
line totals		3		0	0	0		0	0
W	0	4		0	0	0		0	0
EQ	0	5		0	0	0		0	0
H	enter	1		0	0	0		0	0
		2		0	0	0		0	0
line totals		3		0	0	0		0	0
W	0	4		0	0	0		0	0
EQ	0	5		0	0	0		0	0

Wind Earthq.
Totals Achieved 1457 1291

 OK OK
Totals Required (from Sheet A) 657 658

GIB® Bracing Systems, 2006

*For full construction details see literature
GIB® Bracing Systems, 2006*

Supplier	System	Minimum Length (m)	BU's W/m	BU's EQ/m
	none	0	0	0
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0
Custom	Custom	0	0	0

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WASTEWATER DESIGN REPORT

FOR PROPERTIES AT:

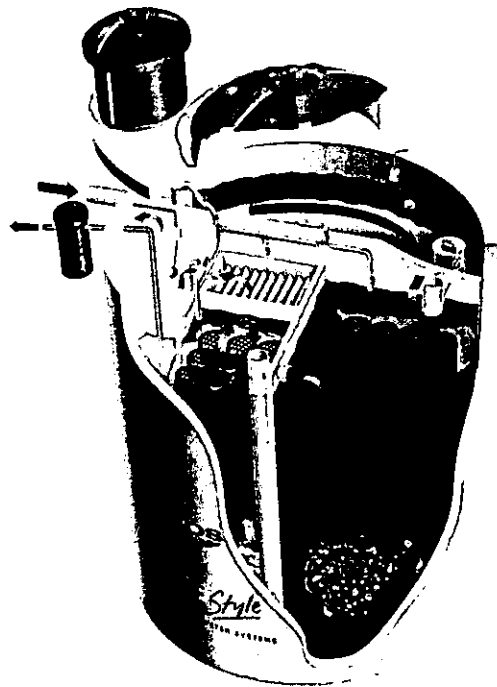
LOT 2 DP 342298

&

LOT 2 & 3 DP 50712

WAITARERE RISE LIMITED

THE BEACH FARM SUBDIVISION



DATE: 29 October 2008

By: Paul Siggs

Hynds Environmental Systems Limited

1.0 INTRODUCTION

Hynds Environmental Systems Ltd was contacted in August 2008 to determine the suitability for the installation of a suitable wastewater system to adequately treat for disposal to the Waitarere Beach Wastewater Treatment Station, the expected waste flow from these properties.

2.0 SITE DESCRIPTION

The legal descriptions of the properties that are to be subdivided are Lot 2, DP 342298 & Lot 2 & 3 DP 50712, Waitarere Beach Road Waitarere. CT reference WN20B/733, WN20B72 & 173880. The total area is a 186 hectare plot of land.

The Development will consist of 142 house blocks ranging in size 3400 to 13100 m². It is proposed that the majority of houses will be 4 bedroom dwellings assuming some will contain a study we have based a system design on a 5 bedroom dwelling.

The attached Check list and this report are is for Lot 16 of the new development.

3.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS (AEE)

- The system chosen for the treatment of waste from this building is a Hynds Lifestyle Advanced Litre Treatment System that has the capacity to treat 1800 litres per day from a residential dwelling with standard appliances and no garbage grinder.
- The Hynds Lifestyle Advanced Treatment System is designed to perform to a quality of 20mg/L BOD₅ and 20mg/L Suspended Solids.
- The Hynds Lifestyle Advanced Treatment System has an audible and visible alarm system that indicates high water level, air interruption and pump failure.
- The tank has a minimum one day emergency storage of 1818 litres
- The design for this application is a conservative approach using Horizons Regional Council Guidelines. The assumed organic loading per person is 70mg/L BOD₅
- Land application in this case is not required as the treated effluent from these systems will be dispersed via a pumped mainline to the Local Council Wastewater Treatment Plant. Here the effluent will be dispersed to land via the councils existing dispersal system.
- The 20-year flood plan has been considered. Risk is minimal with a Hynds Treatment System as all electrical componentry can be easily removed in the event of an unexpected flood. Replacement of any components is simple which ensures the system can continue constant operation.

- Odour effects are not expected, as the Hynds tank is a completely sealed system with all venting being through the house terminal vent.
- The Hynds aeration system is within a sealed container and is considered extremely low noise from a dwelling at 3m distance. The pump is submerged which does not produce a noise effect.
- The Hynds System Management Plan includes a 6 monthly service on every system. The first year's service is included in the purchase price of this system to ensure the client receives full instruction on the system and provide any correction of use during this time. Maintenance after the first year is through a renewal of service contract, if there is any default of payment for the servicing this is advised to Council who may advise the client of their breach of conditions under the code of compliance rule.
- Hynds Environmental maintains a 24 hour phone service for remedial response in the case of system faults and problems.
- Each homeowner receives a user guide on the system at commissioning date. Commissioning date is used for education of the system for the client. Recommendations for maintenance of their irrigation field, cleaning product usage and general filter maintenance are made at this time.
- The visual effect on the surrounding environment is minimal with only a small dome shaped lid and box visual above ground that can simply be disguised with planting

4.0 PROPOSED WASTEWATER SYSTEM DESIGN

Number of habitable rooms	5
Number of Persons	8
Water Usage/person	180
Total Volume L/day	1440

From the above parameters, a Hynds Environmental Advanced Aerobic Sewage Treatment System is recommended.

The system consists of the following:

- ✧ Advanced 2 stage primary chamber
- ✧ Zabel filter on outlet of primary chamber
- ✧ 2 stage Aeration Chamber
- ✧ Settlement Chamber
- ✧ Pump out chamber

The tank includes 24-hour retention period.

The proposed position of the wastewater treatment system is with consideration of building regulations of 3m clearances from any building and 5m from boundary.

5.0 GENERAL COMMENTS

Instructions will be given in writing to the homeowners on use and care of the system and emergency operation instructions.

6.0 CONSTRUCTION WARRANTY

Hynds Environmental offer components that are designed to all relevant New Zealand standards. The products are manufactured in an ISO 9001 quality system and are certified as complying with " S " Mark requirements.

7.0 DESIGN WARRANTY

Hynds Environmental Systems have designed the wastewater treatment system for this property based on information provided.

The wastewater treatment system design is based solely on the assumption that Hynds Environmental shall supply all components and installation.

The installation of the specified system is critical to its effective functioning and as such Hynds Environmental Systems Ltd will not guarantee, or take responsibility for, any system that is manufactured or installed by other parties under this design.

Hynds does not take responsibility for future changes in occupancy that may change the design requirements of the wastewater system for these dwellings.

Plumbing of the dwellings must be certified by a registered plumber to ensure that any poor tap-ware, leaking appliances or illegal pipe-work shall not interfere or compromise the predicted design flows.

8.0 SERVICING

Copies of all service reports are available to be forwarded to the Council.



On-site Wastewater Disposal Site Evaluation Checklist

Compliant with TP58 Appendix E

Paul & Debbie Wing

Lot	2 & 2-3
DP	342298 & 50712
CT	WN20B/733, WN20

On-site Wastewater Disposal Site Investigation Checklist

PART A: Contact Details:

1. Applicant Details:

Applicant Name		Paul & Debbie Wing	
Company Name			
Property Owner Name(s)		First Name(s)	Surname
		Paul & Debbie	Wing
Postal Address		C/- Signature Homes	Palmerston North
Phone	06 359 3939	Business	
Fax	06 359 3949	Mobile	
Nature of Applicant*		Owner	

(* i.e. Owner, Lessee, Prospective Purchaser, Developer)

2. Consultant/Site Evaluator Details:

Consultant/Agent Name		Hynds Environmental Systems Limited	
Site Evaluator Name		Paul Siggs	
Date of Site Evaluation :		5/09/2008	
Postal Address		PO Box 17 388 Greenlane 1546	
		Auckland	
Phone Number	Business	09 571 0090	Private
	Mobile	-----	Fax
			09 571 0091
Name of Contact Person		Paul Siggs	
E-mail Address		paul.siggs@hyndsenvironment.co.nz	

3. Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on this site?

Yes ☐ No ☒ (please tick)

If yes, give Reference Number(s) and Description

4. List any other consents in relation to this proposal site and indicate whether or not they have been applied for or granted.

If so, specify Application Details and Consent No.

(e.g. Land Use, Water Take, Subdivision, Earthworks Stormwater Consents)

Rural Subdivision

PART B: Property Details

1. Property for which this application relates:

Physical Address of Property	Lot 16
	The Beach Farm
	Waitarere Beach
Territorial Local Authority	Horowhenua District Council
Regional Council	Horizons Regional Council
Legal Status of Activity	Permitted: ☒ Controlled: Discretionary:
Total Property Area (m ²)	7540 m ²

2. Legal description of land (as shown on Certificate of Title):

Lot No.	2 & 2-3	DP No.	342298 & 50712	CT No.	WN20B/733, WN20B72, & 173880
Other (specify)					

Please ensure copy of Certificate of Title is attached.

PART C: Site Assessment - Surface Evaluation

1. Has a Desk Study been undertaken for this property?

Yes ☐ No ☒ (Please tick one)

If yes, please specify the findings of the Desk Study, and if not please specify why this was not considered necessary.

2. Has a Slope Stability Assessment been carried out on the property?

Yes ☐ No ☒ (Please tick one)

If No, why not?

As there is no dispersal field on the site it is not required.

If Yes, please give details of report (and if possible, please attach report):

Author	
Company/Agency	
Date of Report	
Brief Description of Report Findings	

3. Site Characteristics (See Table 1 attached):

Provide descriptive details below:

Performance of Adjacent Systems:
Estimated Rainfall and Seasonal Variation:
1000mm
Vegetation Cover:
Site is newly planted with native shrubs and trees
Slope Shape:
NA
Slope Angle:
Surface Water Drainage Characteristics:
No Major Surface water characteristics
Flooding Potential: YES/NO
No
If yes, specify relevant flood levels on appended site plan, i.e. one in 5 year and/or 20 year and/or 100 year return period flood level, relative to disposal area.
Surface Water Separation:
At Least 20m.
Site Clearances (Provide general description here and specific dimensions in Part 6 below and in Site Plan:
Due to the location of the proposed lifestyle installation the site clearances are within the guide lines of the Regional Council Rules
Site Characteristics:
Lifestyle property

4. Site Geology of the subject property

Top terrace is undulating, with a steep slope to a lower building site. area newly planted with native shrubs and trees.

Geological Map Reference Number

5. What Aspect(s) does the proposed disposal system face? (please tick)

North	
North-West	
North-East	
East	

West	
South-West	
South-East	
South	

6. Site clearances, which should also be shown on the site plan:

Separation Distance from	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries	> 1.5m	>1.5m
Surface water	> 20m	> 20m
Groundwater	> 1200mm	> 1200mm
Stands of Trees/Shrubs	N/A	N/A
Wells, water bores	N/A	N/A
Embankments/retaining walls	N/A	N/A
Buildings	> 3m	> 3m
Other (specify):		

PART D: Site Assessment - Subsoil Investigation**1. Please identify the soil profile determination method:**

Test Pit	(Depth)	mm	No. of Test Pits	N/A
Bore Hole	(Depth)	m	No. of Bore Holes	
Other (specify):				
Soil Report attached?	Yes	N/A	No	(Please tick)

2. Was fill material intercepted during the subsoil investigation?

Yes ☐ No ☐ (Please tick)

If yes, please specify the effect of the fill on wastewater disposal

3. Has percolation testing been carried out?

Yes ☐ No ☒ N/A ☐ (Please tick)

If yes, please specify the method

Test Report Attached? Yes ☐ No ☐ N/A ☒ (Please tick)

4. Are surface water interception/diversion drains required?

Yes ☐ No ☒ N/A ☐ (Please tick)

If yes, please show on site plan

5. Please state the depth of the seasonal water table:

Winter	> 1200mm
Summer	> 1200mm

Please indicate whether Measured or Estimated

Measured ☐ Estimated ☒ (Please tick)

6. Are there any potential short circuit paths?

Yes ☐ No ☒ (Please tick)

If the answer is yes, please explain how these have been addressed

--

7. Based on results of subsoil investigation above, please indicate the disposal field soil category (Refer TP58 Table 5.1)

Is Topsoil Present?	Yes ☐	No ☒	If so, Topsoil Depth?	N/A mm
---------------------	------------------------------	--	-----------------------	--------

Soil Category	Description	Drainage	Tick One	Loading Rate
1	Gravel, coarse sand	Rapid draining	☐	5
2	Coarse to medium sand	Free draining	☒	4.5
3	Medium-fine & loamy sand	Good drainage	☐	4
4	Sandy loam, loam & silt loam	Moderate drainage	☐	4
5	Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow drainage	☐	3.5
6	Sandy clay, non-swelling clay & silty clay	Slow draining	☐	2.8
7	Swelling clay, grey clay, hardpan	Poorly or non-draining	☐	2.2

Reasons for placing in stated category

Training from Massey University and also experience and observance of soil definition characteristics and to be conservative in the design.

PART E: Discharge Details

1. Water supply source for the property (please tick):

Rainwater (roof collection)	☒	
Bore/well	☐	
Public supply	☐	Trickle Feed

2. Calculate the maximum daily volume of wastewater to be discharged, unless accurate water meter readings are available

(Refer TP58 Table 6.1 and 6.2)

House

Number of Bedrooms	5		
Design Occupancy	8		(Number of people)
Per capita Wastewater Production	180		(Litres per person per day)
		Total	
Total Daily Wastewater Production	1440	1440	(Litres per day)

3. Do you propose to install:

a) Full Water Conservation Devices?		Yes		No	☒
b) Water Recycling - what %?	%	Yes		No	☒

If you have answered yes, please provide additional information including the estimated reduction in water usage:

4. Is Daily Wastewater Discharge Volume more than 2000 litres:

Yes	☐	(Please tick)
No	☒	(Please tick)

Note: If answer to the above is yes, an wastewater discharge permit will be required by some Councils
Please check With relevant authorities.

5. Gross Lot Area to Discharge Ration:

Gross Lot Area	7540	m ²
Total Daily Wastewater Production	1440	(Litres per day) (from above)
Lot Area to Discharge Ratio	5.2	

Auckland Regional Council Area Only

6. Does this proposal comply with the Auckland Regional Council Gross Lot Area to Discharge Ratio of greater than 1.5?

Yes ☒ No ☐

7. Does this proposal comply with the Auckland Regional Council Gross Lot Area to Discharge Ratio of greater than 3?

Yes ☒ 100% Reserve Required ☐

8. Is an Auckland Regional Council Discharge Consent Required?

No ☒

PART F: Primary Treatment (Refer TP58 Section 7.2)

1. Please indicate below the no. and capacity (litres) of all septic tanks including type (single/dual chamber grease traps) to be installed or currently existing:

Number of Tanks	Type of Tank	Capacity of Tank (Litres)
	Please see Attached Specifications	
	Total Capacity	

2. Is a Septic Tank Outlet Filter to be installed?

Yes ☐ ☒ No ☐ (Please tick)

If Yes, please state the type

Please see Attached Specifications

PART G: Secondary and Tertiary Treatment

(Refer TP58 Section 7.3, 7.4, 7.5 and 7.6)

1. Please indicate the type of additional treatment, if any, proposed to be installed in the system: (please tick)

Secondary Treatment	
Home aeration plant	☒
Commercial aeration plant	
Intermediate sand filter	
Recirculating sand filter	
Recirculating textile filter	
Clarification tank	
Tertiary Treatment	
Ultraviolet disinfection	
Chlorination	
Other	

Please see Attached Specifications

Specify

PART H: Land Disposal Method*(Refer TP58 Section 8)***1. Please indicate the proposed loading method: (please tick)**

Gravity	
Dosing Siphon	
Pump	☒

2. Is a high water level alarm being installed in pump chambers?

Yes	☒	No	☐	(Please tick)
-----	-------------------------------------	----	--------------------------	---------------

3. If a pump is being used, please provide the following information:

Total Design Head	12	29	☒	(Tick) (m)
Pump Chamber Volume	690			(Litres)
Emergency Storage Volume	1818			(Litres)

4. Please identify the type(s) of land disposal method proposed for this site: (please tick)*(Refer TP58 Sections 9 and 10)*

Surface Dripper Irrigation	
Sub-surface Dripper irrigation	
Standard Trench	
Deep Trench	
Mound	
Evapo-transpiration Beds	
Other	☒

Specify

Treated Effluent will be pumped to
Council Treatment Plant for dispersal**5. Please identify the loading rate you propose for the option selected in Part H, Section 4 above, stating the reasons for selecting this loading rate:**

Loading Rate		0	(Litres/m ² /day)
Disposal Area	Basal		(m ²)
	Areal	#DIV/0!	(m ²)
Lineal Meters of Dripline Required @ 3.6mm/hr and 1.0m spacings		#DIV/0!	(m)

Explanation *(Refer TP58 Sections 9 and 10)*

0	No Loading rate is required as there will be no onsite dispersal of the treated effluent it will be pumped to the local council treatment plant for dispersal.
---	--

6. What is the available reserve wastewater disposal area *(Refer TP58 Table 5.3)*

Reserve Disposal Area (m ²)	#DIV/0!
Percentage of Primary Disposal Area (%)	100%

7. Please provide a detailed description of the design and dimensions of the disposal field and attach a detailed plan of the field relative to the property site:

Description and Dimensions of Disposal Field:

--	--	--	--

Plan Attached?	Yes	☒	No	☐	(Please tick)
----------------	-----	-------------------------------------	----	--------------------------	---------------

If not, explain why not

--

PART I: Maintenance & Management

1. Has a maintenance agreement been made with the treatment and disposal system suppliers?

Yes	☒	No	☐	(Please tick)
-----	-------------------------------------	----	--------------------------	---------------

PART J: Assessment of Environmental Effects

1. Is an assessment of environmental effects (AEE) included with application?

(Ensure all issues concerning potential effects addressed)

Yes	☒	No	☐	(Please tick)
-----	-------------------------------------	----	--------------------------	---------------

2. Are there any specific environmental constraints?

Yes	☐	No	☒	(Please tick)
-----	--------------------------	----	-------------------------------------	---------------

If Yes, please explain

--

PART K: Is Your Application Complete?

1. In order to provide a complete application you have remembered to:

Fully Complete this Assessment Form	☒
Include a <i>Location Plan</i> and <i>Site Plan</i> (with Scale)	☒
Include a Property Title (Certificate of Title)	☐
Attach an Assessment of Environmental Effects (AEE)	☒

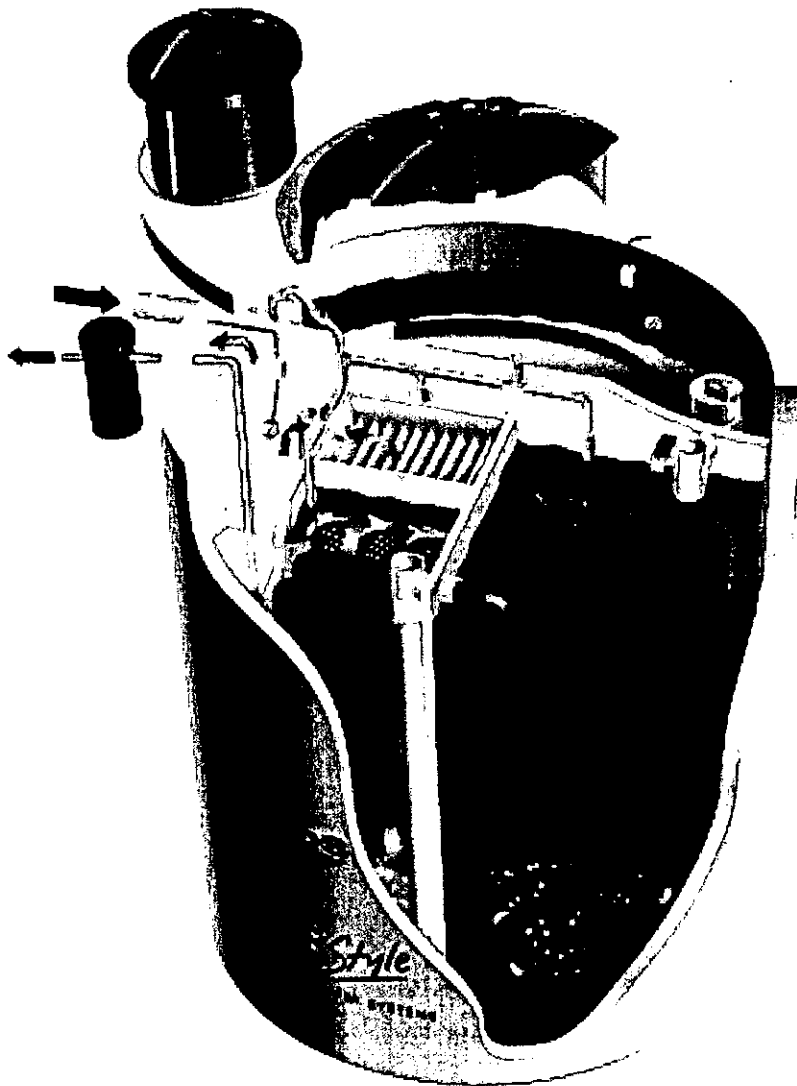
2. Declaration

I hereby certify that, to the best of knowledge and belief, the information given in this application is true and complete.

Name	Paul Siggs - Technical Sales Representative	Signature	
Reviewed By	Peter Carroll - GM	Date	5/09/2008

HYNDS

ENVIRONMENTAL



TECHNICAL SPECIFICATIONS

Hynds Lifestyle Wastewater System

HYNDS ENVIRONMENTAL

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APPENDICES

Appendix A	Irrigation Specifications	Page 14
Appendix B	Lifestyle Installation Instructions	Page 15
Installation Information (EV14)		
Electrical Requirements (EV38)		
User Guide (EV13)		

1. INTRODUCTION

Hynds Lifestyle Systems are an elite range of aerated wastewater treatment systems that offer environmentally sensitive alternatives to the septic tank.

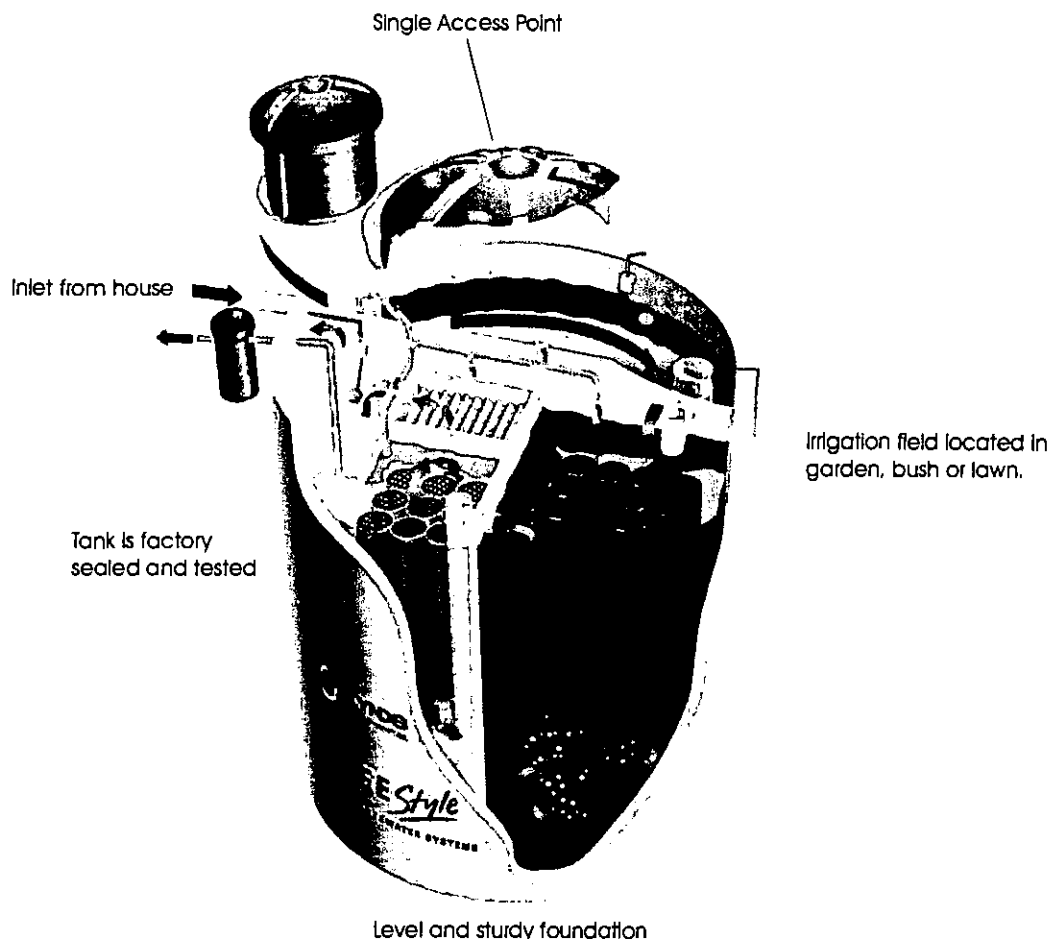
The Lifestyle - Advanced system is supplied as a complete wastewater treatment unit. It only requires a sewage and electrical connection from the house or dwelling to its single tank design.

Systems are installed to offer simple and cost effective wastewater treatment, as well as offering solutions for environmentally sensitive areas or poor ground conditions.

All Lifestyle systems produce a clear, odourless liquid suitable for sustainable irrigation of landscaped gardens, bushes or trees.

Once installed, Lifestyle systems can be easily landscaped to blend in to the surrounding environment.

Hynds Environmental is a privately owned New Zealand company specialising in the manufacture, supply, and installation of environmental protection systems including wastewater systems, stormwater treatment systems, oil water separators and flood walls. A design service and full servicing programme is available to suit the wastewater treatment and disposal needs of both domestic and commercial applications.



2. APPLICATIONS

Lifestyle wastewater systems are commonly used in rural or residential areas not connected to the sewer mains. Typical applications include properties requiring:

- a level of treatment higher than conventional septic tanks;
- effluent disposal on sites with poor soil &/or poor percolation conditions;
- effluent disposal on sites with difficult contours;
- effluent disposal on sites positioned close to beaches, waterways or water sources;
- effluent disposal on sites with high water tables;
- treatment of large volumes;
- limited space available for septic tank disposal trenches.

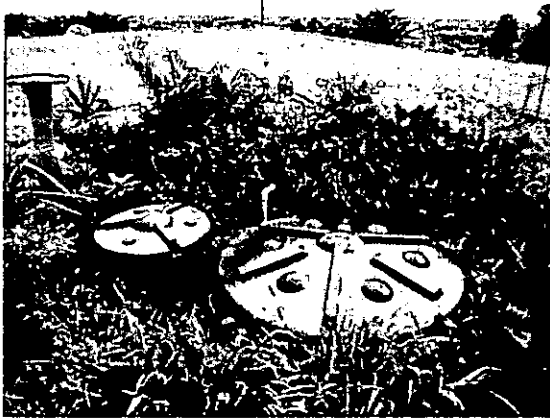


Figure 1: Lifestyle Advanced System

3. FEATURES AND BENEFITS

Some of the features and benefits of the Lifestyle wastewater systems include:

- Guaranteed strength integrity (ISO 9001 manufactured)
- Highest quality concrete construction means no joints and no leaks
- Large capacity (8500 litres)
- Genuine 24 hour emergency capacity
- Single tank installation
- Full height primary chamber wall to prevent surging and cross contamination of raw sewage

- Zabel filter on Primary to prevent carry through of solids and no biodegradable items
- Sludge return function dramatically reduces primary chamber pump out frequency
- Simple and protected Electronic control and Alarm system (IP rated)
- Quiet operation
- Economic to operate – \$150-\$200 pa
- Simple Retrofit for upgrading of an existing system
- Designed for ground water prevention
- Visually unobtrusive with environmentally blending colours
- Fully compensated drip irrigation system for even distribution
- Simple to maintain irrigation filter which offers 6 years warrantee on blockage of irrigation field
- Hynds is a reliable and established company, providing drainage solutions to New Zealand since 1973



Figure 2: Hynds Branches nationwide

- Hynds stand by their quality and warrantees
- Hynds operates a 24 hour call service
- Low maintenance cost compared to existing septic tanks

4. THE TREATMENT PROCESS

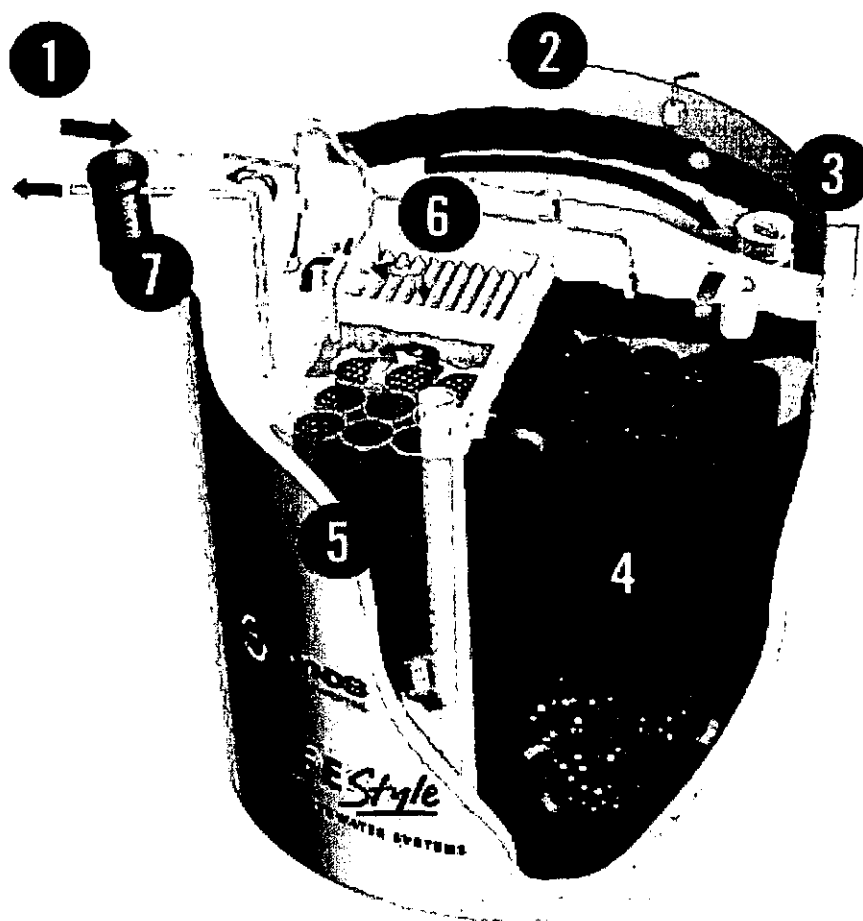
The treatment process occurs through a series of treatment chambers before disposal via a self-compensating drip irrigation field.

The system has the ability to process and treat 1,600 litres per day within a 24-hour period (although larger flows are possible).

The treatment process occurs as follows:

- anaerobic breakdown of the wastewater effluent within a 3000 litre pretreatment chamber, complete with outlet Zabel bio filter;
- two stage aerobic digestion;
- effluent clarification;
- recycling of activated sludge;
- irrigation pump chamber;
- fine filtering of suspended solids through a disc/mesh filter;
- final disposal of the treated effluent through pressurised and compensated drip irrigation network system.

TREATMENT STAGES OF A HYNDS LIFESTYLE WASTEWATER SYSTEM



- | | |
|-------------------------------------|----------------------------------|
| 1. Wastewater enters from dwelling. | 2. Primary treatment tank. |
| 3. Biological filter. | 4. First stage aeration chamber. |
| 5. Second stage aeration chamber. | 6. Laminar plate clarification. |
| 7. Pump out / irrigation. | |

5. CHAMBER FUNCTIONS

For specific chamber capacities refer to Table 1.

5.1 Pretreatment Chamber (Anaerobic)

The pretreatment or anaerobic chamber is situated at the beginning of the treatment process. The chamber is designed to retain the wastewater so the larger settleable solids are retained and form a sludge at the bottom of the chamber. Solids that float combine to form a thick scum on the top of the effluent. Anaerobic organisms break down the sludge resulting in the formation of Hydrogen Sulphide gas. In a well functioning system, this gas should be contained effectively by the solid scum. Further removal of the solids takes place in a biological filter situated at the outlet of the pretreatment chamber.

5.2 Biological Disc Filter

A biological filter is installed at the outlet of the pretreatment tank as a standard feature in the Lifestyle Advanced system.

The Hynds filter performs three main functions in the pretreatment tank as follows:

- reduces surge action and offers flow control;
- retains the solids in the tank;
- lowers the BOD₅

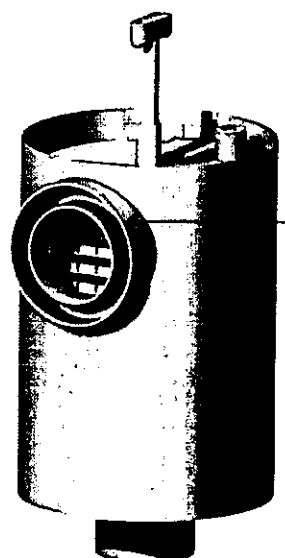


Figure 3: Biological Disc Filter

Table 1

System Type	Pre-treatment Volumes	Aeration Volumes (Stage 1)	Aeration Volumes (Stage 2)	Irrigation Volume	Total System Working Volume	Emergency Capacity	Total System Capacity	Standard System Surge Capacity	Standard System Treatment Capacity
Advanced	3,000 litres	1530 litres	1530 litres	1000 litres	7,200 litres	1,770 litres	8,450 litres	600 litres per hour	1,800 litres per day
Compact	3,000 litres	1500 litres	1250 litres	1500 litres	6,500 litres	2,300 litres	7,500 litres	600 litres per hour	1,800 litres per day
Elite	Stage 1 4,500 litres Stage 2 3000 litres	1530 litres	1530 litres	1000 litres	11,200 litres	3,020 litres	12,950 litres	800 litres per hour	3,000 litres per day

Table 1 : Lifestyle Wastewater Treatment Systems chamber capacities

5.3 Submerged Aerated Filtration Chambers (Aerobic Digestion) – Stage 1

The submerged aerated filtration chamber is a two-stage process. The wastewater is initially infused with oxygen by an electric blower (stored above ground) and a fine bubble diffuser system at the base of the tank. Biomass filter media is situated above the diffusers and aerobic bacteria rapidly multiply on the surface of these biomass filters to create a large biological filter. The effluent is cleansed as it passes through the filter. The bacteria will eventually die and fall off the biomass. This is called slough and is passed into the next chamber.



Figure 4: Submerged Aerated Filtration

5.4 Submerged Aerated Filtration Chambers (Aerobic Digestion) – Stage 2

The submerged aerated filtration process is repeated in a second chamber, which improves the quality of effluent produced. This effluent then passes into the laminar plate separator.

5.5 Laminar Plate Separator and Sludge Return System

Final clarification of the effluent occurs in a laminar plate separator, which is located at the end of the stage 2 aeration chamber. The effluent enters the separator chamber near the base of the tank before passing up through a series of diagonal honeycombed plates to the outlet pipe. The laminar plates remove any fine suspended particles remaining in the effluent and this material drops to a hopper at the base of the separator tank. The velocity of the flow up through the plates is controlled by specifically sized outlet holes, which ensures a high level of suspended solid removal.



Figure 5: Laminar plate separator

A venturi system, driven by the electric blower used for aeration, constantly takes effluent from the bottom of the hopper back to the inlet of the pretreatment chamber. The slough produced in the aeration stages is also passed back to the pretreatment tank at this stage. This high energy activated sludge helps break down the anaerobic sludge in the pretreatment chamber, thereby reducing the frequency that this chamber will require to be pumped out.

5.6 Disinfection Option

Disinfection can be specified with the Lifestyle wastewater system with the use of chlorination (or other alternative methods) if necessary. The disinfection reduces the number of pathogenic coliform organisms present in the treated wastewater and is normally only used in areas where disposal fields are close to aquifers, high pedestrian traffic areas or where spray irrigation is allowed.

The chlorination of the system is achieved with the use of a contact cartridge which is located above the irrigation storage chamber.

Systems installed with the chlorination option usually require an extra service visit annually to ensure the chlorination is maintained.

(Note: The use of chlorination as a method of disinfection will be dependant upon the local regulatory authority - please check their requirement before specifying this option).

5.7 Irrigation Pump Chamber

The irrigation chamber offers a storage buffer to cope with the daily and surge loads placed on the system. The chamber houses a submersible pump (D42) which feeds the disposal field, operated by a float switch. The Lifestyle wastewater system has been designed to allow a specified 'balance' between the irrigation chamber volume and the pump to handle the design input. Please refer to the Hynds Irrigation Headloss Calculator and the pump curve to assess if a custom pump should be supplied.

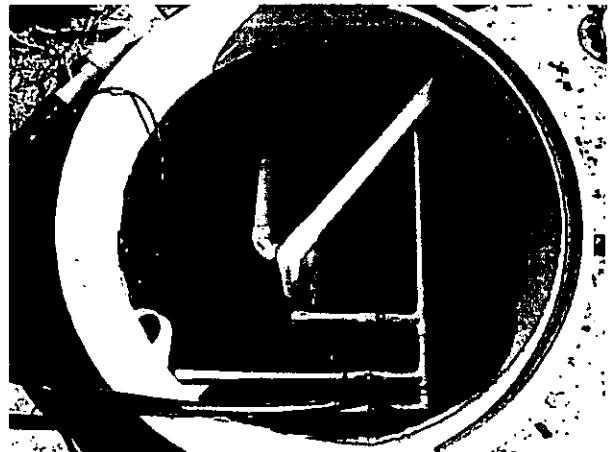


Figure 6: Pump out chamber

6. DESIGN PARAMETERS

The correct design of a Lifestyle Treatment System is essential for its optimum performance. Design must be performed by a civil engineer or other competent professional person (approved by the local regulatory authority) after performing a site investigation/evaluation and following the steps below:

- determination of daily hydraulic input, surge loading, and treatment capacity
- ascertainment of effluent BOD₅ concentration
- positioning of tanks on site in relation to fall, depth, and distance
- positioning of disposal field onsite noting elevations for irrigation pump sizing
- design of disposal field (refer to "The Disposal Field – page 9")
- confirmation of Hynds Environmental - Service Contract

6.1 Hydraulics

Daily hydraulic design may be calculated either by using the Auckland Regional Council Technical Publication No. 058 (TP58) or the New Zealand/Australian Standards NZS 1546-1547.

The surge loads detailed in Table 1 relate to the maximum flow rate possible for our standard systems, without the need to enlarge the irrigation tank/pump combination. It does not relate to treatment quality as systems running continually at this maximum flow rate will not function at their optimum level and may require additional irrigation filter maintenance. Surge conditions should be kept below a maximum period of 10 minutes per hour.

6.2 Effluent Concentration

The standard raw wastewater and grey-water effluent concentrations to be treated should be within the values stated in either ARC TP 58 or the New Zealand/Australian Standards.

Consultation with a Hynds Environmental Technical Representative will be needed for systems required to treat effluent with levels above that stated in these documents, as well as for systems with high grey-water proportions.

6.3 Selection of Tank Site Position

The positioning of the tanks on site must allow a minimum gravity fall (vertical drop) into the pretreatment tank of 1 in 100mm. Additional tank installation depth can be obtained with the specification of riser sections in either 150mm, 300mm, or 450mm heights.



Figure 7: A landscaped Lifestyle System

Tanks are not designed for vehicle loads, point loads, or earth-fill above 450mm deep, unless purpose designed.

Consideration may be made for landscaping aesthetics to cover the concrete tank lid. Refer to www.hynds.co.nz for examples of landscaped systems.

6.4 Selection of Disposal Field Position

Positioning of the disposal field should seek to maximise evapo-transpiration potential. Once the location of the field is designated the ***Hynds head loss spreadsheet should be used to see if a custom pump should be specified for the system. Hynds will email this spreadsheet upon request.***

The field must be designated in a position separate from recreational or animal grazing areas, or gardens used for planting vegetables for consumption. It must also be positioned away from neighbouring boundaries, watercourses and water sources by distances specified by the local regulatory authority for the region concerned.



Figure 8: A typical irrigation field

6.5 Maintenance Contract

Ensure that a Hynds Environmental Service Contract is specified within your design

summary to ensure regular inspection and programmed servicing of the system occurs.

7. THE DISPOSAL FIELD

The Lifestyle wastewater system utilises a pressure compensated dripline emitter system to irrigate the disposal field.

The disposal field should be designed to maximise the evapo-transpiration potential which is a combination of plant transpiration and surface evaporation. Minimal soakage and percolation rates can be accommodated.

The disposal field allows a residual amount of stimulated aerobic bacteria to be transported into the anaerobic disposal fields, hence lengthening the bed's life further by producing an enhanced zone of bacterial activity.

This system incorporates an irrigation filter (described below) as well as combinations of flushing valves, air release valves, and check valves to ensure that the disposal beds perform at an optimum level.

The system owner may use this disposal method to irrigate new or existing shrubs or grasses although this is dependent on their water needs together with the systems daily output volume.

The application rate of the treated effluent for each site must be determined by performing a site investigation and referencing TP58 or the New Zealand/Australian Standard for relevant design values.

The disposal field area (in m²) may then be determined by dividing the daily flow by the application rate.

The length of the drip-line and the layout of the disposal field is then configured by following the basic principals detailed below. (Refer to Appendix A for Typical Irrigation Layouts or consult your Hynds Environmental Technical Representative for further information):

- appropriate choice of drip-line diameter and emitter output rates;
- appropriate choice of emitter spacing and drip-line trench spacing;
- determine drip-line length;
- design layout of irrigation field including (feeder pipe) manifold;
- placement of field either in - bush block with natural vegetation cover - or in bark/mulch garden - or trenching in shallow trench (of typical trench cross-section 50 - 100mm depth and width);
- optional bedding material of topsoil or scoria where conditions require;
- placing drip-lines laterally across contours to ensure treated effluent does not run down the lines laid on a slope;
- ensure that system is continually pressurised above 5m head to allow the emitters to work output correctly;
- use of air valves at the top of the system;
- use of flushing valves at the bottom of the system;
- use of check valves when vertical falls greater than 4m occur. These valves are used to minimise working systems from emptying in small zones which may result in local flooding;
- disposal fields with total irrigation line length greater than 350m may need a higher pressure irrigation pump.

7.1 Irrigation Filter

An irrigation filter is included when using pressure compensated dripline emitters within the disposal field. This filter is a disk-mesh configuration which retains any non-digestable particles still remaining in suspension after treatment.

The filter acts to lengthen the life of the disposal field by significantly reducing any potential blockages within the disposal field emitters.

A range of disk-mesh filters are available for varying design flows.



Figure 9 and 10: Cleaning an irrigation filter



8. TREATMENT LEVELS

A very high level of treatment quality is provided by a Lifestyle wastewater system.

8.1 Controls

The levels obtained depend on a number of controlling factors as follows:

- concentration of effluent to be treated (as a level of BOD_5 initially in wastewater);
- daily input flows;
- the volume of surge loads entering the system;
- adequate disposal field size;
- avoidance of "foreign" non-biological substances;
- continual system maintenance.

8.2 Treatment

A correctly designed and operated Lifestyle system required to treat normal domestic effluent at 20°C will produce a treated effluent with the following characteristics:

- average BOD_5 of 20 mg/l with no samples greater than 30 mg/l;
- non-filterable residue of 20 mg/l average



Figure 11: Testing is carried out by independent laboratories

value with no samples greater than 45 mg/l;

•reduction in E-coliforms.

For domestic systems with disinfection option, this can be reduced to an E-coli count not greater than 200 E-coli per 100ml. The free residue chlorine value generally does not exceed 0.5mg/l after 30 minutes of detention at peak flows of 650 litres per 2 hours.

The Lifestyle system could still operate effectively outside of these parameters for short periods of time provided the system has the ability to recover to standard levels.

For systems continuously operating outside standard capacities, treated effluent quality is expected to decrease during the aeration and clarification processes. A lower quality treated effluent will then be pumped to the disposal field, usually requiring more frequent cleaning of the irrigation filter.

9. MONITORING SYSTEMS

The Lifestyle wastewater system is monitored by an electronic control system. A small remote alarm plate is located inside the dwelling and contains an audible and visible alarm, activating whenever a fault or high water level occurs.

The audible alarm may be deactivated at the alarm plate and must be reactivated once the fault has been corrected or the high water status light has switched off. (Refer to Appendix B – User Guide EV13 and Electrical Requirements EV38) for schematic electrical wiring diagrams for the Lifestyle Advanced system.

10. TANK CONSTRUCTION

The Lifestyle tank is constructed of concrete during a unique homogeneous casting process to ensure that internal tank partitions are accurately located and sealed. Tensile reinforcement is formed with a combination of internal steel and fibre. The lid is constructed of steel reinforced concrete. The concrete compressive strength is 40MPa at 28 days. No fibreglass components are used.

Systems incorporate sealed stainless steel submersible pumps.

11. INSTALLATION OF A SYSTEM

Lifestyle systems are installed either by Hynds Environmental Technical Representatives or trained installers who have undertaken specified Lifestyle installer training. Refer to Appendix B (Installation Information EV14) for details on installation of the Lifestyle systems.

A free site visit and quotation are provided for each Lifestyle system. The quotation will detail the extent of the works covered for each project.

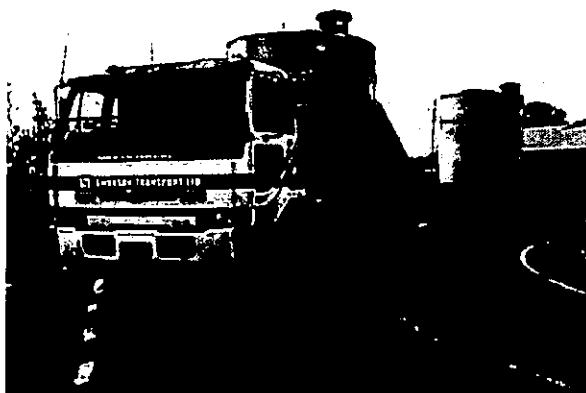


Figure 12: Delivery of a Lifestyle system

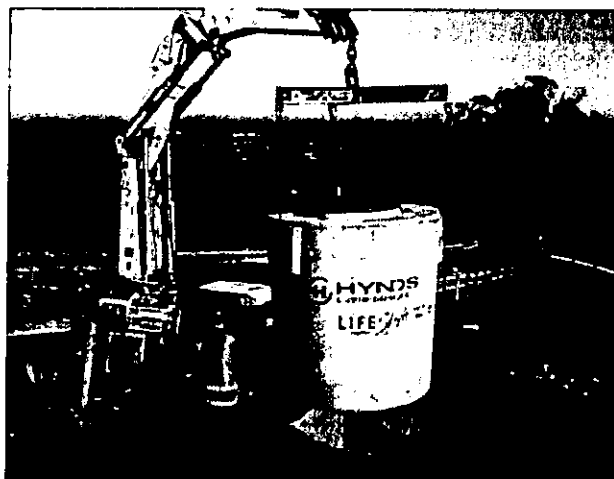


Figure 13: Installation of a Lifestyle system

Tanks must be filled with water to the normal operating level immediately after installation to prevent the tanks from floating if the water table rises.

Tanks are installed in a hole excavated with a level horizontal foundation. If the foundation is found to be soft, rocky, or uneven, then a suitable granular material (minimum of 50mm thickness) is placed as a bedding support for the tanks.

Wiring of the alarm board within the dwelling is to be performed by a registered electrician and is not performed by Hynds Environmental staff or installers. Refer to Appendix B (Electrical Requirements EV38) for the Lifestyle schematic electrical wiring diagram.

12. COMMISSIONING

Commissioning of a Lifestyle system may only be performed by a Hynds Environmental Technical Representative or a trained Lifestyle system installer. The commissioning is completed after the tank has been installed and once electrical power is available. A commissioning report is completed for all systems.

13. SYSTEM REQUIREMENTS

The following requirements must be observed to ensure problem-free operation:

- *Do not switch off the system once commissioned;*
- *Check detergents to see if they are biodegradable or suitable for use in a septic tank*
- *Do not allow non-biodegradable chemicals to enter the system*
- *Try to spread wash loads over the week;*
- *Fix all leaking faucets*
- *Ensure that rain or surface water cannot enter the sewer drainage system. eg. via low gully traps at the house*
- *Never make adjustments to the system or controller*

A comprehensive list of cleaning chemicals which are not recommended can be provided.

14. SYSTEM SERVICING

Lifestyle systems come with a Maintenance Servicing Contract which ensures that the system continues to function efficiently.

Servicing is performed by trained Technical Representatives.

Servicing includes:

- all filters cleaned
- irrigation lines flushed
- electrical equipment tested

- testing of alarm system
- system performance reviewed

All services are recorded on Service Report Sheets which are supplied to the system owner and kept by Hynds Environmental for future system reference. An additional copy is sent to the Local Regional Authority officer if required.

If a system is not running at optimum efficiency, the Technical Representative will detail this for the system owner's attention.

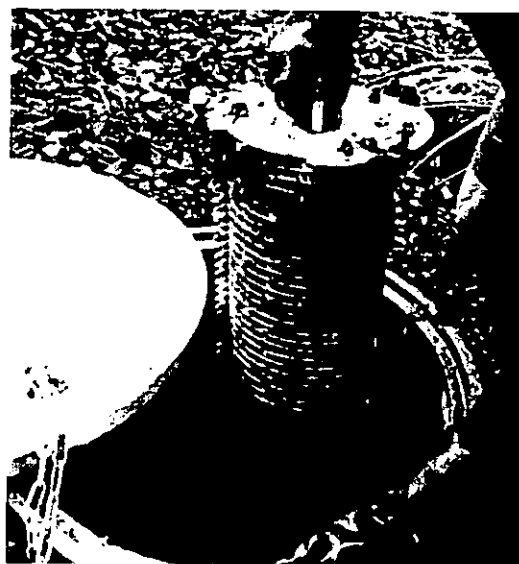


Figure 14: Servicing of a Lifestyle system is completed every 6 months

15. PRODUCT WARRANTIES

Hynds Environmental offers a 15 -year warrantee for concrete components. System pumps and electronic controllers each have a 24-months replacement warrantee.

Warrantees have specific limitations and are not valid in situations of abuse or misuse.

Appendix A

Typical Irrigation Layouts

The Lifestyle Wastewater Treatment System utilises a pressure compensated dripline emitter irrigation system to irrigate the disposal field.

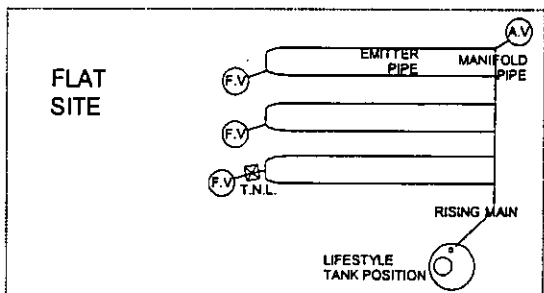
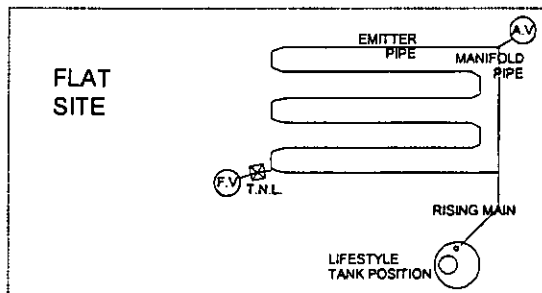
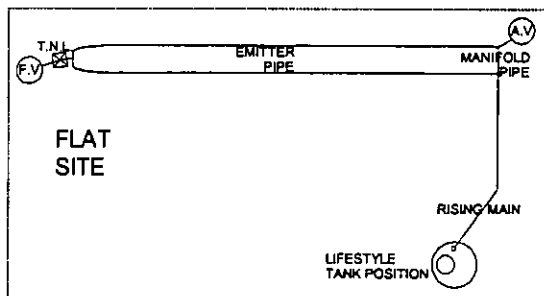
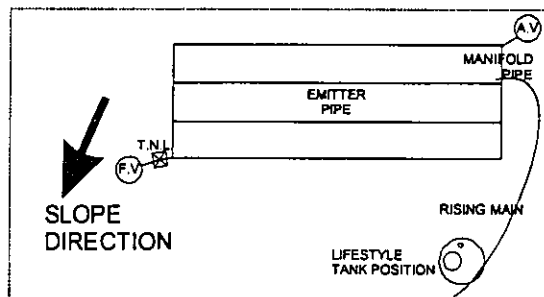
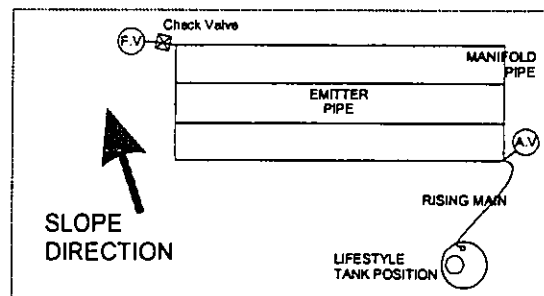
The following typical layouts are presented to assist the designer and installer to correctly use this effective disposal system.

These layouts are schematic only and represent plan views of the disposal field.

Many other effective layouts are possible.

Notes:

- slope direction shown by arrow;
- manifold pipe is usually solid walled alkathene but may be emitter pipe on flat ground;
- A.V. = Air Release Valve (position to prevent blockage);
- Check Valve = Allows flow in one direction after 4m head has been exceeded within the system. Prevents draining of the system after shutdown. Ensures immediate startup when irrigation line exceeds 4m head pressure;
- irrigation pipe, bend and tee fittings are used to form right angles and connections within the layouts. Curves in the emitter pipe signify radius turns in the field without the use of bend fittings;
- F.V. = Flush Valve (position to prevent blockage).



Appendix B Lifestyle Installation Instructions

Installation Information (EV14)

Electrical Requirements (EV38)

User Guide (EV13)



Installation Manual

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Hot Water Storage	7
Open Circuit	8
Close Circuit	10
Collector Location	12
Collector Installation	13
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Please take the time to read this manual thoroughly before installing the Steel for Sun/river system.

ooo Introduction

Solar energy from the Sun arrives at the surface of the Earth with an average intensity of about 1.3 kW/sq metre. This will be less near the poles, greatest at the equator, and also varies with the seasons.

The Sunriver Solar Hot Water System features an Evacuated Glass Tube Heat Pipe array to collect this energy and to heat water.

The standard Sunriver Solar Hot Water System has a low power pump to circulate the water from the solar collector to the Hot Water Cylinder where the energy is stored in the form of hot water.

The standard Sunriver Solar Hot Water System also features a "smart" controller to manage the circulating pump and the electric heating element within the hot water storage cylinder.

ooo System Description

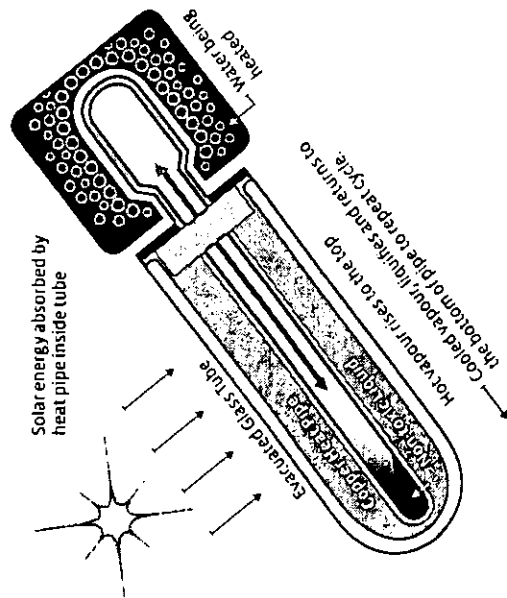
SOLAR COLLECTOR

The Sunriver Solar Hot Water System solar collector consists of an insulated copper tube header at the top edge, with a series of Evacuated Glass tubes with Heat Pipes plugged into this header.

The water passing through this header is heated as it passes over bulbs of the Evacuated glass tube heat pipes.

The Evacuated Glass Tubes are formed of two tubes, one inside the other, sealed off, with the air gap evacuated to form a vacuum in this space. The vacuum is a very effective insulator. The surface of the inner glass tube has a specially developed coating to absorb the energy from the sun.

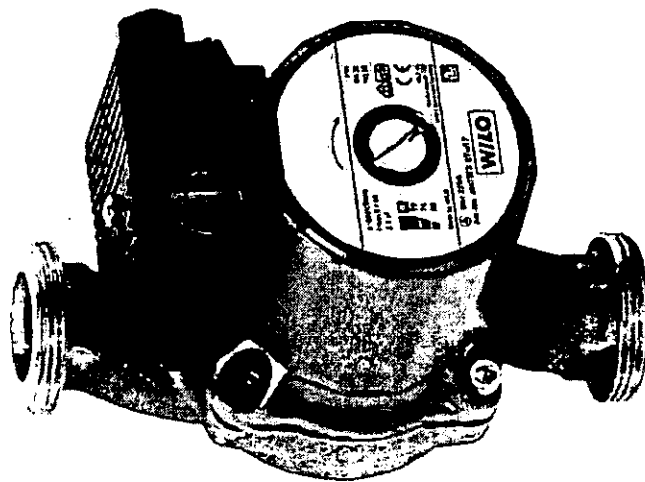
Inside this evacuated tube there is a Heat Pipe to transfer the heat collected from the sun to the bulb at the top of the collector in the copper tube header. The fluid within the heat pipe boils, and the hot vapor rises to the bulb at the top where it gives up its heat to the water in the header, condenses and travels to the bottom of the heat pipe to repeat the cycle.



CIRCULATING PUMP

The water that is heated in the Solar Collector is pumped from the hot water storage cylinder to the solar collector and return by a small Wilo Star Z pump.

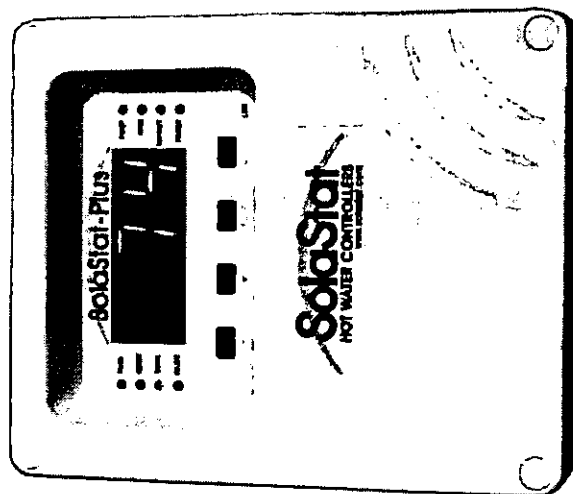
This model Z 25/6 has three speed settings which can be used to vary the flow rate of the circulating water.



CONTROLLER

The operation of the circulating pump and the switching of the electric heating element in the hot water storage cylinder is controlled by a New Zealand manufactured SolaStat electronic Solar Hot Water Controller, designed for New Zealand conditions.

This controller monitors the solar collector and hot water storage cylinder temperatures and switches the pump on when solar energy is being collected.



Hot Water Storage

The hot water storage cylinder is a vertical cylindrical tank, usually made of steel, which stores hot water. It is connected to the solar collector and the circulating pump. The cylinder is designed to store hot water for a period of time, allowing it to be used when the solar collector is not producing heat.

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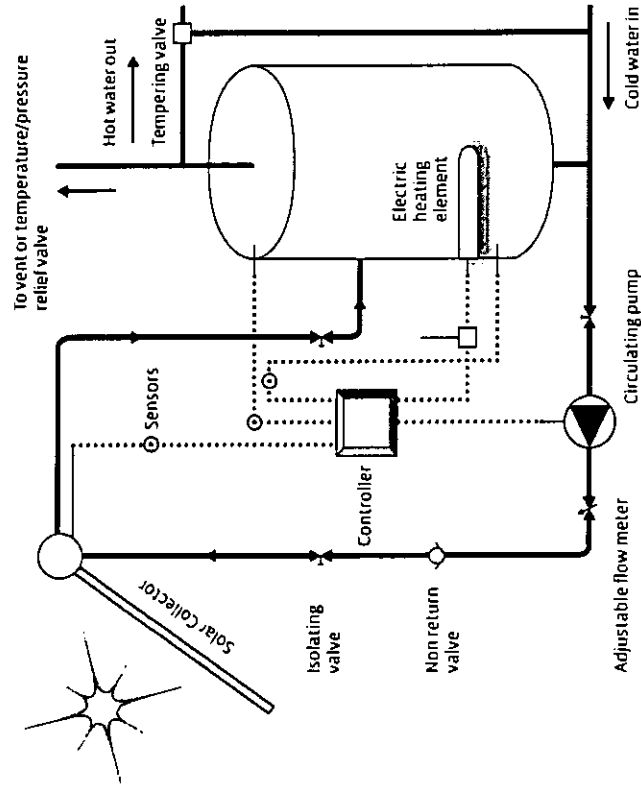
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ooo Open Circuit System

The water that is heated in the header of the solar collector is circulated directly from the Hot Water Storage Cylinder.

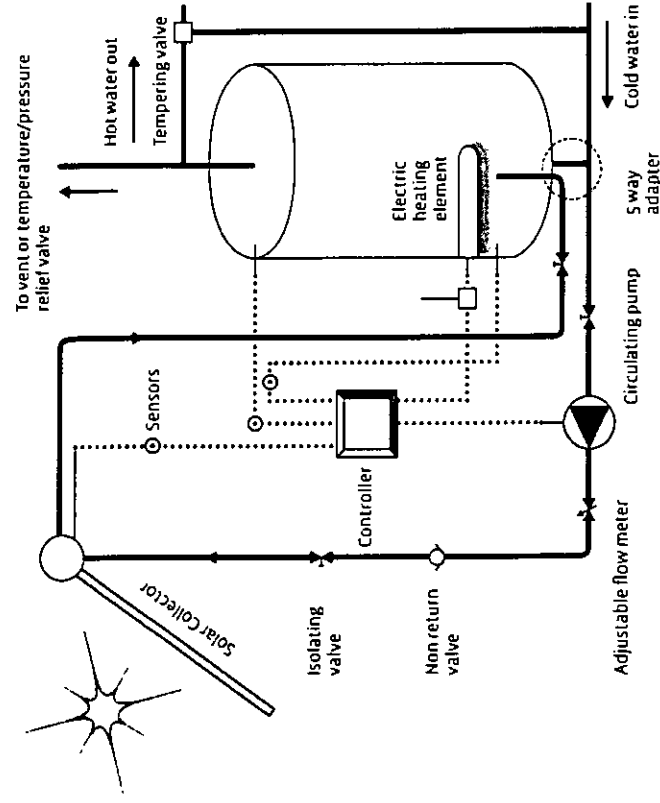
The Controller senses the temperature in the header of the solar collector, the top and bottom of the Hot Water Storage Cylinder and controls the circulating pump and the Electric heating element.



ooo Open Circuit System

Open Circuit system utilising a five way adapter

This is useful for adapting an existing hot water cylinder for a solar hot water circuit.



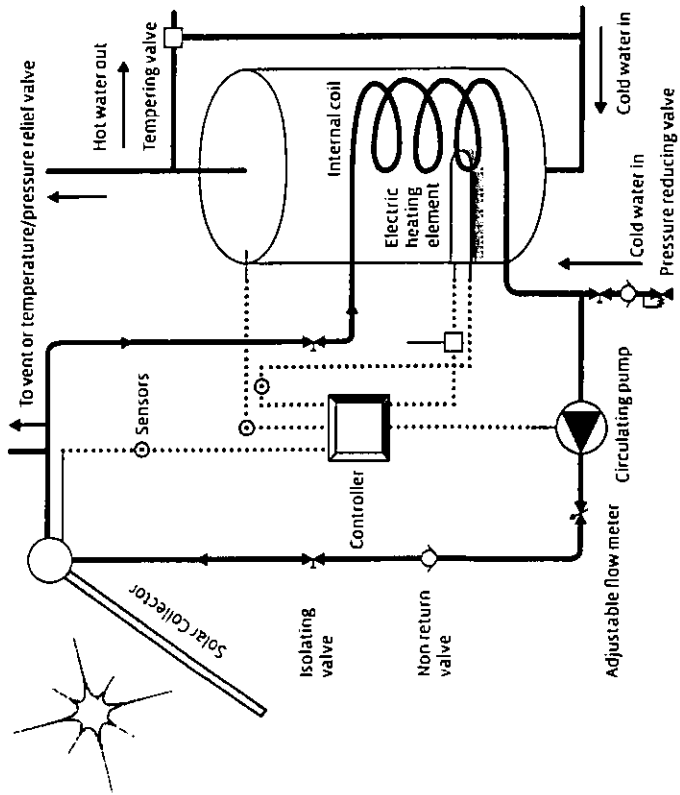
ooo Closed Circuit System

Circuit pressure maintained with a Pressure Reducing Valve

The water which is heated in the header of the solar collector is circulated through a coil inside the Hot Water Storage Cylinder to transfer heat to the water in the Hot Water Storage Cylinder.

This type of Hot Water Storage Cylinder is used when it is necessary to isolate the water in the solar circuit from the water in the Hot Water Storage Cylinder. It is necessary to isolate the water if Glycol is added to the solar circuit for frost protection, or if poor water quality requires that treated water is run in the solar circuit.

The Controller senses the temperature in the header of the solar collector, the top and bottom of the Hot Water Storage Cylinder and controls the circulating pump and the Electric heating element.



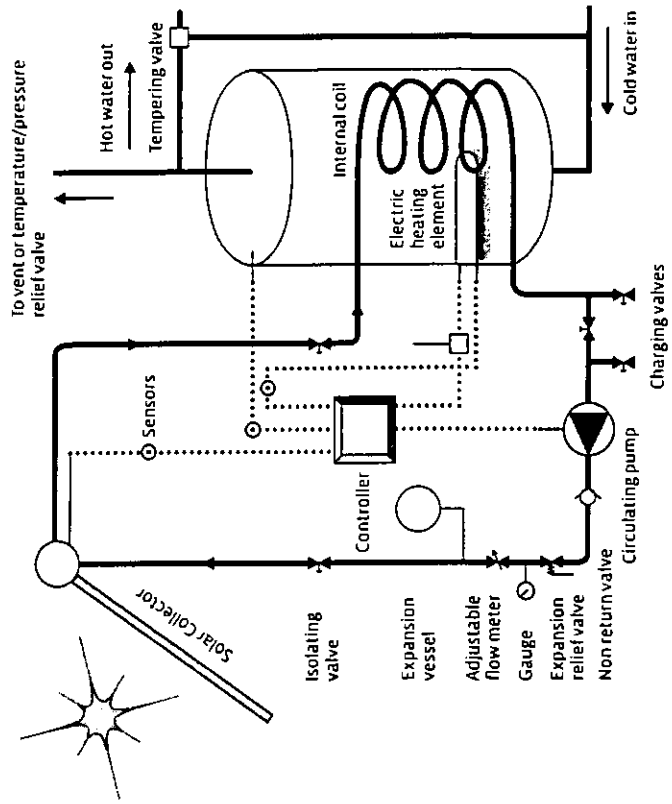
ooo Closed Circuit System

Circuit pressure maintained with an Expansion Vessel

The water which is heated in the header of the solar collector is circulated through a coil inside the Hot Water Storage Cylinder to transfer heat to the water in the Hot Water Storage Cylinder.

This type of Hot Water Storage Cylinder is used when it is necessary to isolate the water in the solar circuit from the water in the Hot Water Storage Cylinder. It is necessary to isolate the water if Glycol is added to the solar circuit for frost protection, or if poor water quality requires that treated water is run in the solar circuit.

The Controller senses the temperature in the header of the solar collector, the top and bottom of the Hot Water Storage Cylinder and controls the circulating pump and the Electric heating element.



ooo Collector Location

It is usual to fit the solar collector on the roof to minimise shading and to keep the collector away from likely sources of damage. The 24 tube solar collector measures 2200 mm wide x 2000 mm high. Ensure there is sufficient space to fit the collector on the roof space. Check the site for shading from adjacent structures and trees. Be aware the winter sun is much lower (about 20° less than the latitude of the location) and the winter shading must be considered.

ORIENTATION

Direction: For optimum performance the collector should face the equator (true or geographic north in NZ). Be aware that magnetic (compass) north is east of true north in NZ. This varies from about 18° in the far north to about 26° on the far south. The collector may be within 45° of true north but there will be some reduction in performance. More easterly facing gives best performance in the morning, more westerly gives better performance in the afternoon.

Pitch: The ideal angle of inclination is the latitude of the site. In NZ this varies from 35° in the far north to 45° in the far south. A deviation of ±20° from this angle is acceptable and if necessary a minimum elevation of 20° can be used without affecting the performance greatly. Steeper angles give better winter performance, and lower angles emphasise summer performance.

ENERGY PERFORMANCE ADJUSTMENT FACTORS FOR DIFFERENT INCLINATION AND SOLAR ORIENTATION

Direction	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	
West	0.85	0.85	0.85	0.8	0.72	0.6	0.53				Good
	0.85	0.92	0.92	0.86	0.73	0.65					
	0.85	0.98	0.99	0.93	0.8	0.71					
North	0.85	0.97	1	0.94	0.8	0.7					
	0.85	0.94	0.95	0.88	0.74	0.65					
	0.85	0.88	0.86	0.77	0.65	0.57					
East	0.85	0.8	0.73	0.64	0.52	0.46					Poor

ooo Collector Installation

SOLAR COLLECTOR

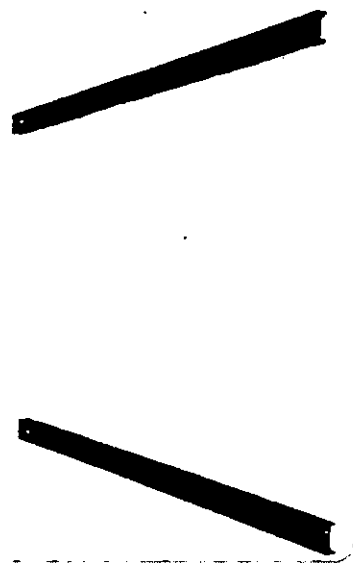
The Sunriver Solar Collector is supplied as components that can be readily manhandled onto the roof, assembled in place and the plumbing tested before the Evacuated Glass Tubes are fitted. It is recommended that the Evacuated Glass Tubes are not fitted until the complete installation is complete and tested. This protects the Evacuated Glass Tubes from damage and prevents any overheating of the system before the solar water circuit is complete.

It is intended that this installation can be carried out without the need to utilise cranes or other specialist means of erecting the collector. The collector does not contain a significant mass of water. A 24 tube array weighs about 70 kg, and should not normally require any structural modifications to the roof.

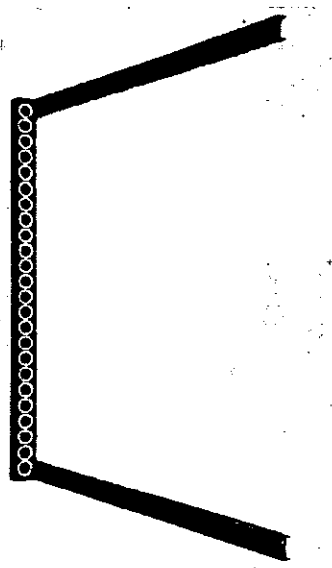
★ The Compliance Document for NZ Building Code Clause G 12/AS2 may be used as the means of achieving acceptable solutions for Solar Water Heating Installations

INSTALLING THE FRAMEWORK

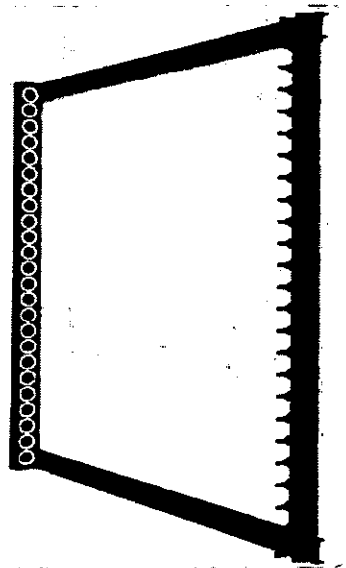
- 1 Locate the two side frame members.



- 2 Place the top header casing across the top end of the side rails and bolt together.

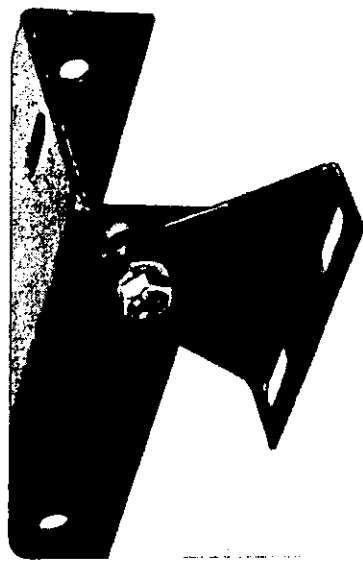


- 3 Fit the footer across the bottom end of the side rails and bolt in place. Square up this framework and tighten the bolts.



- 4 Locate suitable anchor points in the roof structure and attach the feet in a position which suits these anchor points.

*Refer G12/AS2 Section 6 "Structural Support for Solar Water Heaters" for examples of suitable fixing and sealing solutions.



- 5 Locate and form the penetrations for the solar water circuit pipes. And the electrical conduit for the collector sensor.

*Refer G12/AS2 Section 5.2 "Weathertightness" for examples of suitable pipe penetration and electrical conduit flashing and sealing solutions.

The solar water circuit pipes must be insulated in accordance *G12/AS2 Section 5.4. The pipe insulation outside the building must be suitable to resist UV radiation as *Section 5.4.2.

The Evacuated Glass Tubes should be plugged into the upper header using a liberal coating of heat transfer compound between the bulb and the header pocket. When all of these tubes are in place, the cover on the footer can be fitted into place around the rubber boots at the bottom of the tubes, avoiding glass to metal contact.

*The Compliance Document for NZ Building Code Clause G12/AS2 may be used as the means of achieving acceptable solutions for Solar Water Heating installations

1000 Solar Plumbing Installation

EXPANSION RELIEF VALVE

When the **RMC Cold Water Expansion Valve** is used on a closed circuit system, it is set at 4 bar and will relieve an overpressure/temperature situation. The expansion and sludge outlet must be routed to an appropriate discharge area. This valve should be fitted downstream of the pump.

FIVE WAY ADAPTER

ARMC SC701 5 way adapter is available for fitting a solar circuit to an existing Hot water cylinder.

NOTE ON TEMPERING VALVES

It is not uncommon for the water in solar systems to exceed scalding temperatures. A tempering valve rated to handle elevated temperatures must be used. It is recommended a solar rated tempering valve be used when retrofitting a solar circuit to an existing installation.

PUMP

2. **ELBOLLA** (the "pigeon hole") is a box in which the clerk puts the papers of the case. It is made of wood or metal and is usually about 12 inches high, 12 inches wide, and 12 inches deep. It has a lid that can be locked and a keyhole. The clerk puts the papers in the box and locks it. The box is then placed in a safe or a vault.

Wilo Star-Z installer manual No. 9.9.99.3 2-11-01

[illegible]

NON RETURN VALVE

1. The first part of the paper is devoted to a review of the literature on the effects of the 1997-1998 Asian financial crisis on the economies of the Asian countries. The second part of the paper discusses the impact of the crisis on the economies of the Asian countries. The third part of the paper discusses the impact of the crisis on the economies of the Asian countries. The fourth part of the paper discusses the impact of the crisis on the economies of the Asian countries. The fifth part of the paper discusses the impact of the crisis on the economies of the Asian countries. The sixth part of the paper discusses the impact of the crisis on the economies of the Asian countries. The seventh part of the paper discusses the impact of the crisis on the economies of the Asian countries. The eighth part of the paper discusses the impact of the crisis on the economies of the Asian countries. The ninth part of the paper discusses the impact of the crisis on the economies of the Asian countries. The tenth part of the paper discusses the impact of the crisis on the economies of the Asian countries.

ADJUSTABLE FLOW METER

the fact that the only way to get a good idea of the state of the world is to go to the source, to the people who are living in it. This is the only way to get a good idea of the state of the world, and it is the only way to get a good idea of the state of the world.

EXPANSION VESSEL

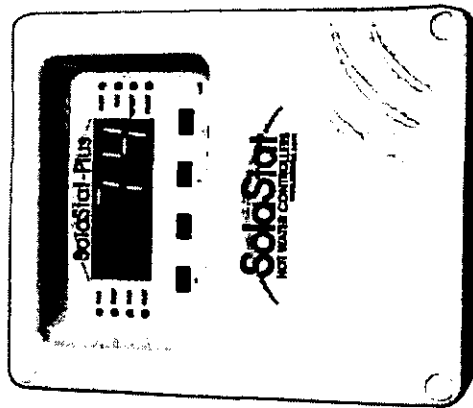
[illegible]

ooo Controller

The operation of the circulating pump and the switching of the electric heating element in the hot water storage cylinder is controlled by a New Zealand manufactured SolaStat Plus electronic Solar Hot Water Controller, designed for New Zealand conditions.

This controller monitors the solar collector and hot water storage cylinder temperatures and switches the pump on when solar energy is being collected. The SolaStat controller allows

intelligent control of the electric element and can prevent the electric element coming on for a programmed time interval when solar heat is being collected. The controller will ensure you do not run out of hot water, all the while being vigilant that Biosafe water conditions are maintained.



OTHER FEATURES OF THIS CONTROLLER

- | | |
|-------------------|---|
| TOP/OUT | When the maximum safe temperature in the hot water storage cylinder is reached. The controller will prevent the pump from moving any more water from the collector. |
| FROST | To protect the collector from freezing, a small amount of water will be circulated when the collector temperature falls near freezing. |
| PUMP TIMER | For monitoring and control of pump cavitation. |

MOUNTING THE SENSORS

Refer to the SolaStat Installation Guide.

The controller should be readily accessible, so the user can inspect the display and operate the functions provided.

This Is Critical to the Success of the Installation

The sensors are the only way the SolaStat-Plus can efficiently control and protect the system.

1 ROOF Sensor (labelled 'ROOF SENSOR' - Solar Collector).

The 'ROOF' sensor is best fitted into a metal immersion 'pocket', liberally using heat transfer compound, just inside the solar collector in the hot water outlet pipe.

2 TANK Sensor (labelled 'TANK SENSOR' - HWC Upper).

The 'TANK' sensor is best fitted into a metal immersion 'pocket' in the upper region of the HWC using thermal transfer compound between the tank and sensor.

3 INLET Sensor (labelled 'INLET SENSOR' - HWC Lower).

The 'INLET' sensor is mounted as per the 'TANK' sensor only this time it is mounted near the bottom of the hot water tank.

All wiring should be carried out by a qualified electrician with reference to the SolaStat Installation Guide.

The SolaStat controller may be programmed to suit the operating conditions of individual installations.

Most functions may be adjusted from the factory preset values. Refer to the SolaStat Installation Guide.

ooo Steelfort Sunriver Limited Warranty

Steelfort manufactures the solar collectors for this system and provides these as a major component in the system. Each of the other major components comes with its own manufacturer's warranty and installation instructions.

The system installation itself is warranted by the contractor or the individual who installs the system.

Steelfort warrants to its distributors, dealers, customers, and the end consumer that our products are free from defects in materials and workmanship for ten years from date of installation. This warranty is non-transferrable and does not extend to any damage or defects caused by negligence, freeze damage, improper installation, vandalism, or improper use.

Component manufacturers warranties apply to all other items (pump, controller etc).

If the product fails to perform through defects in material or workmanship in manufacturing, the manufacturer's sole obligation under this warranty is to repair or replace the defective absorber without charge. Except where prohibited or limited by applicable law, Steelfort may require that the end consumer bear all expenses of shipment of defective parts to and from its factory.

WARRANTY CONDITIONS

The manufacturer, Steelfort Engineering Ltd, warrants this Steelfort Sunriver solar hot water heater system against manufacturing defects, faulty material and/or workmanship and leakage from corrosion on the following terms.

WHEN MAKING A CLAIM

It is essential to follow these steps in order for the warranty to apply:

- ▶ First contact your dealer/installer and explain to them the problem you are having.
- ▶ Make sure that it is your Steelport Sunriver system that is at fault and not your power supply, water supply, plumbing or controller settings.
- ▶ Do not ask another party to undertake any remedial work on your system until you have contacted your dealer/installer and been given the go ahead to do so.
- ▶ Do not turn off the power or water supply, unless there is a major plumbing leakage. If you have a major water problem, cover the vacuum tubes, if possible, to prevent overheating.

YOUR SUNRIVER SYSTEM IS WARRANTED AS FOLLOWS:

- ▶ 10 year warranty on the manifold, footer assembly and frame rails and evacuated tubes
- ▶ 2 year warranty on the SolaStat Plus-2 Controller and Relay
- ▶ 2 year warranty on the Wilo Star-Z Pump

WARRANTY DETAILS

NAME OF PART	COVERED FOR:	NOT COVERED FOR:
MANIFOLD HEADER	Leaking at brazed joints as a result of brazing failure.	When leaking is a result of: Metallic corrosion. Exposure to pressure exceeding 10 bar. Alterations to the shape or configuration of the header pipe. Exposure to temperatures exceeding 250°C. (Manifold stagnation will not reach 250°C.)
EVACUATED TUBES	Significant reduction in performance due to loss of vacuum. Loss of vacuum is confirmed when the silver coating on the bottom of the tube turns white.	When loss of vacuum is a result of: Breakage of the glass tube or the bottom tip during transport or installation. Impact by hail exceeding 25mm in diameter. Impact by objects that could reasonably be expected to break 1.6mm thick glass. Breakage due to movement, vibration or misalignment of the mounting frame.

NAME OF PART	COVERED FOR:	NOT COVERED FOR:
STEEL FRAME	Corrosion in excess of that expected of EGMS grade steel, given the environmental conditions the frame is exposed to.	When the frame is welded, brazed, or otherwise exposed to temperatures exceeding 500°C. When the frame is in contact with other metals, which results in electrolytic corrosion.
RUBBER/ PLASTIC COMPONENTS	Perishing, drying or cracking to such extent that the function of the component is compromised when in outdoor use.	When exposed to temperatures, chemicals, solvents or other substances that weaken, or in anyway degrade the properties or function of such rubber/plastics.

ooo Your Sunriver Supplier

If you have a problem with your Steelfort Sunriver system, please contact your supplier. Their details should be on the installation form.

We take particular care in choosing our suppliers and installers and do so believing they have the skills and the commitment to provide you with excellent service. If their service is not up to the standards you expect, you can contact us directly on 0508 77 88 99 or you can email us at sunriver@steelfort.co.nz.

Your supplier is responsible for completing an assessment of your warranty claim. If there is a problem with the solar collector, and the warranty applies, your supplier will provide you with the replacement part and organise the installation of the part. If you believe you can replace the component yourself, or you can organise someone to complete the servicing for you, your supplier may freight the component to you.

Your supplier is required to provide you with this warranty document covering the Sunriver system and any other components supplied to you.

Enjoy your Steelfort Sunriver system.

Find out more

For more information, please call us on telephone 0638 778899
or visit www.steelport.co.nz



Manufactured by



STEELPORT

Head Office: 500 Rangitikei Street, Private Bag 1045, Palmerston North 4492, New Zealand
Phone: 06 350 9330 • Fax: 06 350 9397 • www.steelport.co.nz

ooo Warranty Card

Your new Steelport Sunriver Solar unit is warranted to be free from manufacturing defects. The cost of parts and labour to rectify any such defect during the warranty period is covered. Fair wear and tear, damage or failure to operate in accordance with the manufacturers instructions are excluded.

To validate the warranty, please complete and return this card within 14 days of purchase.

Purchase Date

Owner

Address

Phone

Email

Dealer

Make and Model

Batch Number

Consent Number

Installation carried out by (name of installer)

Have you received instruction on the current operation/service and maintenance of this product. ☐ Yes ☐ No



AS/NZS2712 and AS/NZS535 compliant.

Product Questionnaire

1. What first brought this product to your attention?

- ☐ Newspaper or Magazine
- ☐ Advertisement
- ☐ Television
- ☐ Radio
- ☐ Direct Mail
- ☐ Friend/family recommendation
- ☐ Field/Trade show
- ☐ In-store display
- ☐ Website
- ☐ Other (please specify)

2. What 3 factors most influenced your selection to buy?

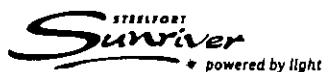
- ☐ Dealer recommendation
- ☐ Friends recommendation
- ☐ Demonstration
- ☐ Appearance
- ☐ Price/Value
- ☐ New Zealand made product
- ☐ Other (please specify)

3. Was your installation for:

- ☐ New Home
- ☐ Renovation
- ☐ Specific solar retrofit

If you do not wish to be kept updated on new products, please tick here. ☐

Thank you.

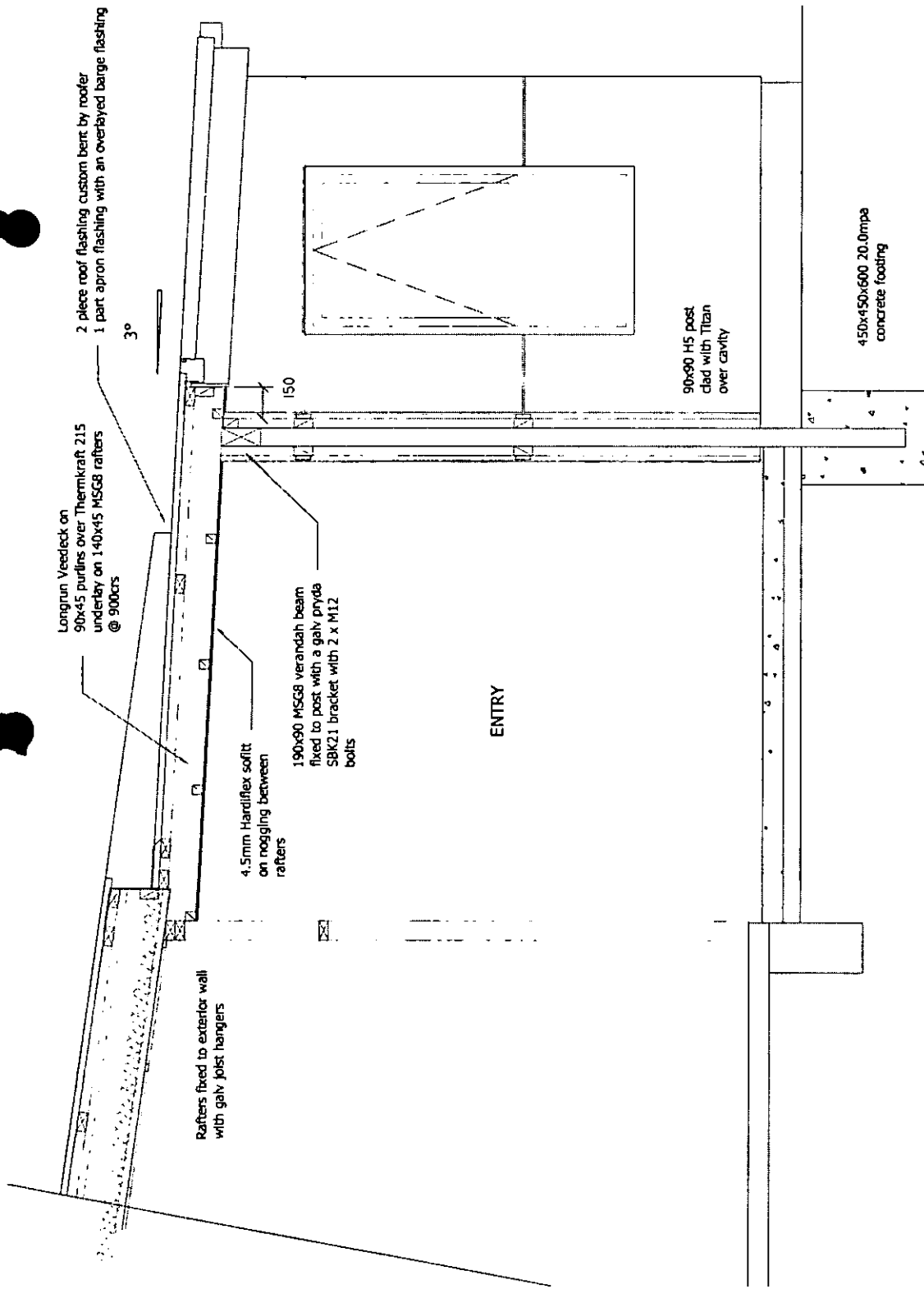


www.steelport.co.nz

FOLD

Please return to:

Freepost 189578
Steelport Engineering Company Ltd
Private Bag 11045
Palmerston North 4412



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DATE	19 NOV 08	SCALE	A3	1:20	AS
DRAWN BY		REV		08-578	
CHECKED BY		DATE		16	13

ENTRY PORCH

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBEE BEACH

Signature
HOMES
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SITING TO BE
CONFIRMED BY SURVEY PEGS

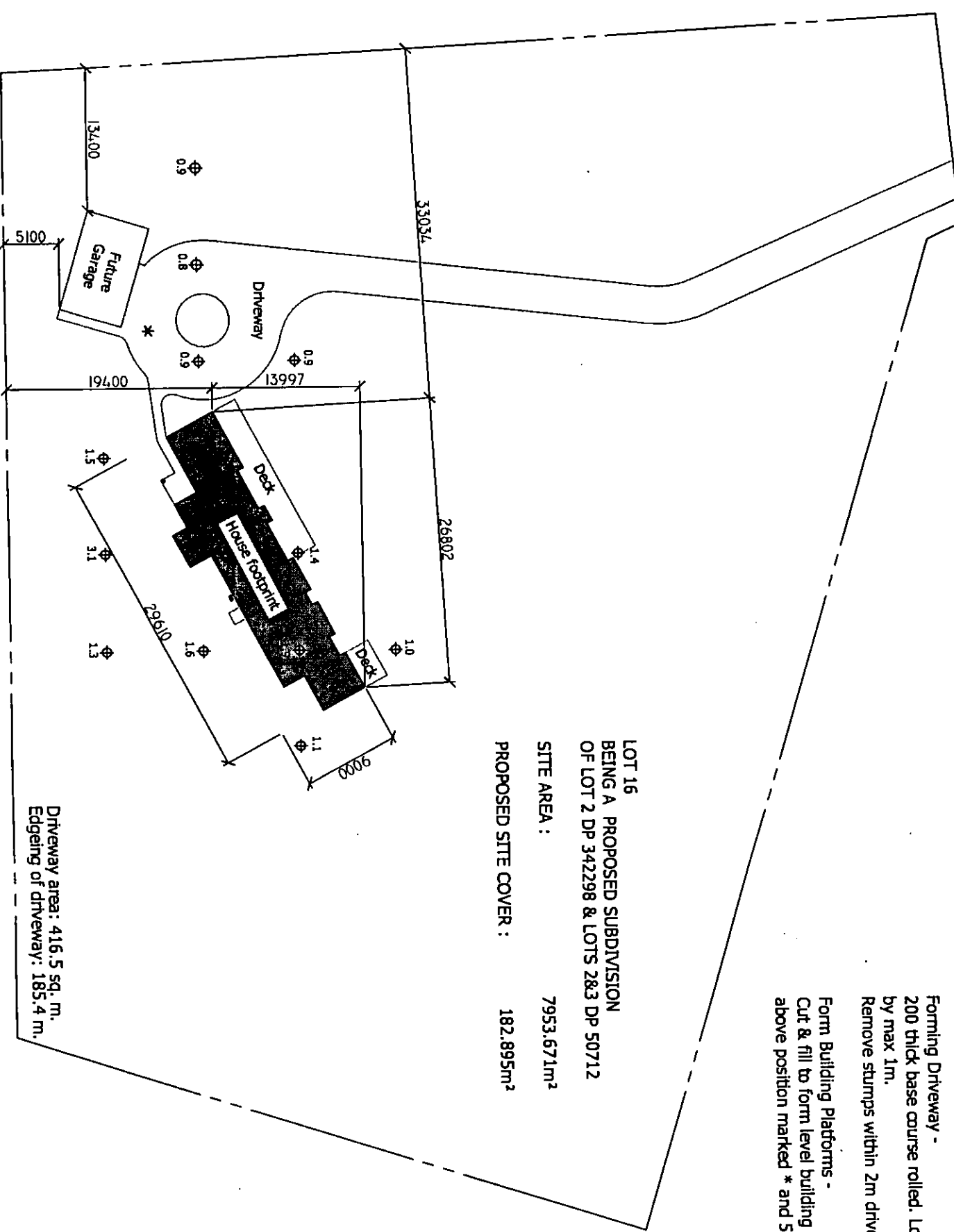
Site Preparation:

- Forming Driveway -
200 thick base course rolled. Lower drive way over crest
by max 1m.
Remove stumps within 2m driveway
- Form Building Platforms -
Cut & fill to form level building platform approx 300mm
above position marked * and 5m back from building line.

⊕ Datum on kerb 0.00

4.0 TO CL DRIVE

LOT 16
BEING A PROPOSED SUBDIVISION
OF LOT 2 DP 342298 & LOTS 283 DP 50712
SITE AREA : 7953.671m²
PROPOSED SITE COVER : 182.895m²



Driveway area: 416.5 sq. m.
Edging of driveway: 185.4 m.

ALL WORK TO FULLY COMPLY WITH
THE BUILDING CONSENT
DOCUMENTS. ANY VARIATION TO BE
SUBMITTED FOR CONSIDERATION AS
AN AMENDMENT BEFORE
COMMENCEMENT.



HDC PROCEDURE	
Decision	☒ Accept ☐ Decline
Procedure Type:	B/C PROCESSING
Reason	B/CODE COMPLIANCE
Outcome	Consent Granted
DATE:	11.3.09 BCC [Signature]

SOFT GROUND
MAY REQUIRE
REFERRAL TO ENGINEER

SITE PLAN

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WAITAREBE BEACH

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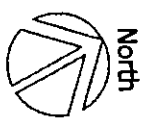
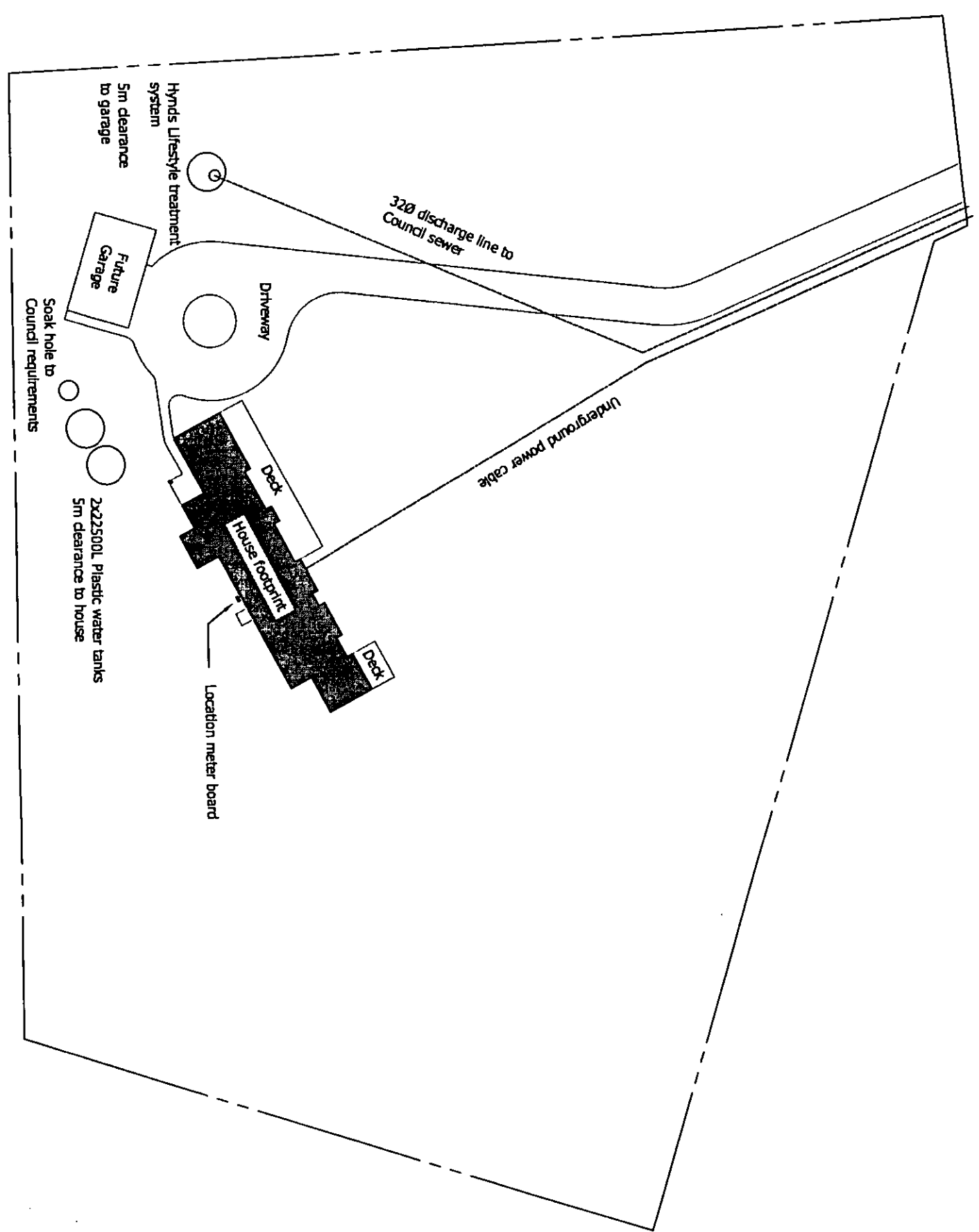
These drawings have been prepared on the understanding that the Building Consent Authority has issued a Building Consent for the proposed development. The drawings are intended to be used in conjunction with the specifications and documentation that form part of the contract. Where drawings are made, the drawings are intended to be used in conjunction with the specifications and documentation that form part of the contract.

DATE:	19 NOV 08	SCALE:	A3 1:500 M
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CHECKED BY:	AS	REV:	08-576
DATE:	16	REV:	1

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Services at the road boundary
are within 2m of boundary



These drawings are to be read in conjunction with the specifications and documentation that form part of the contract. Where drawings are made by the architect, they are intended to be used for the purpose of the contract and are not to be used for any other purpose without the written consent of the architect.

These drawings have been prepared on the understanding that the Building Contractor has a sound knowledge of the NZ Building Code (NZBC:1991). The architect does not accept any liability for any loss or damage arising from any failure to comply with the requirements of the Building Code, or any other requirements of the Building Act 1991, or any other requirements of the Building Regulations 1992, or any other requirements of the Building Act 1991, or any other requirements of the Building Regulations 1992, or any other requirements of the Building Act 1991, or any other requirements of the Building Regulations 1992.

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PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WAITAREBE BEACH

SERVICES LOCATION PLAN

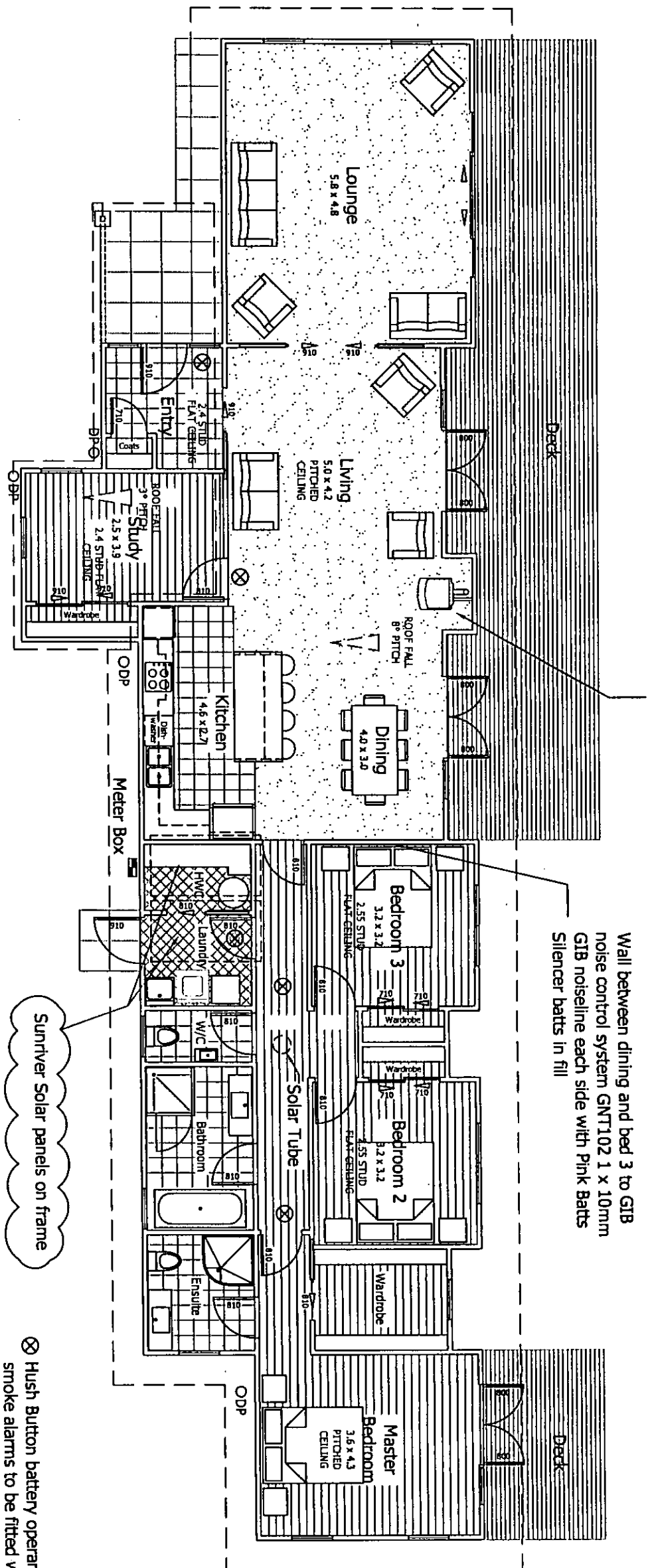
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16				2

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Enviro Evolution Pallet Stove
with through wall vertical rise and
horizontal termination installation

Wall between dining and bed 3 to GIB
noise control system GNT102 1 x 10mm
GIB noiseline each side with Pink Batts
Silencer batts in fill



⊗ Hush Button battery operated
smoke alarms to be fitted within 3m
of a bedroom.

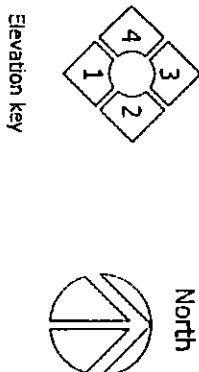
Floor Coverings

	Polished concrete	68.44 sq. m.
	LSI strip flooring	67.51 sq. m.
	Ceramic tiles	21.75 sq. m.
	Linoleum	6.78 sq. m.
	Timber deck	
	concrete paving	
	Exterior Colours	

Refer to 'Colour Schedule' in the Specifications

Amended
Date..... 20/2
Revision..... A.....

Floor area: 182.90 sq. m.
Covered area: 13.09 sq. m.
Deck area: 51.66 sq. m.
Paved area: 10.57 sq. m.



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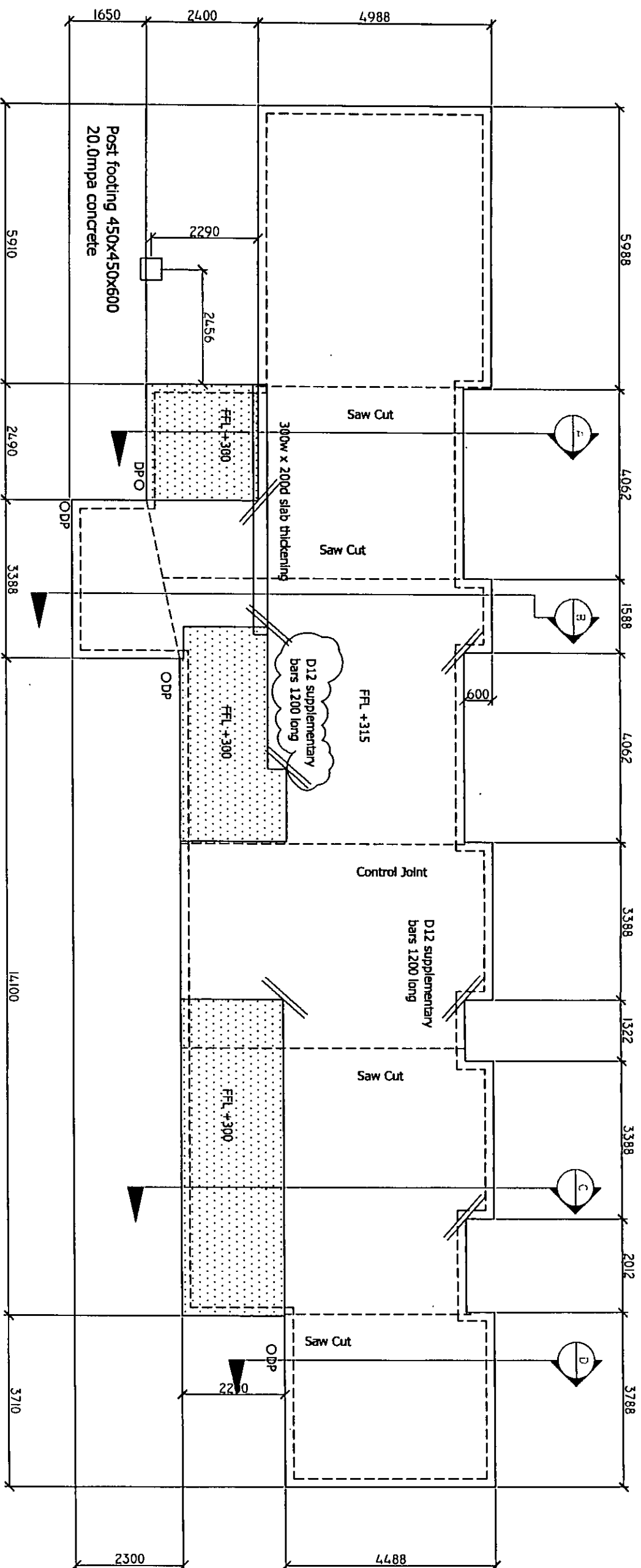
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PAUL & DEBBIE WING
BEACH ROAD WATERBURY BEACH

FLOOR PLAN

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16					3

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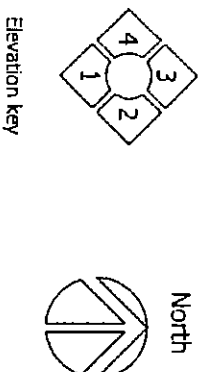
100mm 20.0mpa concrete slab with 665 mesh over
50mm EPS on 250 micron polythene over
compacted hardfill and a min 50mm sand blinding

Refer details foundations

Cut saw cuts to a depth of 25mm
bay dimensions limited to a maximum ratio of length
to width of 2 to 1 with a minimum dimension of 5
metres.

Dimensions allow a 6mm frame overhang

Tiled areas rebated 15mm below FFL



Amended
Date... 20/2
Revision... A

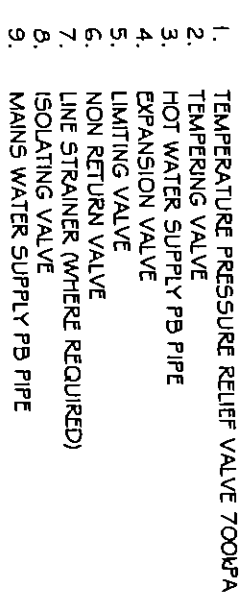
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BRACH ROAD WAITAREBE BEACH

SLAB PLAN

DATE:	20 FEB 08	SCALE:	A3 1:100	AM.
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DATE:	08-576	SHEET NO:	4	

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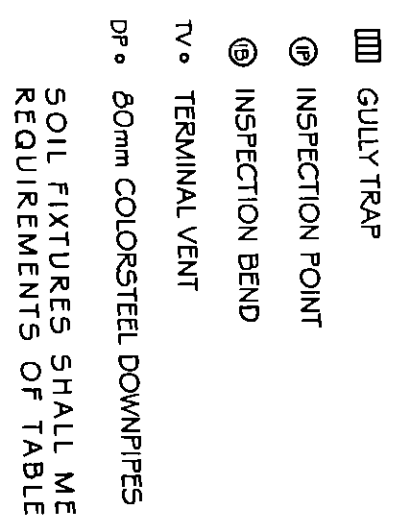


1. TEMPERATURE PRESSURE RELIEF VALVE 700C/A
2. TEMPERING VALVE
3. HOT WATER SUPPLY PB PIPE
4. EXPANSION VALVE
5. LIMITING VALVE
6. NON RETURN VALVE
7. LINE STRAINER (WHERE REQUIRED)
8. ISOLATING VALVE
9. MAINS WATER SUPPLY PB PIPE

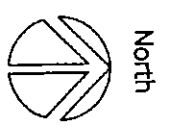
HOT/COLD SUPPLY - PLUMBING

HOT WATER EX 180L RHEEMS MAINS PRESSURE
ELECTRIC CYLINDER WITH SEISMIC RESTRAINTS
AS PER NZBC SECTION G12

PVC FIXTURE WASTE PIPES 40mm I : 40 MIN FALL
UNLESS OTHERWISE NOTED



SOIL FIXTURES SHALL MEET THE VENTING
REQUIREMENTS OF TABLE G13/A51

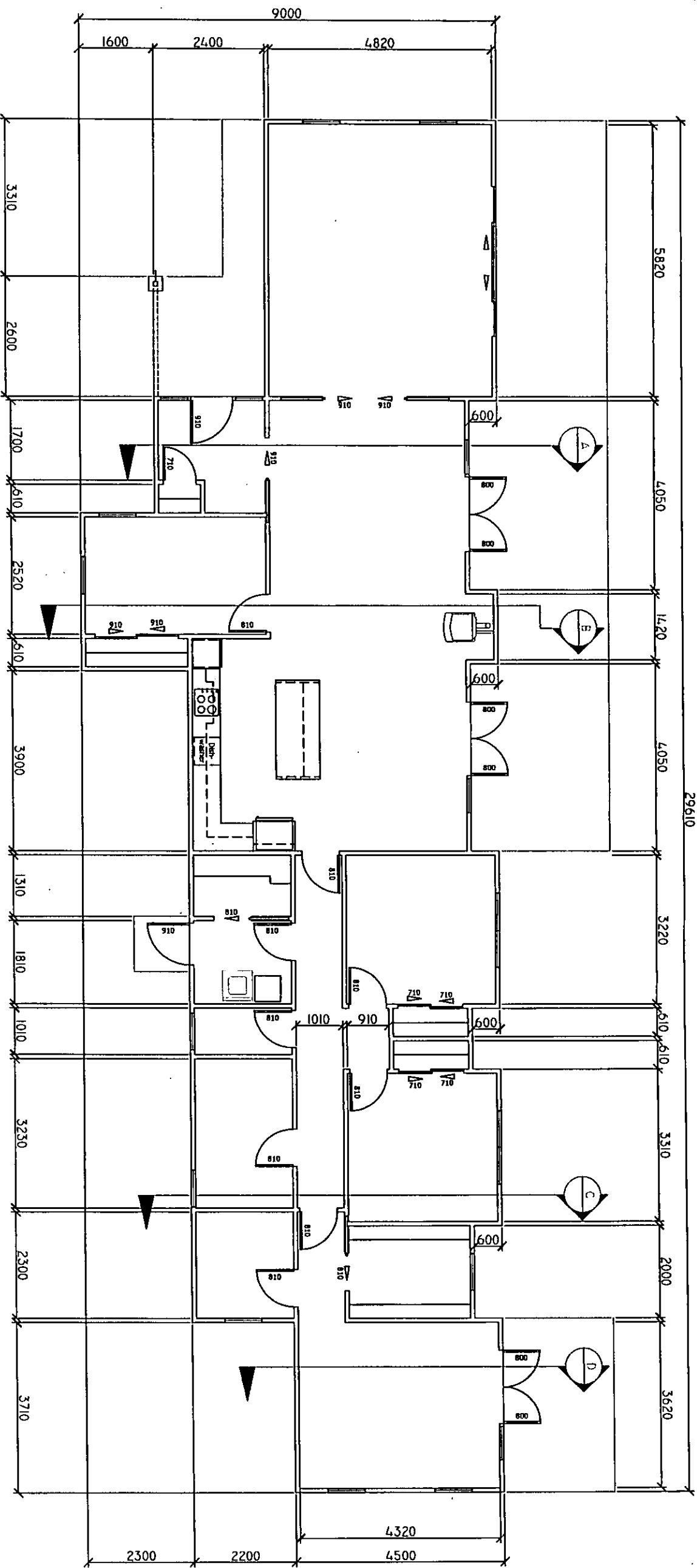


North

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PLUMBING & DRAINAGE

DATE: 19 NOV 08		SCALE: A3 11:00 AM -	
DRAWING: RP		REV: 1	
LOT: 16	DP: 16	JOB NO.: 08-576	
		SHEET NO.: 5	



Note :

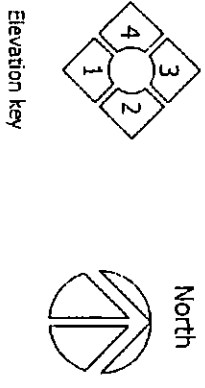
High wind zone
Studs up to height 2420 90x45 MSG8 @ 600crs
Studs up to height 2700 90x45 MSG8 @ 480crs
Studs over 2700 and up to 3500 140x45 MSG8 @ 600crs
Top plate 2/90x45 MSG8 H1.2
Bottom plate 90x45 MSG8 H1.2 on dpc
Top plate to stud fixing 2 gun nails + 1 x pyrida SN50 strap nail each stud
Bottom plate fixed to slab over DPC with M12 trubolts & square washers @ 900crs
Lintel height 2120

Note :

Wall between dining and bed 3 to be a noise control wall fir 10mm GIB noiseline each side with Pink Batts noise batts in fill
Trimming Studs on lintels spanning less than 3.0m use 1 x 90x45 MSG8
Trimming Studs on lintels spanning more than 3.0m use 2 x 90x45 MSG8

Amended

Date.....20/2
Revision.....A



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These drawings have been prepared in the understanding that the building is to be constructed in accordance with the Building Code of New Zealand. The contractor is responsible for the design and construction of the work. The contractor is responsible for the design and construction of the work. The contractor is responsible for the design and construction of the work.

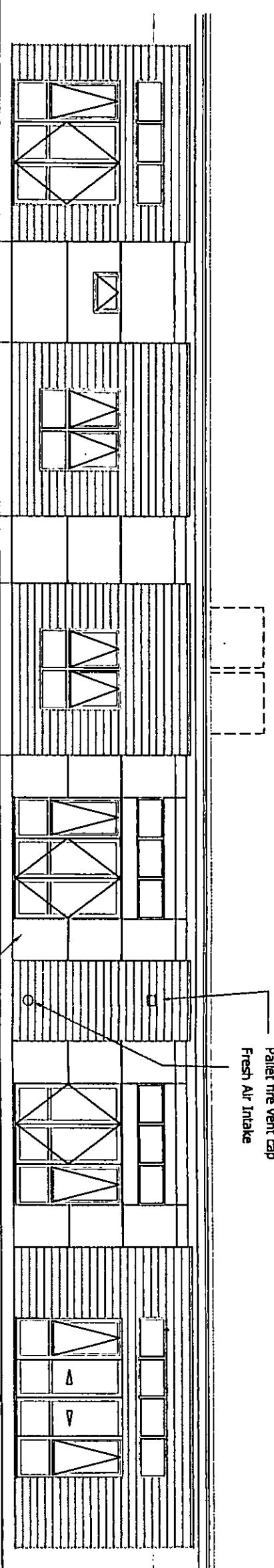
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PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARERE BEACH

DIMENSIONS

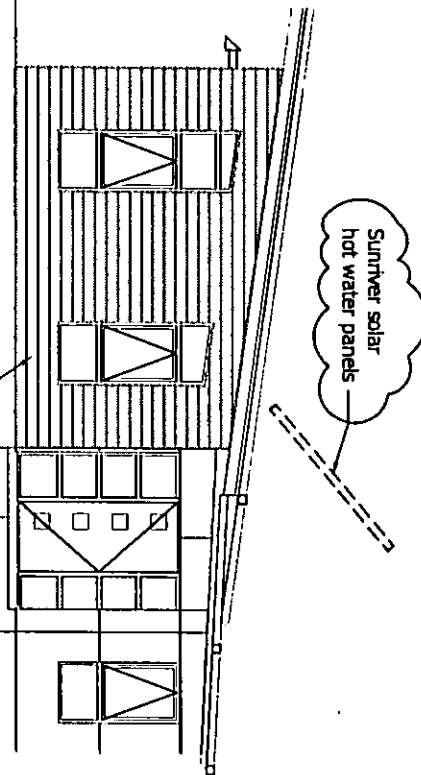
DATE	20 FEB 09	SCALE	A3 1:100	AM
DATE	08	REV	08-576	
LOT	16	A	SHEET	6

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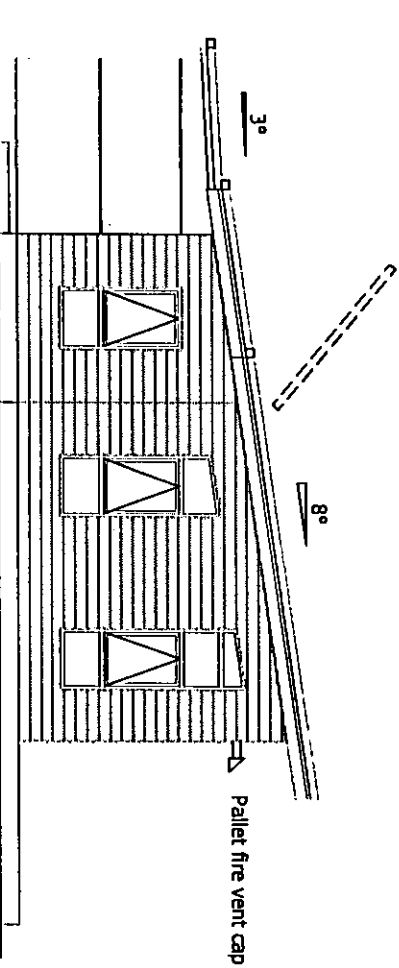


Elevation 1 (north facing)

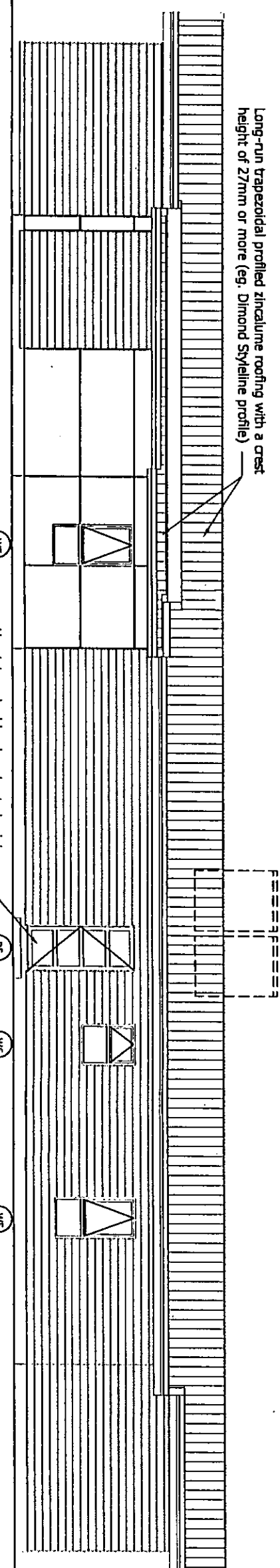
Rek Matrix:	Score
Wind zone	1
Number of stories	0
Roofline intersection design	3
Excess width	0
Envelope complexity	1
Deck design	0
Total:	5



Elevation 2 (west facing)



Elevation 4 (east facing)



Elevation 3 (south facing)

Amended
Date 20/2
Revision A

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PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBEE BEACH

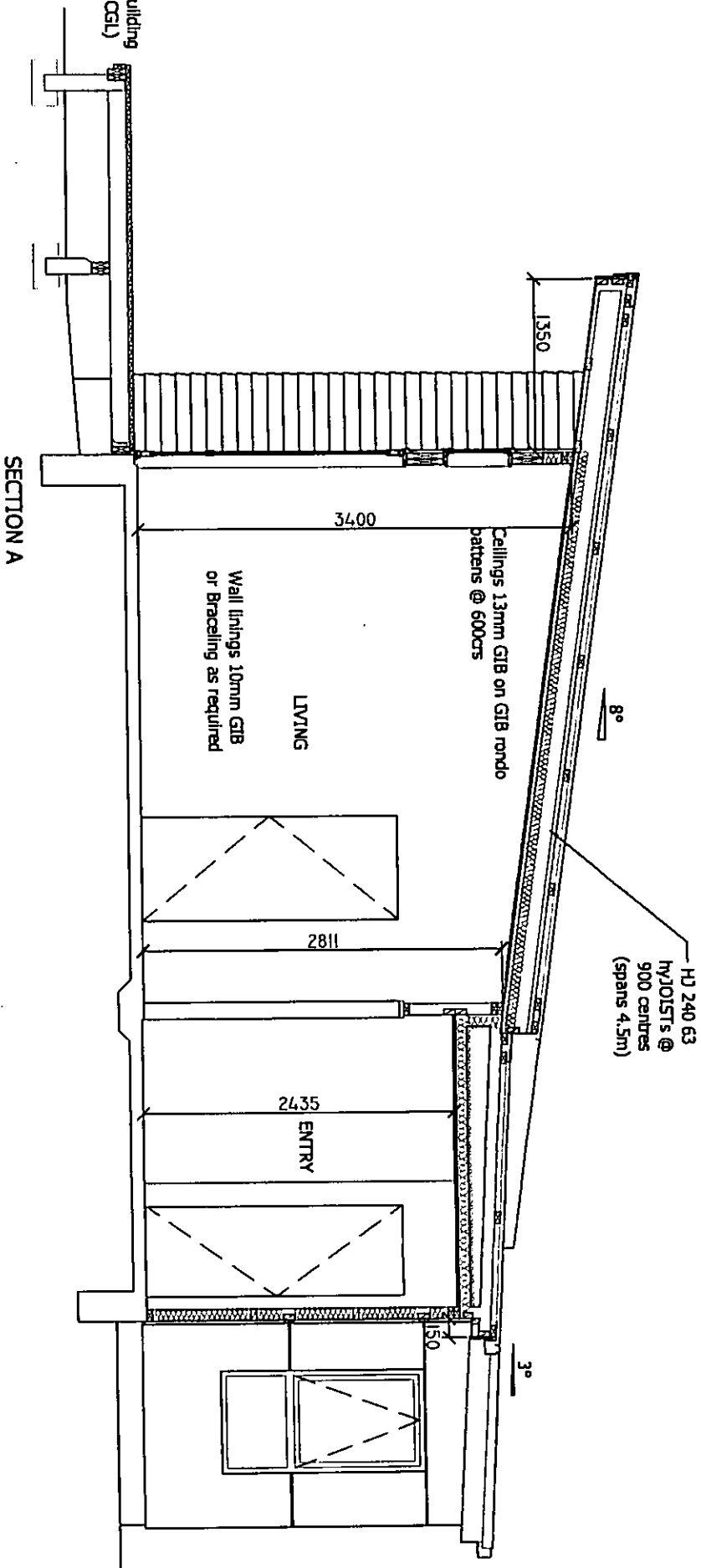
ELEVATIONS

DATE:	20 FEB 09	SCALE:	A3 1:100 A4 1:200
DRAWN:	SP	REV:	A
LOT:	SP	EXT. NO.:	08-576
16		POST NO.:	7

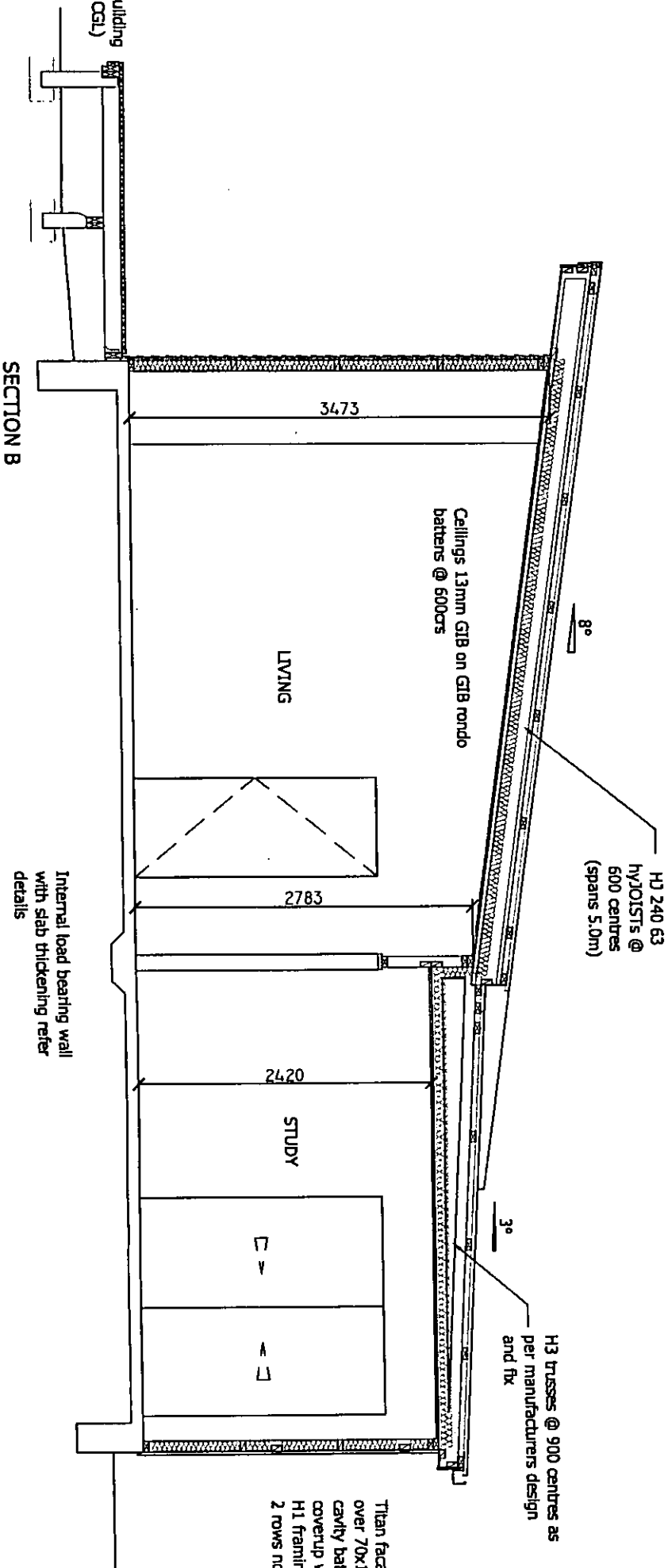
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Future deck (not requiring a building consent as less than 1m from GGL)



Future deck (not requiring a building consent as less than 1m from GGL)



Titan facade sheet cladding over 70x19mm CLD structural cavity battens on Thermakraft coverup wrap over 90x45 MSG8 H1 framing studs @ 600c/s with 2 rows noggs

H3 trusses @ 900 centres as per manufacturers design and fix

HJ 240 63 hyJOISTS @ 600 centres (spans 5.0m)

Internal load bearing wall with slab thickening refer details

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These drawings have been prepared on the understanding that the Building Consent Authority has a signed copy of the NZ Building Code (NZBC:1991). The Client has accepted the responsibility of the Owner or Builder to ensure that the design complies with the relevant provisions of the Building Act 2004 and the Building Regulations 2004. The Client has accepted the responsibility of the Owner or Builder to ensure that the design complies with the relevant provisions of the Building Act 2004 and the Building Regulations 2004. The Client has accepted the responsibility of the Owner or Builder to ensure that the design complies with the relevant provisions of the Building Act 2004 and the Building Regulations 2004.

Signature
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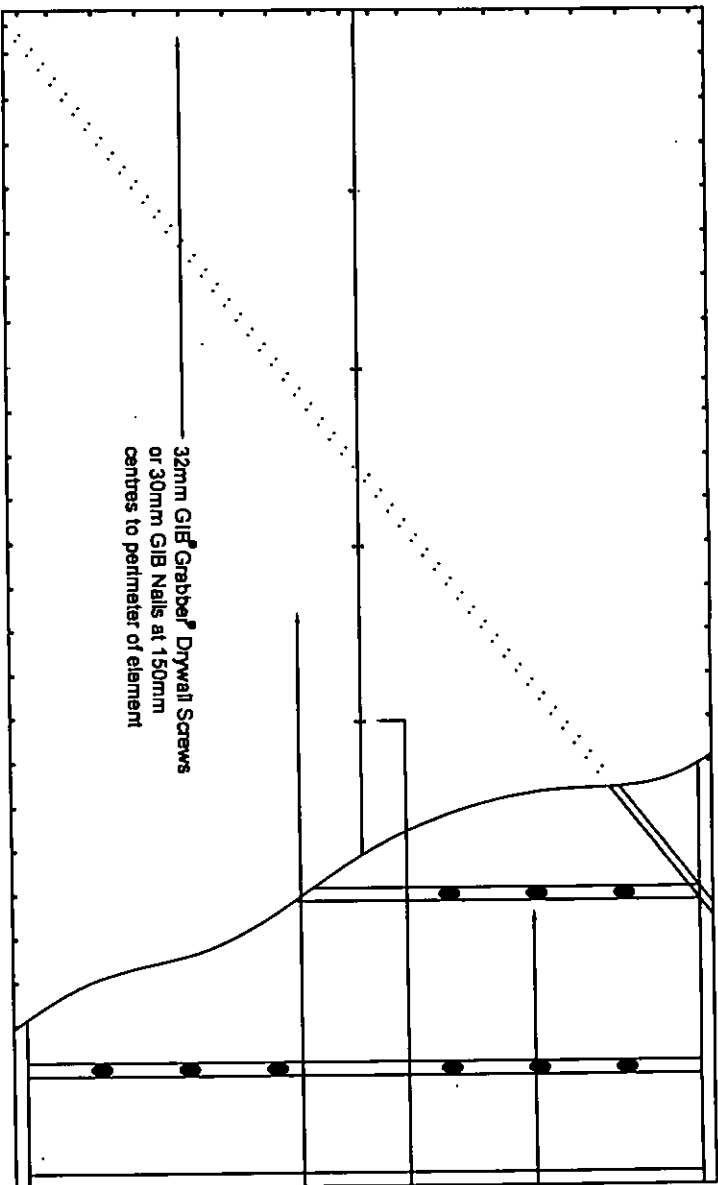
PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATAREBE BEACH

SECTIONS A&B

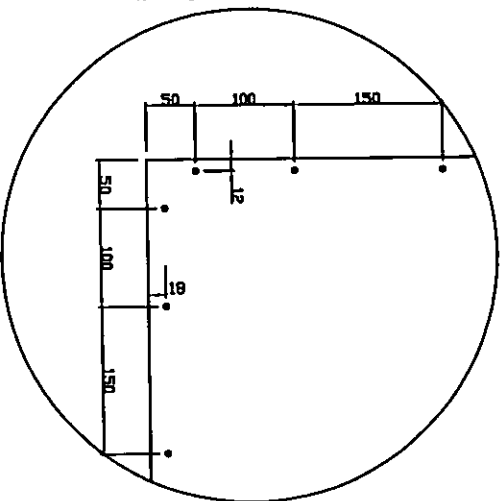
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DATE:	19 NOV 08	SCALE:	A3 1:50	A4 1:
DRAWN:	SP	BY:		
LOT:	DP	JOB NO:	08-576	
16		SHEET NO:	8	

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Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machined edge of the sheet and no closer than 18mm to a sheet end or cut edge.



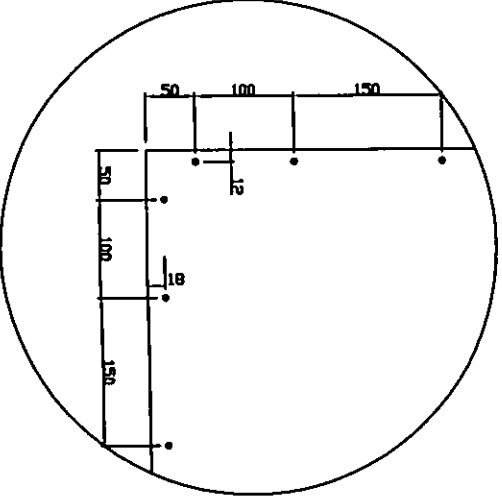
Dabs of GIBFix adhesive at 300mm centres to intermediate studs.
Single 32mm x 8g GIB Grabber Drywall Screws at intermediate studs.

10mm GIB Standard Plasterboard

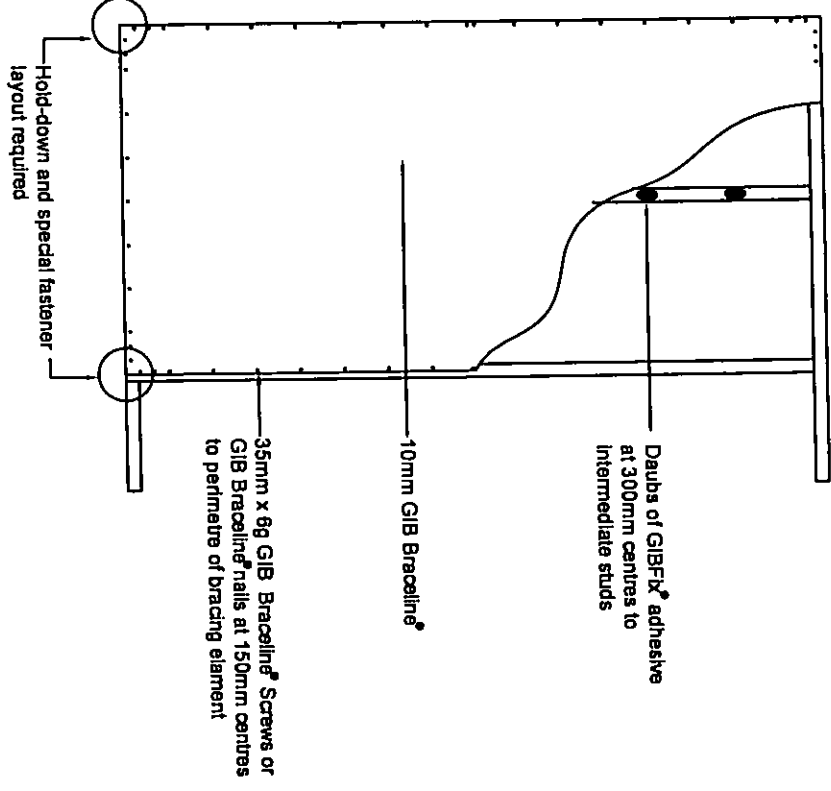
Dabs of GIBFix adhesive at 300mm centres to intermediate studs

Single 32mm x 8g GIB Grabber Drywall Screws at intermediate studs

10mm GIB Standard Plasterboard

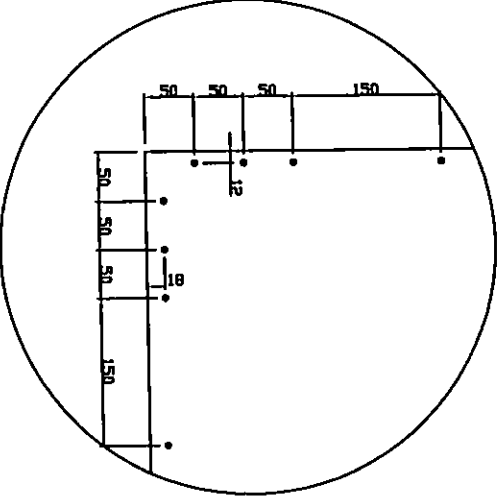


Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to a sheet end or cut edge.



Dabs of GIBFix adhesive at 300mm centres to intermediate studs

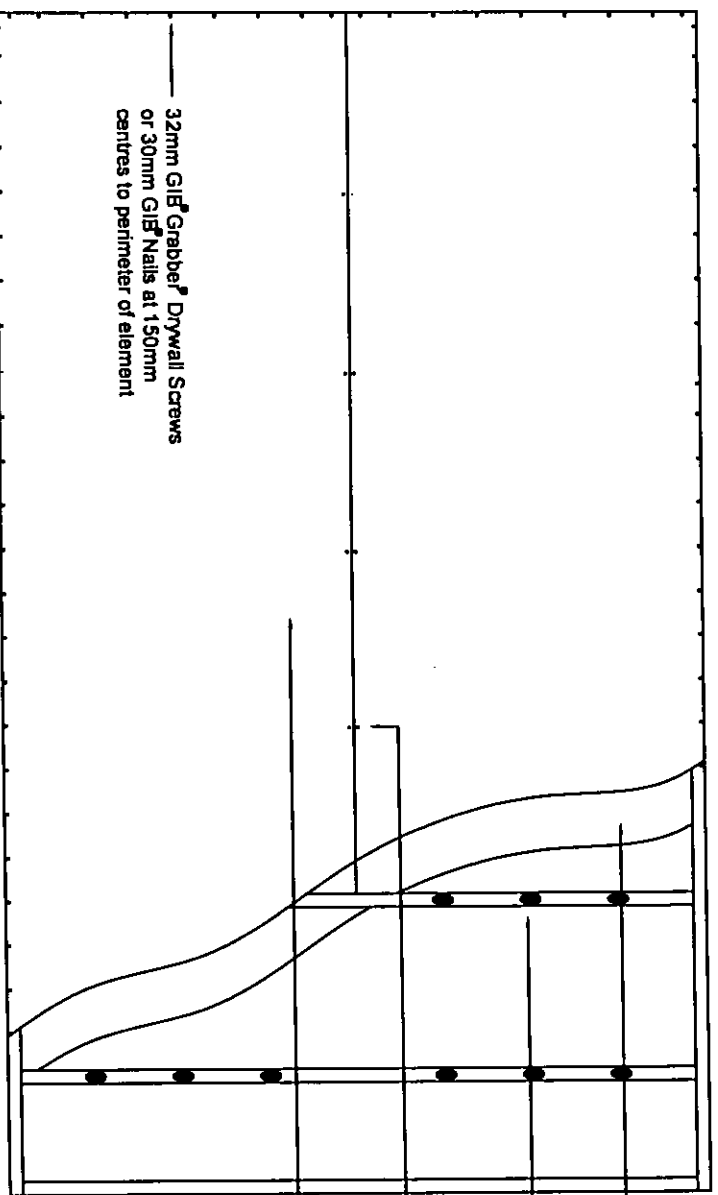
10mm GIB Braceline MINIMUM LENGTH 400mm
BL1 HORIZONTAL OR VERTICAL FIXING LINED ONE SIDE ONLY



Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, 100, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to a sheet end or cut edge.

10mm GIB Standard Plasterboard MINIMUM LENGTH 1200mm
GS2 HORIZONTAL FIXING LINED BOTH SIDES

32mm GIB Grabber Drywall Screws or 30mm GIB Nails at 150mm centres to perimeter of element



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BRACH ROAD WATAREBE BEACH

BRACING DETAILS

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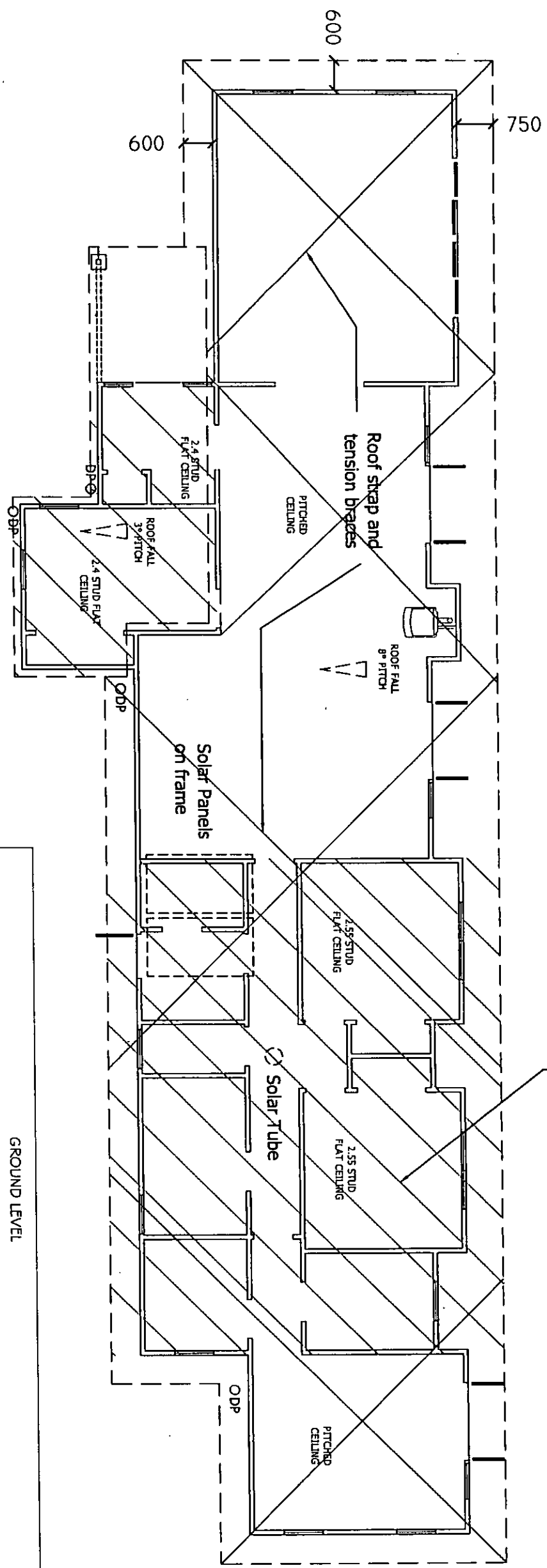
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DRAWN:	SP	REV:		
CHECKED:	SP	REV:		
DATE:	16	REV:		
PROJECT NO:	08-576			
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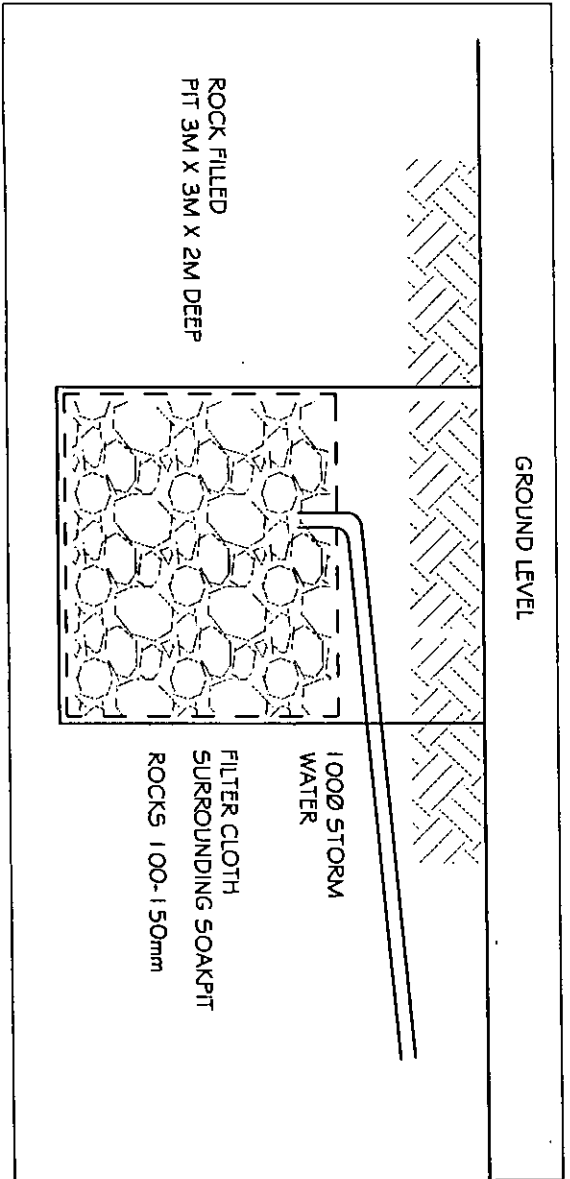
TRUSSES TO HATCHED AREA



Note : _____

- High Wind Zone
- Longrun Veedeck profile Zincalume finish
- Pitch 8° main roof 3° entry & study
- Combination HJ240x63 hyJOISTS @ 900cns and trusses @ 900cns as hatched above
- Roof underlay Thermakraft 215
- 180mm Linea Fascia with continuous Colorsteel guttering PVC downpipes

Roof penetrations to be flashed with Deklite EDPM flexible boot flashings



Amended

Date: 20/2

Revision: A

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PROPOSED HOUSE
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BEACH ROAD WATARBEE BEACH

ROOF PLAN

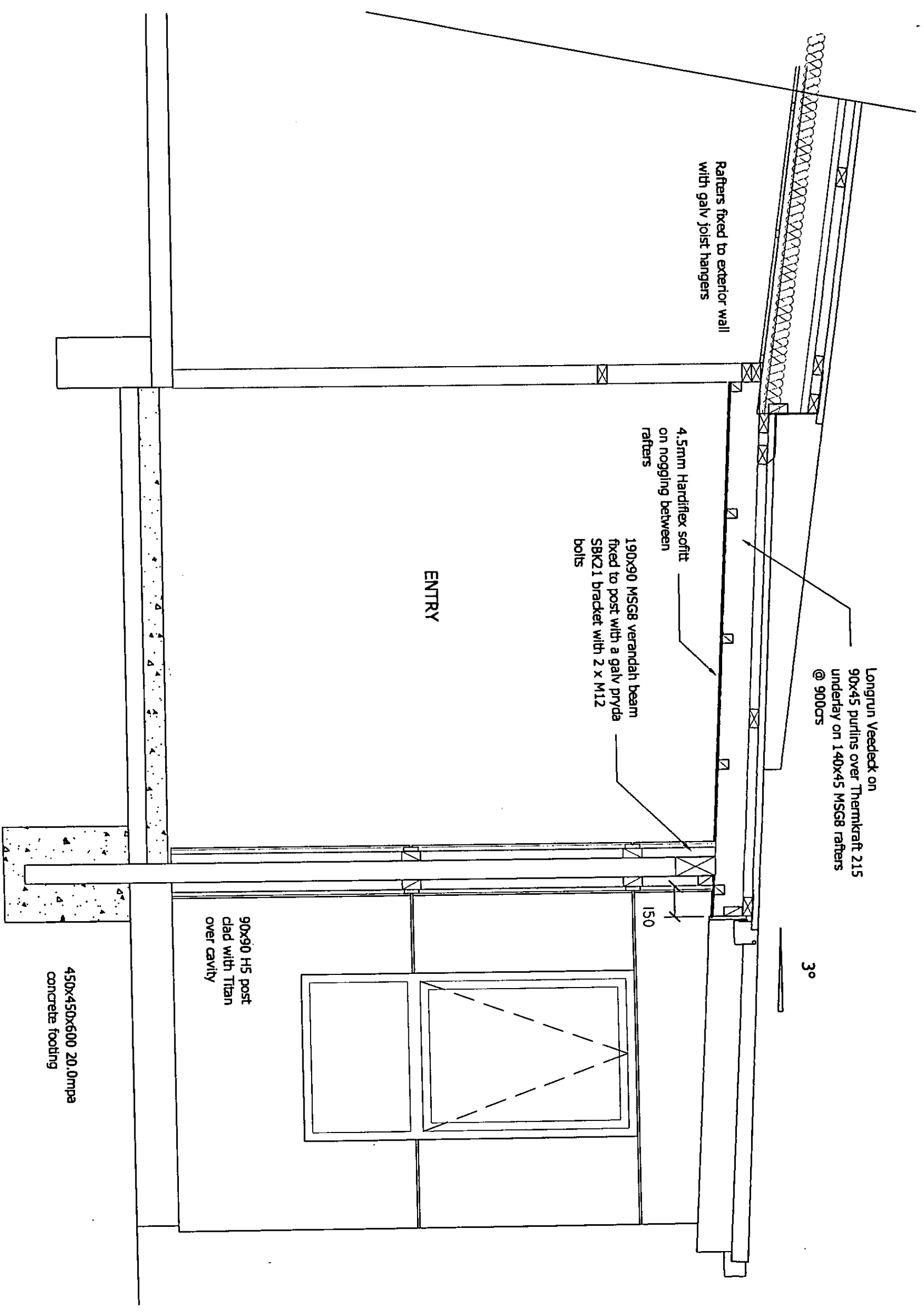
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LOT:	DP	A	SHEET NO:	12

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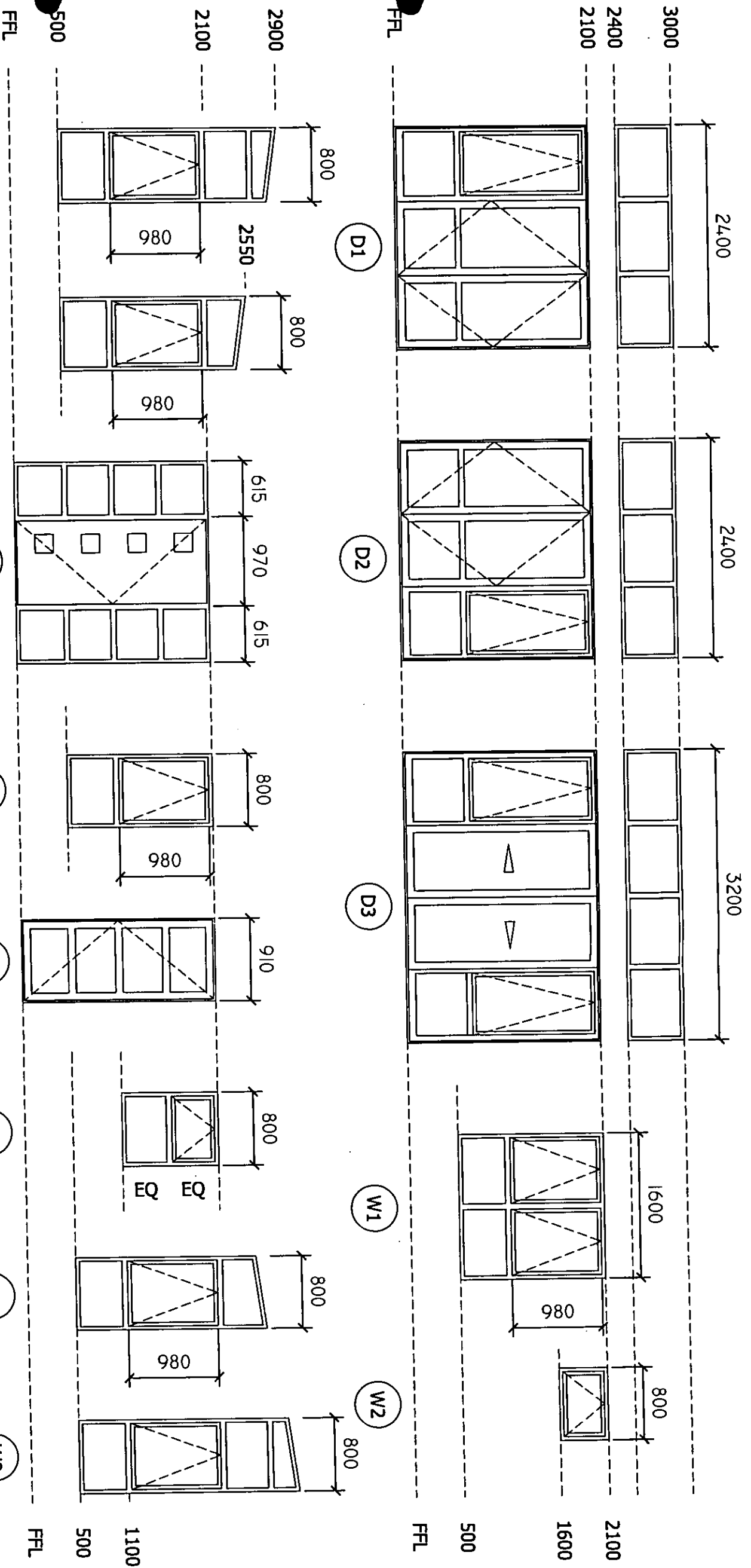
PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARERE BEACH

ENTRY PORCH

DATE:	19 NOV 08	SCALE:	A3 1:20	A4 1:
DRAWN BY:	REV:	DATE REC:	08-576	
16	13			

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BEACH ROAD WATAREBE BEACH

WINDOW SCHEDULE

DATE:	19 NOV 08	SCALE:	A3	A4
DRAWN:	DP	REV:	08-576	
DATE:	16	DATE:	14	

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90x45 MSG8 framing
bottom plate
over bituminous DPC
fixed to slab with M12 trubolts
with 50x50x3 washers @
900c/s max

R2.6min insulation to exterior
walls

100mm 20.0mpa concrete slab

665 mesh with
min 300 cover to starters

floor level

250 micron polythene

compacted hard fill with min
50mm sand binding

ground level

20.0mpa vibrated concrete
ring foundation with 2/D12
along and D10 starters @
600c/s

315 Min
300
50 min cover to formwork
180
75 min cover

FLOOR LEVEL TO BE
315mm ABOVE
UNSEALED GROUND

50mm EPS

30 min top cover

ENCAPSULATED SLAB FOUNDATION

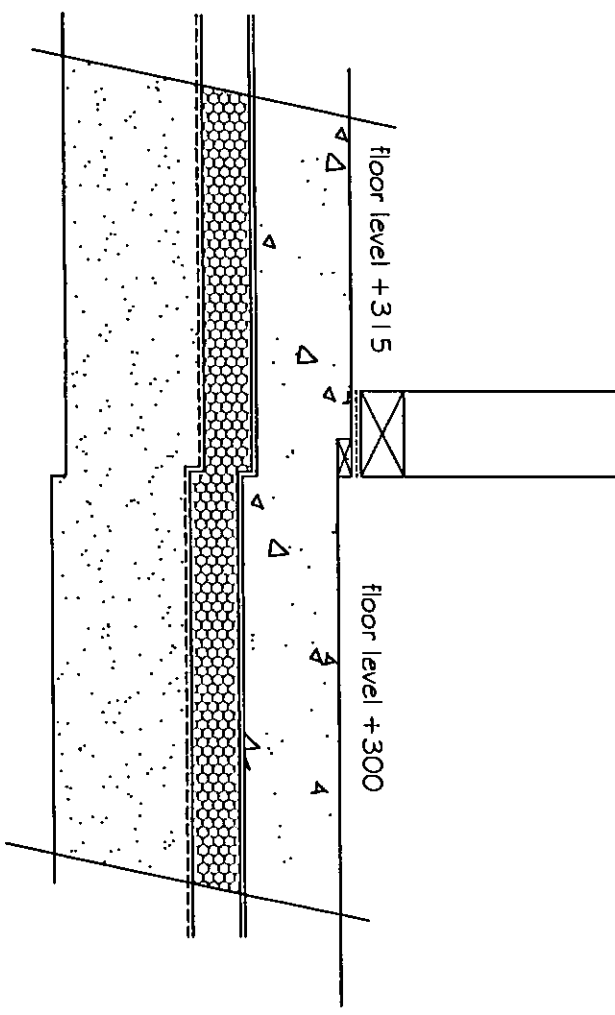
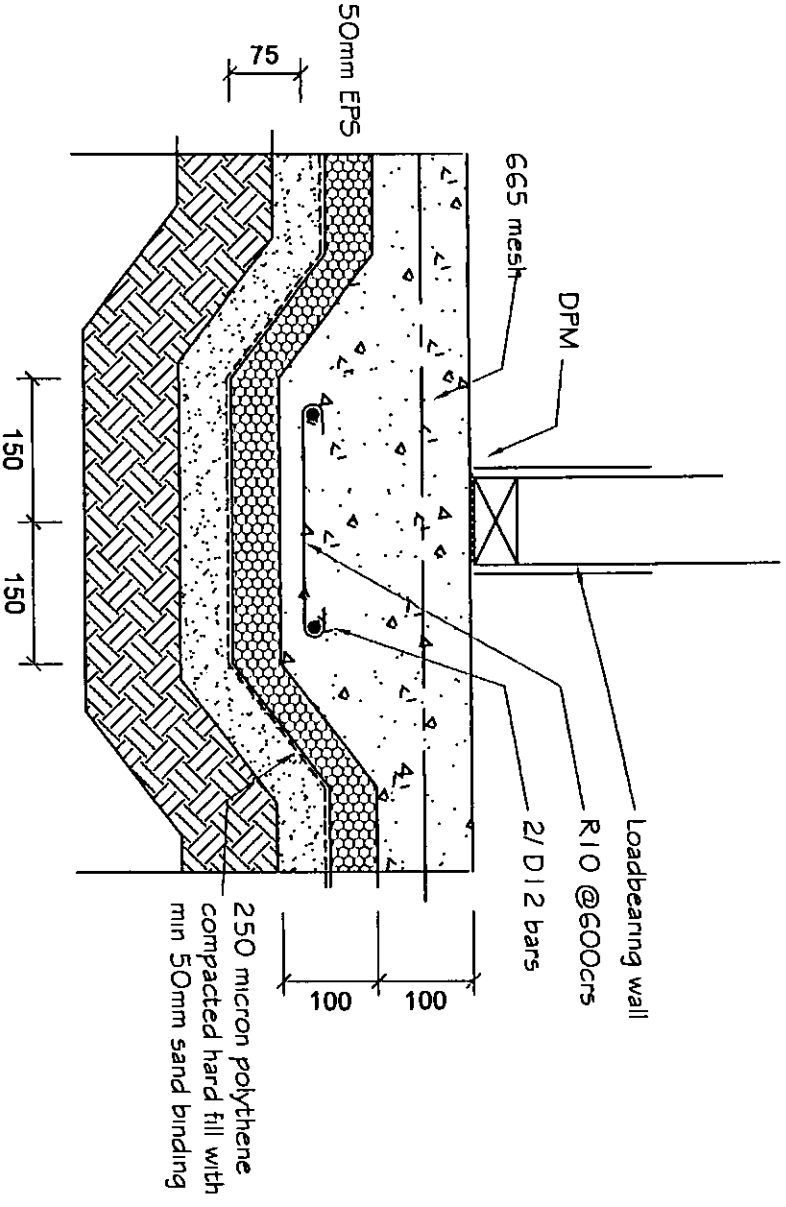
665 MESH

MIN 50mm
SAW CUT

REID CONSTRUCTION
SYSTEMS DOWEL ASSEMBLY
12MM X 400 LONG @ 600c/s

CONTROL JOINT

SLAB THICKENING



SLAB REBATE TILED AREAS

Amended
Date: 20/2
Revision: A

These drawings are to be read in conjunction with the specifications and documentation. No part of the contract documents shall be altered without the written approval of the Designer. Any alteration shall be made in a separate sheet and shall be signed by the Designer. Any alteration shall be made in a separate sheet and shall be signed by the Designer. Any alteration shall be made in a separate sheet and shall be signed by the Designer.

These drawings have been prepared on the understanding that the Building Regulations and the Code of Practice for the Design and Construction of Buildings shall be followed. The Designer shall ensure that all work complies with these standards in relation to any requirements of the Building Regulations. Any alteration shall be made in a separate sheet and shall be signed by the Designer. Any alteration shall be made in a separate sheet and shall be signed by the Designer. Any alteration shall be made in a separate sheet and shall be signed by the Designer.

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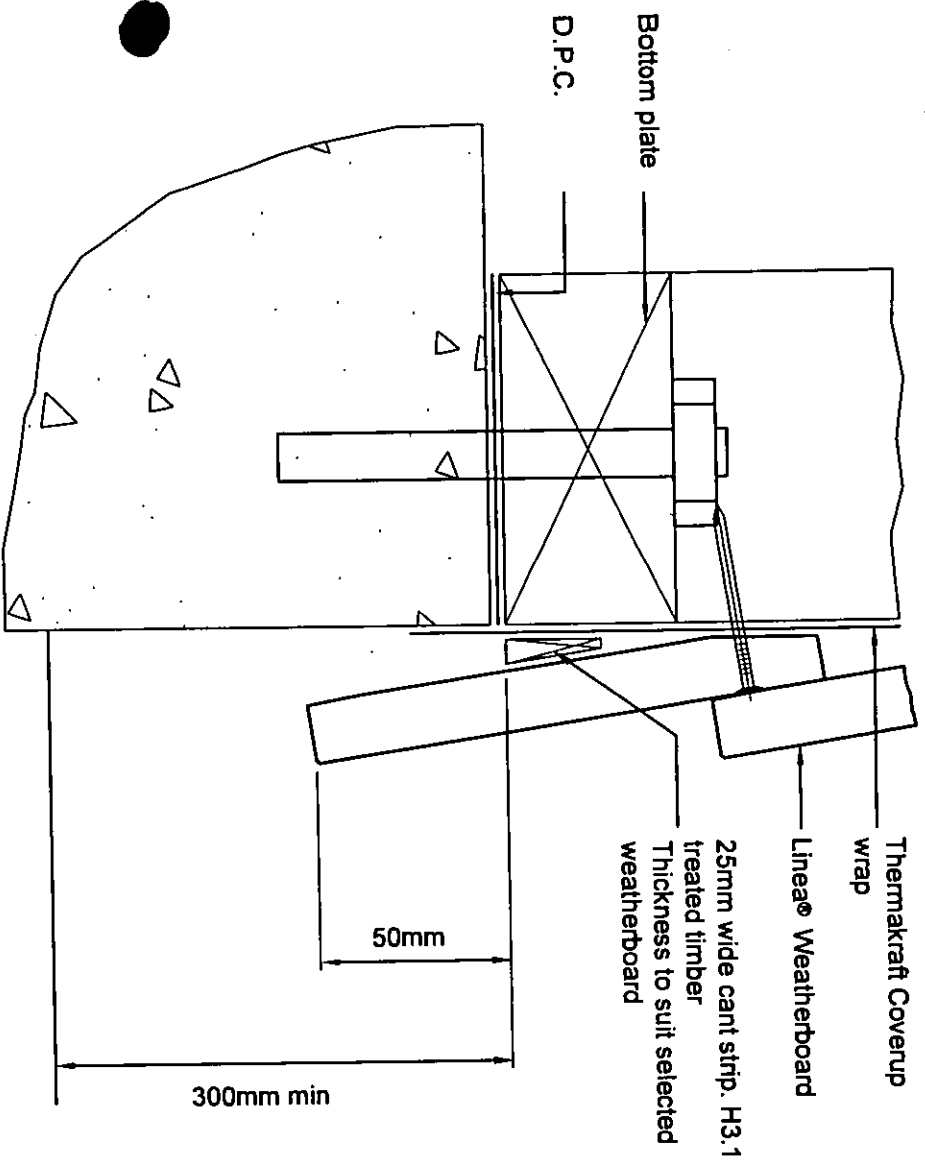
PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATERBURY BEACH

FOUNDATION DETAILS

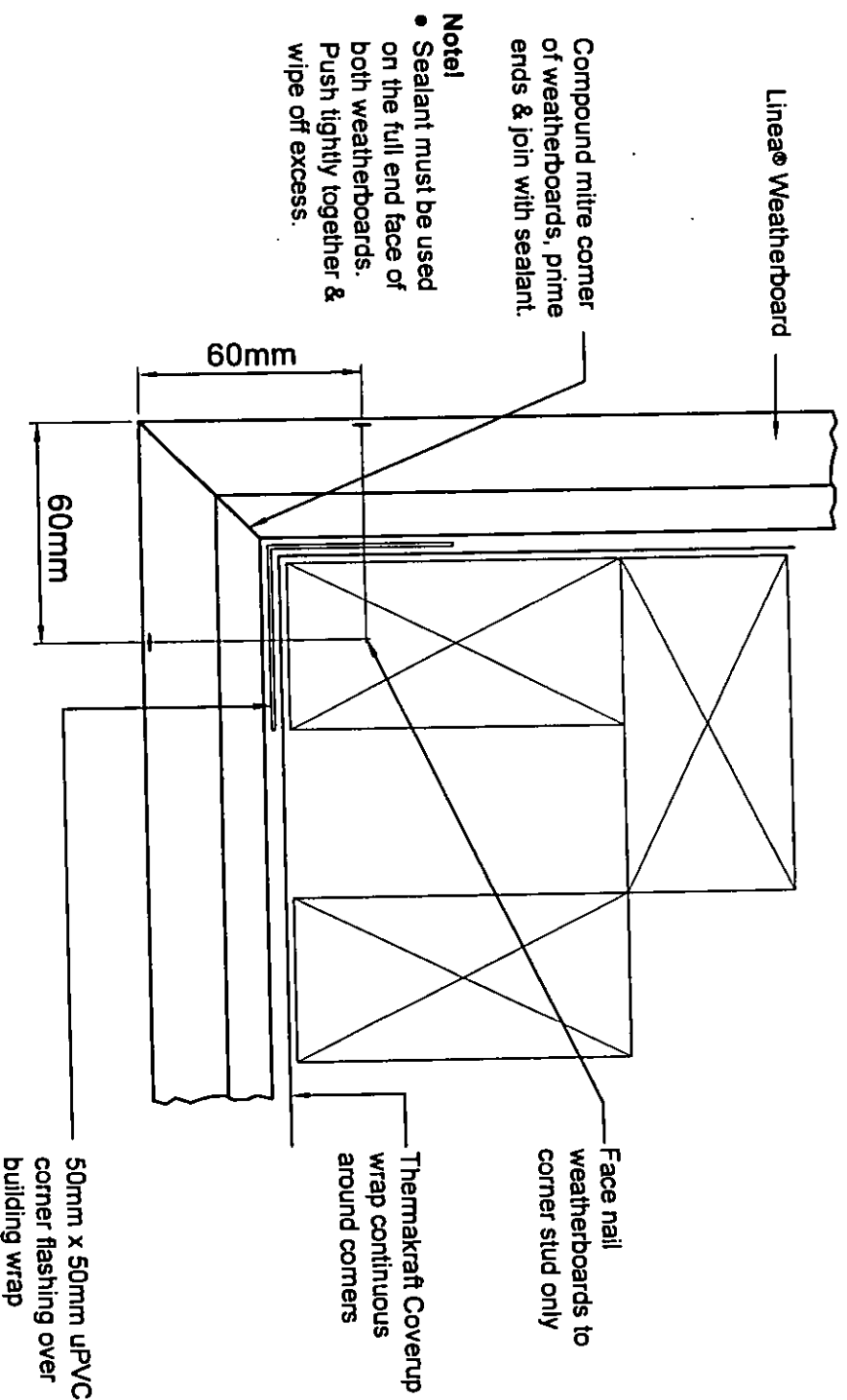
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CHECK:	MP	JOB NO.:	08-576	
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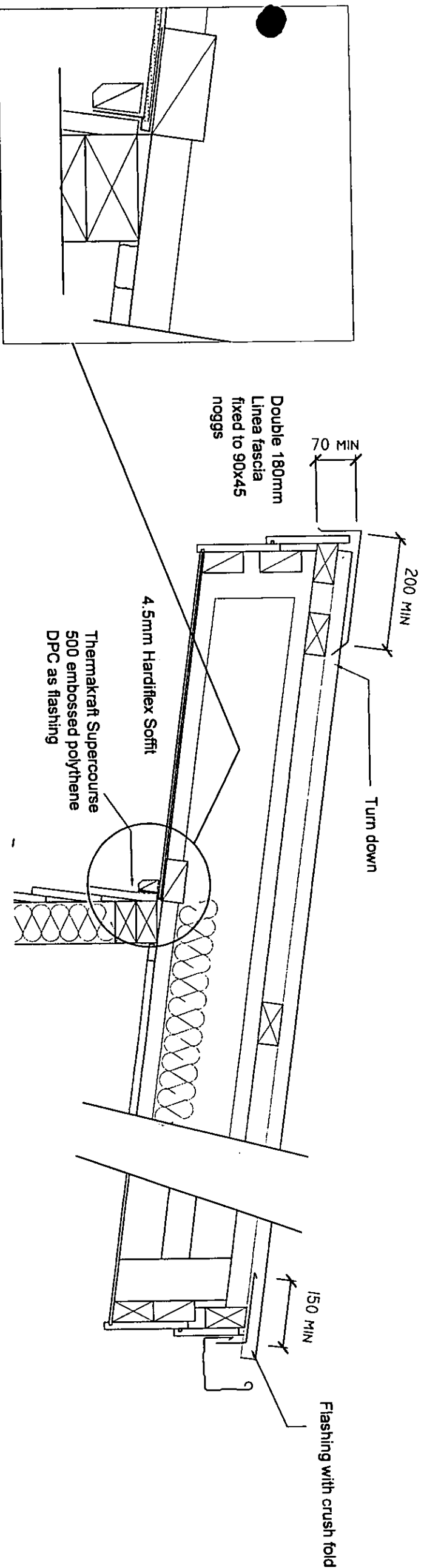
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DIRECT FIX CONCRETE SLAB



DIRECT FIX MITRE CORNER



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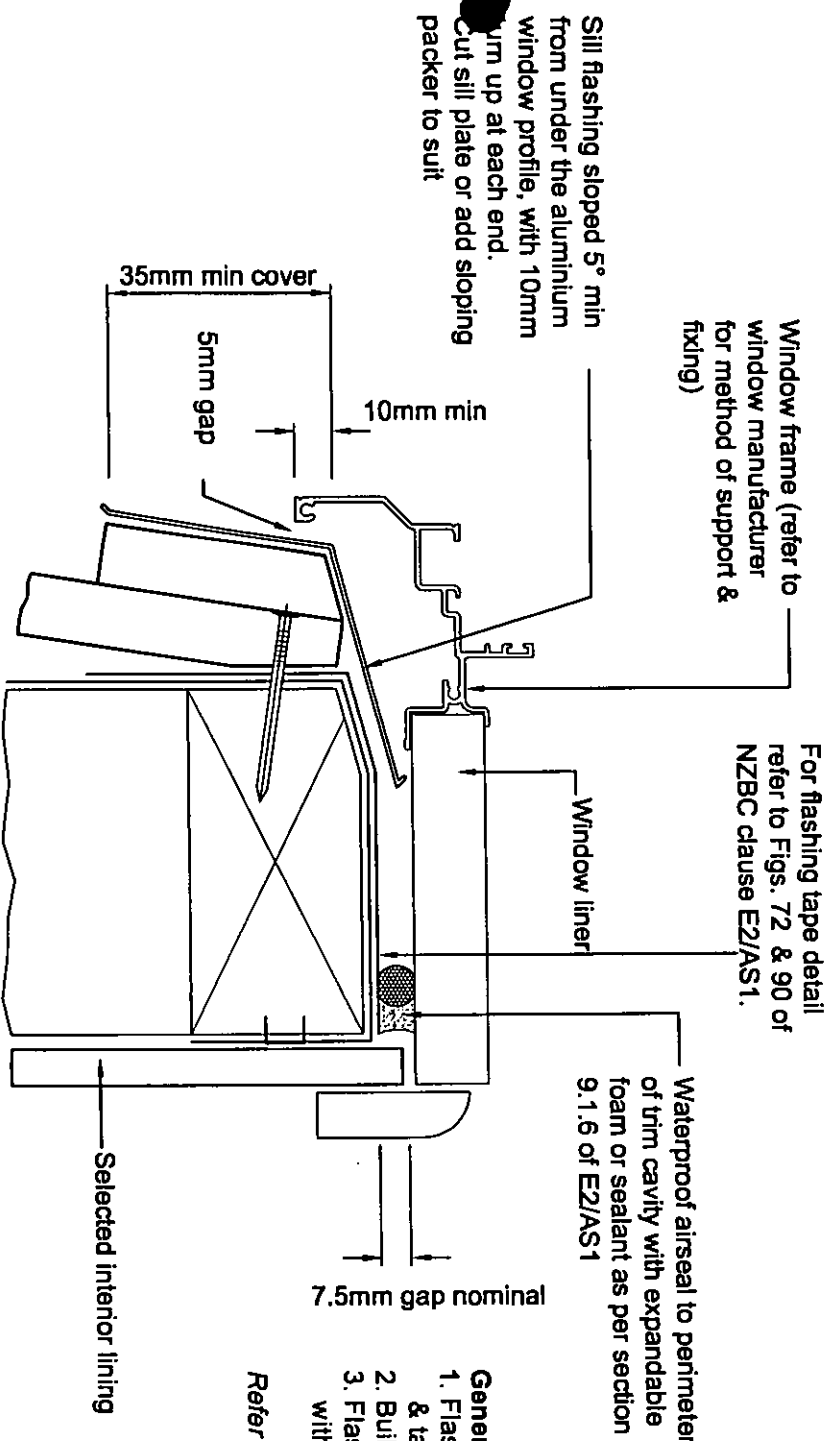
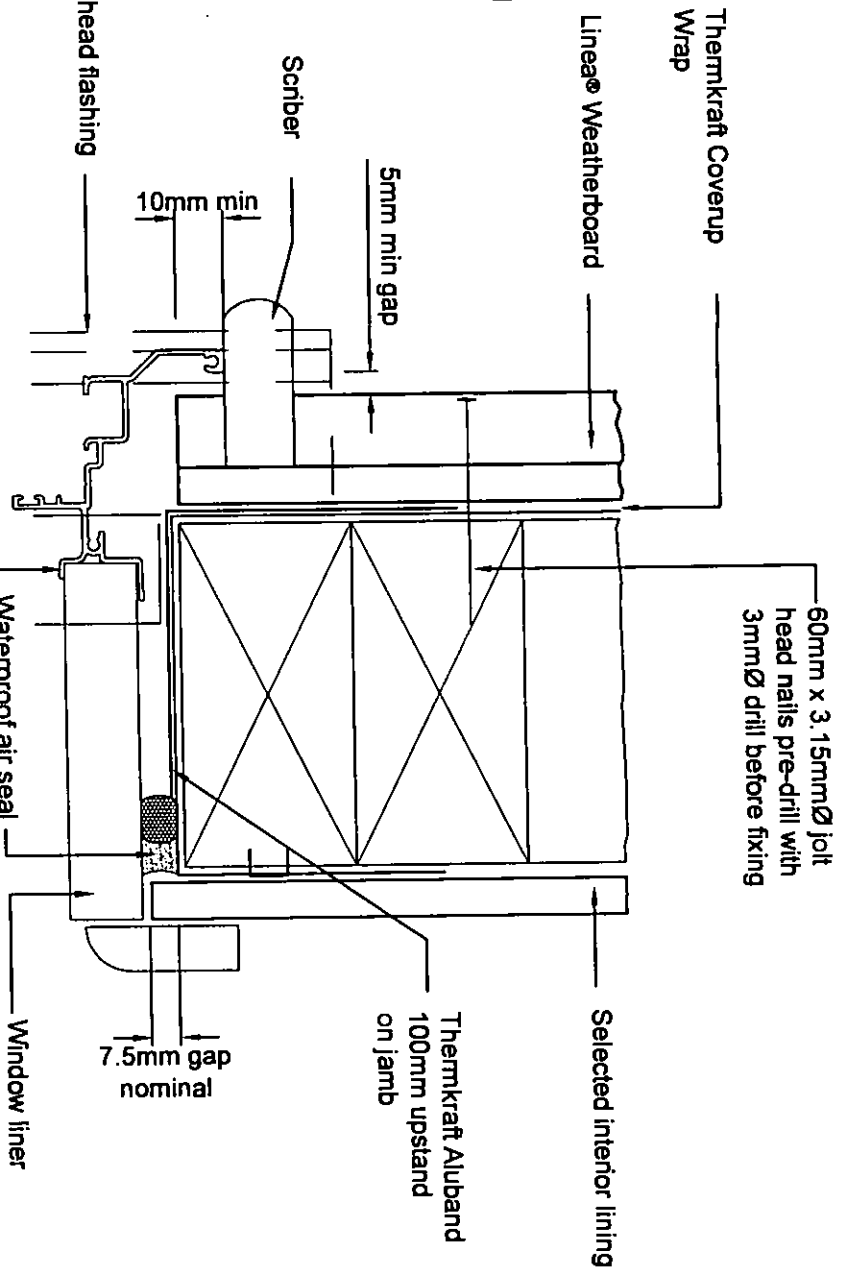
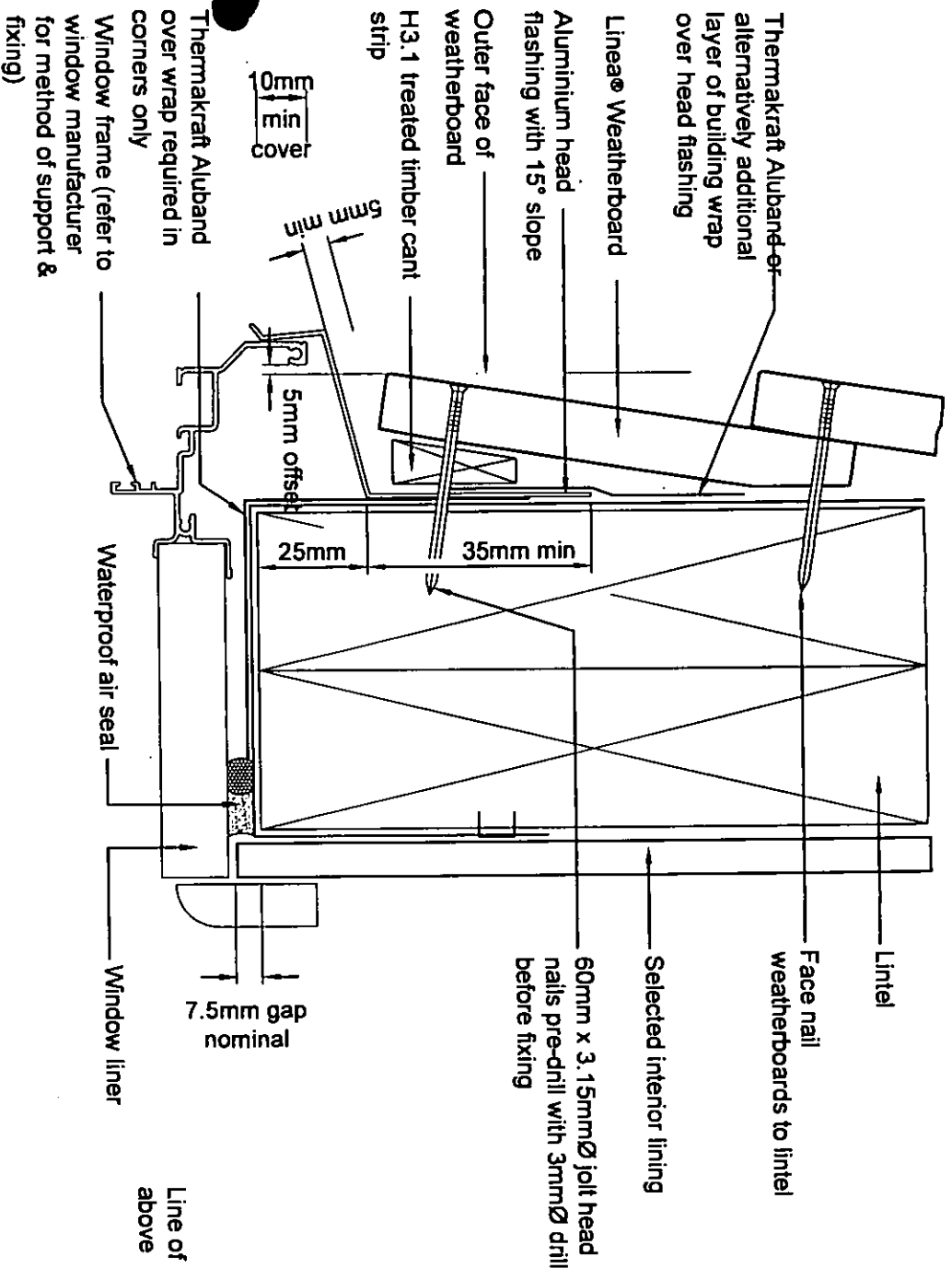
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PROPOSED HOUSE
PAUL & DEBBIE WING
BRACH ROAD WATARRAB BEACH

CLADDING LINEA

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SHEET:	16	SHEET NO:	16	



- General notes for materials selection**
1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 & table 20 of NZBC clause E2/AS1.
 2. Building wrap must comply with acceptable solution NZBC clause E2/AS1 & NZS 3604.
 3. Flashing tape must have proven compatibility with the selected building wrap & other materials with which it comes into contact as per table 21 of NZBC clause E2/AS1.

Refer to the manufacturer or supplier for technical information for these materials.

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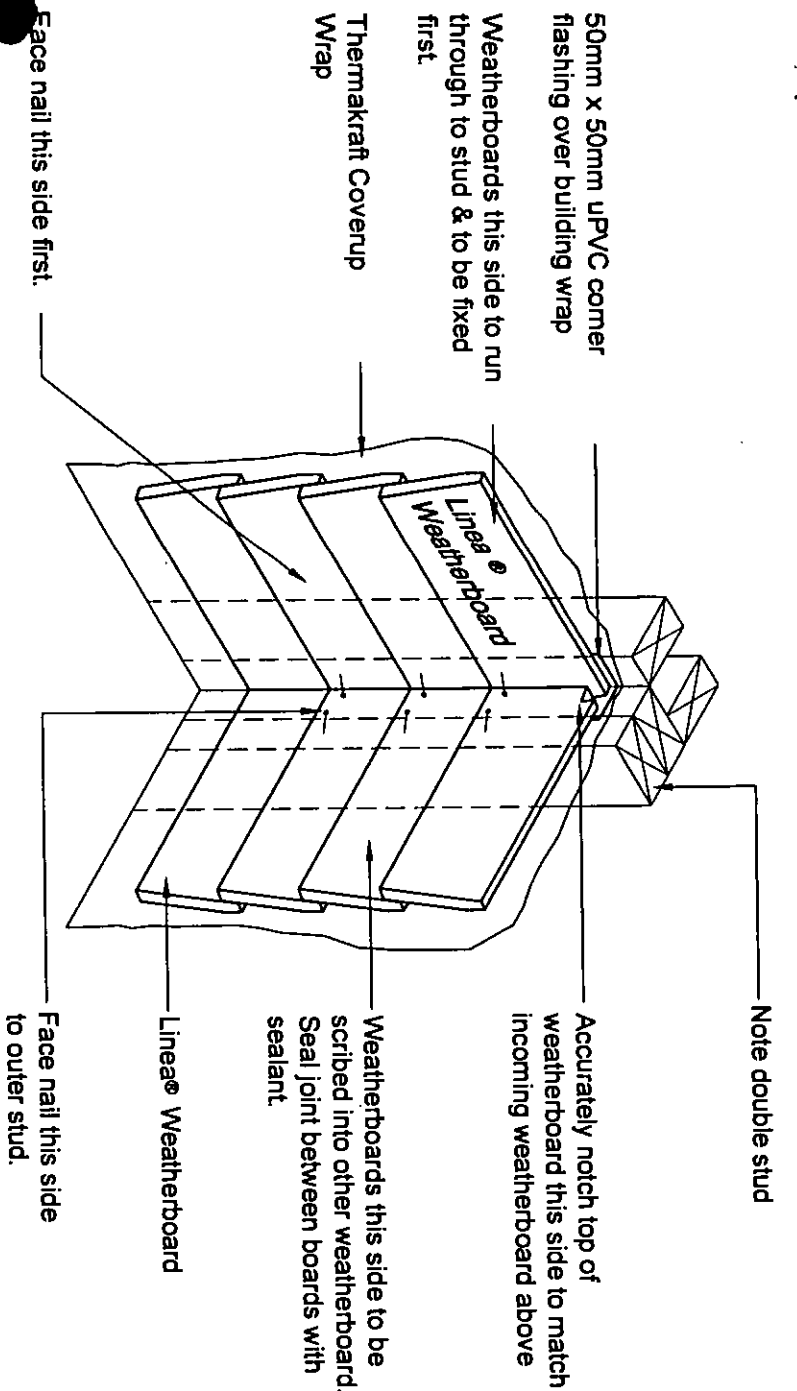
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PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARERE BEACH

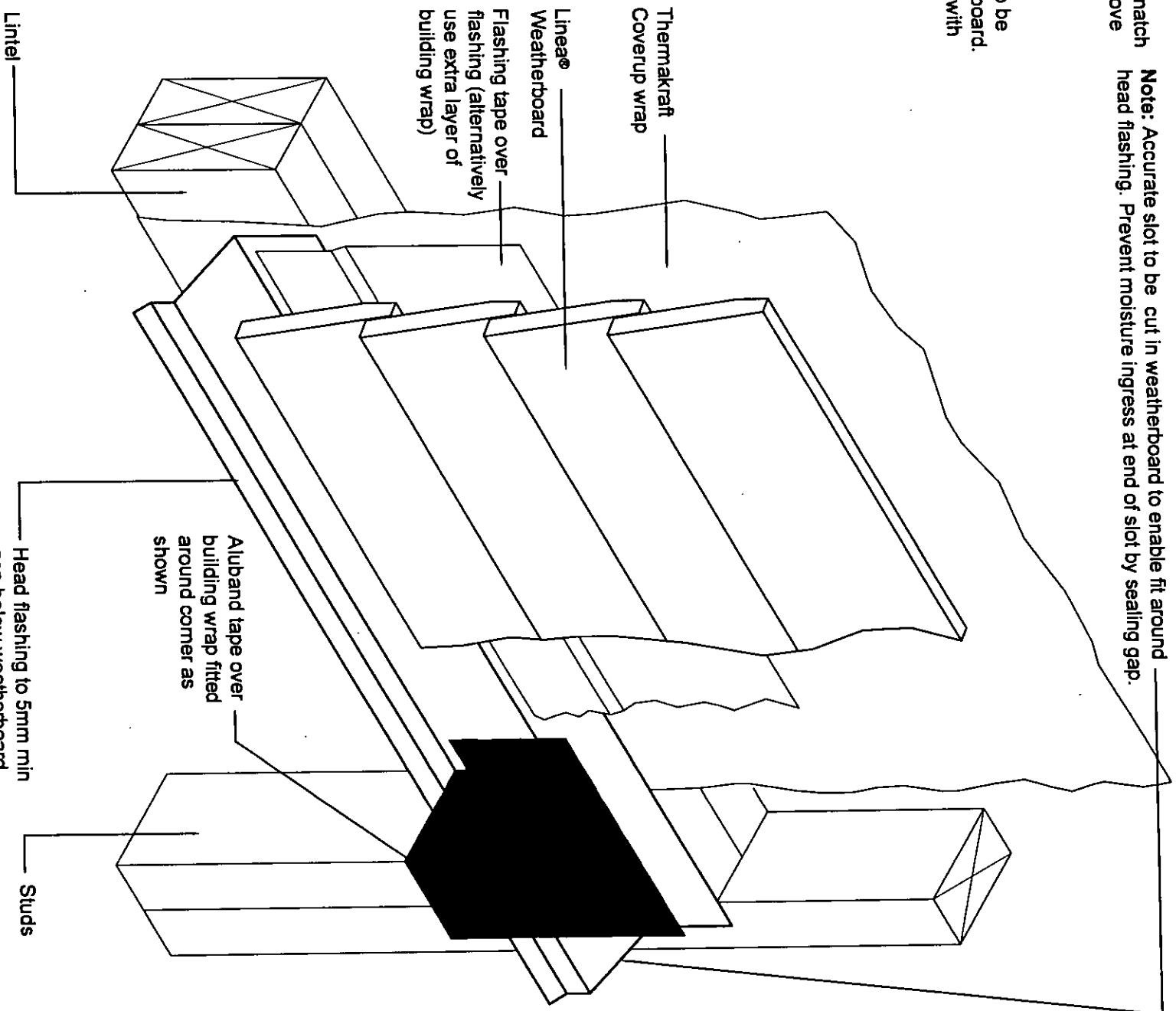
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CHECKED BY:	SP	DATE:	17	



DIRECT FIX INTERNAL CORNER

Note: Accurate slot to be cut in weatherboard to enable fit around head flashing. Prevent moisture ingress at end of slot by sealing gap.



DIRECT FIX CORNER SOAKER

Soaker material	Nail material
Stainless steel	Stainless steel

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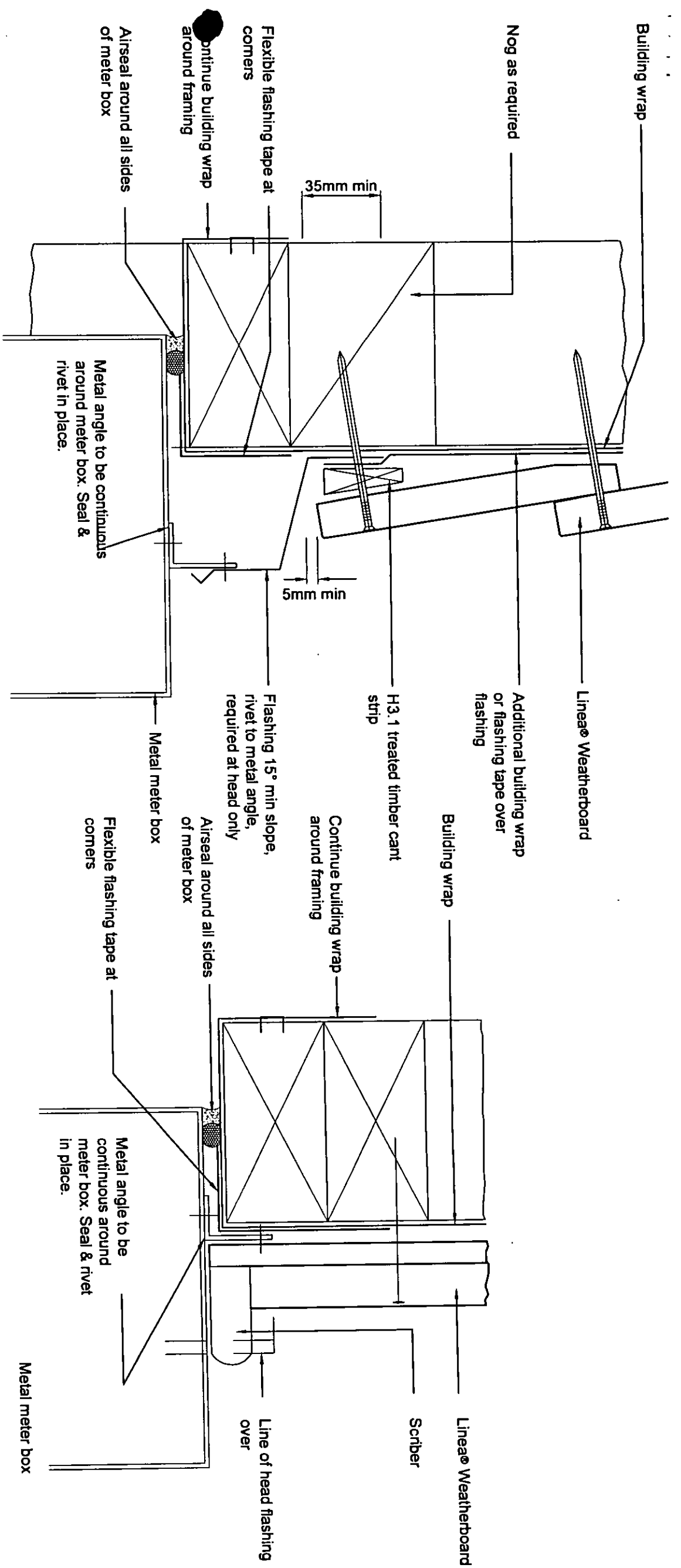
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PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARERE BEACH

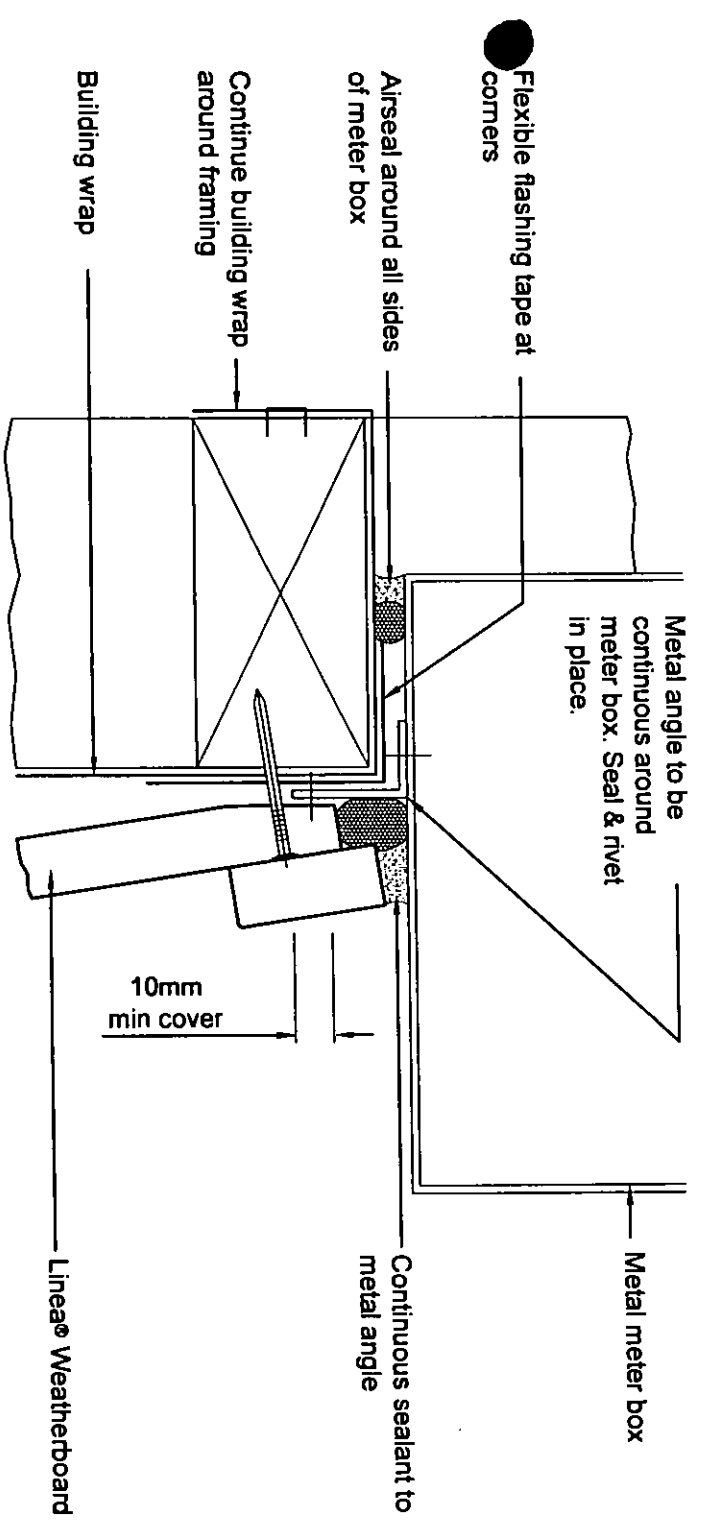
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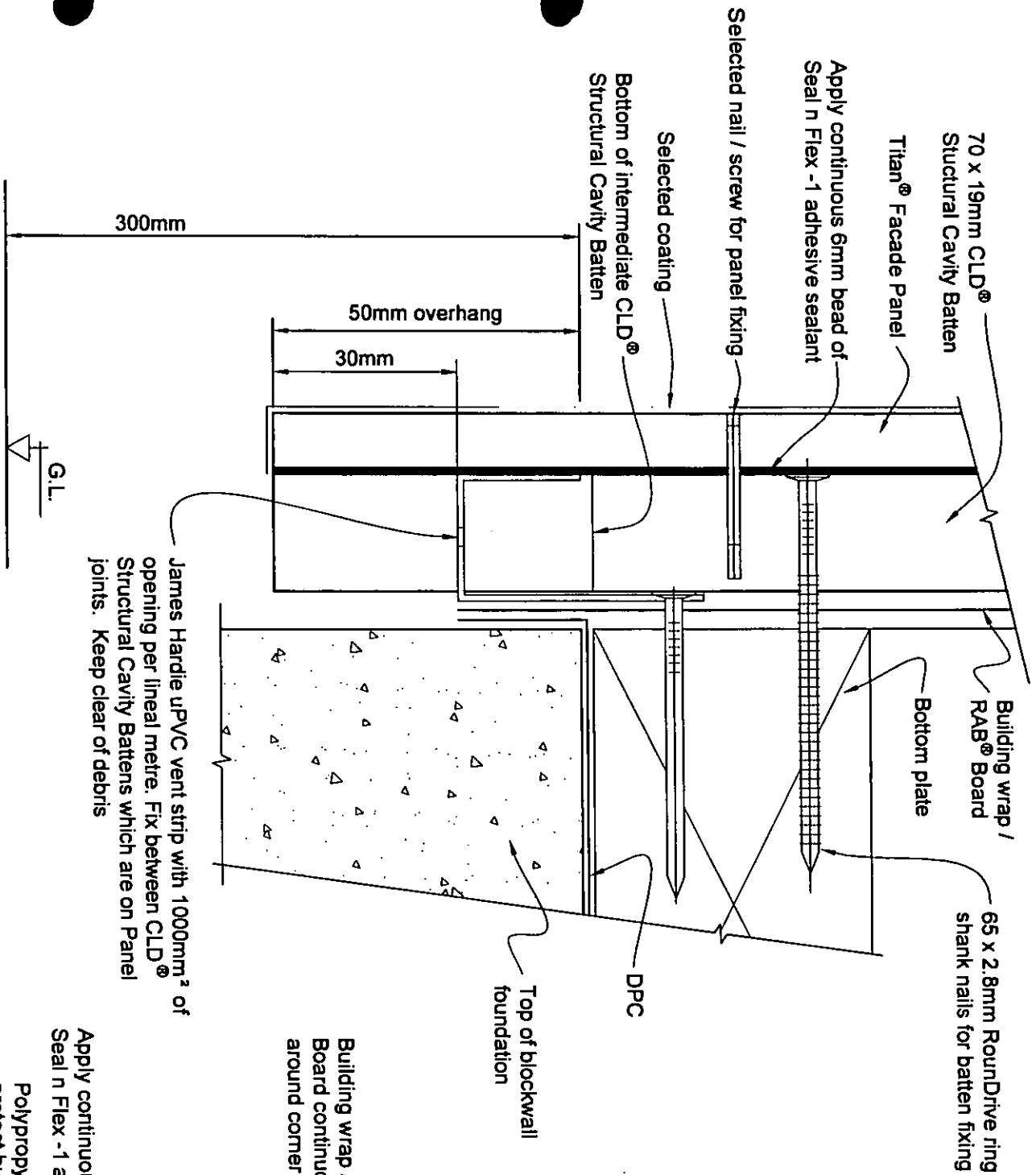
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PROPOSED HOUSE
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METER BOX FLASHING

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LOT:	SP	JOB NO:	08-576	
	16	DATE:	19	

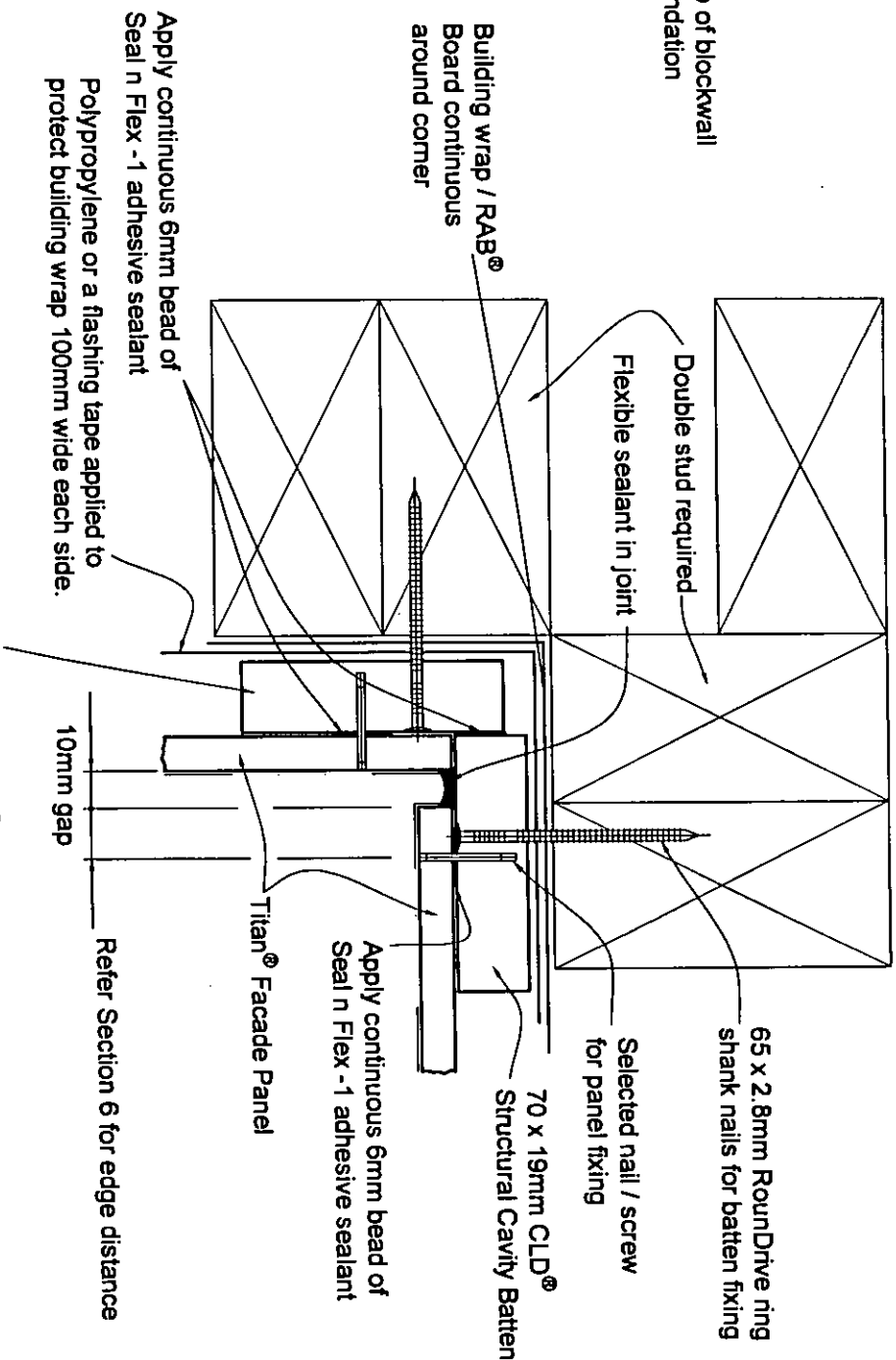
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FOUNDATION DETAIL

Notes:

- Check panel extends past bottom plate 50mm min.
- uPVC Vent strip must remain level and secure during construction. Cut and fix uPVC vent strip between CLD® Structural Cavity Battens fixed under the panel joints.
- Check vent strip is free from site debris.



INTERNAL CORNER

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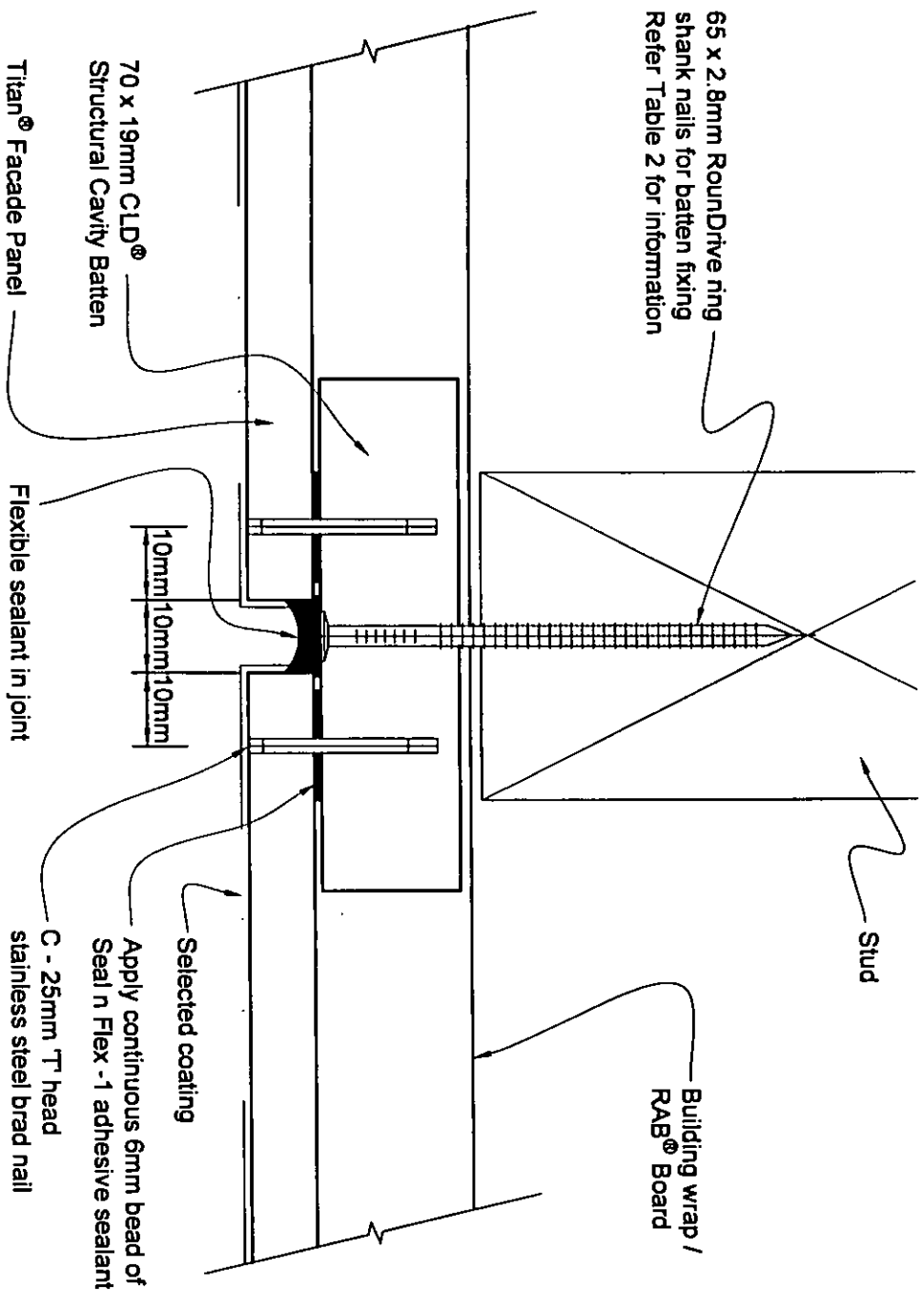
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BEACH ROAD WATAREBE BEACH

CLADDING TITAN

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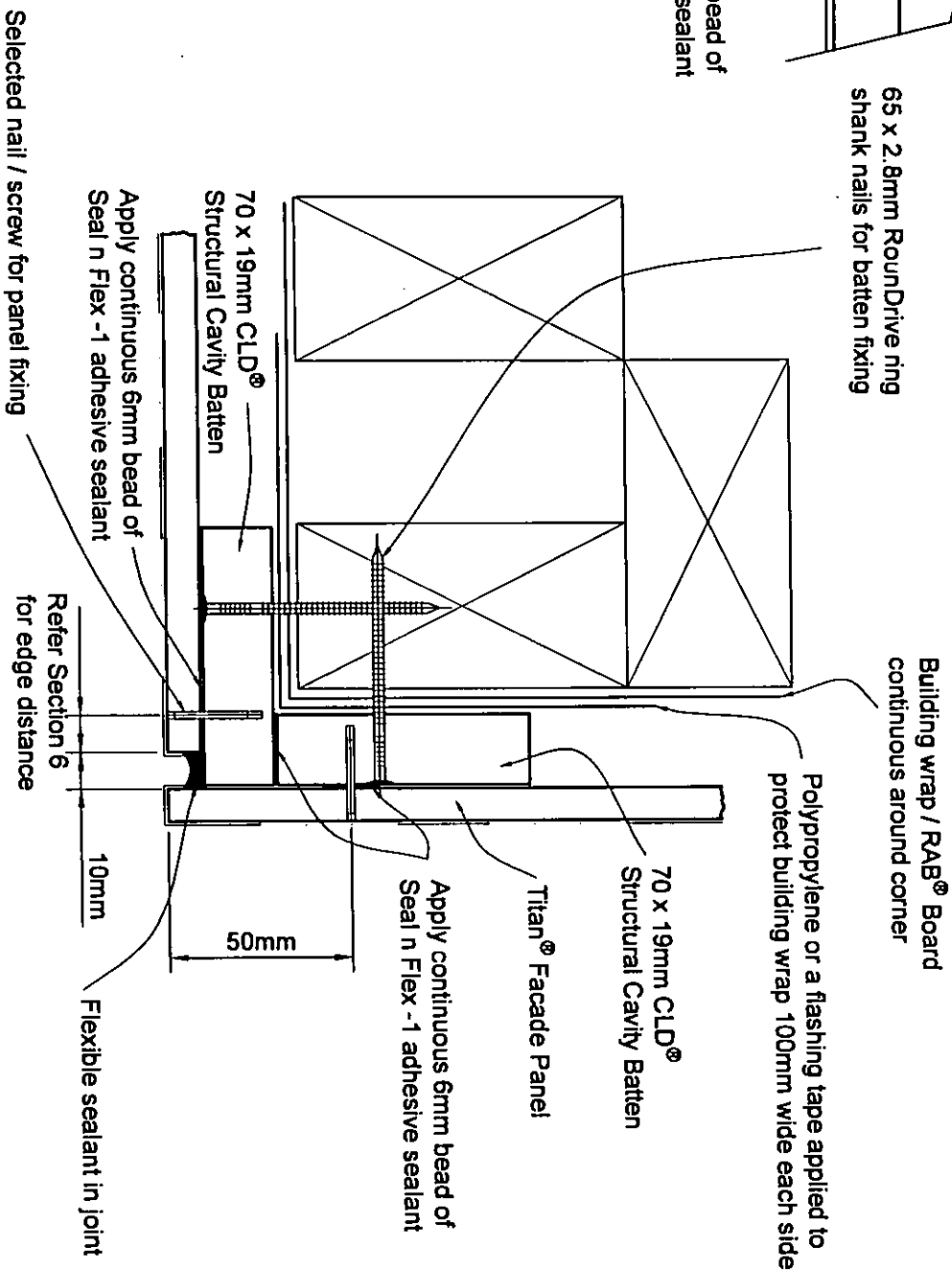
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DRAWN:	BP	REV:	08-576	
DATE:	16	SHEET NO:	20	



Notes:

- Ensure that a continuous 6mm bead of adhesive sealant is applied between CLD Structural Cavity Batten and Titan Facade Panel.
- Ensure that the required edge distance is maintained when fixing.
- Seal cut edges with a primer compatible with final coatings.
- Refer to Table 3 for Titan Facade Panel fixing options.

VERTICAL EXPRESSED JOINT



EXTERNAL CORNER

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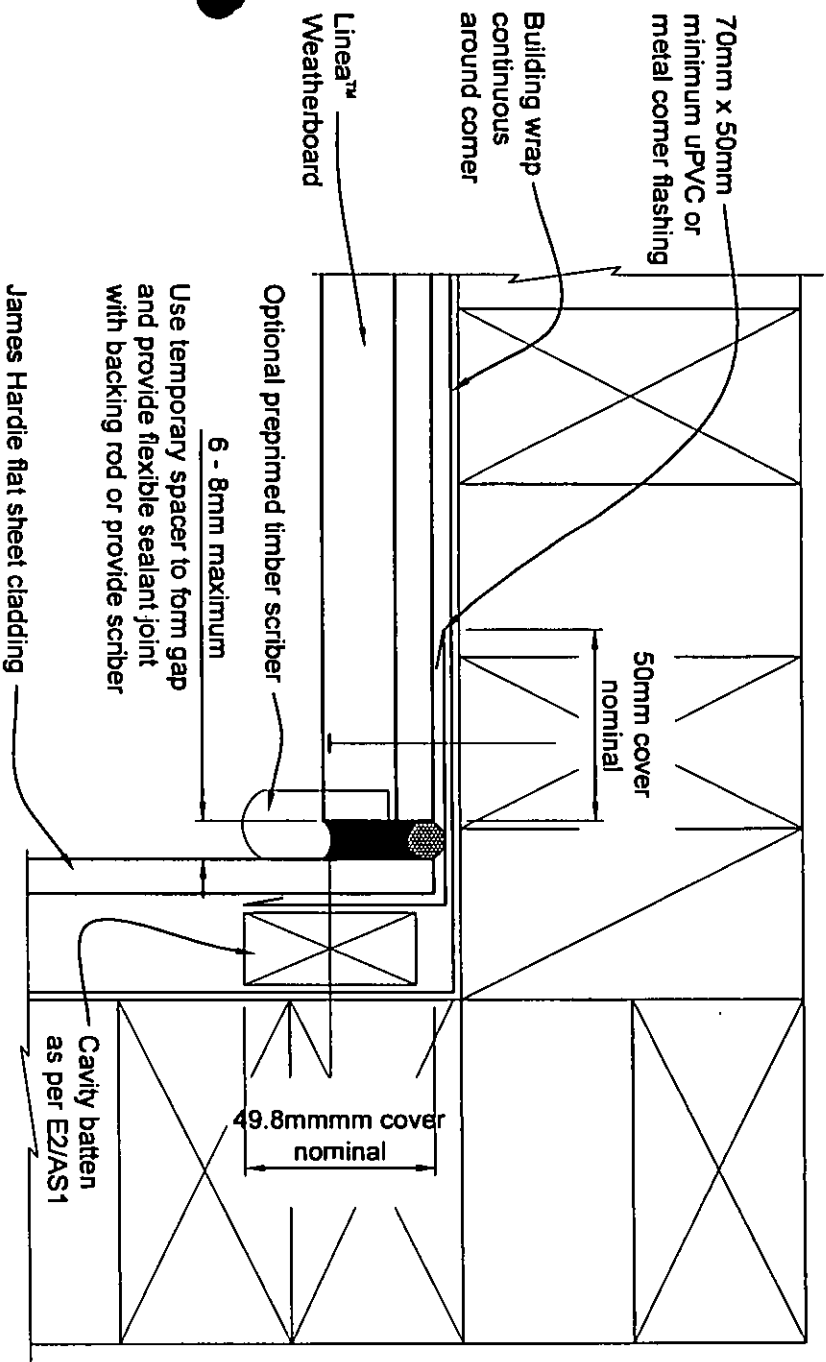
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Signature
PAUL & DEBBIE WING
BEACH ROAD WATARBURGH BEACH

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBURGH BEACH

CLADDING TITAN CONT.

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LOT:	DP	SHEET NO:	21	



INTERNAL CORNER JUNCTION BETWEEN LINEA
WEATHERBOARD AND JAMES HARDIE FLAT SHEET
CLADDING

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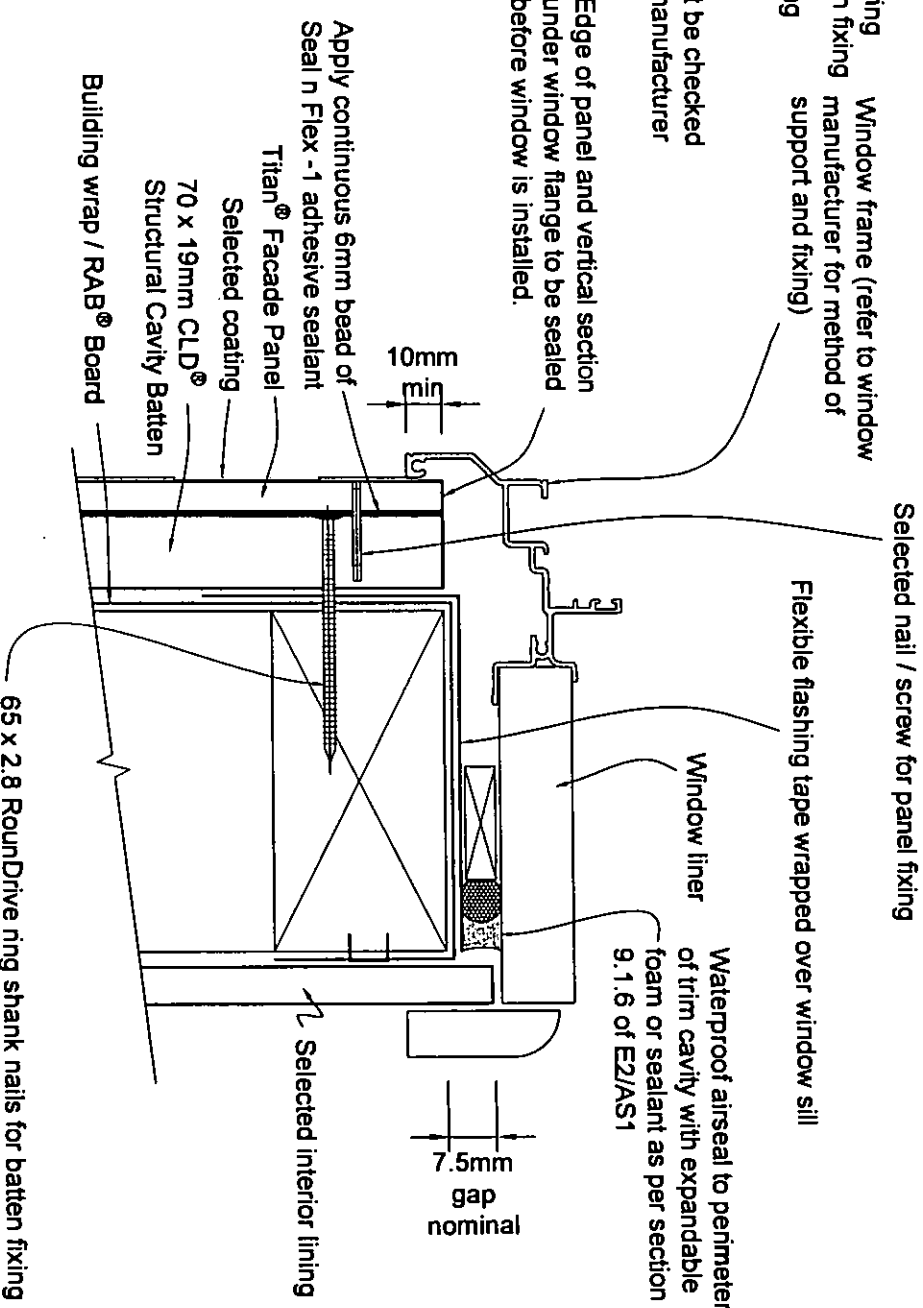
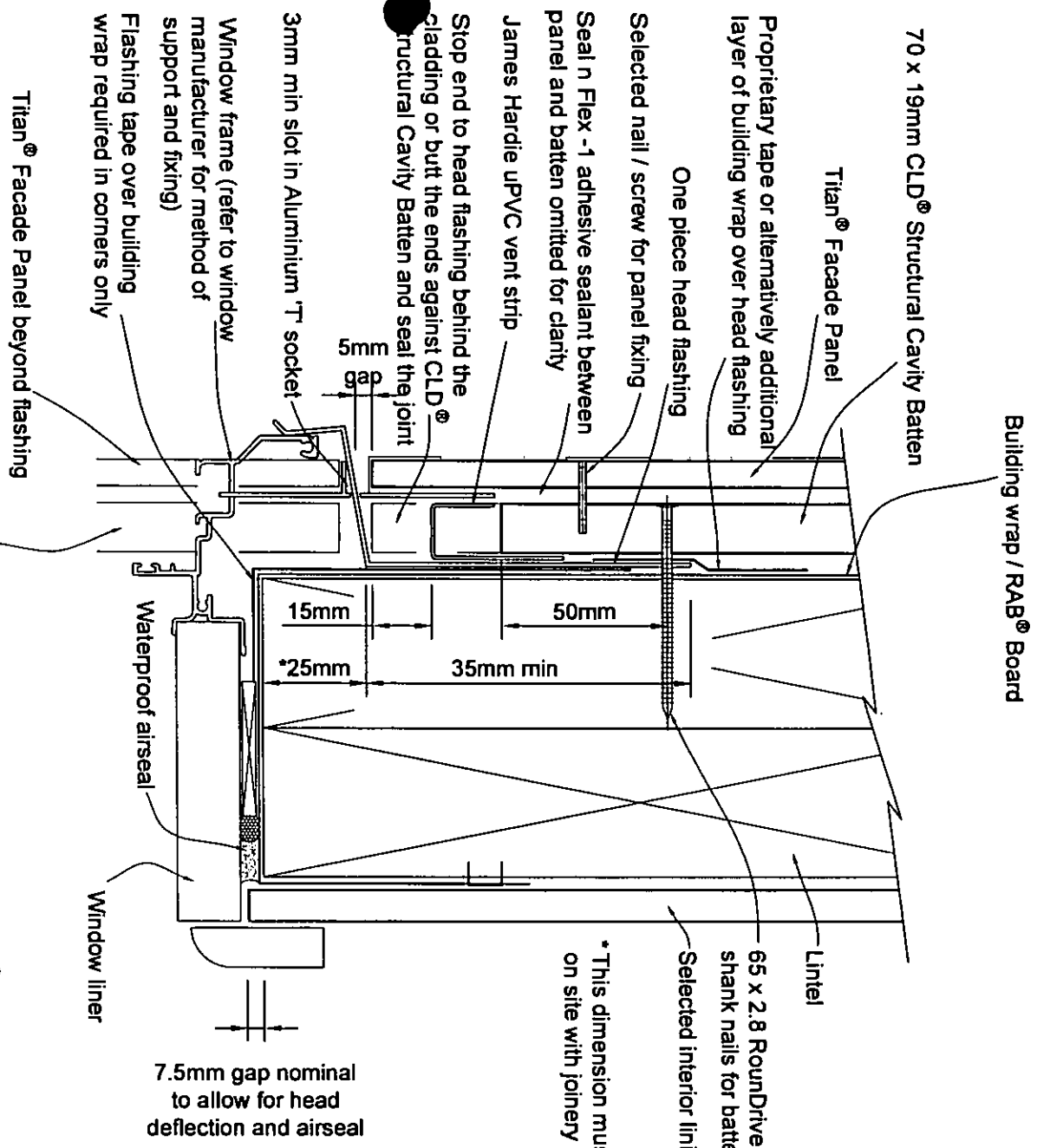
PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARRERE BEACH

CLADDING TITAN CONT.

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Note: When RAB® Board is used flashing tape to be applied to the entire window opening

SOCKET JOINT DETAIL AT WINDOW HEAD

- General notes for materials selection**
- Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC E2/AS1.
 - Building wrap must comply with acceptable solution E2/AS1 and NZS 3604.
 - Flashing tape must have proven compatibility with the selected building wrap and other materials with which it comes into contact as per Table 21 of E2/AS1.
- Refer to the manufacturer or supplier for technical information for these materials.

WINDOW SILL

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Signature
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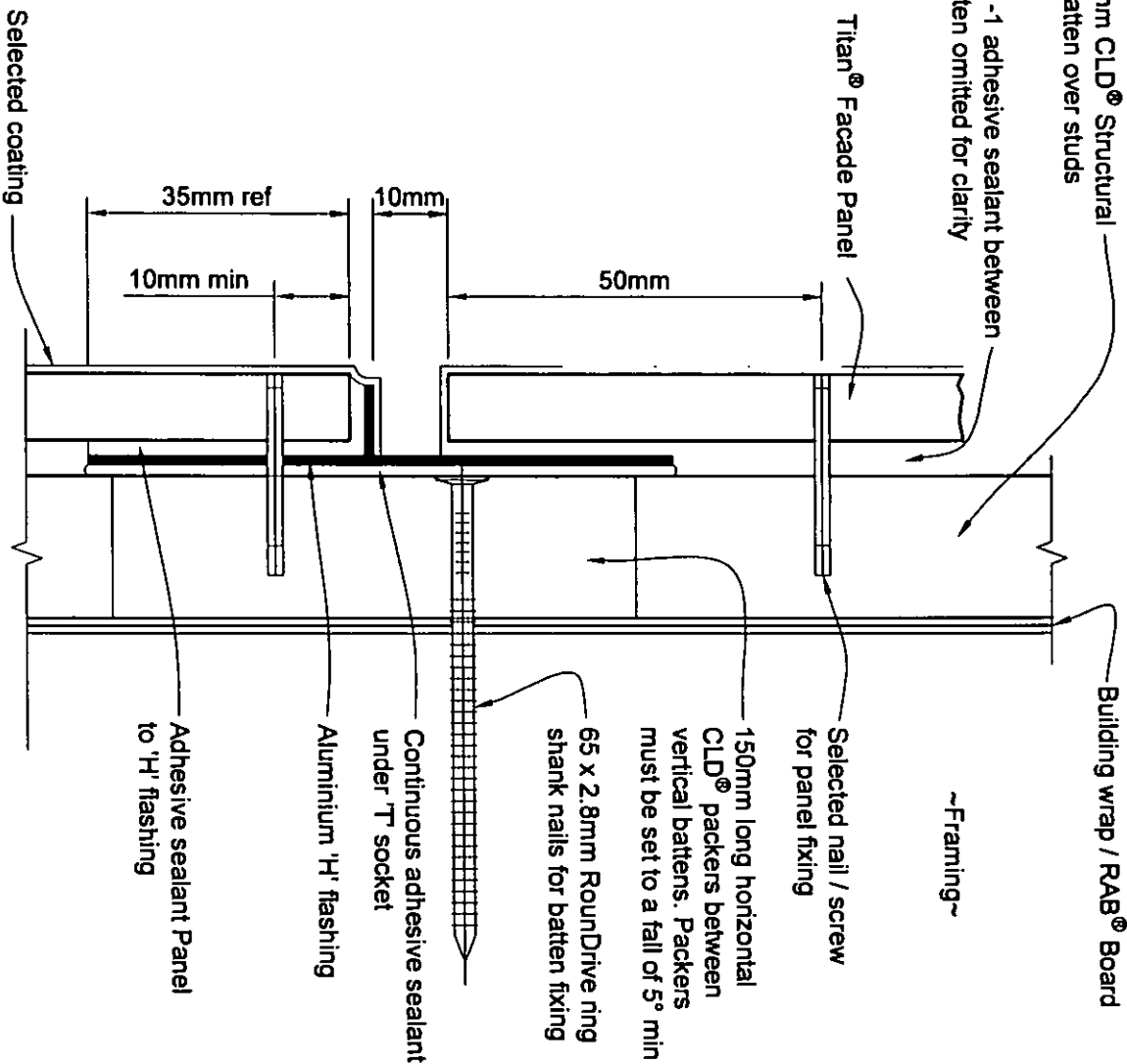
PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBRE BEACH

CLADDING TITAN CONT.

DATE:	19 NOV 08	SCALE:	A3	AM:	
DRAWN:	BP	REV:		JOB NO:	08-576
LOT:	DP			SHEET NO:	23
	16				

70 x 19mm CLD® Structural Cavity Batten over studs

Seal n Flex -1 adhesive sealant between panel & batten omitted for clarity



Step 1

- Ensure that building wrap / RAB® Board is in place.

Step 2

- 70 x 19mm CLD® Structural Cavity Battens to be installed over the studs.
- Nylon strapping intermediate support to be provided to hold insulation in place between studs.

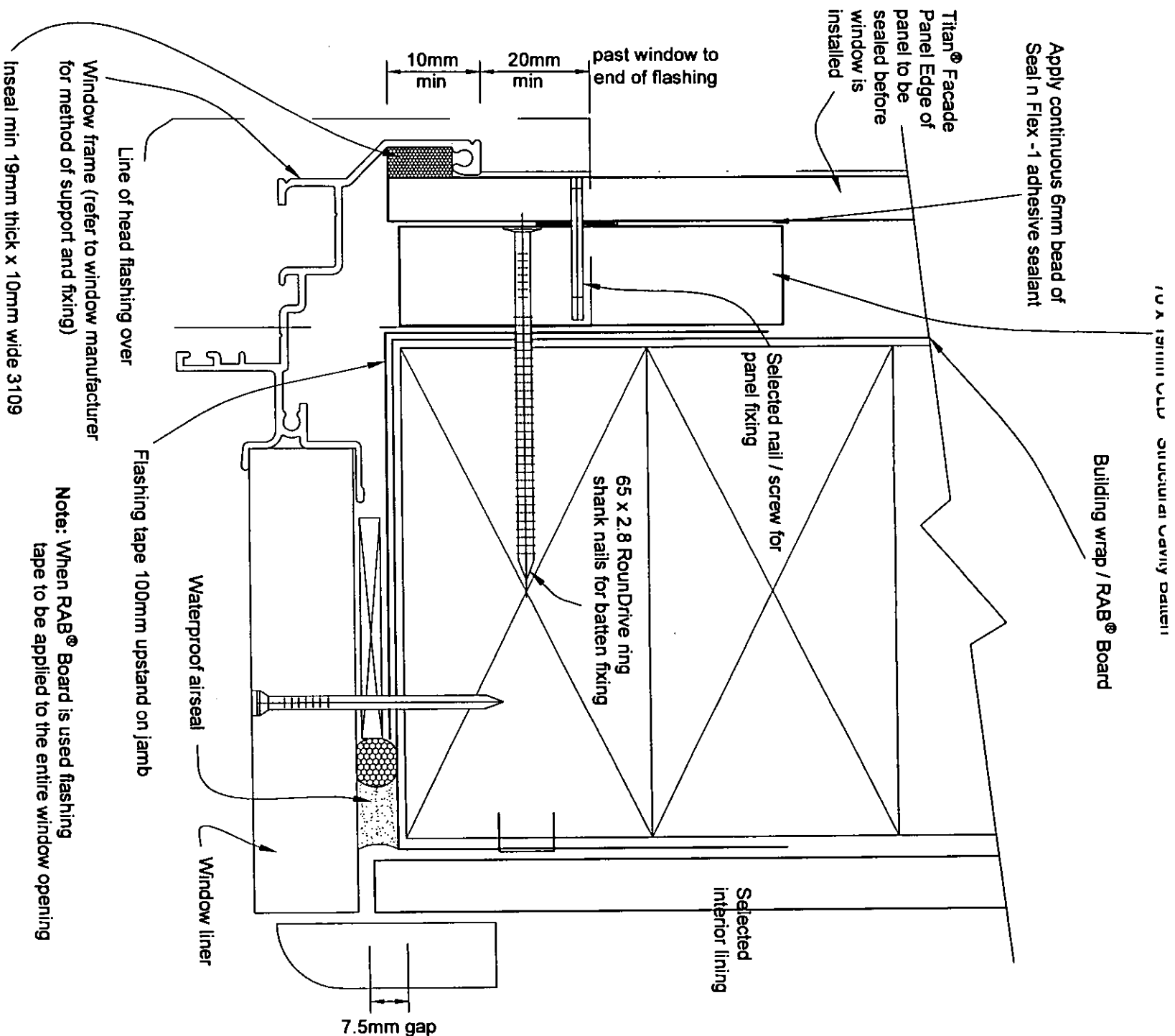
Step 3

- Install the lower panel complete with Aluminium 'T' socket.
- Install the upper panel keeping a 10mm gap.

Notes:

- The Aluminium 'T' socket can be glued onto the back of the sheet on the ground. Apply two 6mm thick lines of adhesive sealant on the bottom portion of the Aluminium 'T' socket to seal. Take care to ensure continuous seal is formed between panel and Aluminium 'T' socket.
- The sealant must continue between socket flange and top panel edge.
- The Aluminium 'T' socket must be sealed using adhesive sealant to the CLD® Structural Cavity Batten.
- For edge distance of fixings refer to Section 6.

HORIZONTAL ALUMINIUM FLASHING



WINDOW JAMB

Note: When RAB® Board is used flashing tape to be applied to the entire window opening

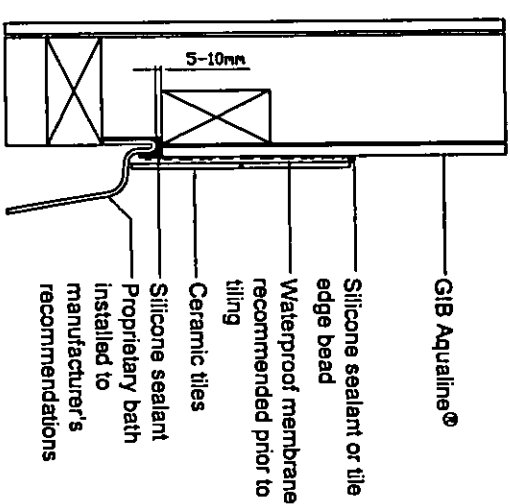
Signature
PAUL & DEBBIE WING
BEACH ROAD WATARRBURR BEACH

PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARRBURR BEACH

CLADDING TITAN CONT.

DATE	19 NOV 08	SCALE	AS	MM
DRAWN	DP	REV	08-576	
LOT	DP			24
16				

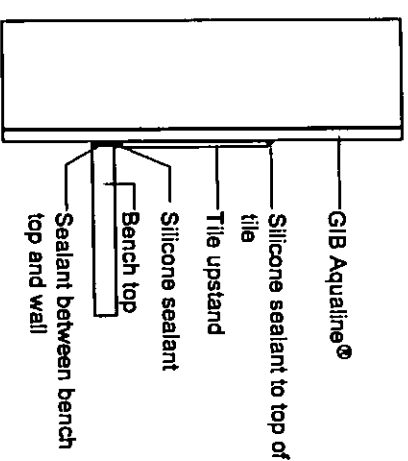
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Bath/Wall Detail

Bath - Tiled Upstand

GAW-D014



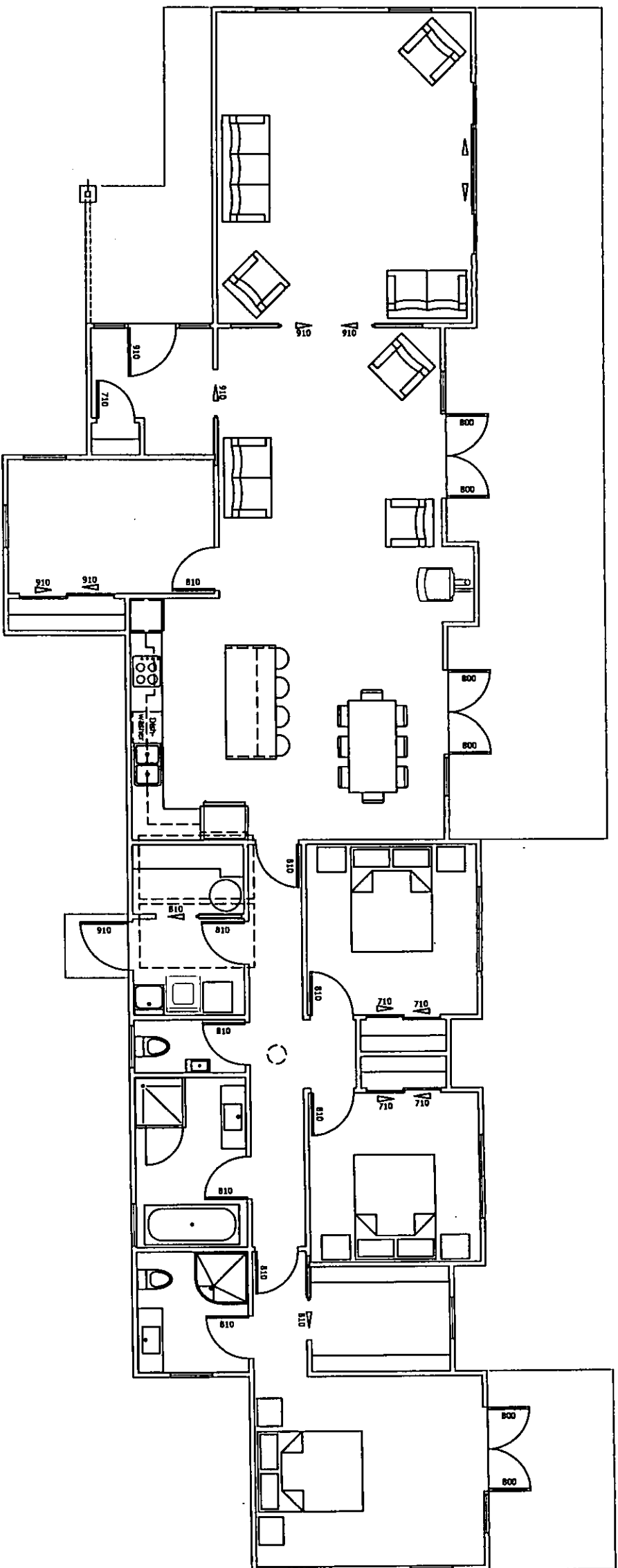
Bench Top/Wall Detail

Kitchen and Laundry

GAW-D031

III DETAILS

DATE:	10 NOV 08	SCALE:	A3	M
DRAWN:	49	REV	-	
LOT:	D-	QTY Req.	08-576	
16		SHEET NO.	25	



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PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATARBRE BEACH

ELECTRICAL PLAN

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DRAWN:	SP	REV:	08-576	26
LOT:	DP	REV:	08-576	26

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LIGHTING + VENTILATION SCHEDULE HOUSE					
ROOM NAME	SQM	10% LIGHT REQUIRED	LIGHT ACHIEIVED	5% VENTILATION REQUIRED	VENTILATION ACHIEIVED
BED 1	19.68	1.9	9.5	.95	3.7
BED 2	14.0	1.4	2.0	.7	1.0
BED 3	16.0	1.6	3.1	.8	1.0
BED 4	11.0	1.2	3.1	0.6	1.0
STUDY	12.6	1.2	2.8	.6	.75
BATH	10.0	.5	2.2	.25	1.0
ENS	9.8	.5	1.6	.25	.8
LIVING	25	2.5	11.1	1.3	4.5
DINING	20	2.0	5.0	1.0	.66
FAMILY	23	2.3	6.3	1.2	6.3
KITCHEN	11.5	1.1	2.4	.5	.8

These drawings have been prepared on the understanding that the Building Contract has a usual knowledge of the R2 Building Code NZS3604:1999. The Client, who has a usual knowledge of the R2 Building Code NZS3604:1999, must ensure that all works comply with these codes in addition to any requirements of the Technical Authority. Any such undertaking shall be a requirement without the prior written approval of the designer. Engineer's order to the Technical Authority hereby indemnifies the Designer of the Agent against any claims, or claims, in respect of the said work.

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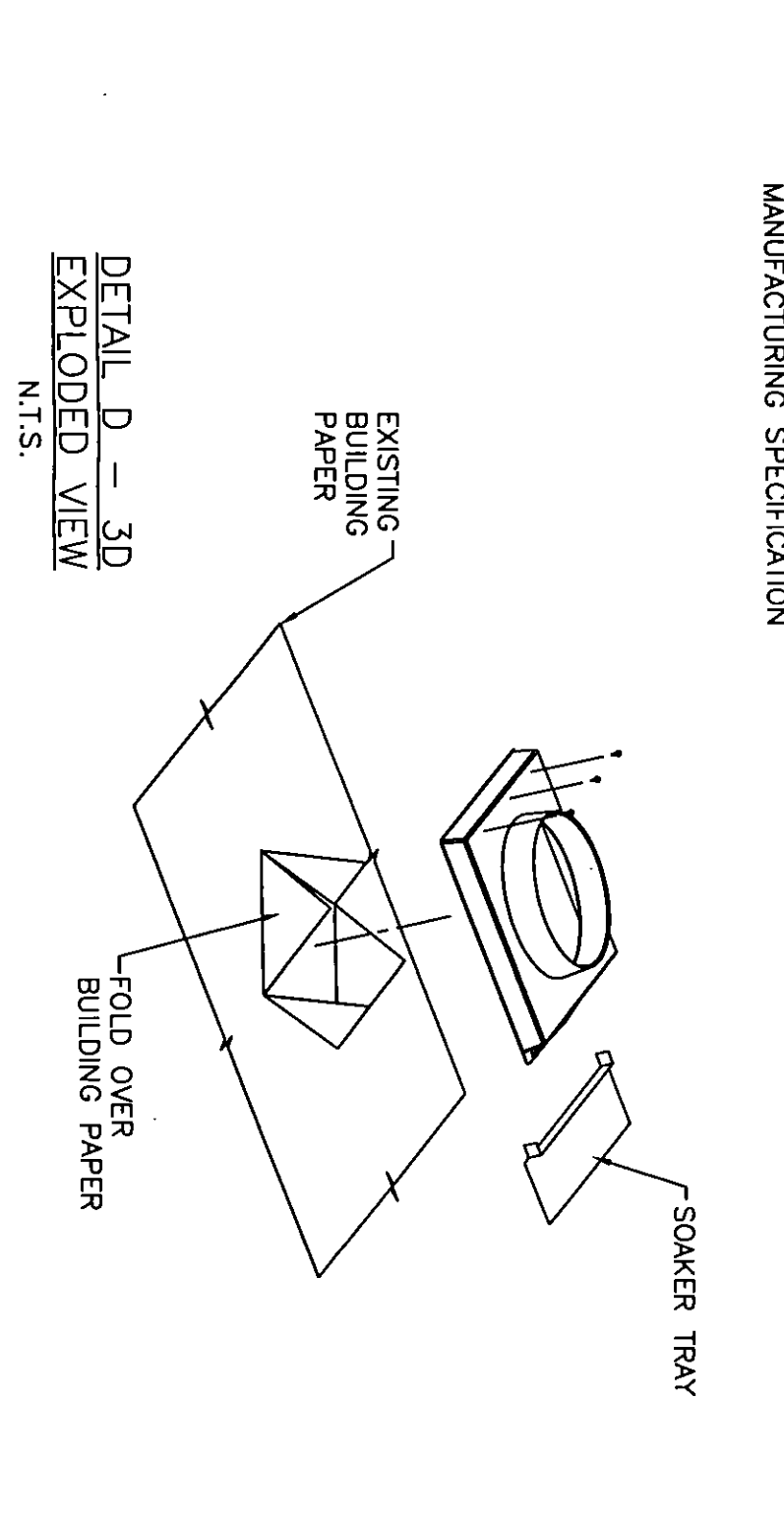
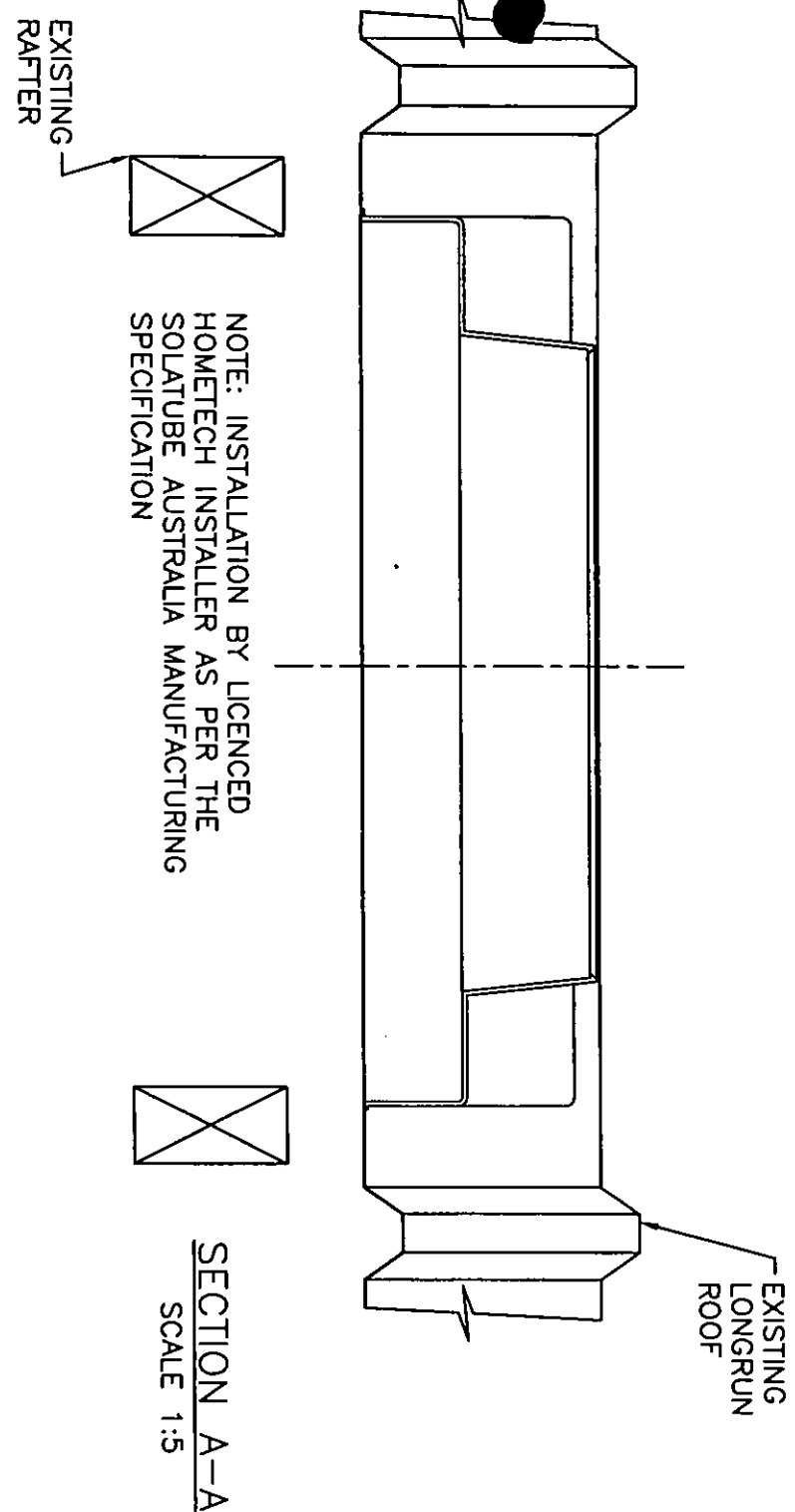
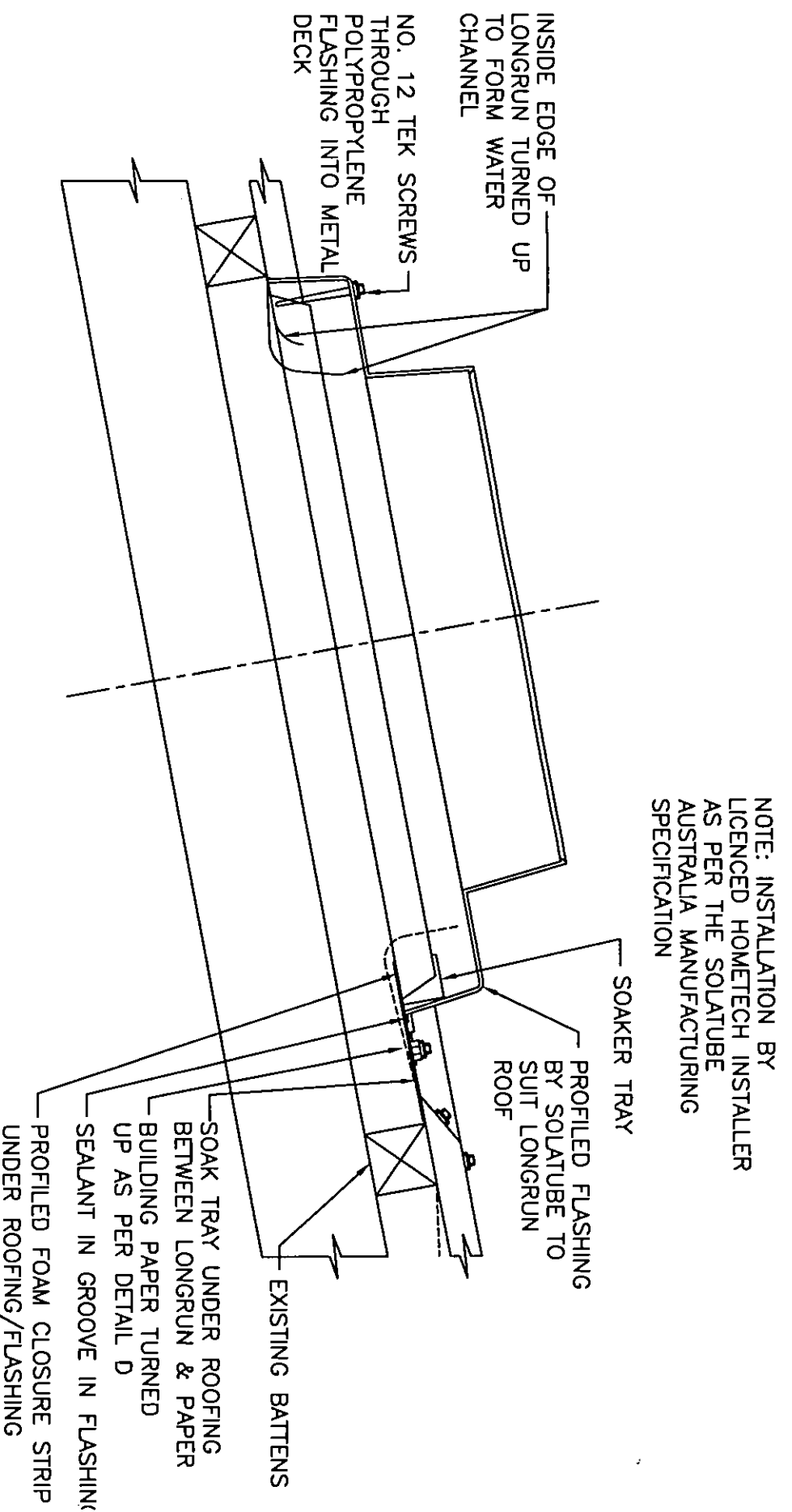
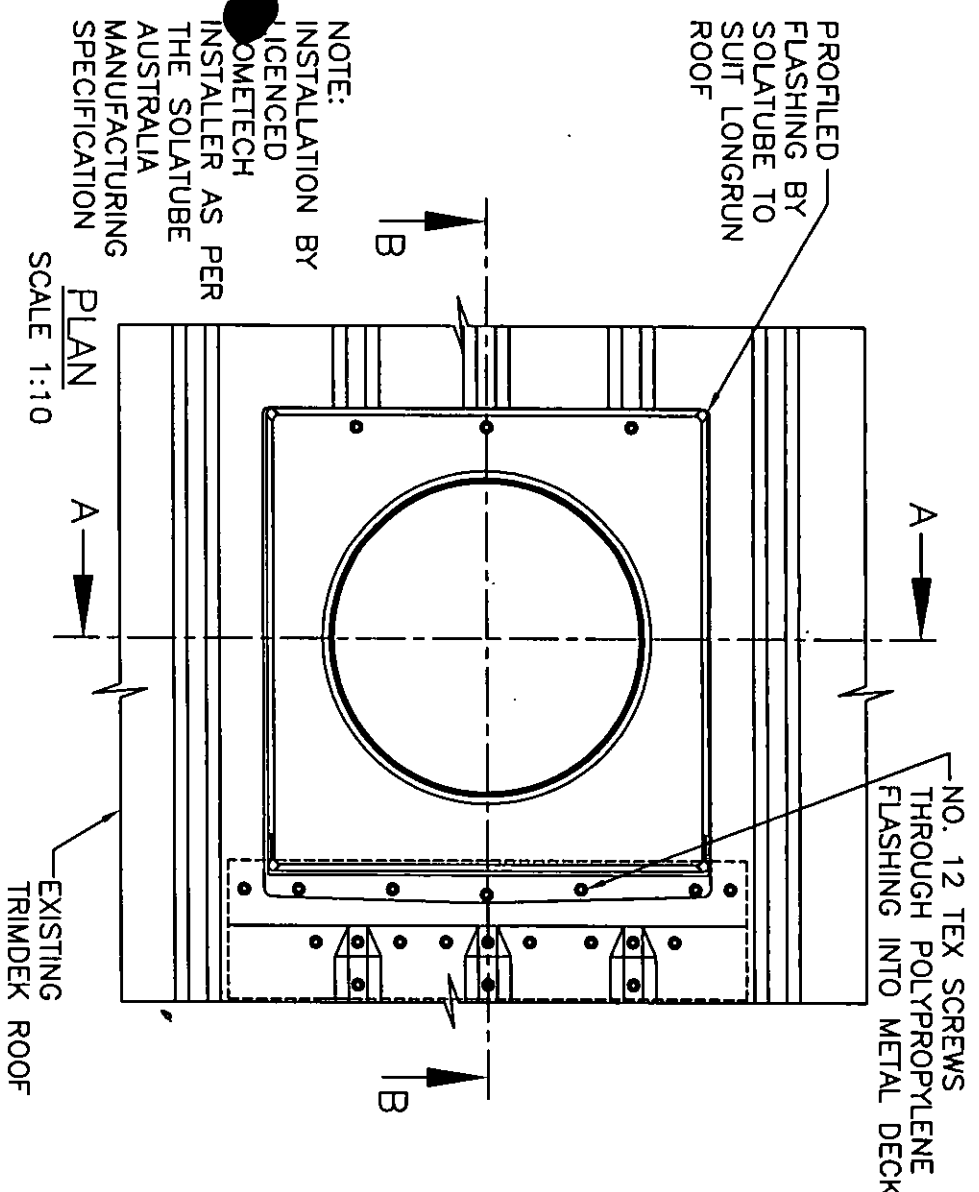
**PROPOSED HOUSE
PAUL & DEBBIE WING
BEACH ROAD WATERBURY BEACH**

VENTILATION SCHEDULE

DATE:	18 NOV 08	SCALE:	A3	A4	-
DRAWN:	RP	REV		JOB NO.:	08-576
LOT:	DP:		-	SHEET NO.:	27
16					

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2/5 Winton Rd
Wentworth Park NSW 2114
Australia

ST400 SOLATUBE 400Ø TUBULAR SKYLIGHT
INSTALLATION FOR LONGRUN ROOF - UNIVERSAL FLASHING LONG RUN ROOF

INSTALLATION: INSTALLED BY A LICENCED HOMETECH INSTALLER AS PER THE SOLATUBE AUSTRALIA MANUFACTURING SPECIFICATION

NOTE: INSTALLATION BY LICENCED HOMETECH INSTALLER AS PER THE SOLATUBE AUSTRALIA MANUFACTURING SPECIFICATION

NOTE: INSTALLATION BY LICENCED HOMETECH INSTALLER AS PER THE SOLATUBE AUSTRALIA MANUFACTURING SPECIFICATION

DRAWN:	PCR
DATE	9/11/05
APPROVED	PN
DATE	9/11/05

REVISION	A
SCALE	1:5, 1:10, NTS
DWG NO.	ST400-UF2

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