WAIMAKARIRI
DISTRICT COUNCIL

215 High Street
Private Bag 1005
RANGIORA 7440
New Zealand

Phone: (03) 311 8900
or: (03) 327 6834
Fax: (03) 313 4432
www.waimakariri.govt.nz

Form 7

Code compliance certificate 110550

TRIM Record Number
BC110550.03
120627040231

Section 95, Building Act 2004

The building

Street address of building: 149 Hodgsons Road, Loburn

Legal description of land where building is located: Lot 2 DP 431621

Valuation number: 2149016011

Building name:

Location of building within site/block number:

Level/unit number:

Current, lawfully established, use:

Year first constructed:

The owner

Name of owner: Humphreys David John & Humphreys Paula Gail

Contact person: David Humphreys

Mailing address: 149 Hodgsons Road, RD 2, Rangiora 7472

Street address/registered office:

Phone number: Landline: 3133962 Mobile: 0210576850

Daytime: After hours:

Facsimile number:

Email address: dhumphreys@kiwichef.com.sg

Website:

First point of contact for communications with the council/building consent authority:
As above

Building work

Building consent number: 110550

Consent description: New Dwelling + 2 x logburners

Issued by: Waimakariri District Council

Code compliance

The building consent authority named below is satisfied, on reasonable grounds, that —

(a) the building work complies with the building consent

Accredited as an International 'Safe Community'
by the World Health Organisation Collaborating Centre on Community Safety.



Signature



Position

On behalf of: Waimakariri District Council

Date: 9/05/12

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8 May, 2012

D Humphreys
12 Riverview Rd
Rangiora 7400

RE: Building Consent Application No. 110550
New Dwelling + 2 x logburners
149 Hodgsons Road, Loburn
2149016011

Dear D Humphreys,

We completed a final inspection of the above building project and have audited the working file.

During this audit or as part of the site inspection we have found that we require the following information to be provided or remedial work to be completed prior to the issue of the Code Compliance Certificate. The outstanding items are listed below.

1. Please have the drainlayer supply the as laid plan
2. Please supply the tanking producer statement

The Code Compliance Certificate cannot be issued until all of the above items have been addressed to our satisfaction and your assistance in having this attended to in a timely manner would be greatly appreciated.

You should also note that any additional inspections will have to be paid prior to the release of the CCC.

In the interim if you have any queries please contact me.

Yours faithfully

Sarah Smith
Building Consent Administration

WAIMAKARIRI DISTRICT COUNCIL

File sign off for issue of a CCC

Job Number 110550 Final By Wes / Paul 2x Auditor Sarah

Project Description New dwelling att garage
2x wood fire.

Items highlighted (**) are to be sent to the council.

Legend: ✓ Pass — N.A . Required

Audit items	
Form 6, signed and dated** 1.5.12	✓
Final landscaping photos**	✓
Heating check sheet** 2x.	✓
Drainage Plan**	✓
Exterior Plaster PS3**	—
Gas Certificate**	✓
Electrical Certificate**	✓
Drain layers Reg No: E Rake	✓
Plumbers Reg No:	✓
Plumber pressure Test PS4** Consents from 1.11.07	✓
Tanking PS3**	✓
Cladding type/s as per plans	✓
Drain layers Eff. PS3**	✓
W.D.C effluent approval & Fenced	✓
Well water test** Hunter	—
Engineers site notes**	
Engineers PS4**	
Membrane warranty**	
Membrane Roof Pitch	
Membrane installers PS4**	
Construction Statements**	
Inspection Notices**	
Consent fees owed	✓
CCC** Inspection Notices**	

Jobs on HOLD outstanding items (list)

1. ~~Gas cert~~
2. No land plan.
3. Tanking PS3.
4. Money.

WAIMAKARIRI DISTRICT COUNCIL

File sign off for issue of a CCC

Commercial	
Access & Facilities	
FPS PS4**	
FPIS Certificate**	
HVACPS4**	
Compliance Schedule application**	
Surveyors cert.**	

- **Read File – PIM Conditions.**
  Check above with site notes and working file.
- **Check all site notices, rearrange file with notes in date sequence.**
  Site File to be arranged in
  - RH Side – Inspection notes in date order, stapled twice along top
  - LH side – Drainage plan, PS4's, Energy Certificates etc
  - Put all remaining documentation in date sequence, including plans and specs, bind and place in working file.
- **Follow up all failed inspection items thoroughly, sign and date decision and briefly describe outcome.**

Use space on back of sheet to write up any back ground notes ie: where a follow through of a site inspection requirement is not 100% clear from another reinspection but has been conveyed in other inspections. Also note any discussion with field officer/other staff to show how acceptance was achieved.

Inspection notices correctly completed and signed off (Yes) No

Outstanding Items (Yes) No OK for CCC Yes (No)

(signed) _____ Date 8.5.12.

Form 6

Application for code compliance certificate

Section 92, Building Act 2004

The building consent

Building consent number: 110550

Issued by: Waimakariri District Council

Valuation number: 2149016011

***The owner**

Name of owner: D Humphreys

†Contact person: David Humphreys

Mailing address: 12 Riverview Rd, Rangiora 7400

Street address/registered office:

Phone number: Landline: 3133962 Mobile: 0210576850

Daytime: After hours:

Facsimile number:

Email address: dhumphreys@kiwichef.com.sg

Website:

The following evidence of ownership is attached to this application: [copy of certificate of title, lease, agreement for sale and purchase, or other document showing full name of legal owner(s) of the building]

First point of contact for communications with the council/building consent authority:
As above‖

Application

All building work to be carried out under the above building consent was completed on 25/07/11

The personnel who carried out the building work are as follows:

Designer: Mark Milnes Architectual 7 Park St Rga : 3135946

Structural Engineer: BLS Consutling Ltd 200 Heywards Rd Ltd Kaiapoi : 033278062

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: 12 Riverview Rd, Rangiora 7400 (Owner)

Signature of owner

CRAIG BOXSY

Name of person signing

Date: 1/5/12

Attachments

The following documents are attached to this application:

¶Certificates from the personnel who carried out the work

¶Certificates that relate to the energy work

¶Evidence that specified systems are capable of performing to the performance standards set out in the building consent

*Delete this section if details have not changed from the building consent.

†Delete if owner is an individual.

‡Delete this section if the application is not being made on behalf of the owner.

§Delete if the agent is an individual.

‖Contact details must be in New Zealand.

¶Delete items not applicable.

WAIMAKARIRI DISTRICT COUNCIL

WORKING FILE

AS BUILT TRUSS LAYOUT

☑ **Included with Submitted Documents**

☐ **Required** - **from Truss Manufacturer at least 10 working days prior to Pre-Roof Inspection**

IO: **110550** WDC Rec 12.05.2011

ER: D Humphreys
NE: 0210576850

NT:
EMAIL:

DESIGNER: Mark Milnes Architectual
SITE: 149 Hodgsons Road, Loburn
BUILDER/PH:

TYPE: New (& prebuilt) House, Unit, Bach, Crib

Resource Consent Sticker

DATE PROCESSED: 14/7/11.
PROCESSED BY: Peter Thomson

ENDORSEMENTS (Any special conditions/endorsements on the Building Consent and/or documents that must be drawn to the attention of the

These are noted on the left inside page (see over) P.T.O.

PROPOSED ORDER AND NUMBER OF INSPECTIONS REQUIRED	PASS	FAIL	INSPECTED BY	DATE
* foundation	✓		WH	17/10/11
Pre-pour - slab & load pads. (free cantilever)				
Pre-pour - slab & load pads. (" ")			WH	1/11/11
Pre-pour - slab & load pads. (" " joint)				
* Structure - pre-roof - pre-wrap. *	✓		[illegible]	13/12/11
Building wrap sill tape.	✓		AK	20-12-11
Mid height cladding (brick)	✓		MR	19-1-12
" " " "				
Pre-line plumbing. A	✓		A.K.	15-2-12
Pre-stop	½ ✓		EC WH	20-2-12 & 1/3/12
Wet area tanking.	✓		MM	11-4-12
Drains ∝	✓ part		MR	20-4-12
Effluent field	✓		WH	1/5/12
Effluent fencing.				
Free standing fire (2 fires)	✓		WH	1/5/12
FINAL ✓ * (see over)				
Pre-line (Building).				

PROJECT COMPLETE/ CCC APPROVED -

INSPECTOR'S SIGNATURE: _____ NAME: _____ DATE: _____

WAIMAKARIRI DISTRICT COUNCIL

INSPECTION ISSUES

INSPECTION ISSUES NOTED DURING PROCESSING:

Check plywood sheet bracing Assy pre-wrap.

* Retro Fit slab point loads - appears "as built" truss point loads don't match buildable point loads - different truss company & different systems - Pryda vs MiTek.

(*) Batts to check at final east end above office.

ALTERNATIVE SOLUTION/S:

AMENDMENTS (AFTER CONSENT ISSUE):

DATE: 4/11/11 - truss "as built" layout; truss - lintel - stud fixings
- see above *

ENGINEER TO INSPECT: N/A.

SURVEYOR REQUIRED (PEGGING / FFL / RECESSION PLANE): N/A

FIRE ENGINEER TO INSPECT: N/A

ITEMS FOR COUNCIL TO INSPECT (SUCH AS EFFLUENT/POOL FENCING): N/A.

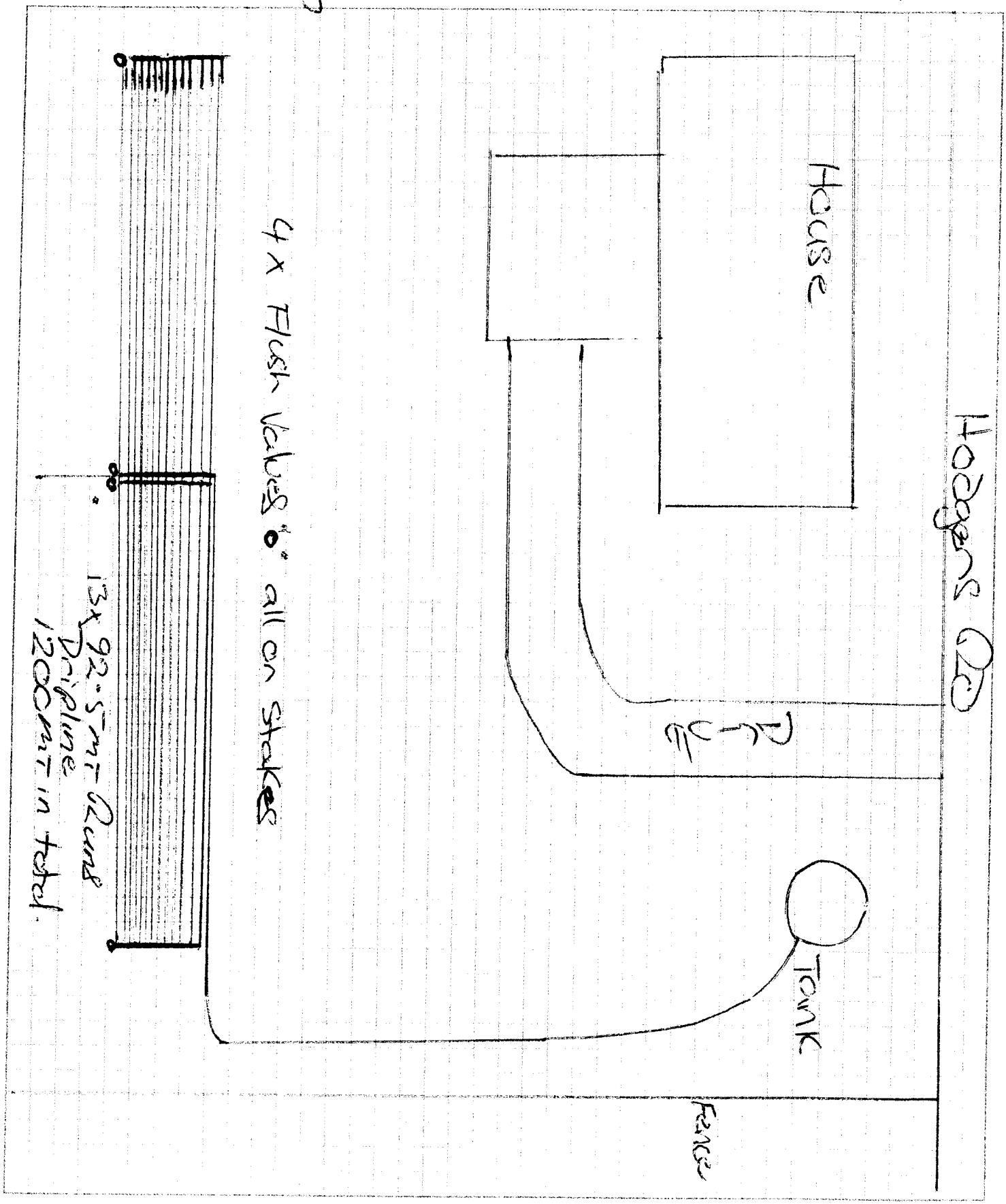
CONSTRUCTION REVIEWS REQUIRED TO SUPPORT PRODUCER STATEMENT DESIGN AND INSPECTION: Electrical Cert. SFH installer declarations x 2, wet area tanking installers PS3's,

GK's Contracting
GLENROY

Client: Humphries

Address: 149 Hodgens Rd Lobum

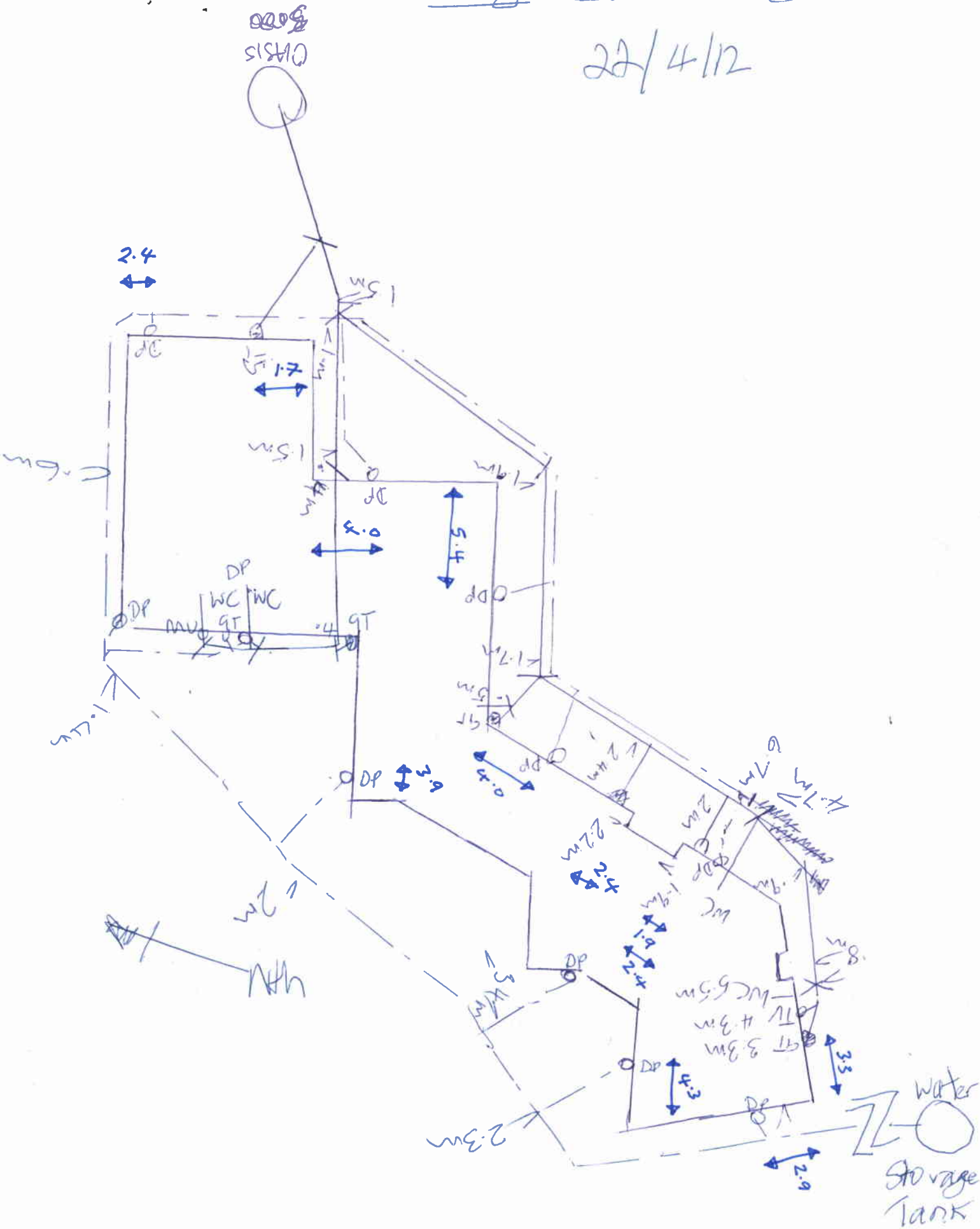
Date 19/4/2012



B.C. : 110550

Drawing by Jim Raika 05104

22/4/12



WAIMAKARIRI
DISTRICT COUNCIL

21897

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Humphreys

Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd

Officer: Andrew Kendall

To the Owner / Agent / Occupier (Contractor)

How Notified
☑ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 23 / 04 / 12 at 3.51 am/(pm) this site was inspected pursuant to Building Act 2004

Inspection Type: Drainage (Stormwater)

Project Description: Dwelling.

Inspection Notes: Passed Items:

- 2nd Stage of drainage inspection. Inspection covers Stormwater lines on north side of dwelling.
- Drainlayer: Jim Raika, reg: D5104
- Pipes laid in accordance with 'as built' plan dated: 22-4-12.
- 90mm dia uPVC stormwater line laid with gradient on bedding chip.

Site Instruction

- Stormwater holding tank with overflow soakage yet to position

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
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WAIMAKARIRI
DISTRICT COUNCIL

21030

NOTICE OF INSPECTION Section 90 Building Act 2004

Owners Name: Humphreys Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd Lbrn Officer: Paul Jones

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 4 / 5 / 12 at 2:05 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: FINAL REINSPECTION

Project Description: Dwelling attached Garages
Pass Heating.

Inspection Notes: *Hot Water temperature East Wing 55° ✓
West Wing 51° ✓
*Studio bench to be installed at a later date. ✓
*Pump to be replaced as it is cutting out.

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature Paul Jones

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

21020

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D Humphreys

Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd Lbrn

Officer: Paul Jones

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 3 / 5 / 12 at ~~3~~ 4:20 ~~am~~/pm this site was inspected pursuant to Building Act 2004

Inspection Type: FINAL RE-INSPECTION

Project Description: Dwelling and attached Garages
Pass Items

Inspection Notes: ① Vermin proofing completed to garage doors
② Weepholes cleaned out
③ Brick cladding completed and 45° Corner re laid
④ Outside taps sealed
⑤ Aluminium flashing sealed at Master Bedroom (To be replaced next week)
⑥ Meter Box penetration sealed
⑦ Concrete pad in place to gas bottle.
⑨ Mechanical ventilation in place to WC in east wing.
⑪ Gas Hob wall tiled for protection.
Bathroom painting and taps completed.
⑫ Splash pad in place to stormwater overflow
Fail Items.
⑧ Water to be on for temperature test
⑩ Studio bench to be fitted.

All work as per consent documents	☐ ~~Yes~~	☑ No
Amendments required	☐ ~~Yes~~	☑ No
Reinspection Required	☑ Yes	☐ ~~No~~

Signature Paul Jones

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440. Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI DISTRICT COUNCIL

NOTICE OF INSPECTION
FINAL INSPECTION

Building Act 2004 - Section 90

Owners Name D HUMPHREYS

Site Address 149 HODGSONS ROAD LOBURN

Project Description DWELLING + 1ST GARAGES

To the Owner / Agent / Occupier (Contractor)

Local Auth. Consent No. 110550 4477

Prime Job No. —

Officer INES HOLLAND

Phone No. 021221837.

How Notified: ☐ Notified Direct ☑ Left on Site

Please take note that on the 1 / 1 5 / 12 at 11:30 (am)/pm this site was inspected pursuant to the Building Act 2004

	COMPLIES	YES	NO
Internal			
1 Safety glass		☐	☐
2 Window restraints CA		☐	☐
3 Window identification H2		☑	☐
4 Suitable natural ventilation & light		☐	☐
5 Smoke detectors		☑	☐
6 Plumbing finish		☑	☐
7 Shower leak test		☑	☐
8 Fixtures secured & sealed		☑	☐
9 Impervious floor coverings		☑	☐
10 Mechanical ventilation to exterior		☑	☐
11 Gas storage to outside		☑	☐
12 Gas hob protection		☑	☐
13 Heating unit inspected MARK 3 200L		☑	☐
Plumbing			
1 HWC (Type & size) MARK 3 200L		☑	☐
2 Seismic restraint		☐	☐
3 Safe Tray		☐	☐
4 Tempering valve		☑	☐
5 HWC valving		☑	☐
6 Hot water drain points		☑	☐
7 Water Temperature ____ degrees		☐	☒
8 Header tank, restrained / tray / overflow / lagging		☐	☐
9 Floor waste gully water seal		☐	☐
10 Water Isolation Valve		☑	☐
11 Open Vent		☐	☐
Stairs & balcony			
1 Treads & risers		☐	☐
2 Handrail – height & dimension		☐	☐
3 Hand rail bracket		☐	☐
4 Balcony / Handrail / Barrier		☐	☐
5 Overflow relief		☐	☐

	COMPLIES	YES	NO
Energy			
1 Gas / Diesel tank siting		☑	☐
2 Storage protection		☐	☒
3 Capacity 9 KG		☑	☐
4 Automatic shut off		☐	☐
5 Gas storage ventilation		☑	☐
Roof space			
1 Ceiling insulation		☑	☐
2 Down light suitability		☑	☐
3 Solar panel support/fixing		☐	☐
4 Roof underlay / laps		☑	☐
5 Ducting suitably fixed & connected		☑	☐
6 Chimney restraints		☐	☐
7 Fire break / Fire blanket		☐	☐
Exterior			
1 FGL		☐	☒
2 Paved areas		☐	☐
3 ORG		☑	☐
4 S/W discharge		☑	☒
5 S/W sumps & Strip Drains		☐	☐
6 Size & location of TV		☑	☐
7 Finished height of GT		☑	☐
8 Mechanical vents to external & operational		☑	☐
9 Weep holes / vents sealed (gas)		☑	☐
10 Weep holes / ventilation gaps		☐	☒
11 Soffit / windows sealed		☑	☐
12 Window flashings / facings		☐	☒
13 Weathertightness		☐	☒
14 Roof cladding suitably fixed		☑	☐
15 D/P connected		☑	☐
16 Snow straps / boards		☐	☐

	COMPLIES	YES	NO
17 Vermin proof (eg: Garage door)		☐	☒
18 Roof penetrations sealed		☑	☐
19 Solar Panel Flashing		☐	☐
20 Effluent Field inspected		☑	☐

	SUPPLIED	REQUIRED
General		
1 Form 6	☑	☐
2 As built drainage plan	☐	☒
3 Effluent field PS3	☑	☐
4 Gas certificate	☑	☐
5 Electrical certificate	☑	☐
6 Structural engineer site notes	☐	☐
7 Structural engineer PS4	☐	☐
8 Exterior cladding PS3	☐	☐
9 Tanking PS3	☑	☐
10 Heating Unit PS3	☑	☐
11 Water test (Potable)	☐	☐
12 Plumbing Pressure Test	☑	☐
13 Solar PS3	☐	☐
14 Commercial Final Checklist	☐	☐
15 Butyl Membrane PS3	☐	☐
16 Hazardous Goods Cert	☐	☐
17 R M A inspection completed	☐	☐

Inspection	Passed	☐
	(Failed)	☑
Re-Inspection	(Yes)	☑
	No	☐

(1) COMPLETE VERMIN PROOFING TO GARAGE DOOR (2) CLEAN OUT WEEPHOLES (3) COMPLETE NIB BRICK CLADDING INCLUDING COLUMNS 45° CORNER, LOOSE BRICKWORK, (4) SEAL AROUND OUTSIDE TAPS (5) RE FIT ALUMINIUM FLASHING AT MASTER BEDROOM, (6) SEAL METER BOX PENETRATION (7) FIT CAVITY PAN UNDER GAS BOTTLE (8) * WATER TO BE ON TO CHECK TEMPERATURE (9) MECHANICAL VENTILATION REQUIRED TO WC AT LOFT LINE (10) * SHOWER BENCH TO BE (11) GAS HOB PROTECTION REQUIRED COMPLETE BATHROOM PAINTING + FIT TAP. (12) FIT SPLASH PAN TO OVERFLOW OF S/W

Signature

NB: This is not a Code Compliance Certificate

WAIMAKARIRI
DISTRICT COUNCIL

21990

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D HUMPHRIES
149 HODGSONS RD

Local Auth. Consent No. 110550

Site Address: LOBURN

Officer: WES HOLLAND

To the Owner / Agent / Occupier / (Contractor)

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 1 / 5 / 12 at 11:30 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: FREESTANDING HEATING UNIT (SITTING ROOM LOG BURNER)

Project Description: DWELLING + ATTACHED GARAGES

Inspection Notes: PASSED 1ST INSP

- METRO XTREME PED UNIT IN PLACE ✓
- SEISMIC RESTRAINTS IN PLACE ✓
- HEAT PROTECTION IN PLACE ✓
- DOUBLE FLUE SHIELD IN PLACE ✓
- UNIT CLEARANCES OK ✓
- S/S RIVETS TO FLUE ✓
- FLUE FIXED AT SPIGOT ✓
- FLUE / CEILING PENETRATION OK ✓
- FLUE / ROOF PENETRATION OK ✓
- FLUE HEIGHT OK ✓
- DEKTITE FLASHING TO METAL TILE ROOF ✓
- SMOKE ALARMS IN PLACE ✓
- PROVIDE INSTRUCTIONS SHEET ✓

All work as per consent documents ☑ Yes ☐ No
Amendments required ☐ Yes ☐ No
Reinspection Required ☐ Yes ☐ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240. Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

21991

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D HUMPHRIES

Local Auth. Consent No. 110550

Site Address: 149 HODGSONS ROAD
LOBURN

Officer: MES HOLLARD

To the Owner / Agent / Occupier / Contractor

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 1 / 5 / 12 at 10 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: FREESTANDING HEATING UNIT.

Project Description: DWELLING + ATT GARAGES (DINING MAIN HOUSE)

Inspection Notes: PASSED JOINTS

- METRO LTD MEGA RAD UNIT INSTALLED SERIAL Nº 108110 ✓
- SEISMIC RESTRAINTS IN PLACE. ✓
- DOUBLE FLUE SHIELD IN PLACE. ✓
- FIRE BLOCK PROTECTOR IN PLACE. ✓
- UNIT CLEARANCES OK ✓
- S/S RUGS TO FLUE. ✓
- FLUE/CEILING PENETRATION OK ✓
- FLUE/ROOF PENETRATION OK ✓
- FLUE HEIGHT OK ✓
- DECKTE FLASHING TO METRO TILES ✓
- SMOKE ALARMS IN PLACE ✓

SITE INSPECTION
PROVIDE INSPECTION SHEET. ✓

All work as per consent documents ☑ Yes ☐ No
Amendments required ☐ Yes ☑ No
Reinspection Required ☐ Yes ☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

21989

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D HUMMELS

Local Auth. Consent No. 110550

Site Address: 149 HODGSONS ROAD LOBURN

Officer: WES HOLLAND

To the Owner / Agent / Occupier / Contractor

How Notified
~~Notified Direct~~ ~~Left on Site~~ Faxed

Please take note that on the 1 / 5 / 12 at 11:10 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: EFFLUENT FIELD.

Project Description: DWELLING + AD GARAGES.

Inspection Notes: PASSED ITEMS

- HOLDING TANK + SEPTIC TANK IN POSITION (OASIS 2000) ✓
- HIGH LEVEL ALARM IN PLACE. ✓
- EFFLUENT FIELD LOCATION AND SIZE CONSISTENT WITH PLAN. ✓
- 13 x RUNS of DRIPPER LINES @ APPROX 90 m + 2x END RUNS of 15m = 1200m. ✓
- EFFLUENT FIELD FENCED ✓

SITE INSPECTION:
PROVIDE PS3 FOR INSTALLATION. ✓

All work as per consent documents ~~Yes~~ ~~No~~
Amendments required ~~Yes~~ ~~No~~
Reinspection Required ~~Yes~~ ~~No~~

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

21787

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Humphreys Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd Officer: Mike Rowe

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 20 / 4 / 12 at 2 ~~am~~/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Drains

Project Description: New Dwg + Att Garage

Inspection Notes: Passed items:-

- sewer drains almost completed ✓
- laid in 100mm uPVC - insp. to G13 ✓
- bedded in pre-mix type material. ✓
- x2 vents to be fitted. ✓
- gradient 1:60+ ✓
- stormwater ½ completed - laid in 90mm PVC to holding tank. ✓
- gradient 1:100 ✓
- plan to be provided. ✓

- OK to backfill all drains laid date another inspection on Monday.
- Septic Tank yet to be fitted.

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature M. A Rowe

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

21735

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Humphreys

Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd
Loburn

Officer: Mark McLaughlin

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 11 / 4 / 12 at 8:40 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Wet Area Tanking

Project Description: New owelling + Att Garage

Inspection Notes: Passed Items

- GT tiling ✓
- mapei system used ✓
- tiled showers x 3 have grey colour membrane applied to approx 1850mm high all corners bandaged and rebate bandaged ✓
- Bath x 2 have membrane and bandaged applied taken approx 100mm up wall ✓

- Site instructions
provide tanking certificate

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

27246

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D HUMPHREYS

Local Auth. Consent No. 110550

Site Address: 149 HODGSONS ROAD LOBURN

Officer: WES HOLLAND

To the Owner / Agent / Occupier / Contractor

How Notified
☐ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 1 / 3 / 12 at 10:30 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: PRE SOP.

Project Description: DWELLING + ATT GARAGE

Inspection Notes: PASSED ITEMS

- 10m STANDARD GIB LININGS TO WALLS ✓
- 13m STANDARD GIB LININGS TO CEILINGS ✓
- 10/13m GIB REQUIRED TO BATHROOM + ENSUITE ✓
- GIB DIAPHRAGM COMPLETED TO GARAGE - ACCESS AT 1/3 EACH WAY. FIXINGS @ 150m c/c TO PERIMETER AND PENETRATIONS ✓
- BRACELINE GIB IN PLACE AS REQUIRED ✓
- ALL BRACE ELEMENTS IN PLACE & FIXED OFF AS PER WINSTONES FIXING SPECIFICATIONS ✓
- METAL ANGLES TO TILED STRUTS - FIXINGS @ 100m c/c TO PERIMETER + INTERMEDIATE STRUTS ✓

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03 313 4432, E mail buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

22369

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D Humphreys

Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd.

Officer: Ellen Como-/P. Jones.

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 20 / 2 / 12 at 8:30 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Prestop Granny flat only.

Project Description: House garage.

Inspection Notes: Passed items.

- Brace panels nailed off as per Winstone site guide. ✓
- 13 mm standard gib to ceilings. ✓
- 10 mm standard gib to walls ✓
- AQcia Line to bathroom walls & ceiling. Tiled shower area screwed 150 crs. ✓
-

Site instructions.

21/3/12 MT
✓ Ceiling insulation to check at final East end of sitting room.
✓ Tile shower metal corner to install. main house.
✓ Roof ladder still to move in ceiling diaphragm
✓ Flush box to move B1

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature Paul Jones

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

20010

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Humphreys

Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Road

Officer: Andrew Kendall

(Phoned)

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 15 / 02 / 12 at 8.30 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Pre-line

Project Description: Dwelling.

Inspection Notes: Passed Items:

- Pink Batt thermal insulation fitted to both separate wings. ✓
- Moisture content: 18% ✓
- Wall bracing hold-downs as per plans. ✓
- Air seals in place to exterior joinery ✓
- Polybutylene piping system lagged outside ~~lagging~~ insulation ✓
- Window wind Zone: High / level 2. ✓

Site Instructions:

- Flush boxes to be moved from B1 & C1 bracing element ends ✓
- Man hole in garage to be within middle third of Gib ceiling diaphragm.
- Ceiling insulation to fit to E. East end sitting & office rooms
- Tile shower metal corner to complete

Note: C1 GS2 now changed to GS1 3.6m

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

17196

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Humphreys

Local Auth. Consent No. 110550

Site Address: 49 Hodgsons Rd

Officer: Mike Rowe

To the Owner / Agent / Occupier / ~~Contractor~~

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 19 / 1 / 12 at 11.30 ~~am~~/pm this site was inspected pursuant to Building Act 2004

Inspection Type: M. H. V.

Project Description: New Dwg with A/Garage

Inspection Notes: Passed items:- Midland bricks - Kiwi Florentine batch # 3.1.11.11.

- meter - box with thermakraft sill tape all 4 sides.
- D.P.C. to window & door jambs - 200m wide to window sill with kickout. - sill tape to garage jamb ✓
- WANZ sill bars fitted. - some brick sill already fitted ✓
- 50mm cavity - relatively clean ✓
- 20m cover to windows ✓
- eagle ties 330¢ V x 600¢ H. ✓
- penetrations sill taped. ✓

Site Instructions:- * to seal meter-box to bricks for final.

* to fit bricks on every course to lounge steel post between R/S & window.

OK to brick up

All work as per consent documents ☑ Yes ☐ No
Amendments required ☐ Yes ☑ No
Reinspection Required ☐ Yes ☑ No

Signature M Rowe

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432

WAIMAKARIRI
DISTRICT COUNCIL

19843

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: Humphreys

Local Auth. Consent No. 110550

Site Address: 149 Hodgsons Rd.

Officer: Andrew Kendall

To the Owner / Agent / Occupier / Contractor /

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 20 / 12 / 11 at 11 (am)/pm this site was inspected pursuant to Building Act 2004

Inspection Type: Building wrap

Project Description: Dwelling

Inspection Notes: Passed Items:

- Retro fitted lintels & concentrated load bearing points now fitted. ✓
- Nail on plates completed. ✓
- CT200 connectors completed ✓
- D.P.M turned up at slab edges. ✓
- Cover-up synthetic building wrap. ✓
- Horizontal polypropylene tape to wrap between battens.
- Thermakraft sill tape in openings with uPVC bottom corner soakers as required.

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

19345

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: HUMPHREYS

Local Auth. Consent No. 110550

Site Address: 149 HODGSONS RD

Officer: ROBERT BAILEY

To the Owner / Agent / Occupier / Contractor

How Notified
☑ Notified Direct ☐ Left on Site ☐ Faxed

Please take note that on the 13 / 12 / 11 at 1 ~~am~~/pm this site was inspected pursuant to Building Act 2004

Inspection Type: PREROOF

Project Description: NEW HOUSE

PASSED

Inspection Notes: 90x45 MSG8 H1.2 FRAMING AT 600c, DOUBLES AT 900c ✓

OPC UNDER BOTTOM PLATES, ANCHOR PLATES AND SHOT NAILS AT 900c. ✓

LINTELS, H3.1, H1.2 MSG 8, LVL, STEEL ALL AS CONSENT PLANS ✓

7m PLY H3.2 NAILED AT 150c, PLACED AS CONSENT PLANS, HANDIBRACE AND SCREW BOLT AT BRACE ENDS ✓

GSI BRACING AS CONSENT PLANS, DOUBLE NAILED AT BRACE ENDS. ✓

LINTEL AND STUD FIXINGS AS CARTERS FRAME PLAN. ✓

90x45, 140x45 MSG8 AT 900c, FIXED DOWN AS ~~GOO~~ TRUSS PLAN. ✓

CUT-IN H1.2 VALLEY BOARDS ✓

50x40 H1.2 BATTENS ✓

70x35 LMR CEILING BATTENS AT 600c. ✓

SITE INSTRUCTION

✓ POINT LOADS TO BE COMPLETED BEFORE TILES FIXED IN PLACE

AK 20.12.11 ✓ FINISH NAIL ON PLATES

✓ ONE OF 200

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI DISTRICT COUNCIL

19715

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D HUMPHREYS

Local Auth. Consent No. 110550

Site Address: 149 HODGSONS ROAD LOBURN

Officer: WES HOWARD

To the Owner / Agent / Occupier / Contractor

How Notified
☐ Notified Direct ☑ Left on Site ☐ Faxed

Please take note that on the 1 / 11 / 11 at 1:20 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: PRE POUR SLAB.

Project Description: PUILDING + ATTACHED GARAGE.

Inspection Notes: PASSED ITEMS

- BLACK DPM OVER COMPACTED HARDFILL & SAND BLINDING LAYER. - DPM LAPPED & TAPED AT JOINS. ✓
- DID ROOM SPACERS @ 600m c. ✓
- EUROSTEEL SE 615 - 500 MESH TO SLAB AREA, LAPPED TIED & SUPPORTED ON CHAIRS, TAGS IN PLACE. ✓
- POINT LOAD THICKENINGS POURED WITH FOUNDATION. ✓
- MESH CUT EITHER SIDE OF FREE JOINTS ✓
- CONTRACTOR FITTING BARS TO FREE JOINT WITH DENSO TAPE AT ONE END AT TIME OF INSPECTION. ✓
- CONDUIT REEF PIPES IN PLACE. ✓
- 100mm SLAB.
- WASTE PIPES IN PLACE, TAPE SCORED TO DPM, LAGGED ✓

SITE INSTRUCTION.

- FREE JOINTS TO COMPLETE. / SUPPLEMENTARY CORNER BARS TO FIT.
- PLAN SHOWS WASTE PIPE TO SINK IN GARAGE (EXT) + DISHWASHER TO ISLAND BENCH - NO WASTE PIPES EVIDENT - MIKE GREER HOMES CONTACTED AND MADE AWARE

OK TO POUR WHEN READY.

All work as per consent documents ☐ Yes ☑ No
Amendments required ☐ Yes ☑ No
Reinspection Required ☐ Yes ☑ No

Signature

Waimakariri District Council
215 High Street, Private Bag 1005 Rangiora 7440, Phone 03-311 8240, Fax 03-313 4432, Email buildinginfo@wmk.govt.nz

WAIMAKARIRI
DISTRICT COUNCIL

17838

NOTICE OF INSPECTION

Section 90 Building Act 2004

Owners Name: D HUMPHREYS

Local Auth. Consent No. 110550.

Site Address: 149 HODGSONS ROAD LOBURN.

Officer: WES HOLLAND

To the Owner / Agent / Occupier / Contractor

How Notified
~~Notified Direct~~ ~~Left on Site~~ Faxed

Please take note that on the 17/10/11 at 1:10 am/pm this site was inspected pursuant to Building Act 2004

Inspection Type: FOUNDATIONS.

Project Description: DWELLING + ATTACHED GARAGE.

Inspection Notes: PASSED ITEMS.

- 1X BOUNDARY PEG LOCATED. ✓
- SITING CONSISTENT WITH PLAN. -20m FROM EAST BOUNDARY. ✓
- SITE SCRAPED - BEDROOM 5/6/7 STILL TO BE SCRAPED.
- FOUNDATIONS 250m WIDE x 300m DEEP MIN. ✓
- FIRM BEARING TO FOUNDATION BASE. ✓
- 2x HORIZONTAL DK BARS, 3x DK BARS TO NORTH WEST CORNER, R10 LINKS @ 600 c/c. ✓
- ALL REINFORCING GRADE 300E, LAPPED, TIED & SUPPORTED
- WASTE SLEEVES IN PLACE WITH ADEQUATE FALL. ✓
- 100m UAC SEWER LINE TO NE CORNER UNDER SLAB, CHANGED TO 1060 GRADE. ✓
- SLAB THICKENINGS x5 AND REINFORCING IN PLACE. ✓
- D10 FLOOR STANCHIONS ON SITE READY TO FIT WHEN POURED. ✓

OK TO POUR

- CONCRETE PLACER CONFIRMS REMAINDER OF SCRAPE WILL BE COMPLETED PRIOR TO HARDFILL PLACEMENT.

All work as per consent documents	☑ Yes	☐ No
Amendments required	☐ Yes	☑ No
Reinspection Required	☐ Yes	☑ No

Signature















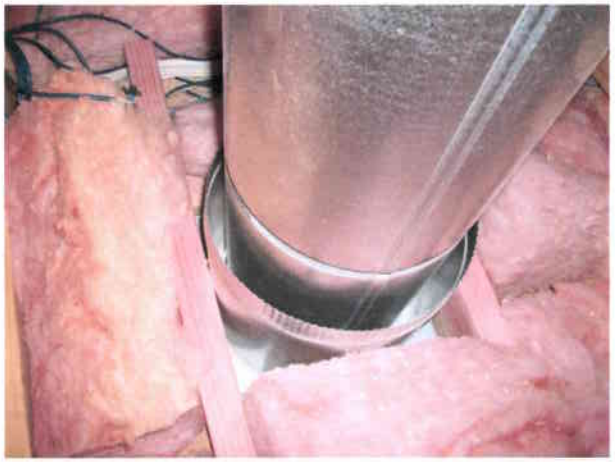






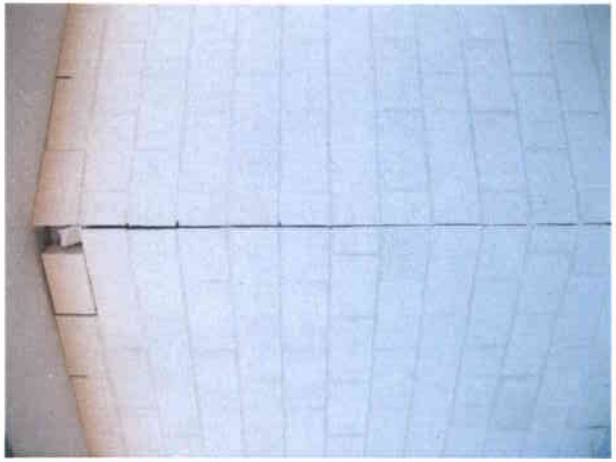




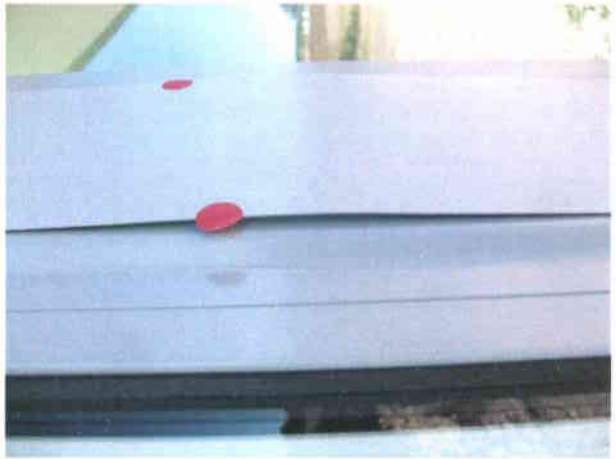
















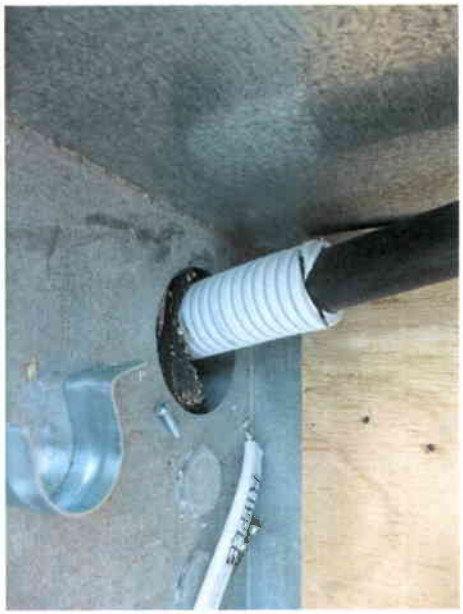












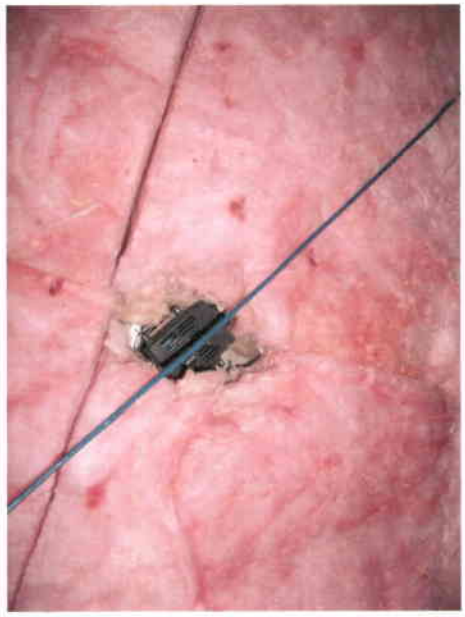





MAINS
PRESSURE
0800 657 335
MODEL 31230015

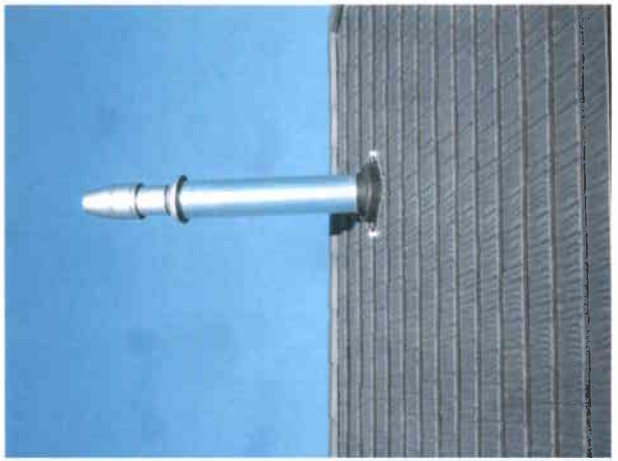
















BC NO: 110660
OWNER D Humphreys
PHONE 02105/68850
AGENT
EMAIL
DESIGNER Mark Manns Architectural
SITE 149 Hodgsons Road Lyttelton
BUILDER PH
TYPE New (& prefab) House Unit Back Crib

PRIME BUILDING COMPLIANCE

The one-stop building compliance company

SOLID/LIQUID FUEL HEATING APPLIANCE
For Installer to Complete

NB: Leave on Site for Building Inspector

Consent Number: 110550

Site Address: 147 HODGSENS RD LOBURN

Free standing ☑ Inbuilt ☐ Wet back ☐

Make of SFB METRO FIRES Model of SFB ~~EXTREME~~ LTD PED Make of Flue ECO FLUE SYSTEM

Tick as Appropriate:	Yes	No	N/A
Is the SFB and Flue as per the building consent	☑	☐	☐
Chimney Cleaned	☐	☐	☑
Fireplace surround/chimney face junction sealed with a heat resistant material	☐	☐	☑
The flue pipe is constructed of austenitic stainless steel	☑	☐	☐
Seismic Restraint fitted	☑	☐	☐
Flue sections are secured together with Stainless Steel Rivets	☑	☐	☐
The Flue is secured to the heating unit	☑	☐	☐
The chimney void has been vented at the top	☐	☐	☑
Flue and appliance clearances have been achieved in terms of the manufacturers instructions and AS/NZS 2918:2001	☑	☐	☐
Flue Joints sealed in Accordance with Manufactures Instructions	☑	☐	☐
Fire Safety Valve connected and working correctly	☐	☐	☑

If you have answered "no" to any items please comment:

If wetback is fitted, name the craftsman plumber who carried out the work:

Name: _____ Registration No: _____

I GERARD MCQUEEN PLUMBING + GAS LTD (print name) certify that the above specified installation has been carried out as described and in accordance with the manufacturers installation instructions and the current building code requirements.

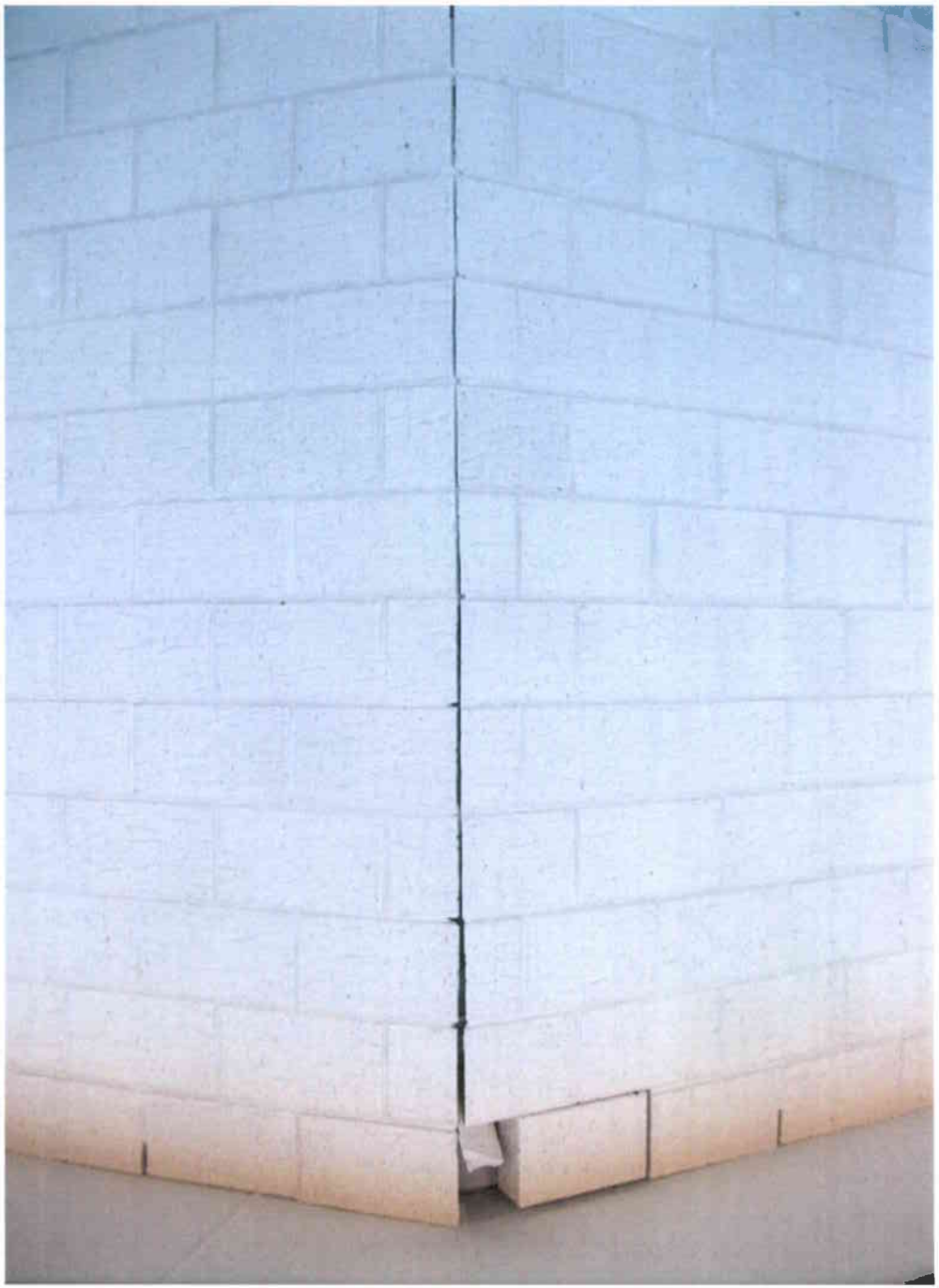
Installers Signature: GMcQueen Date: 28.4.12

Address: 7 BELGRAVE DRIVE RANGIORA

Phone: 03 3107102 Fax: 03 3107120

027 2800653

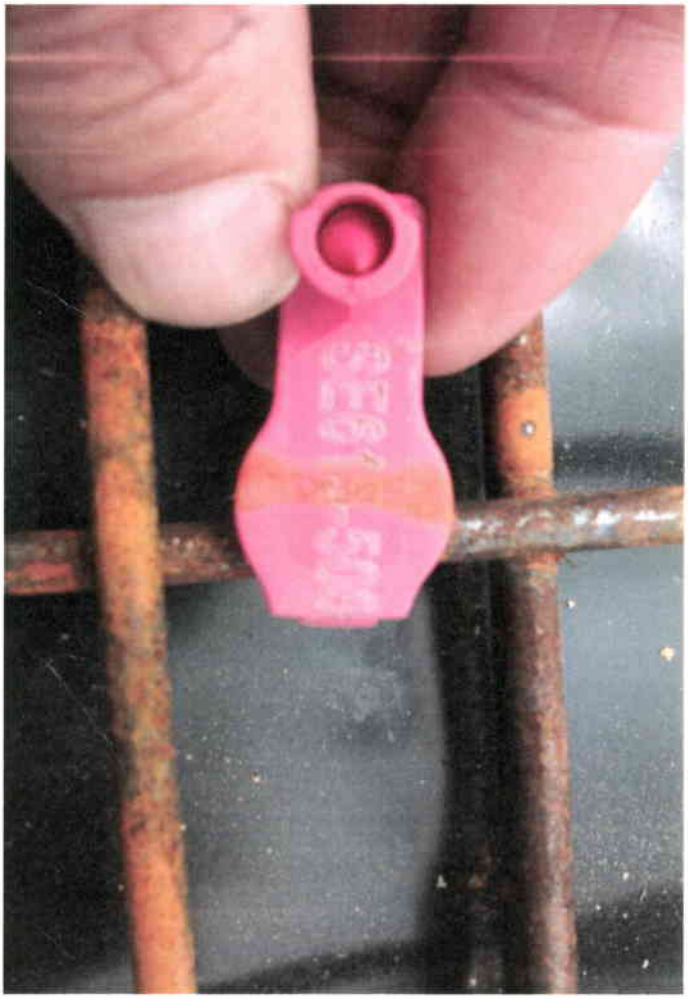




110550 149 HODGSONS RD
9/11/11











BC NO: 110550 WDC Rec 12.05.2011

OWNER: D Humphreys
PHONE: 0210576850

AGENT:
EMAIL:

DESIGNER: Mark Milnes Architectual
SITE: 149 Hodgsons Road, Loburn
BUILDER/PH:

TYPE: New (& prebuilt) House, Unit, Bach, Crit




















RIPPLE

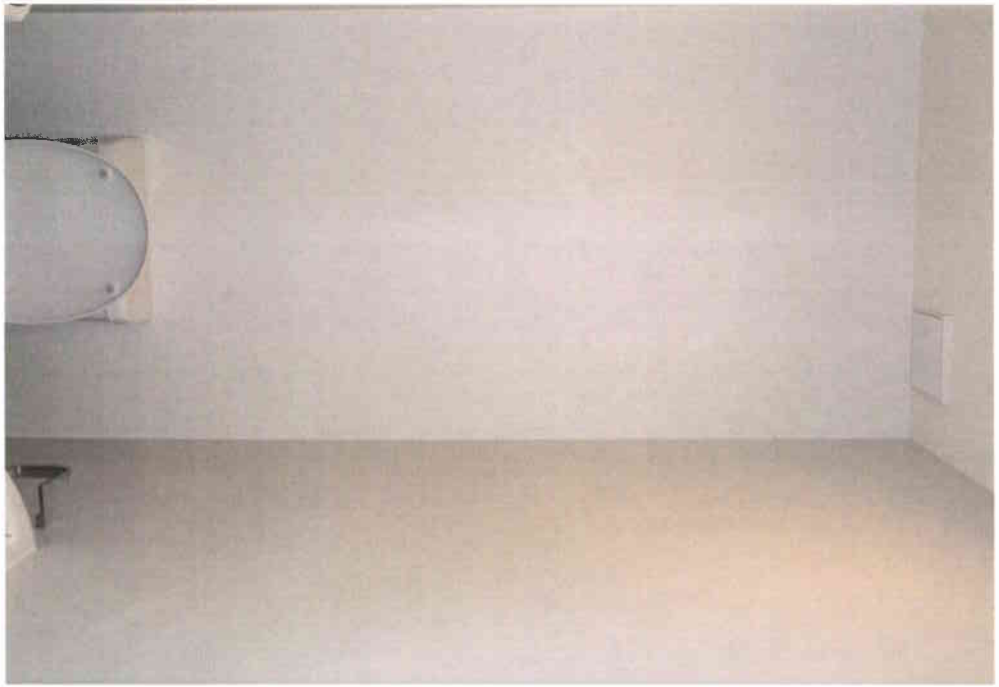














PRIME BUILDING COMPLIANCE

The one-stop building compliance company

SOLID/LIQUID FUEL HEATING APPLIANCE
For Installer to Complete

NB: Leave on Site for Building Inspector

Consent Number: 110550

Site Address: 147 HODGSENS RD LOBURN

Free standing ☑ Inbuilt ☐ Wet back ☐

Make of SFB METRO FIRES Model of SFB MEGA LTD PED Make of Flue ECO FLUE SYSTEM

Tick as Appropriate:	Yes	No	N/A
Is the SFB and Flue as per the building consent	☑	☐	☐
Chimney Cleaned	☐	☐	☑
Fireplace surround/chimney face junction sealed with a heat resistant material	☐	☐	☑
The flue pipe is constructed of austenitic stainless steel	☑	☐	☐
Seismic Restraint fitted	☑	☐	☐
Flue sections are secured together with Stainless Steel Rivets	☑	☐	☐
The Flue is secured to the heating unit	☑	☐	☐
The chimney void has been vented at the top	☐	☐	☑
Flue and appliance clearances have been achieved in terms of the manufacturers instructions and AS/NZS 2918:2001	☑	☐	☐
Flue Joints sealed in Accordance with Manufactures Instructions	☑	☐	☐
Fire Safety Valve connected and working correctly	☐	☐	☑

If you have answered "no" to any items please comment:

If wetback is fitted, name the craftsman plumber who carried out the work:

Name: _____ Registration No: _____

I GERARD MULQUEEN PLUMBING & GAS LTD (print name) certify that the above specified installation has been carried out as described and in accordance with the manufacturers installation instructions and the current building code requirements.

Installers Signature: _____ Date: 28.4.12

Address: 7 BELGRAVE DRIVE RANGIORA

Phone: 03 3107102 Fax: 03 3107120

027 2800653

Plumbers,
Gasfitters and
Drainlayers Board

GASFITTING CERTIFICATE OF COMPLIANCE

Pursuant to the Gas Act 1992 and the Gas (Safety and Measurement) Regulations 2010

ENERGY WORK CERTIFICATE

(Pursuant to the Building Act 2004)

This certificate is not transferable

Level 9, 70 The Terrace
PO Box 10655, Wellington 6143
Tel 04 494 2970, Fax 04 494 2975
www.pgdb.co.nz

Consumer:	Humphreys	Certificate Number:	**691243**	**Test Results:**	8 min Duration
Installation Address:	147 Hodgsens RD	Gas Supplier:	9kg by owner		8.13kPa test pressure
	Loburn	Category:	Domestic		0.00kPa Loss / Gain
	Rangiora	Type (Regulation 44(1)):	NEW		2.79kPa Working pressure
Vehicle Registration:		Gas Type:	LPG	**Other Testing:**	
Vessel Registration:		Certification Date:	28 Apr 2012	**Test Date:**	27 Apr 2012

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

Qty	Item Type	Item Location	Make/ Model	Input Rate	Flue Type	Flue Location	Vent Type	Vent Location
1	Pipework							
1	Freestanding cooker	Kitchen	Westinghouse DSP96S S S/no 04014914	49.1mj/hr	Unflued		Complies	

I certify that:

1. I Certify that all appliances and fittings worked on by me or by persons working under my supervision are safe to connect to a gas supply and that all work carried out was in accordance with all applicable requirements of the Gas Act 1992 and Gas (Safety and Measurement) Regulations 2010.
2. I Certify that the Gasfitting to which this certificate applies does not make other parts of the installation unsafe or otherwise non-compliant with the Gas Act 1992 and Gas (Safety and Measurement) Regulations 2010.
3. I Certify that the Gasfitting work to which this certificate applies does include work on an appliance or fitting imported or manufactured for the consumers use.

Installer(s) supervised by certifier

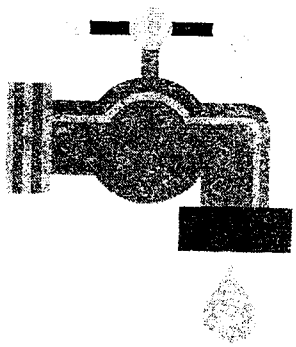
Authorisation No: 22139
Name: Price, Gregory Matthew

Authorisation No:
Name:

Certificate Owner

Authorisation No: 10158
Name: Mulqueen, Gerard
Company: Gerard Mulqueen Plumbing & Gas Ltd

Signed:
Certifier
Authorisation No: 10158
Name: Mulqueen, Gerard



PRODUCER STATEMENT
PIPEWORK TESTING

Please complete and return to:
Prime Building Compliance
PO Box 387
Rangiora
Email: onfo@primebc.co.nz
Fax: 03 313 1643

Building Consent Number:	110550
Issued by: *(Registered Craftsman Plumber)*	GERARD MULQUEEN GERARD MULQUEEN PLUMBING + GAS LTD
For: MIKE GREER HOMES *(Owner)* NR CANTERBURY	/ HUMPHREYS HOUSE

In respect of the testing of water pipe work prior to concealment.

At: *(address)* 147	HOOGSENS ROAD LOBURN

I hereby state that I have personally tested the water pipe work installed in the building authorised under this Building Consent by the method indicated hereunder.

- ☑ By pressurising the pipe work to 1500 kpa for a period of not less than 15 minutes for the hot and cold water supply and checking to see there are no leaks. (NZBC G12/AS1 7.5.1 (a), (b).)
- ☐ By pressurising the upvc pipe work to 1.5 times the maximum working pressure for a period of not less than 15 minutes and checking that there are no leaks. (NZBC G12/AS1 7.5.2, NZS 7643). Max working pressure was .....
- ☑ By pressurising the pipe work to 1500 kpa for a period of not less than 5 minutes and checking to see there are no leaks. (NZBC G12 VM1, AS3500:Part 1.2 1998)

And believe on reasonable grounds that the pipe work has passed that test.

- ☑ All work complies with the NZBC

I also understand that Prime Building Compliance in accepting this producer statement will be relying on it to issue the Code Compliance Certificate at the completion of the building work.

Signature of Craftsman Plumber:	GMulqueen
Date:	28 . 4 . 12
Craftsman Registration:	10158
Company Name:	GERARD MULQUEEN PLUMBING + GAS LTD 7 BELGRAVE DRIVE RANGIORA 027 2800653

ELECTRICAL WORKERS REGISTRATION BOARD

Safety • Competency

EWRB 5

Electrical Certificate of Compliance

No. 3770301

for a low voltage installation if prescribed electrical work has been done on any part of it and the prescribed electrical work involved placing, replacing, or repositioning conductors or fittings attached to conductors.

No. of attachments

To be completed whether or not an Inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer: Mr & Mrs Humphreys Phone: 0210233760

Address of installation: 167 Hodgsons road, Lobarn

Postal address of customer (if not as above)

DECLARATION OF CONFORMITY (Please tick (✓) appropriate boxes)

In accordance with Regulation 58 of the Electricity (Safety) Regulations 2010, the design of the installation or part of the installation to which this certificate applies

(a) complies with either Part 2 of AS/NZS 3000:2007 ☑ or Part 1 of AS/NZS3000:2007 and Regulation 59 ☐ and

(b) the supply system of the installation or part of the installation to which this certificate applies is 230V/400 V MEN ☑ or attached other system ☐

WORK DETAILS

111	No. of lighting outlets	1	No. of ranges	Please tick (✓) as appropriate where work includes:	
68	No. of socket outlets	3	No. of water heaters	✓ Mains	✓ Main earthing sys
Was any installation work carried out by the homeowner?		× Yes	✓ No	✓ MEN Switchboard closest to point of supply	× Electric lines

Description of work carried out (If necessary attach any pages with work done)

New house c 16mm² 3 ϕ mains & 6mm² main earth & bond
All lighting run in 1.5mm² T+E protected by 10A MCB+RCD
All plugs run in 2.5mm² T+E protected by 20A MCB+RCD
Main house power run as sub board installed by other

CERTIFICATION OF WORK (Please tick (✓) appropriate boxes)

I certify that the completed installation or part of the installation to which this certificate applies

- ☑ has been installed in accordance with the design detailed in the Declaration of Conformity section above
- ☑ has had tests which are required by the Electricity (Safety) Regulations 2010 satisfactorily completed
- ☑ has an earthing system that is correctly rated
- ☑ contains fittings which are safe to connect to a power supply
- ☑ is safe to connect to a power supply

ELECTRICAL WORKER DETAILS

Name	Tim Nimmo	Registration No.	E245242
Company	Wire Electrical	Contact Ph No.	0276990762
Signature	TN	Date	25-4-12

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

☐ Mains work (mains, MEN switchboards closest to the point of supply, or main earthing systems) ☐ Attached other ☐ Work carried out in accordance with Part 1 of AS/NZS 3000:2007

I certify that the items identified above are electrically safe and that the inspection has been carried out in accordance with the Electricity (Safety) Regulations 2010.

Name Registration No.

Signature Date

Forms approved by the Electrical Workers Registration Board PO Box 10-130, Wellington. Telephone 0800 80 1000, for the purposes of the Electricity (Safety) Regulations 2010.

ADHESIVES – SEALANTS – CHEMICAL PRODUCTS FOR BUILDING

WATERPROOF PRODUCT PERFORMANCE WARRANTY:

Please fill in the following:

1. Customers Name: Humphreys/East
2. Site Address: **167 Hodgsons Rd, Loburn**
3. Installer Name: GT Tiling Ltd
4. Applicator No: 459
5. Date work completed: 18/04/2012
6. Building Consent No: **110550**

PRODUCTS USED:

PRODUCTS:	**PLEASE TICK THE APPROPRIATE BOX.**
Mapegum WPS	Y
Mapelastic	
Mapelastic Smart	
Primer S	
Primer G	Y
Mapeband	
Mapeband Internal Corners	
Mapeband External Corners	
Mapeband Flange	
Mapeband PE120	Y
Mapeband PE120 Internal Corners	
Mapeband PE120 External Corners	
Mapeband PE120 Flange	
Mapenet 150(Fibreglass Mesh)	
Mapetex Sel	Y
Adesilex T Super	
If waterproofing has been installed over an external plywood substrate, please confirm that the plywood installation has been installed in accordance with the requirements of E2/AS1 of the NZ Building Code.	**Yes** | **N/A** | **No** — Please circle one

Please circle as appropriate:

Wet Area:	**Splash Area:**	**External Balcony:**	**Swimming Pool/Water Tank:**
Shower Enclosure	Bath Surround		
X3	X2		
Yes	Yes	Yes | N/A | No	Yes | N/A | No

Oasis Clearwater
ENVIRONMENTAL SYSTEMS
WASTEWATER TREATMENT ENGINEERS
A FLETCHER CONCRETE AND INFRASTRUCTURE LIMITED BUSINESS

Christchurch Head Office:
PO Box 16276, Hornby, Christchurch 8441
Phone: 03 344 0262 Fax: 03 344 0267
Email: office@oasisclearwater.co.nz
www.oasisclearwater.co.nz
Distributors Nationwide Phone 0800 48 48 49

CERTIFICATE OF COMPLETION

THIS IS TO CERTIFY THAT THE CONSTRUCTION OF THE TREATMENT AND EFFLUENT DISPOSAL SYSTEM AT THE SITE OF:

D J & P G HUMPHRIES

149 HODGSONS ROAD

LOBURN

LOT 2 DP 431621

CRC 111584A

No 4429

DATE OF PLAN 02/06/2011

DATE COMPLETED/COMMISSIONED 23/04/2012

WAS CARRIED OUT BY GK'S CONTRACTING, REGISTRATION No. 13504, AND THE SYSTEM HAS BEEN FULLY INSTALLED IN ACCORDANCE WITH THE DESIGN PLANS AND RESOURCE CONSENT CONDITIONS.

Name: David McKay

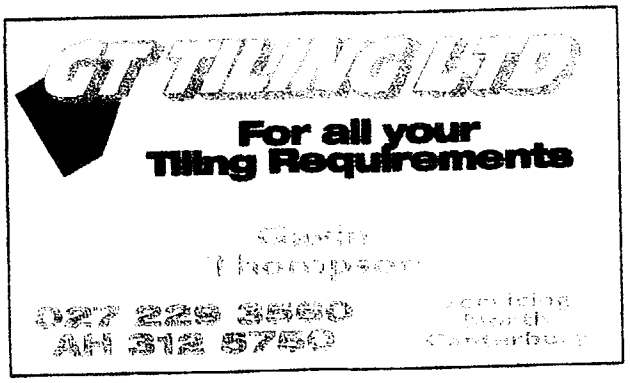
Company: Oasis Clearwater Environmental Systems
Address: P O Box 16276
Hornby Christchurch

Telephone: 03 344 0262

Signature: K.A. Fraser pp

Date: 30/04/2012.

ENVIRONMENTAL AND PUMPING ENGINEERS - PRECAST CONCRETE PRODUCTION
THINKING GLOBALLY ACTING LOCALLY
COMMITTED TO PROTECTING OUR ENVIRONMENT



MAPEI Approved Applicator Waterproofing Installation Statement

MAPEI approved applicator: **Mr. Gavin Thompson**

MAPEI applicator #: **459**

Customer: Humphreys Residents

Site: 167 Hodgsons Rd
Lyttelton
North Canterbury
Consent # 110550

MAPEI Waterproofing Systems Used

- [x] MAPEGUM WPS
- [ ] MAPELASTIC/SMART

Areas waterproofing applied to

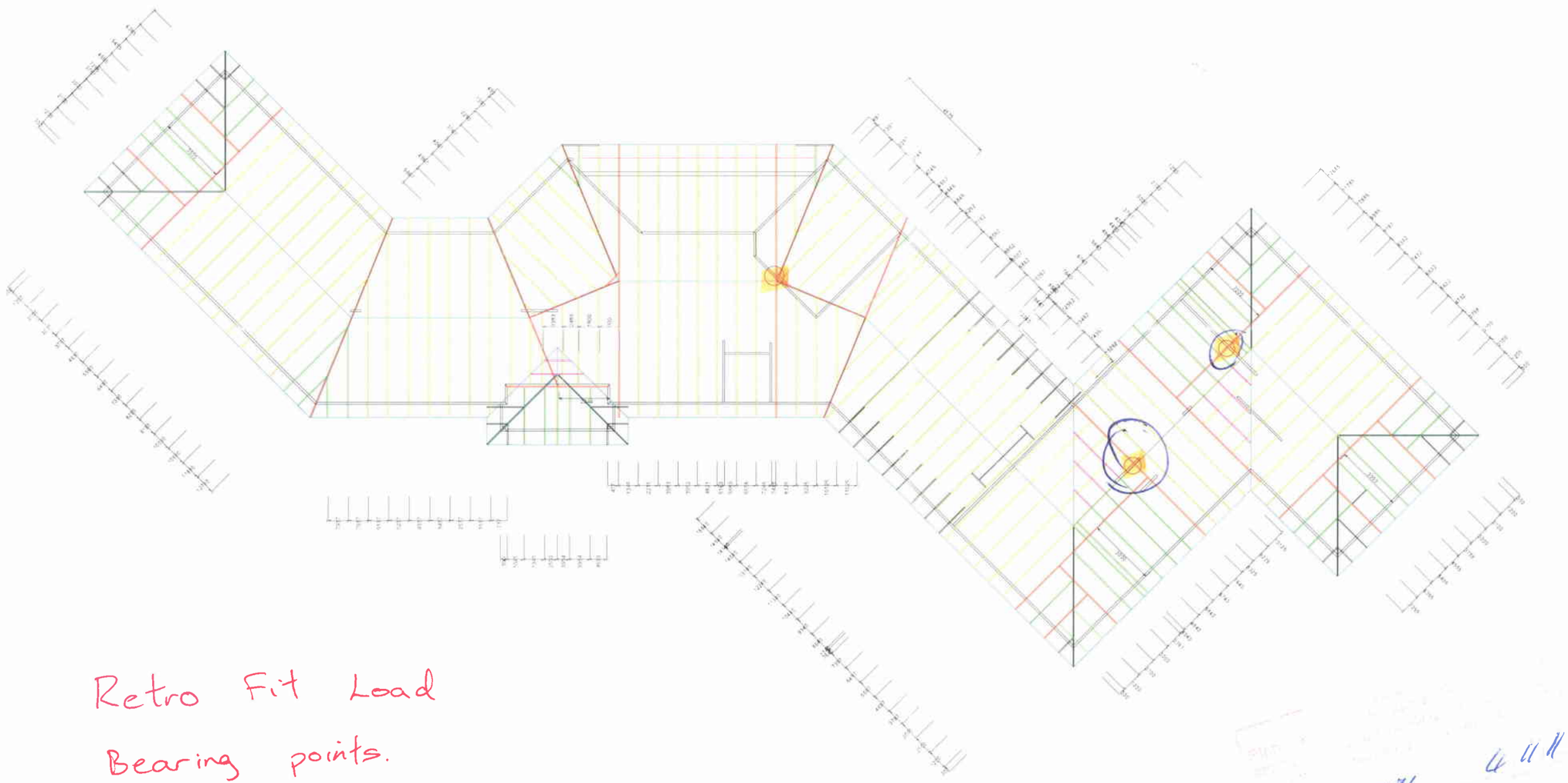
- [x] SHOWER × 3
- [x] BATH × 2
- [ ] FULL BATHROOM
- [ ] DECK (EXTERNAL)
- [ ] OTHER:

This statement confirms that the abovementioned MAPEI approved applicator has installed MAPEI waterproofing Systems to this residence/building using appropriate MAPEI products and strictly in accordance with current MAPEI guidelines and instructions

Applicators signature:

Mr. Gavin Thompson

FINAL LAYOUT



Retro Fit Load
Bearing points.

NOTIFICATION OF POINT LOADED LINTELS AND POINT LOADS ON INTERNAL WALLS WHERE THE DOWNLOAD IS HIGHER THAN 10kN OR THE UPWARD LOAD IS GREATER THAN 10kN
Note: If no point loads indicated, loading does not exceed above.

CARTERS
MANUFACTURING
21 Broughs Rd
Christchurch
Ph (03) 359 2731

02 NOV 2011
BY

JOB No **CD91052**

Client: Mike Greer Hon
Job Name: Humpheys
Address: 149 Hodgsons F
loburn

Consent #:

Pitch: 28.000
Roof Material: Corona Shake
Soffit Overhang: 600
Wind Area: High
Snow Load: 0.403 (Factore

Trusses And Rafters At 900 Cent
Unless Stated Otherwise.

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

DRAWN BY Brent Yellov
DATE 1 Nov,2011 | PAGE

NOTE

Please contact your local CARTERS Manufacturing Branch for any queries regarding this layout or if any on site work is required.

No modifications to Roof Trusses or \ are to be undertaken without first obt written authority from CARTERS Mar

All walls indicated on the layout are c to be load bearing.

LINTELS

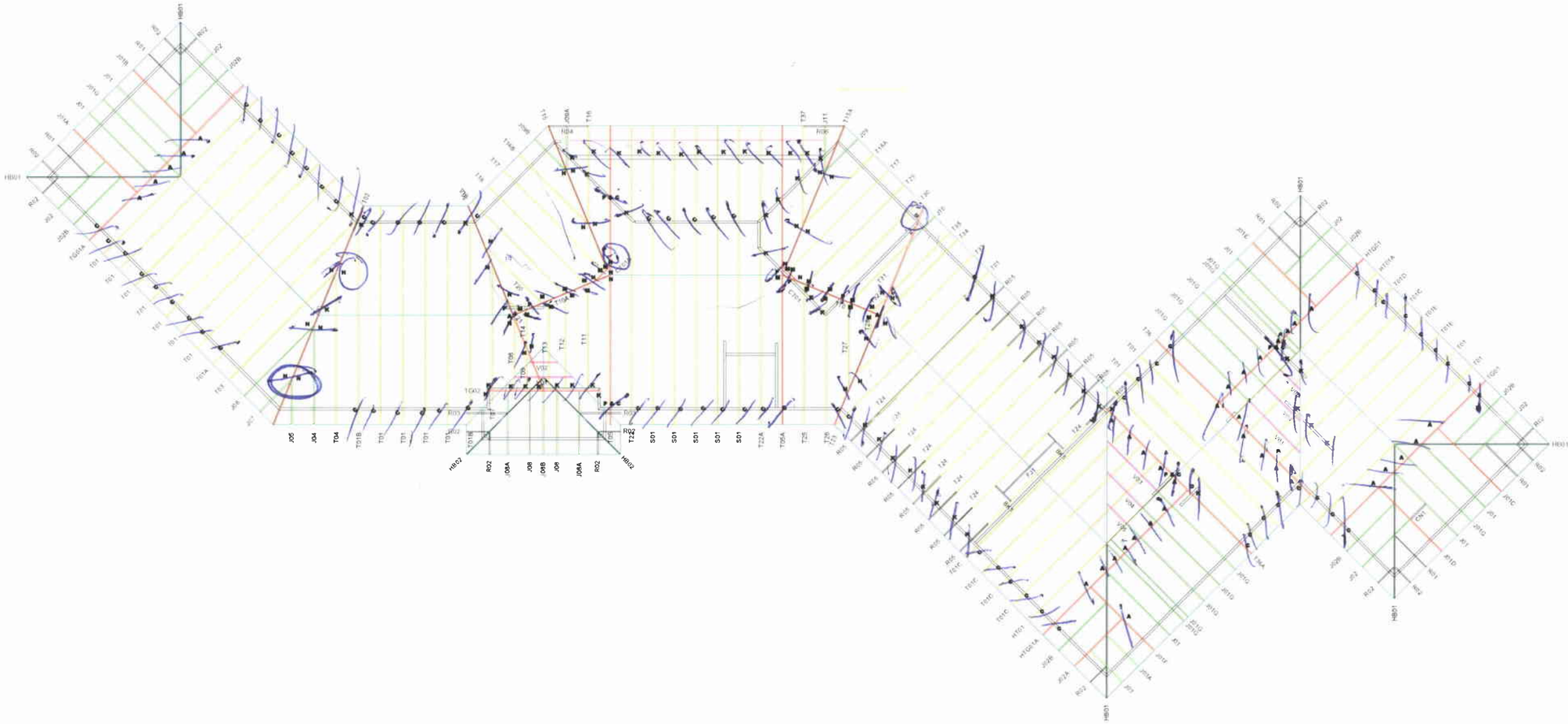
Refer Frame Lay for Lintel Size

QUALITY ASSURANCE F.T.M.A. NEW ZEALAND TIMBER & TRUSS MANUFACTURERS ASSOCIATION NZ

See page 1 for labels

PDF created with pdfFactory Pro trial version www.pdffactory.com

FINAL LAYOUT



CARTERS
MANUFACTURING
21 Broughs Rd
Christchurch
Ph (03) 359 2731

02 NOV 2011
110560

JOB No **CD91052**

Client: Mike Greer Hon
Job Name: Humpheys
Address: 149 Hodgsons F
Ioburn

Consent #:

Pitch: 28.000
Roof Material: Corona Shake
Soffit Overhang: 600
Wind Area: High
Snow Load: 0.403 (Factorec

Trusses And Rafters At 900 Cent
Unless Stated Otherwise.

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

DRAWN BY Brent Yellov

DATE 1 Nov,2011 | PAGE

FIXINGS

A=47x90 JH
B=47x120 JH
D=47x190 JH
E=95x165 JH

Joist

C=CT200 (Pair)
M=Multigrip (Pair)
N=Nail On Plate
K=CPC 40 (Pair)
P=CPC 80 (Pair)
X=N21 Cleat (Pair)

Mul

All other Truss fixings must be Two wire dogs Unless indicated as above.

Nail

NOTE

Please contact your local CARTERS Manufacturing Branch for any queries regarding this layout or if any on site r work is required.

No modifications to Roof Trusses or W are to be undertaken without first obta written authority from CARTERS Manu

QUALITY ASSURANCE
F.T.M.A.
NEW ZEALAND
TIMBER TRUSS MANUFACTURERS ASSOCIATION (NZ)

See Page 2 for Dimen and Point Loads.

4 11 11

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FINAL LAYOUT

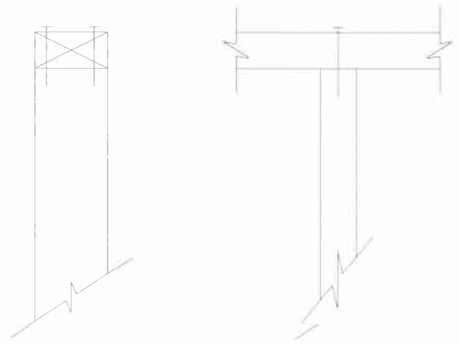
CARTERS MANUFACTURING

0 2 NOV 2011
BY:
110550 A

Stud to Top Plate Fixing

Fixing Type A (0.7kN)

2/90x3.33 Plain Steel Wirenails
Driven Vertically Into Stud



Fixing Type B (4.7kN)

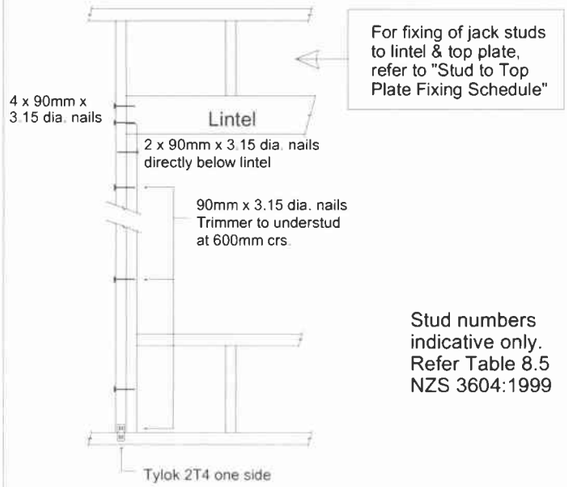


GANG NAIL Stud Strap
Design Capacity 6.1 kN
AS1720.1-1997

.EASE NOTE:
‹ings supplied are only for applications shown.

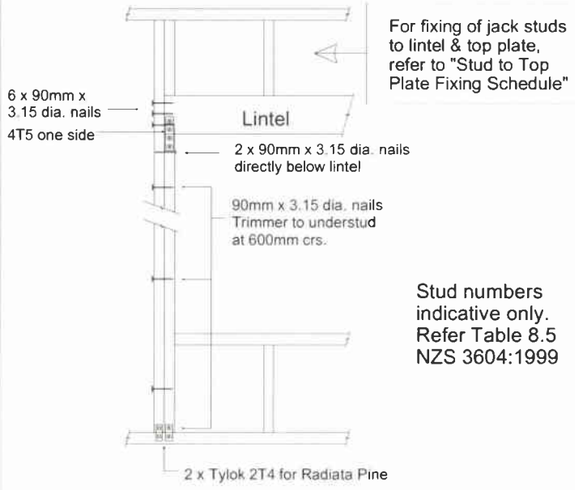
Lintel Fixing

Type E (1.4kN)



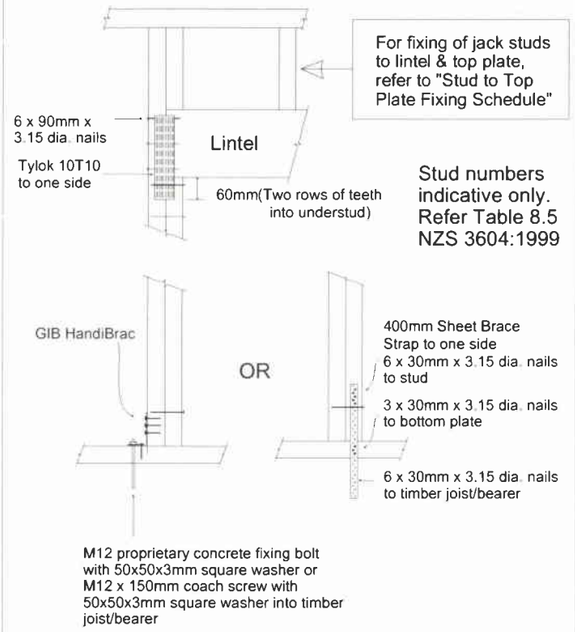
Stud numbers indicative only. Refer Table 8.5 NZS 3604:1999

Type F (4.0kN)



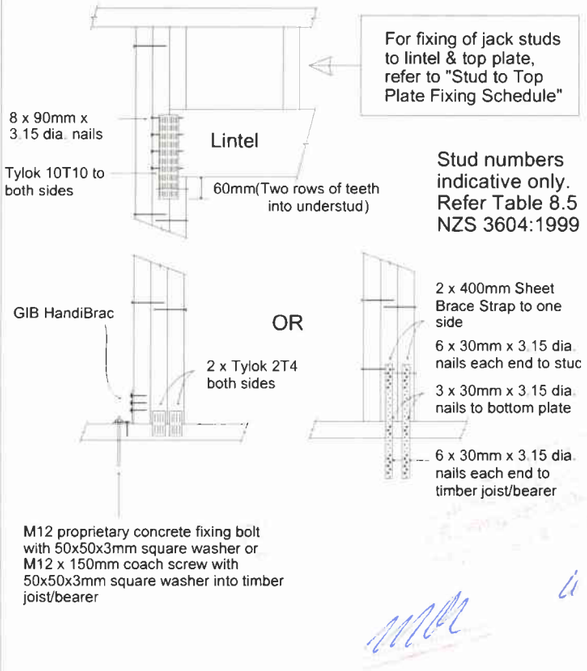
Stud numbers indicative only. Refer Table 8.5 NZS 3604:1999

Type G (7.5kN)



Stud numbers indicative only. Refer Table 8.5 NZS 3604:1999

Type H (13.5kN)

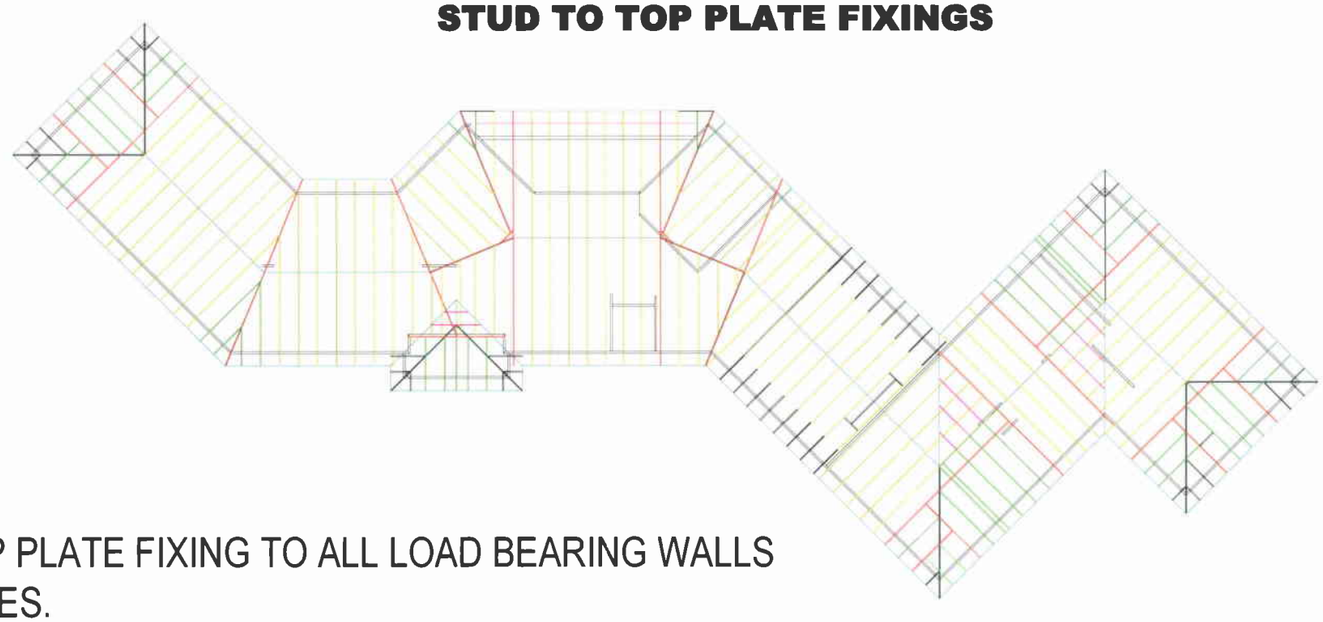


Stud numbers indicative only. Refer Table 8.5 NZS 3604:1999

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FINAL LAYOUT

STUD TO TOP PLATE FIXINGS

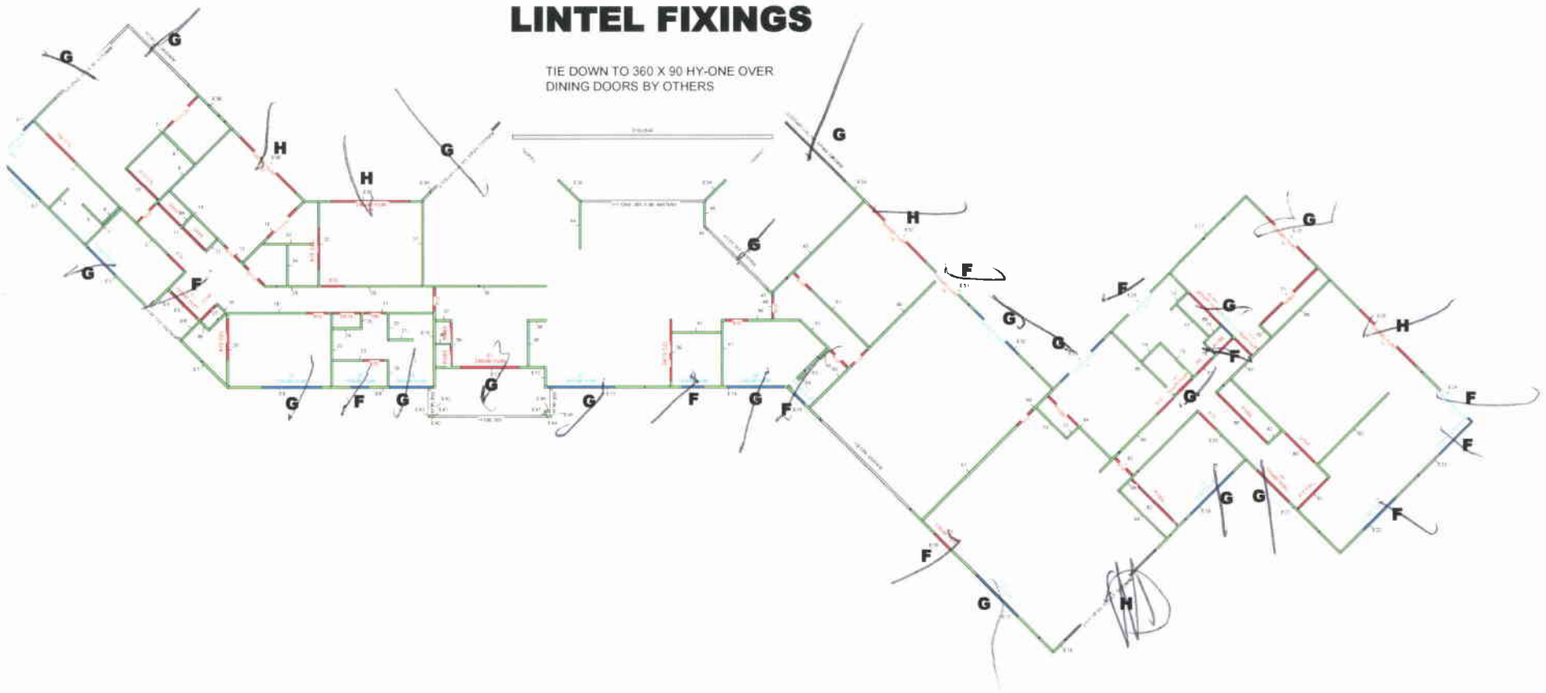


TYPE B STUD TO TOP PLATE FIXING TO ALL LOAD BEARING WALLS SUPPORTING TRUSSES.

PLEASE REFER TO ATTACHED PAGE OF THE FUTURE BUILD LVL MANUAL FOR CANTERLEVER CONNECTIONS

LINTEL FIXINGS

TIE DOWN TO 360 X 90 HY-ONE OVER DINING DOORS BY OTHERS



CARTERS
MANUFACTURING
21 Broughs Rd
Christchurch
Ph (03) 359 2731

02 NOV 2011
BY:

JOB No **CD91052**

Client: Mike Greer Hom
Job Name: Humpheys
Address: 149 Hodgsons F
loburn

Consent #:

Pitch: 28.000
Roof Material: Corona Shake
Soffit Overhang: 600
Wind Area: High
Snow Load: 0.403 (Factorec

Trusses And Rafters At 900 Cent
Unless Stated Otherwise.

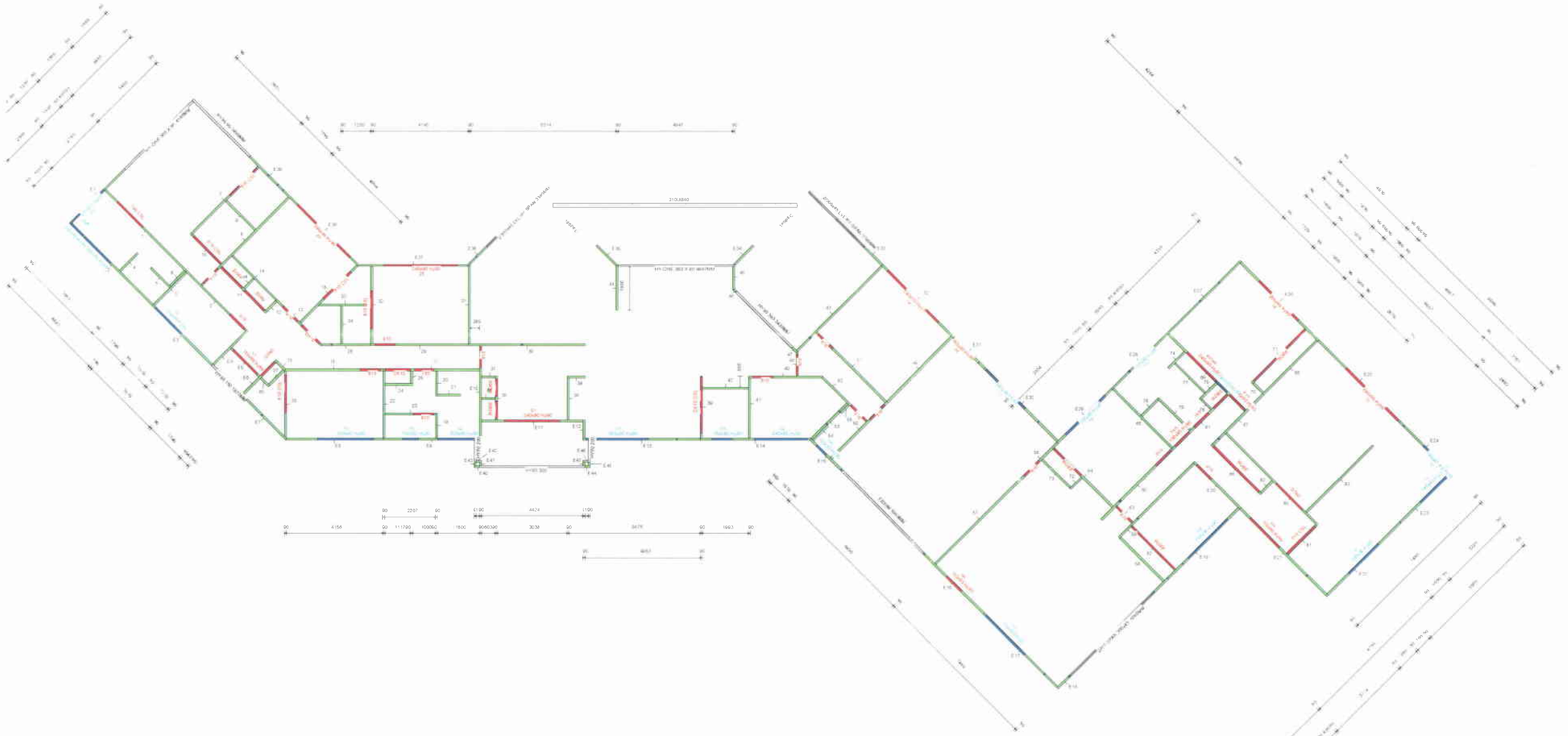
This layout is to be read in conjur
with the Architectural plans.

DRAWN BY Brent Yellow
DATE 1 Nov,2011 | PAGE

**Refer Fina
Page for
Lintel and
Top Plate
Fixing Ke**

PDF created with pdfFactory Pro trial version www.pdffactory.com

FINAL LAYOUT



CARTERS
MANUFACTURING

21 Broughs Rd
Christchurch
Ph (03) 359 2781

RECEIVED
12 NOV 2011
650 A

JOB No CD91052

Client: Mike Greer Hom
Job Name: Humpheys
Address: 149 Hodgsons F
loburn

Consent #:

Pitch: 28.000
Roof Material: Corona Shake
Soffit Overhang: 600
Wind Area: High
Snow Load: 0.403 (Factorec

Trusses And Rafters At 900 Cent
Unless Stated Otherwise.

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

DRAWN BY Brent Yellow
DATE 1 Nov,2011 | PAGE

These lintels have been sized using
one of the following:

The GANGLAM 04/2008 and
FLITCH BEAM 12/2007
selection manuals from MiTek NZ L

hyONE and hy90 lintels have been
using designIT v4 NZ software
(incl. sub versions) or selection mar
hy90 Edition 1, and hyONE April 20
provided by CHH Woodproducts.

Unless otherwise stated the timber
for all lintels is MSG8. Lintels not sl
are to be selected as per NZS3604

Level 1 Fran

QUALITY ASSURANCE
F.T.M.A.
NEW ZEALAND
FRAME & TRUSS MANUFACTURERS ASSOCIATION

See Other Pages Fo
Truss Layout and
Fixings

PDF created with pdfFactory Pro trial version www.pdffactory.com

02 NOV 2011

Debbie Haywood

From: Jennings, Todd (Carters Christchurch Manufacturing) [Todd.Jennings@carters.co.nz]
Sent: Wednesday, 2 November 2011 3:17 p.m.
To: Building Services
Subject: Consent 110550
Attachments: image004.jpg; CD91052 - FTMA Cert.pdf; CD91052.pdf

Please find attached the as built layout for the above consent

CARTERS **Todd Jennings** Scheduling Support Co-ordinato
YourBuildingPartner ■ DDI +64 3 3592736 ■ FAX +64 3 3595800 ■
19-21 Broughs Rd, Harewood, Christchurch | PO Box 4643, Christchurch 8140 | www.carters.co.nz

REGISTERED MASTER BUILDERS APPRENTICE OF THE YEAR IN ASSOCIATION WITH CARTERS



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WAIMAKARIRI DISTRICT COUNCIL

RECEIVED 08 JUL 2011

To: Building

C/O
Pete Thomson
Alpine Project Management
PO Box 558
Wanaka 9343
Sub Humphreys BC110550

Peter Thomson

From: Peter Thomson <alpine.project@ihug.co.nz>
Sent: Wednesday, 29 June 2011 8:01 a.m.
To: 'Mark Milnes'
Subject: RE: Humphreys consent

Hello Mark

Thanks for the IR info, we are now looking good

I trust you will now forward the final A2 drawing's x 3 sets either to WDC in Rangiora or direct to me here in Wanaka?

Please confirm when you will do this so I can allocate some time to rebuild the files and get them back to Rangiora for BC issue

Thanks for your help
Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

Delivery Address
238 Beacon Point Road
Wanaka

From: Mark Milnes [mailto:msmilnes@hotmail.com]
Sent: Tuesday, 28 June 2011 12:53 p.m.
To: peter thomson
Subject: Humphreys consent

Hi Peter
Truss manufacturer covers everything identified on his attached drawings also as in last email he re checked LVL's and changed garage lintel to flitch beam for attic truss load. please find attached also corrected address (sorry I sent wrong design last time)

Hansen local effluent designers not normally asked for spec's as it is a locally well known approved system.Please find their 550 design.

Please find HWC drain line re added to sheet 2.

regards Mark

OK for validation 14-7-11

Peter Thomson

From: Mark Milnes <msmilnes@hotmail.com>
Sent: Tuesday, 28 June 2011 12:53 p.m.
To: peter thomson
Subject: Humphreys consent 110550
Attachments: sheet 2 HWC drain.pdf; New Truss design.pdf; Hansen design.pdf

Hi Peter
Truss manufacturer covers everything identified on his attached drawings also as in last email he re checked LVL's and changed garage lintel to flitch beam for attic truss load. please find attached also corrected address (sorry I sent wrong design last time)

Hansen local effluent designers not normally asked for spec's as it is a locally well known approved system.Please find their 550 design.

Please find HWC drain line re added to sheet 2.

Regards Mark

A4 x 10
A3 x 1

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: 29-6-11

Job: Humphreys. Job Number: 110550

Location: 149 Hodgsons Road Loburn

Page No	Issues / Queries	Comments
	all ok.	
●		
	design non to	
	supply 3x sets A2 OK	drawings as
		per amended,
		(4o A3 as emailed)
●		

These pages must be kept with the file copy.

Consent Officer: Date: 14-7-11.

Peter Thomson

From: Peter Thomson <alpine.project@ihug.co.nz>
Sent: Thursday, 23 June 2011 11:48 a.m.
To: Debbie Haywood (debbie.haywood@wmk.govt.nz)
Subject: FW: Humphreys Job
Attachments: Email 4th F I 110550 23rd June 11.doc

Hello Debbie

4th RFI letter as emailed to designer today; on hold on day 10 110550

21/6/11 IR but not all info supplied
23/6/11 4th RFI letter sent

From: Peter Thomson [mailto:alpine.project@ihug.co.nz]
Sent: Thursday, 23 June 2011 11:45 a.m.
To: 'Mark Milnes'
Subject: RE: Humphreys Job

Hello Mike

Please refer to the attached RFI letter, still 4 outstanding points to supply

Please send full size scaled drawings to either WDC in Rangiora or direct to myself in Wanaka to the address as listed below

Thanks
Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

Delivery Address
238 Beacon Point Road
Wanaka

From: Mark Milnes [mailto:msmilnes@hotmail.com]
Sent: Tuesday, 21 June 2011 10:48 p.m.
To: peter thomson
Subject: Humphreys Job

Hi Peter
Hope that covers everything.
regards
Mark

EMAIL TRANSMISSION

Alpine Project Management
P O Box 558
Wanaka 9343
Phone 03-443 7564
Mob 0274 873 115
Fax 03-443 7844
E mail alpine.project@ihug.co.nz

DATE: 23/6/11

TO: David Humphreys/ Mark Milnes

COMPANY:

FAX/EMAIL: dhumphreys@kiwichet.com.sg

FROM: Peter Thomson

No of Pages: 2

TIME: 11.45am

STATEMENT OF CONFIDENTIALITY: This facsimile and/or e mail sheets contain information which is confidential and/or privileged. This information is intended to be for the use of the addressee named on this transmission sheet. If you are not the addressee, note that any disclosure, photocopying, distribution or use of the content of this faxed information is prohibited. If you have received this in error, please notify us by telephone (toll free 0800 724 2378) immediately so that we can arrange for the retrieval of the original documents at no cost to you.

Re: Building Consent application No. 110550
New single storey dwelling with garaging and two wood burners at 169 Hodgsons Road, Loburn
4th further information letter requesting the same information in part

Dear Mark,

I am currently processing your proposed building consent application for compliance with the New Zealand Building Code on behalf of Waimakariri District Council.

I have assessed the documentation provided and I require further information and / or clarification as detailed on the attached pages. **Please refer to the points highlighted in bold text and to clarify/supply amended details accordingly**

Once you have answered all my queries, I can continue processing your application for approval. I am happy to receive information by e-mail up to A3 in size. **Please provide 3 copies of information if other than sent by e-mail.**

If you have any queries please contact me on the above address, or phone / e-mail me.

Yours faithfully

Peter Thomson
Building Consent Processor

OK for validation 14-7-11

Minor items that can be corrected with a red pen subject to the designer's written approval

1. tagged
2. tagged
    a. ok

Designer to supply additional detail as listed below

3. ok

4. ok
    a. ok
    b. ok
    c. **Please have the truss specifier supply a copy of the truss certificate with the correct address shown; The truss cert and layout plan as received is for Collins 239 West Belt Rangiora**
        i. ok
    d. ok
    e. To detail the (copper) HWC drains from relief valves to a suitable outfall(gully dish) Copper drain required; please tag accordingly; **the outline of the drain for the 300 litre cylinder has been omitted from this amended drawing**

5. **Have the effluent system designer, supply the Hanson 55 pre-treat tank specifications and details**

6. ok

7. ok

8. ok

9. ok
    a. ok
    b. **Supply the span chart/ PS1 for the 300x90 LVL beams to the garage door openings D15, D16 and to D5 opening; (span chart as supplied has no reference to LVL on it and a design certificate is required or have the truss specifier cover with their truss design certificate)**
    c. ok D15:- changed to pitch beam

10. ok D5; D16. 300x90 LVL on layout plan.

11. ok

OK for validation 14-7-11.

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: 23-6-11

Job: Humphreys Job Number: 110550

Location: 149 Hodgsons Rd Lobuin.

Page No	Issues / Queries		Comments
4(c)	Truss cert	x	for Colling 239 west belt, wrong truss cert.
4(e)	300 ltr HWC drain outlet	x	now not shown. please include
5.	Tank 1. Hanson SS pre-fab	x	please supply

These pages must be kept with the file copy.

Consent Officer: Date: 14-7-11

Peter Thomson

From: Mark Milnes <msmilnes@hotmail.com>
Sent: Tuesday, 21 June 2011 10:48 p.m.
To: peter thomson
Subject: Humphreys Job
Attachments: sheet 1 site plan.pdf; specs gasfitter.pdf; sheet 2 foundation & plumbing.pdf; sheet 3 floor plan.pdf; sheet 4 elevations.pdf; sheet 5 bracing plan.pdf; sheet 6 bracing elements.pdf; sheet 7 beam & lintel plan.pdf; sheet 8 stormwater plan.pdf; sheet 9 cross sections.pdf; sheet 10 foundation details.pdf; sheet 11 window details.pdf; sheet 12 beam fixing details.pdf; sheet 13 beam fixing details.pdf; specs & owners manual.pdf; Truss cert.pdf; table 6.pdf; carpenter.pdf; bath tile details.pdf; second council letter.pdf

Hi Peter
Hope that covers everything.
regards
Mark

~~A4 x 36~~
~~A3 x 13~~

Mark Milnes Architectural Design
7 Park Street
Rangiora

Building Consent No: 110550
20 June 2011

Peter Thomson
BUILDING CONSENTS PROCESSOR
Alpine Project Management
Dear Peter,

1. ok
2. ok
3. **Please find attached all drawings with amended address 149 Hodgsons Road**
   a) ok
   b) ok
4. **Please find attached drawings with amended sheet 10 showing separation coating on dowels on one side of joint.**
   a) ok
   b) ok
   c) Please find attached truss design with amended address 149 Hodgsons
   d) ok
   e) Please find attached amended sheet 2 to include 'copper'.
   f) ok
   g)) Please find attached copy of table 6 of G13/AS1 to add to plumbers spec's.
   h) ok
   i) ok
   j) ok
   K) ok
   l) ok
5. **Please find attached effluent designers manual and high level alarm specifications.**
6. ok
   a) ok
   b) Please find attached bath wall & bath floor junctions as per Gib Aqualine specifications.
   c) ok
   d) ok
   e) Please find amended sheet 3 ducting labeled.
   f) ok
   g) Please find attached gas specifications to add to Plumber's spec's
7. **Please find amended sheet 4 specifying Gerard tile spacing & fixing. Note batten fixings are already given in Carpenters specs (all battens 3 nails or 1nail +1 screw)**

8. **a)** ok.
   b) ok.
   c) ok
9. ok
   a) ok
   b) Please find attached amended truss design certificate to include LVL's. Note Truss manufacturer has changed LVL over garage door related to Attic Trusses in case of extra loading to Pryda flitch beam (300x6mm)
   c) ok
10. ok.
   a) ok
   b) ok.
11. ok

Any further information required please phone or fax me at 313 5946.
Or email msmilnes@hotmail.com

Regards Mark

Peter Thomson

From: Peter Thomson <alpine.project@ihug.co.nz>
Sent: Sunday, 5 June 2011 2:51 p.m.
To: Debbie Haywood (debbie.haywood@wmk.govt.nz)
Subject: FW: Building Consent application No 110550
Attachments: Email 3rd F I 110550 3rd June 11.doc

Hello Debbie

Details on 110550
1/6/11 IR info received by e mail; not all info supplied
3/6/11 3rd RFI letter e mailed; on hold on day 9

From: Peter Thomson [mailto:alpine.project@ihug.co.nz]
Sent: Sunday, 5 June 2011 2:47 p.m.
To: 'Mark Milnes'
Subject: RE: Building Consent application No 110550

Hello Mark
Please refer to the attached 3rd RFI letter, just a few points still need clarifying or supplying

Regards
Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

Delivery Address
238 Beacon Point Road
Wanaka

From: Mark Milnes [mailto:msmilnes@hotmail.com]
Sent: Wednesday, 1 June 2011 11:38 p.m.
To: alpine.project@ihug.co.nz
Subject: Building Consent application No 110550

Hi Peter
attached is the information requested
the plans that are A1 I can post hard copy if you are now happy with them
Please feel free to phone to discuss any queries
regards
Mark

Mark Milnes Architectural Design Ltd

EMAIL TRANSMISSION

Alpine Project Management
P O Box 558
Wanaka 9343
Phone 03-443 7564
Mob 0274 873 115
Fax 03-443 7844
E mail alpine.project@ihug.co.nz

DATE: 3/6/11

TO: David Humphreys/ Mark Milnes

COMPANY:

FAX/EMAIL: dhumphreys@kiwichet.com.sg

FROM: Peter Thomson

No of Pages: 3

TIME: 4.14pm

STATEMENT OF CONFIDENTIALITY: This facsimile and/or e mail sheets contain information which is confidential and/or privileged. This information is intended to be for the use of the addressee named on this transmission sheet. If you are not the addressee, note that any disclosure, photocopying, distribution or use of the content of this faxed information is prohibited. If you have received this in error, please notify us by telephone (toll free 0800 724 2378) immediately so that we can arrange for the retrieval of the original documents at no cost to you.

Re: Building Consent application No. 110550
New single storey dwelling with garaging and two wood burners at 169 Hodgsons Road, Loburn
3rd further information letter requesting the same information in part

Dear Mark,

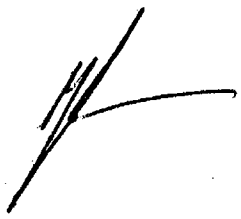
I am currently processing your proposed building consent application for compliance with the New Zealand Building Code on behalf of Waimakariri District Council.

I have assessed the documentation provided and I require further information and / or clarification as detailed on the attached pages. **Please refer to the points highlighted in bold text and to clarify/supply amended details accordingly**

Once you have answered all my queries, I can continue processing your application for approval. I am happy to receive information by e-mail up to A3 in size. Please provide 3 copies of information if other than sent by e-mail.

If you have any queries please contact me on the above address, or phone / e-mail me.

Yours faithfully



Peter Thomson
Building Consent Processor

Minor items that can be corrected with a red pen subject to the designer's written approval

1. tagged

2. tagged
   a. ok

Designer to supply additional detail as listed below

3. We will confirm the site address once the PIM is issued; **your address is 149 Hodgsons Road; please supply amended drawings with the correct address shown**
   a. Please refer to your PIM in regards to Resource Consent requirements
   b. ok

4. **Sheet 10; to add to the free control joint detail "separation coating (Denzo tape or similar) required to one side of the dowels" so your detail is compliant**
   a. ok
   b. ok
   c. **Please have the truss specifier supply a copy of the truss certificate with the correct address shown**
      i. ok
   d. ok
   e. To detail the (copper) HWC drains from relief valves to a suitable outfall(gully dish) **Copper drain required; please tag accordingly**
   f. ok
   g. **Supply the size of the branch drain vents or supply a copy of table 6 of G13/AS1**
   h. ok
   i. ok
   j. ok
   k. ok
   l. ok

5. **Have the effluent system designer supply the owner's manual, tank and effluent pump and high level alarm specifications; Please note; this is required for NZB Code compliance and is nothing to do with the ECAN approval**

6. ok
   a. ok
   b. **Please detail the waterproof junctions for the 2 x bath to wall and bath to floor with impervious wall lining details to the top edge of the bath/s; you may want to supply bath details from the Gib Aqualine booklet**
   c. ok
      i. ok
      ii. ok

ok for validak 14-7-11

d. ok
e. **Please label the ventilation ducting as now detailed on sheet 03, or supply a key for the drawing and to label that the ducting is terminated under the soffit**
f. ok
g. **Kitchen hob gas as per amended details; please therefor supply gas specification as part of the plumbing specifications**

7. **Sh4; to detail the Gerard tile fixings, tile batten size and spacing's and tile batten fixings; (these details are not in the Gerard specifications)**

8. ok
   a. ok
   b. ok
   c. ok

9. ok
   a. ok
   b. **Supply the span chart/ PS1 for the 300x90 LVL beams to the garage door openings D15, D16 and to D5 opening; (span chart as supplied has no reference to LVL on it and a design certificate is required or have the truss specifier cover with their truss design certificate)**
   c. ok

ok

10. ok

11. ok

OK for validation 14-7-11

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: 9-6-11

Job: Humphreys Job Number: 110550.

Location: 149 Loburn.

Page No	Issues / Queries	Comments
3.	supply to amended drwg, with correct address	✗ ie. 149 Hodgsons Road
4.	Sh10. tree control joint. detail	please detail seperator cont (Denzo tape) around one end of dowel, or we can try, ✗
4.	(c) wrong address on trucss cert.	✗ 149 Hodgsons Road
	(c) ii) bad pads not on truss cert	OK if installed
4	(e) copper. HWC drain	✗ copper reqd
4	(g) branch drain wall size table 6 of G13/AS1	✗ supply

These pages must be kept with the file copy.

Consent Officer: Date: 14-7-11

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries		Comments
4.	j	OK	
	K not in spec.	x	so tagged as per designers RFI response letters
5.		x	supply alpheth details
6. (b)	both frontage details req'd. can use 6(b) aquate details x to supply		
(c)	2 x fire appliances	OK	full installation supplied
6(o)	sh03. duct shown but no key to start or duct not labelled	x	please detail and tag duct to form wide stitch.
	gas as energy source supply gas spec's to plumbing spec	x	please supply
7.	Tile	x	details pixing

These pages must be kept with the file copy.

Consent Officer: _____ Date: 14-7-11

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries	Comments
8.	(a) OK	Please label the 3 block to sh 06, OK as is
9.	6.	x span chart what it for no detail on span sketch.
	PSI Bay cat	

These pages must be kept with the file copy.

Consent Officer: _____ Date: 4-7-11

Peter Thomson

From: Mark Milnes <msmilnes@hotmail.com>
Sent: Wednesday, 1 June 2011 11:38 p.m.
To: alpine.project@ihug.co.nz
Subject: Building Consent application No 110550
Attachments: letter.pdf; sheet 2 AMENDED foundation & plumbing _.pdf; sheet 13 beam fixing details.pdf; sheet 3 AMENDED floor plan.pdf; sheet 6 AMENDED bracing elements.pdf; sheet 8 AMENDED stormwater plan.pdf; sheet 9 AMENDED cross sections.pdf; sheet 10 AMENDED foundation details.pdf; 4 reinforcing AMENDED.pdf; 5 carpenter AMENDED.pdf; attic truss design.pdf; ECO Freestanding Manual.pdf; ECAN (effluent).pdf; LVL lintel table.pdf; letter.pdf; sheet 2 AMENDED foundation & plumbing _.pdf; sheet 13 beam fixing details.pdf; sheet 3 AMENDED floor plan.pdf; sheet 6 AMENDED bracing elements.pdf; sheet 8 AMENDED stormwater plan.pdf; sheet 9 AMENDED cross sections.pdf; sheet 10 AMENDED foundation details.pdf; 4 reinforcing AMENDED.pdf; 5 carpenter AMENDED.pdf; attic truss design.pdf; ECO Freestanding Manual.pdf; ECAN (effluent).pdf; LVL lintel table.pdf

RECEIVED
2011

Hi Peter
attached is the information requested
the plans that are A1 I can post hard copy if you are now happy with them
Please feel free to phone to discuss any queries
regards
Mark

Mark Milnes Architectural Design Ltd

~~A4x 4~~
A3x 4

Mark Milnes Architectural Design
7 Park Street
Rangiora

Building Consent No: 110550
31 May 2011

Peter Thomson
BUILDING CONSENTS PROCESSOR
Alpine Project Management
Dear Peter,

1. Please red pen Schedule of Compliance.
2. Please red pen specification 5.
3. **a)** ok
   b) Please remove soak pit detail from specifications, sheet 1 & sheet 8 does not show soak pits?
4. **a)** Please find attached amended specifications for reinforcing to be G300 E.
   b) Please find attached amended sheet 2 to include text *"not over control joints"*
   c) Please find attached updated truss design. Note load thickenings shown as indicated by truss manufacturer.
   d) Please find attached amended drainage schedule on sheet 2.
   e) Please find attached amended sheet 2 to include HWC drains.
   f) Please find attached amended sheet 2 to include dishwasher AAV
   g) Please note terminal vent shown as DN80 in drainage schedule, regarding branch vents I have specified in the plumber's specification for the Sanitary System to be in accordance with clause G13 / VM1, Foul Water, of the N.Z. Building Code. Install and connect all soil, waste and vent pipes as required to comply with G13 / AS1, NZBC .Generally all pipework shall be PVC to comply with NZS 7643. All discharge pipes, vent pipes and traps shall be to sizes as required to suit fixture. Pipe sizes shall not decrease with direction of flow. All pipes shall be laid to gradients; 1:20 for 32mm dia. pipes, 1:40 for up to 65mm dia, 1:60 for up to 100mm dia. Provide support to all pipework as required with expansion joints to accomodate thermal movement. Wrap all pipes in bituminuous felt at supports and where they pass through concrete slabs and foundations, also wrap with densotape at concrete. All joints to be neatly made and all wastes to discharge over gully traps. Combine vent pipes where possible within the roof space to reduce the number of pipes penetrating the roofing. Terminate vent pipes 150mm above roof line & 600mm min. above windows. Are you asking for copy of table 6 G13/AS1 for minimum diameter of vent pipes for the branch drains, for plumber's reference?
   h) Please find attached amended sheet 2 to include additional IP inspection point beside gully trap.
   i) Sheet 10 shows foundation min depth 300mm below existing ground level? (NZS 3604: 1999 clause 3:4.2 *the minimum depth of footings below the cleared ground level shall be 200mm).*
   j) Please note roof plane bracing as per roof brace chart provided in carpenter

specifications (7 valleys and 11 hips).Please find additional roof plane brace on amended sheet 8.

K) Please note specified in Bricklayer specification as 70 series 'Clay brick' type : AUSTRAL BRICKS

l) Sheet 9 shows 4.5mm hardi soffit – brick junction.

5. Please find attached ECAN approval for effluent design.

6. Please find amended sheet 3 showing shower doors on guest wing shower. Please note dotted lines indicate waste positions, construction and tanking is provided in Tiler specifications.

a) Please find attached amended sheet 3 showing shower rose positions of all showers.

b) Bath wall junctions are to be tanked and tiled as per Tiler specifications.

c) Please find amended sheet 2 showing the model of the two fire appliances as per Plumber specifications . Please note dwelling is outside of clean air zone therefore no ECAN restrictions apply.

d) Please find attached amended sheet 2 showing labels for kitchen appliances.

e) Please note WC fan type as provided per Electrician specifications. Please find attached amended sheet 3 showing ducting to soffits.

f) Please find attached meter box position shown on amended sheet 2 & sheet 6.

g) Owner has now decided to have gas hobbs please find gas bottle position shown on sheet 3. Plus provision of Gas bottle position to add to Plumber/Gas fitter specifications.

7. Please find all Gerard tile fixing details provided in roofer specifications.

8. **a)** Please find amended sheet 6 to show corrected element M1 as EP1.

b) Please find amended sheet 6 to show plywood as H3.2.

c) Please find amended sheet 6 to show garage ceiling Rondo battens direct fixed. (as shown in carpenters specifications).

9. Window sizes listed in H1 compliance details. Sheet 7 measurements are lintel sizes. W4 opening is 800mm wide (openings less than 900mm not normally given, unless point loaded).

a) Please find additional sheet 13 showing Lintel fixings for W17.

b) Please find attached copy of LVL span chart.

c) Please find additional sheet 13 showing 90x45mm plate bolted to top and underside of PFC.

10. Please find amended carpenter specifications to show MSG8 framing.

a) Please find third cross section on amended sheet 9 labeled CC

b) Please find amended sheet 9 to show reference to sheet 13.

11. Please find amended sheet 2 showing 45L underbench cylinder.

Any further information required please phone or fax me at 313 5946.
Or email msmilnes@hotmail.com

Regards Mark

Peter Thomson

From: Peter Thomson <alpine.project@ihug.co.nz>
Sent: Wednesday, 1 June 2011 9:07 a.m.
To: Debbie Haywood (debbie.haywood@wmk.govt.nz)
Subject: FW: Bc 110550
Attachments: Email 2nd F I 110550 31st May11.doc

Hello Debbie

Copy of amended F I letter now that the PIM has been issued

Still on day 7

Regards P T

From: Peter Thomson [mailto:alpine.project@ihug.co.nz]
Sent: Wednesday, 1 June 2011 9:03 a.m.
To: paulah@kiwichef.com.sg
Subject: Bc 110550

Hello Paula

Your PIM has now been issued for your BC application
Please refer to the amended 2nd F I letter as attached
Any questions please call me to discuss

Regards
Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

Delivery Address
38 Beacon Point Road
Wanaka

EMAIL TRANSMISSION

Alpine Project Management
P O Box 558
Wanaka 9343
Phone 03-443 7564
Mob 0274 873 115
Fax 03-443 7844
E mail alpine.project@ihug.co.nz

DATE: 31/5/11

TO: David Humphreys

COMPANY:

FAX/EMAIL: dhumphreys@kiwichet.com.sg

FROM: Peter Thomson

No of Pages: 4

TIME: 9.00am

STATEMENT OF CONFIDENTIALITY: This facsimile and/or e mail sheets contain information which is confidential and/or privileged. This information is intended to be for the use of the addressee named on this transmission sheet. If you are not the addressee, note that any disclosure, photocopying, distribution or use of the content of this faxed information is prohibited. If you have received this in error, please notify us by telephone (toll free 0800 724 2378) immediately so that we can arrange for the retrieval of the original documents at no cost to you.

Re: Building Consent application No. 110550
New single storey dwelling with garaging and two wood burners at 169 Hodgsons Road, Loburn
Updated further information letter now your PIM has been issued

Dear Paula,

I am currently processing your proposed building consent application for compliance with the New Zealand Building Code on behalf of Waimakariri District Council.

I have assessed the documentation provided and I require further information and / or clarification as detailed on the attached pages. **Your PIM has now been issued; therefor please refer to the amended points highlighted in bold text**

Once you have answered all my queries, I can continue processing your application for approval. I am happy to receive information by e-mail up to A3 in size. Please provide 3 copies of information if other than sent by e-mail.

If you have any queries please contact me on the above address, or phone / e-mail me.

Yours faithfully

Peter Thomson
Building Consent Processor

Ok for validation 14-7-11

Minor items that can be corrected with a red pen subject to the designer's written approval

1. Schedule of Compliance; to add the following as a means of compliance; B1; NZS 3604 & B1 VM1; C1/AS1; F2/AS1; F5/AS1 & G13/AS2; we can tag with your consent

2. Specifications; 5 insulation; to amend R28 to R2.8 for the wall insulation; we can tag with your consent
   a. Purlins; 70 x 45 to amend to tile battens

Designer to supply additional detail as listed below

ok

3. We will confirm the site address once the PIM is issued; **your address is 149 Hodgsons Road; please supply amended drawings with the correct address shown**
   a. **Please refer to your PIM in regards to Resource Consent requirements**
   b. **A soak pit detail has been provided, however on the Hanson stormwater design it shows an overflow to the natural watercourse via a dissipater, therefor please amend sheet 1 and 8 accordingly and to delete the soak pit detail in your specifications**

dated 30-5-11.

ok

4. Sheet 10; to amend to free control joints from saw cuts to dowel bars in accordance with B1/AS1 which took effect from the 19th May 11
   a. **All reinforcing steel to be Ductility Class E, in accordance with NZS 4671; in accordance with B1/AS1 which took effect from the 19th May 11; please detail to documentation accordingly**
   b. Sh2; To include in the text re corner bars; "not over control joints" or we can tag with your consent
   c. Please have the truss specifier supply a legible copies of the truss layout plan with the attic trussed details as per the detail to your Sheet 3

ok

   Please have the truss specifier clearly indicate if load pads are required to the load points as details on the truss layout plan and as shown on sh02 by your designer
   d. Sh2; specifies a 180 & 300 litre HWC, however on the drainage schedule to the same sheet a 270 & 300 are specified; please clarify and or supply amended detail

ok

   e. To detail the (copper) HWC drains from relief valves to a suitable outfall(gully dish)
   f. To vent the dish washer waste pipe as the developed length is over 3.5 meters (AAV or open vent)

ok

   g. Supply the size of the F S drain main and branch drain vents
   h. To show an inspection opening to either side of the under slab F S drains to comply with G13/AS2
   i. Sh10; to specify the depth of the foundations in accordance with NZS 3604: 1999
   j. Provide the roof plane bracing layout on the roof or bracing plan Sh08
   k. Please supply the brick type for the 70 series brick cladding

tagged clay Austral Brick as per designers Letter.

l. Provide a detail of the soffit with guttering, fascia, tile roofing and roofing underlay and to show the brick cladding clearly separated from the roof cavity by either solid blocking or the soffit linings Sh09

OK 5. Have the effluent system designer supply the owner's manual, tank and effluent pump and high level alarm specifications

6. Sh3; to supply the construction detail with fall to the wet area shower/s base/s detailed and to detail the shower screen/door, or other details in accordance with E3/AS1 in supplex installation instructions in specs

   a. We note one wet area shower only shows the position of the shower rose, please detail the other 2 wet area shower rose positions

OK b. Please detail the waterproof junctions for the 2 x bath to wall and bath to floor with impervious wall lining details to the top edge of the bath/s

   [redacted] please [redacted] for the fire appliances and flue system with roof flashing details for the metal tile roofing

      i. Please label each the fire appliance model on the floor plan as shown on Sh02

      ii. Please confirm in writing that both Metro fire appliance models meet the ECAN clean air requirements

   d. Please label the fixtures and appliances to the kitchen and pantry areas Sh03. & Sh02

OK e. To detail the ventilation to the bedroom 6 W C room to comply with G4/AS1 and to supply the ventilation rate and the weather-proof termination point for the ventilation ducting if other than to under the eaves to label on Sh03.

   f. Please detail the location of the meter box on the appropriate elevation and to amend detail to the electrical specifications where the text reads " Meter box location shown on the service plan" or to supply the service plan Sh02, tagged.

OK g. Is the kitchen hob gas or electric, if gas to label accordingly and supply the location of the gas source and supply a gas specification as part of the plumbing specification gas specs

OK 7. Sh4; to detail the Gerard tile fixings, tile batten size and spacing's and tile batten fixings

8. Sh5; to amend the bracing calculation sheets for a 28 degree roof pitch to a 30 degree as per the truss plan and certificate Trues cert now 28° pitch

   a. Block 2 bracing calculations; Element M1 is shown as a EPG, however on sh6 block 2 M1 is shown as a EP1; please supply amended detail accordingly

   b. To label the timber treatment of the plywood sheet bracing on the drawings (H3.2) Sh06

   c. Sh6; to tag block 3; garage ceiling diaphragms with Rondo ceiling battens to be direct fixed to truss bottom cords

9. Sh7; to detail the size of window opening W4 800 wide

   a. To detail the fixings for W17 cantilevered lintel 240 x 90

Sh 13

OK

b. Supply the span chart/ PS1 for the 300x90 LVL beams to the garage door openings D15, D16 and to D5 opening
c. PFC to opening D4 & D6; text re "continue PFC to end of wall"; please supply the end of wall fixing details Sh 13

10. Sh9; specifies MSG8 framing, however in the specifications MSG6 is specified; please clarify which detail is the project specific one and to amend accordingly — Spec amended to MSG8
    a. Third cross section to Sh9 is not labelled; appears to be section CC; we can tag with your consent
    b. Sh9; section Cc; Text reads "see sheet 12 for beam fixings detail" please supply or clarify Sh 13

11. To detail how the hot water source to the kitchen sink complies with H1 Energy efficiency given the distance of the supply hot water pipe is over 12 meters in developed length (please refer to NZS 4305 as a means of compliance) Sh 2 under bench HWC 45 litre

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: 26-5-11

Job: D Humphreys. Job Number: 110550

Location: 149 Hodgsons Rd Loburn.

Page No	Issues / Queries	Comments
	PIM received 25th May	
	PIM re RC 110550	
	spec re Nirfan	× Sled
	stormwater	× via swale as per Hanson details OK.
	dwg 169	× on PIM 149 Hodgsons Rd

These pages must be kept with the file copy.

Consent Officer: [signature] Date: 14-7-11

Peter Thomson

From: Paula Humphreys <paulah@kiwichef.com.sg>
Sent: Wednesday, 25 May 2011 7:21 a.m.
To: Peter Thomson
Subject: Re: BC application 110550
Attachments: CRC111584, Decision documents.pdf

Hi Peter

I have forwarded your email to my architect who is going through the questions and will liaise with you. I did receive this ecan consent yesterday for septic as attached.

Paula
----- Original Message -----
From: Peter Thomson
To: paulah@kiwichef.com.sg
Sent: Monday, May 23, 2011 8:04 AM
Subject: FW: BC application 110550

Hello David & Paula

As discussed by phone this morning with Paula if you or your designer has any questions please call me to discuss
Regards

Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

Delivery Address
238 Beacon Point Road
Wanaka

From: Peter Thomson [mailto:alpine.project@ihug.co.nz]
Sent: Sunday, 22 May 2011 2:55 p.m.
To: 'dhumphreys@kiwichet.com.sg'
Subject: BC application 110550

Hello David

Please refer to the attached further information letter in regards to this BC application

Any questions please call me to discuss

Regards
Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

A4 x 9

Peter Thomson

From: Peter Thomson <alpine.project@ihug.co.nz>
Sent: Monday, 23 May 2011 8:06 a.m.
To: Debbie Haywood (debbie.haywood@wmk.govt.nz)
Subject: FW: BC application 110550
Attachments: Email 110550 22nd May11.doc

Hello Debbie

110550 on day 7 please stop the clock
Thanks P T

From: Peter Thomson [mailto:alpine.project@ihug.co.nz]
Sent: Monday, 23 May 2011 8:05 a.m.
To: 'paulah@kiwichef.com.sg'
Subject: FW: BC application 110550

Hello David & Paula

As discussed by phone this morning with Paula if you or your designer has any questions please call me to discuss
Regards

Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

Delivery Address
238 Beacon Point Road
Wanaka

From: Peter Thomson [mailto:alpine.project@ihug.co.nz]
Sent: Sunday, 22 May 2011 2:55 p.m.
To: 'dhumphreys@kiwichet.com.sg'
Subject: BC application 110550

Hello David

Please refer to the attached further information letter in regards to this BC application

Any questions please call me to discuss

Regards
Peter Thomson
alpine.project@ihug.co.nz
Alpine Project Management Ltd
P o Box 558
Wanaka 9343

EMAIL TRANSMISSION

Alpine Project Management
P O Box 558
Wanaka 9343
Phone 03-443 7564
Mob 0274 873 115
Fax 03-443 7844
E mail alpine.project@ihug.co.nz

DATE: 22/5/11

TO: David Humphreys

COMPANY:

FAX/EMAIL: dhumphreys@kiwichet.com.sg

FROM: Peter Thomson

No of Pages: 4

TIME: 2.55pm

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Re: Building Consent application No. 110550
New single storey dwelling with garaging and two wood burners at 149 (169) Hodgsons Road, Loburn

Dear David,

I am currently processing your proposed building consent application for compliance with the New Zealand Building Code on behalf of Waimakariri District Council.

I have assessed the documentation provided and I require further information and / or clarification as detailed on the attached pages. Once your PIM has been issued we will update you on any addition information that may be required

Once you have answered all my queries, I can continue processing your application for approval. I am happy to receive information by e-mail up to A3 in size. Please provide 3 copies of information if other than sent by e-mail.

If you have any queries please contact me on the above address, or phone / e-mail me.

Yours faithfully

Peter Thomson
Building Consent Processor

Minor items that can be corrected with a red pen subject to the designer's written approval

1. Schedule of Compliance; to add the following as a means of compliance; B1; NZS 3604 & B1 VM1; C1/AS1; F2/AS1; F5/AS1 & G13/AS2; we can tag with your consent

2. Specifications; 5 insulation; to amend R28 to R2.8 for the wall insulation; we can tag with your consent
    a. Purlins; 70 x 45 to amend to tile battens

Designer to supply additional detail as listed below

3. We will confirm the site address once the PIM is issued; currently both 149 & 169 Hodgsons Road are specified on different documentation as supplied
    a. Once you PIM has been issued we will update you regarding any additional requirements
    b. A soak pit detail has been provided, however on the Hanson stormwater design it shows an overflow to the natural watercourse via a dissipater, therefor please amend sheet 1 and 8 accordingly and to delete the soak pit detail in your specifications

4. Sheet 10; to amend to free control joints from saw cuts to dowel bars in accordance with B1/AS1 which took effect from the 19th May 11
    a. All reinforcing steel to be Ductility Class E, in accordance with NZS 4671; in accordance with B1/AS1 which took effect from the 19th May 11
    b. Sh2; To include in the text re corner bars; "not over control joints" or we can tag with your consent
    c. Please have the truss specifier supply a legible copies of the truss layout plan with the attic trussed details as per the detail to your Sheet 3
        i. Please have the truss specifier clearly indicate if load pads are required to the load points as details on the truss layout plan and as shown on sh02 by your designer
    d. Sh2; specifies a 180 & 300 litre HWC, however on the drainage schedule to the same sheet a 270 & 300 are specified; please clarify and or supply amended detail
    e. To detail the (copper) HWC drains from relief valves to a suitable outfall(gully dish)
    f. To vent the dish washer waste pipe as the developed length is over 3.5 meters (AAV or open vent)
    g. Supply the size of the F S drain main and branch drain vents
    h. To show an inspection opening to either side of the under slab F S drains to comply with G13/AS2
    i. Sh10; to specify the depth of the foundations in accordance with NZS 3604: 1999
    j. Provide the roof plane bracing layout on the roof or bracing plan
    k. Please supply the brick type for the 70 series brick cladding

l. Provide a detail of the soffit with guttering, fascia, tile roofing and roofing underlay and to show the brick cladding clearly separated from the roof cavity by either solid blocking or the soffit linings

5. Supply a copy of the ECAN application form and/or the approval from ECAN for the effluent disposal system
    a. Have the effluent system designer supply the owner's manual, tank and effluent pump and high level alarm specifications

6. Sh3; to supply the construction detail with fall to the wet area shower/s base/s detailed and to detail the shower screen/door or other details in accordance with E3/AS1
    a. We note one wet area shower only shows the position of the shower rose, please detail the other 2 wet area shower rose positions
    b. Please detail the waterproof junctions for the 2 x bath to wall and bath to floor with impervious wall lining details to the top edge of the bath/s
    c. 2 x log burners; please supply full instillation instructions for the fire appliances and flue system with roof flashing details for the metal tile roofing
        i. Please label each the fire appliance model on the floor plan as shown
        ii. Please confirm in writing that both Metro fire appliance models meet the ECAN clean air requirements
    d. Please label the fixtures and appliances to the kitchen and pantry areas
    e. To detail the ventilation to the bedroom 6 W C room to comply with G4/AS1 and to supply the ventilation rate and the weather-proof termination point for the ventilation ducting if other than to under the eaves
    f. Please detail the location of the meter box on the appropriate elevation and to amend detail to the electrical specifications where the text reads " Meter box location shown on the service plan" or to supply the service plan
    g. Is the kitchen hob gas or electric, if gas to label accordingly and supply the location of the gas source and supply a gas specification as part of the plumbing specification

7. Sh4; to detail the Gerard tile fixings, tile batten size and spacing's and tile batten fixings

8. Sh5; to amend the bracing calculation sheets for a 28 degree roof pitch to a 30 degree as per the truss plan and certificate
    a. Block 2 bracing calculations; Element M1 is shown as a EPG, however on sh6 block 2 M1 is shown as a EP1; please supply amended detail accordingly
    b. To label the timber treatment of the plywood sheet bracing on the drawings (H3.2)
    c. Sh6; to tag block 3; garage ceiling diaphragms with Rondo ceiling battens to be direct fixed to truss bottom cords

9. Sh7; to detail the size of window opening W4
    a. To detail the fixings for W17 cantilevered lintel 240 x 90
    b. Supply the span chart/ PS1 for the 300x90 LVL beams to the garage door openings D15, D16 and to D5 opening
    c. PFC to opening D4 & D6; text re "continue PFC to end of wall"; please supply the end of wall fixing details

10. Sh9; specifies MSG8 framing, however in the specifications MSG6 is specified; please clarify which detail is the project specific one and to amend accordingly
    a. Third cross section to Sh9 is not labelled; appears to be section CC; we can tag with your consent
    b. Sh9; section Cc; Text reads "see sheet 12 for beam fixings detail" please supply or clarify

11. To detail how the hot water source to the kitchen sink complies with H1 Energy efficiency given the distance of the supply hot water pipe is over 12 meters in developed length (please refer to NZS 4305 as a means of compliance)

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
Tel: (03) 311 8240 Fax: (03) 313 4432 www.waimakariri.govt.nz

Date: 22-5-11

Job: Humphreys House Job Number: 110550

Location: 167 Hodgsons Rd, Lobuin,

Page No	Issues / Queries	Comments
	PIM not issued yet to include in Letter.	
	Schedule of compliance.	
		B1, UZS 3604,
		B1 VH1,
		C1/AS1
		F2/AS1 F5/AS1
		GB/AS1 & AS2
	149 or 169 Hodgsons Rd	
		x check PIM
	Risk matrix	
	600 cases to all sections of dwelly,	
		x total 8
sh01.	Site plan	
	Levels existing,	
	levels proposed so.	OK.
	60 mm across dwelly	
	fall,	
	proposed ground level	
	so.	

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Consent Officer: _____ Date: 14-7-11

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries		Comments
Sh 2.	free control joints locations OK.		
	Sh 10 free control joint	x	to show saw cut to over half the depth floor slab. (or we can tag)
	corner bars - not over control saw cuts	x	to include in 'text'
	Truss specifier to supply detail on 2 BW.		
	one load pads reqd	x	please confirm in writing (designer Ads shown)
	specs 180 x 300		
Sh 2	HWC 180 x 300		
	on text 300 x 270	x	to amend
	cylinder drain	x	copper show drain to slab.
	dish washer waste over 3.5m	x	to vent AAV.
	head main drain TV	x	size
	head branch drain TV	x	size

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries	Comments
	WC fixture vent as drain and soil pipes @ 1'60	OK to vent in accord G13 table 5
	under slab drain to show ip at entler end	x ip. to branch drain head.
sh10	detail / foundation min depth	x please specify
	ECA 2 effluent system)	x approval, letter req'd.
	owners manual	x supply
	tanks pump high level alarm spec	x supply
	spec's (5) R28	x R2.8, to amend
	Roof bracg layout	x detail on roof or brag layout. (roof plan bracing)

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries	Comments
sh3	tile roof. Serard Corona Shake x	Gutter + and fascia details with cover dimensions
	spec - ridge valley OK.	
	clay brick 70 series x	owner to confirm type.
	HWC	OK seismic restraints
sh8	Soak pit size?? x Overflow from water storage tank to scale as per Heinen design x 3 x wet area showers. fall to base, construction details	will confirm on sw disposal once PIM is issued please supply
	one shows shower rose x label screen door x	other 2 please glass??
	2 x baths to wall & floor details limy / tily x	please detail

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries	Comments
Sh03	2x log burners	
		x please label models on floor plan.
		x full Installation instruction please for 2TO mega Red and Blue System. Eco Xtrema Red.
	Flue to roof flash detail	x supply
	please label facilities appliance to kitchen	x to label
	WC room to bed 6 area	x ventilation please detail as pe 64/AS1
	2x bed 6.	x area to 7.
	log burner clean air	x approved. confirm.
Sh04.		
	Meter box location	x please detail
	Kitchen hob gas	x if so supply gas spec and gas bottle location

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Consent Officer: _____ Date: 14-7-11

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet A — single storey — V03/09

Job Details

Name	Humphreys One
Street and Number	Hodgsons I
Lot and DP Number	Lot 2
City/Town/District	Loburn
Designer	Mark Milnes
Company Name	
Date	22nd May

BRANZ Appraised
Appraisal No 294 [2009]

Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		heavy	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		30	15
Roof height above eaves (m)		2.6	1.0
Building height to apex (m)		5.0	3.0
Ground to lower floor level (m)		0.2	
Stud Height (m)		2.4	2.4
Building Length (m)		14.2	10.0
Building Width (m)		8.8	10.0
Building Plan Area (m2)		90	200

Building Location

Wind Zone *High*

Select by Building Consent Authority Map or Preference: High

Region	Preference selected
Terrain	Preference selected
Exposure	Preference selected
Topography	Preference selected

Earthquake Zone: A

Consult GIB® EzyBrace™ Systems, 2009 for Wind Zone definitions

Bracing Units required for Wind (achieved)

Demand W (BU)		Walls single	
along	slab	668	788
across	slab	1051	1095

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single	
slab		494	754 / 1032

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14-7-11,

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet A — single storey — V03/09

Job Details

Name	Humphreys Block 2
Street and Number	Hodgsons I
Lot and DP Number	Lot 2
City/Town/District	Loburn
Designer	Mark Milnes
Company Name	
Date	22nd May

BRANZ Appraised
Appraisal No.294 [2009]

Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight	heavy		
Roof Weight	light		
Room in Roof Space	no		
Roof Pitch (degrees)		30	15
Roof height above eaves (m)		3.4	1.0
Building height to apex (m)		5.8	
Ground to lower floor level (m)		0.2	
			3.0
Stud Height (m)		2.4	2.4
Building Length (m)		29.6	10.0
Building Width (m)		13.3	10.0
Building Plan Area (m2)		213	200

Building Location

Wind Zone	***High***
Select by Building Consent Authority Map	
or Preference	High
Region	Preference selected
Terrain	Preference selected
Exposure	Preference selected
Topography	Preference selected

Earthquake Zone: A

Consult GIB® EzyBrace™ Systems, 2009 for Wind Zone definitions

Bracing Units required for Wind

Demand W (BU)		Walls single	
along	slab	1130	1430
across	slab	2926	2950

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single	
slab		1168	1399 / 2310

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14-7-11,

WAIMAKARIRI DISTRICT COUNCIL

Memo Pad

Waimakariri District Council 215 High Street Private Bag 1005 Rangiora 7440
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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries	Comments
04	t/c Arms	detail as per manufactures. installation instructions
sh5	Bracing 3 Block. well labelled.	
	Block one. HS 2.6 0.2, 30° pitch	(roof tiles cont 30°)
	L 14.2	on calcs 28°
	W 8.8. area 90,	
	Block Two, S.8. 3.4 0.2	
	L 29.6	
	W 13.3 area 212.7	on calcs 28°
	Block Three	
	HS. 2.6 0.2,	
	L 20. W 19.9 0.2	on cal 28°
	area 234	amend to 30°.
	Block 2. M1 on calc sheet EPG.	
sh6	M1 to block 2 EP1	to amend to EPG.

These pages must be kept with the file copy.

Consent Officer: _____ Date: 4-7-11

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet A — single storey — V03/09

Job Details

Name	Humphreys Block 3
Street and Number	Hodgsons I
Lot and DP Number	Lot 2
City/Town/District	Loburn
Designer	Mark Milnes
Company Name	
Date	22nd May

BRANZ Appraised
Appraisal No.294 [2009]

Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		heavy	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		30	15
Roof height above eaves (m)		2.6	1.0
Building height to apex (m)		5.0	
Ground to lower floor level (m)		0.2	
			3.0
Stud Height (m)		2.4	2.4
Building Length (m)		20.1	10.0
Building Width (m)		19.9	10.0
Building Plan Area (m2)		234	200

Building Location

Wind Zone	***High***
Select by Building Consent Authority Map or Preference	High
Region	Preference selected
Terrain	Preference selected
Exposure	Preference selected
Topography	Preference selected

Earthquake Zone: A

Consult GIB® EzyBrace™ Systems, 2009 for Wind Zone definitions

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	1410
across	slab	1454

2292
1176

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single
slab		1283

2036.
1700

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ample Bus

each block Lengths do some way as ratio ok.

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries		Comments
sh06	fly sheet brac	x	timber treatment - please specify H3.2 req'd
	roof plane brac	x done	please detail where
sh07	W17 240 x 90 cantilever beam	x	to detail with fixings
	W4 Inlet str	x	plan specify no on truss layout pl
	300 x 90 LVL	x	span chart ref SP1.
	truss layout some text is unreadable	x done	supply please re supply legible copy
sh07.	contin PFC to end of wall.	x	fixings please detail to end of wall.
	LVL to DS. Inlet a bottom plate brg	x	please detail in spec

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries	Comments
sh 09	M66 & front Specs Conj M66	× please detail which detail is the s16 spoke one
	3rd sect to 09 not labelled.	× we can tag sect CC. with your consent.
	see sh 12. beam Proj detail	× where 290x90 beam carried Proj ??
	Road to garage	× direct Pic as conj display to tag,
specs	purlins 70x45	× to specify fib batten size, timber treat, spacings & fixings

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Consent Officer: _____ Date: 14-7-11

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Date: _____

Job: _____ Job Number: _____

Location: _____

Page No	Issues / Queries		Comments
sh 03.			
	garage attic trusses.	x	no shown on truss cert and layout plan.
	82: Durability.	x	please detail re steel and metal fixings.
	WC room mech vent rake	x	
		y	weatherproof termination
	soffit lining to show sealing		
	Wall roof spark from brick cavity	x	please detail
	Elect spec		
	meter box shown on service plan.	x	no service plan supplied
		x	please clarify
	Potable water source	x	please specify
	FS Drain & waste pipe support and thermal movem	x	please detail as pr 613

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Consent Officer: _____ Date: 4-7-11

10

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Date: _____

Job: _____ Job Number: _____

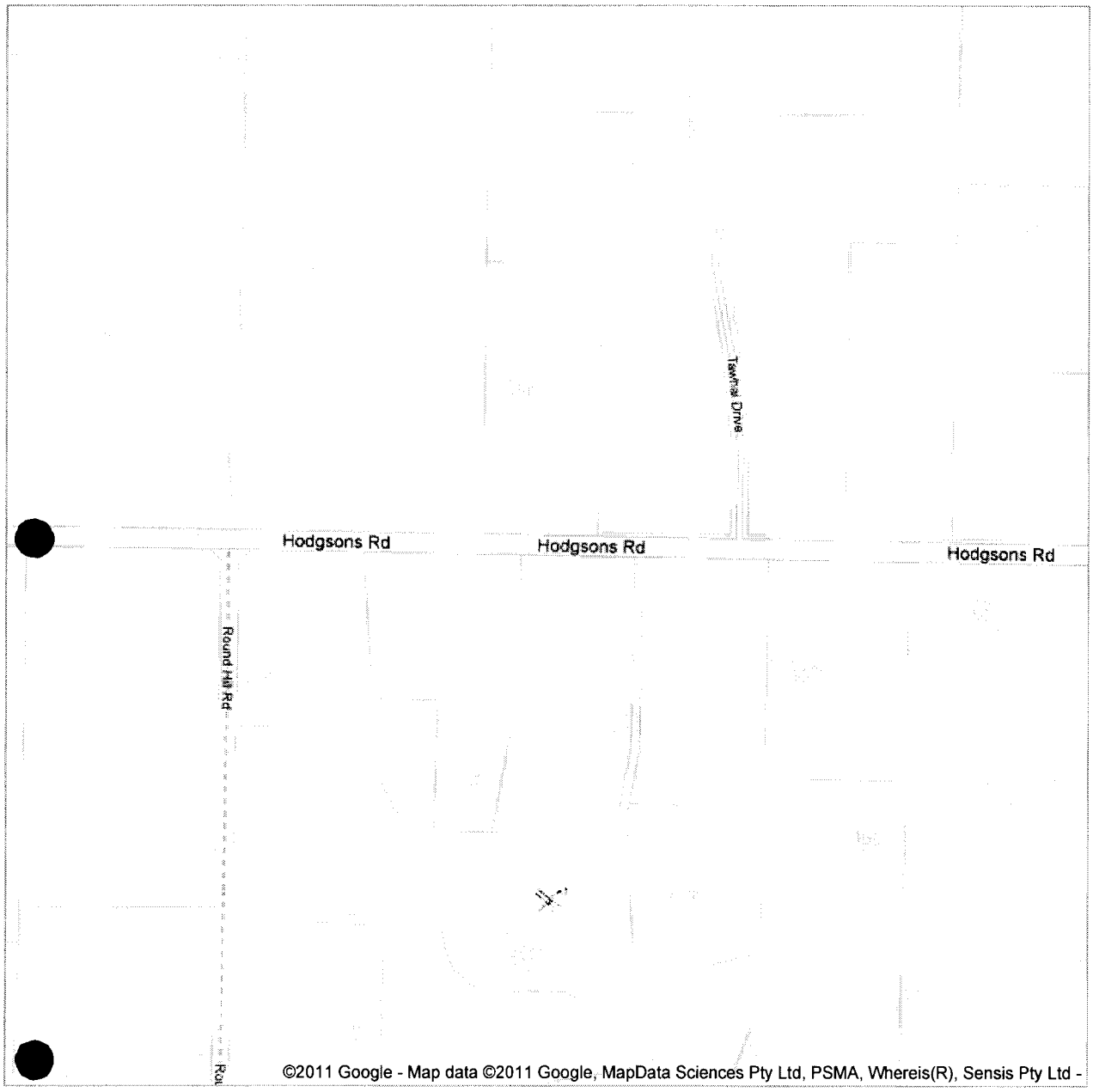
Location: _____

Page No	Issues / Queries	Comments
	HW source to kitchen sink please detail as run one	
	12m for 15mm ϕ x (developed length)	detail as per HI.

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Consent Officer: _____ Date: 14-7-11

Google maps
New Zealand



ZA: 103m.
Med / 22 / 24 / / /

Review PIM requirements, hazards etc		Wind / Earthquake / Snow / Bearing / Flooding etc
Is Resource consent required ?	Lapsed for 2nd kitchen	Lodged, Granted, Section 37
	✓	Plans amended
Review Processing and Correspondence	✓	
Documents specific to project	✓	PS1, Truss design, Effluent design
Review documents for inconsistencies	✓	
	✓	
Processing Decisions Justified	✓	
Alternative Solutions Justified	✓	File notes for L1, AS Forms completed for L2 and 3
Risk assessment - Environment	✓	Taken into account by processor + Notes for Inspector
- Design	✓	Taken into account by processor
- Construction	✓	Notes for Inspector to convey to Builder
- Inspection	✓	Notes for Inspector
- CCC Sign off	✓	Notes for Inspector and auditor
	✓	
	✓	
PS1 exclusions acceptable	✓	
Inspections Correct	✓	Type and Number ✓
Construction Reviews by consultants	✓	Condition(s) of Consent
PS4's Required	✓	Condition(s) of Consent PS3's.
As Built Truss Green Sticker Ticked	✓	
Notes for Inspectors as required	✓	

Validation has been completed by: Mark Fowler and consent approved for issue.

Signature: _____ Date: 22/7/11

NOTES

1. ~~665 mesh~~ 7
2. ~~Fencing effluent field.~~

Endorsed

Endorsed ~~As~~ All reinforcing bars & mesh is to ~~meet~~ ductility ~~class E ductility~~ requirements in accordance with NZS 4671. as prescribed by the ~~Department~~ DBH 19 ~~May~~ 2011.

* Job needs to go back to Plan office for approval of Amendment to remove 2nd kitchen & eliminate Sec 37 cert.

WAIMAKARIRI DISTRICT COUNCIL

Processing Check Sheet
Habitable Building
Building Consent Number 110550

Not applicable = — Further info reqd = ✖ Compliant = ✓ **CLAUSE**	Checked	**MEANS OF COMPLIANCE AND COMMENTS** **"Producer statement meets criteria" checks must record the authors name and authors number if applicable. The Producer statement must be signed and dated by the processor.
PIM Issues	✓	19/5/11
Plans match PIM issued	✓	
RC lodged / granted	✖	
Earthquake Zone	✓	(Zone A,) Zone B
Wind Zone	✓	Low, (Med,) High, Very High, Specific Design
Snow Zone 4 for Engineering Design	—	Altitude = 103 m, (Sg = 0.9 kPa min)
Snow Load for NZS 3604	✓	(0.5 kPa @150m,) 1.0 kPa @250m, Specific Design > 250m
Plans Site Specific	✖	
Specs Site Specific	✖	
Risk Matrix	✓	Completed and Correct
Schedule of Compliance	✖	Completed and Correct
A1 Classified Use (identify)	✓	(level 2)
Producer Statements	✓	
Structural Calculations	✓	
Specified Intended Life not less than 50 yrs	✓	Condition of consent for 50 years or less
Alteration to Existing Building (Sec 112)	—	Means of Escape
Change of use, (Sec 115)	—	**** Use Commercial Checklist****
B1 Structure		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	✓	
Calculations for Verification Method	✓	
Inspections and PS4 by engineer	—	
Footing depth and width	✖	24 wide depth ?
Foundation wall (boxed or masonry)	✓	
Steel & Sizing	✓	2 x D16's
Slab thickness and ties	✓	100 mm D10's @ 600crs.
Slab Thickenings (see truss design)	✓	
Point Loads	✓	
Mesh	✓	(665,)668, Other (specify)
Slab Corner Steel	✖	2/D10 x 1200mm – not over control joints
Saw Cuts (control joints)	✓	No mesh = 3m crs, (Mesh & exposed = 6m crs)
Free Joints	✖	668 = 12m, 665 = 24m
Piles (including bracing)	—	
Subfloor Ventilation	—	
Timber Grade	✓	(MSG) VSG (6,) 8, 10,12, Other
Bearers	—	
Floor Joists	—	
Masonry walls (PS1 or NZS 4229)	—	
Proprietary beams / joists (Specify)	—	
Fixing Guide	—	
Stud Sizes and Centres GL	✓	90 x 45 @ 600crs.
Top Plates to Load Bearing Walls	✓	double 90x45 + 90 x 45 (SH.09)
Long Stud Size or lateral support	—	
Stud to plate fixings	✓	spec sheet
Lintels	✓	Truss Manufacturer ✓ Eng. ✓ NZS 3604 (M668)
Lintel fixings	✓	spec sheet.
Brick Lintel size and landing	—	
Fixed Shelf Angles PS1	—	
Bracing Calculations	✓	Parameters Correct, Wall Height Reduction Factors

Brace Distribution	✓	Locations. Type, Suitability.
Diaphragm Bracing as per NZ 3604	✓	Garage x2.
Roof Support Beams	✓	PST covers.
Truss Design, layout and PS	X	
Truss Point Loads and Thickenings	—	
Roof Framing – Rafters	—	
Roof Truss / Rafter Fixings	✓	
Purlin fixings	✓	type C spes sheet.
Roof Plane Bracing - 1/ 50m2	X	
Roof Space / gable braces	—	
Heavy hip braces to braced wall	—	
Roof Space Access location and size	✓	
Chimney Construction	—	
SFH Location and clearances	—	
Balustrade and barrier fixings	—	
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Corrosion Zone	✓	Sea spray, Zone 1, (Zone2) Zone 3,
Durability Assessment	—	
Structure - 50 Years	✓	
Claddings - 15 Years	✓	
Maintenance provisions / condition	—	
Timber Treatment	X	Plywood sheet bracing spes section 6.7
Steel Protection	✓	
Fixings	✓	
G1 Outbreak of Fire		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
SFH - Compliance with Spec	X	See also Detailed SFH and flue checklist
Diesel - Compliance with Spec	—	
Gas - Compliance with Spec	X	? to confirm if gas hob
Recessed Downlights (CA or other)	✓	
G2 Means of Escape		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
Escape Path (24m max DEOP)	—	
G3 Spread of Fire		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
Boundary to wall (1.0m)	—	
Eave to Boundary (650mm)	—	
Linings and Fixings	—	
Services penetrations	—	
Blocking/ Firestop – Roof and Eave	—	
G4 Structural Stability		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
Structure and Base Fixings	—	
D1 Access Routes		
Acceptable Solution	✓	

Processing Attachments and Completion Sign off

Producer Statements ☑ Memo Sheets ☑ Alternative solutions form(s) ☐ Working file notes ☑

Inspections Scheduled ☑ Forms Signed & Dated ☑ Alternative solutions form ☐ Check Statutory Clock ☑

Agreement Letter faxed to Truss Manufacturer ☐ Truss Design Green Sticker ☐

Processing has been completed by: Peter Thomson and approved for validation

Signature: _____ Date: 14-7-11.

NOTES

Stop valves for each unit		
Hot Water System type and capacity	✓	Low open vent, Med/High valve vent, Capacity = 300x180.
Pipe size and flow rate if low pressure sys	—	
Relief drain type and outfall	X	
Pipe Materials Specified	✓	Hot= polybutylene Cold= polybutylene
Tempering Valve	✓	in specs
Seismic Restraint	✓	x3 in specs
Solar Water Heating	—	Refer Solar Checklist
Wetback interface schematic	—	For valve vented cylinders
G2 Sanitary Plumbing		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Reticulated Sewer Connection	—	
Cover, Grade and Length vs Lateral Depth	—	
Pipe Materials	✓	uPVC.
Gully Traps	✓	
Pipe Gradient & Size	✓	
Drains Under Buildings	X	
Bedding & Backfill	✓	specs sheet 613
Terminal Vent	✓	
Soil Fixture Vents	✓	
Waste Pipe Layout and Sizes	✓	
Waste Gradients and Venting	✓	
Support & Thermal Movement	X	
Effluent Disposal System Design	✓	
Bedroom Numbers / Daily Flow	✓	
Water table depth	X	
WDC / ECAN approvals	X	Resource consent, general authorisation
Tank and Compartment Sizes	X	
High Level Alarm	X	
Pump Specification	X	
Turrets and Chamber Access	X	
Disposal Field Details and Specifications	X	
Disposal Field setback	X	Boundaries, Well
Waste disposal unit	X	Not Permitted / Permitted by design
Owners Maintenance Manual	X	
Effluent Fencing	X	Option 1, 2, 3 Other
G3 Industrial Liquid Waste		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
G4 Ventilation		Not Applicable to Housing
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
G5 Interior Environment		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Area and Percentage Calculations	✓	
Schedule Method	—	Glazing S,E W<30%, N<50% & Total<30%, skylight<1.2m2
Other Method (Specify) Calc	✓	
Thermal Envelope R values required	✓	Ceiling R3.3, Walls R2.0, Floor R 1.3, Glazing R 0.26, Skylight R 0.31
Heated Ceiling Walls, and Floors	—	Ceiling R3.5, Walls R2.6, Floor R 1.9
Thermal Envelope R values provided	✓	Ceiling R: 3.6 Walls R: 2.8 Floor R: Glazing R: 0.26 Double glazing in specs
	—	Skylight R:
HWC to Kitchen Sink (developed length)	X	15mm = 12m, 20mm = 7m, (2 ltr max), extra fully insulated
Recessed Down lights	✓	CA / RA = unlimited, Other = Calculations required,

Alternative Solution	—	
**Producer statement meets criteria	—	
Slip Resistance Ext Steps / Ramps	✓	
Slip Resistance Stairs	—	
Stair Classification / Pitch	—	
Treads and Risers	—	
Headroom	—	
Handrail at least one side	—	
G6 Airborne & Impact Sound		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
Domestic Lift		
G7 Natural Light		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Min Floor Level (refer to PIM)	—	
Site Levels	✓	Existing and Proposed (OK at 50. on sh2)
Floor Level Relative to Crown of Road etc	—	
Sub Soil Drainage & Discharge	—	
Tanking	—	
Sediment Control design - Hillside	—	
Down Pipe (size to pitch and area)	✓	75mmØ x12 = 12x 70 = 840m2 ample.
Spreaders (Max 25m2)	—	
Internal Gutter Capacity	—	
Overflow – size and level	X	to detail
Rain Water Head	—	
Snow Straps / Boards	—	@ 600 crs
Pipe Size and Gradient / Catchment Area	✓	100 mmØ 2 x drains
Inspections, Bedding and Backfill	✓	
Type 1, 2, and Bubble up Sumps	—	
Provisions for Snow (boards/ straps)	—	
Soak Pit Size and Construction	X	storage tank.
G8 Interior Installation		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Weathertight Risk Matrix	✓	
Cladding System correct for risk score	✓	
DPM Under Slab and termination	✓	
Floor & Cladding to Ground & Paving	✓	
LRV for Colour of plaster	—	
Control Joints	—	
Window/Door Flashings to opening	✓	
Garage Door Jamb Flashings	✓	
Window materials	✓	
Door materials	✓	
Door and window support angles and bars	✓	Continuous or Alternative Solution (in specs)
Airseals on PEF Backing Rod	✓	
Building Wrap Air Barrier (Gable End etc)	—	Cover up wrap used (no gable ends)
Meter Box Flashings (Location x)	X	
Wall Penetrations	✓	150 mm lap min horizontally
Roofing Underlay Orientation and support	✓	< 8° horizontal + support / 8° and greater vert self support
Roofing Profile to suit pitch	✓	
Roofing fixings to suit profile	X	
Kick-out Flashings	—	
Roof Internal Gutters	—	
Entry Roof Flashings	✓	
Roof Penetrations	X	
Roof / Wall Junction Flashings	—	
Change of Pitch Flashing	—	

Flue	X	
Chimney	—	
E2 External Moisture		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Prevention of Fungal Growth	✓	
Overflow between units	—	
Water Splash	X	
Wet Area Shower Tanking, Grade etc	X	Construction details
Screen or 1500mm from rose	X	
Thermal break – (Steel Frame)	—	Walls, Roof,
E3 Internal Moisture		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
E4 Glazing		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Glazing/Asbestos	✓	Standard condition 17 for asbestos specs 1223 incl
E5 Surface Finishes		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
E6 Sanitary Plumbing		
Acceptable Solution	—	
Alternative Solution	—	
Pool Fencing / Access	—	Refer also to Council prior to consent issue
Upper level Opening Windows	—	
Barriers to Decks, Stairs and Landings	—	
E7 Construction and Demolition Hazard		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
E8 Pool Barrier		Not Applicable to Housing
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
F2 Warning Systems		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Location of smoke alarms	✓	x6.
Type of Smoke Alarm (Test and Hush)	✓	specs sheet in spec
F3 Hot Water		Not Applicable to Housing
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
G1 Personal Hygiene		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Number of Sanitary Fixtures	✓	
Location	✓	
G2 Laundering		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Laundering Facilities	✓	

G3 Food Preparation and Prevention of Contamination		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Appliances & Facilities	X	
G4 Ventilation		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Natural Ventilation	X	5% of floor area of room served (WC 100mm)
Mechanical Ventilation Rate	X	Cubic metres / Hour, Air Changes / Hour
Ducted	X	To Exterior, Weatherproof Termination
G5 Interior Environment		No Applicable to Housing
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
Temperature Control & Space	—	
G6 Airborne and Impact Sound		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
STC and IIC between household units	—	
G7 Natural Light		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Vertical Window in External Walls	✓	
Awareness of Outside Environment	✓	
10% of room floor area for light	✓	
Light Reflective Value	—	
Colour Schemes	—	
G8 Artificial Light		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Illuminance	✓	spec, electrician
G9 Electricity		Standard Condition # 19
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Electrical Installation self certified	✓	Standard condition 19
G10 Piped Services		
Acceptable Solution	—	
Alternative Solution	—	
**Producer statement meets criteria	—	
G11 Gas Supply System		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Gas installation self certified	✓	Standard condition 19
G12 Water Supply		
Acceptable Solution	✓	
Alternative Solution	—	
**Producer statement meets criteria	—	
Potable Water Source (Specify)	✓	Town Supply, Well, Test < 18 months old

Retro Fitted Load Bearing Option

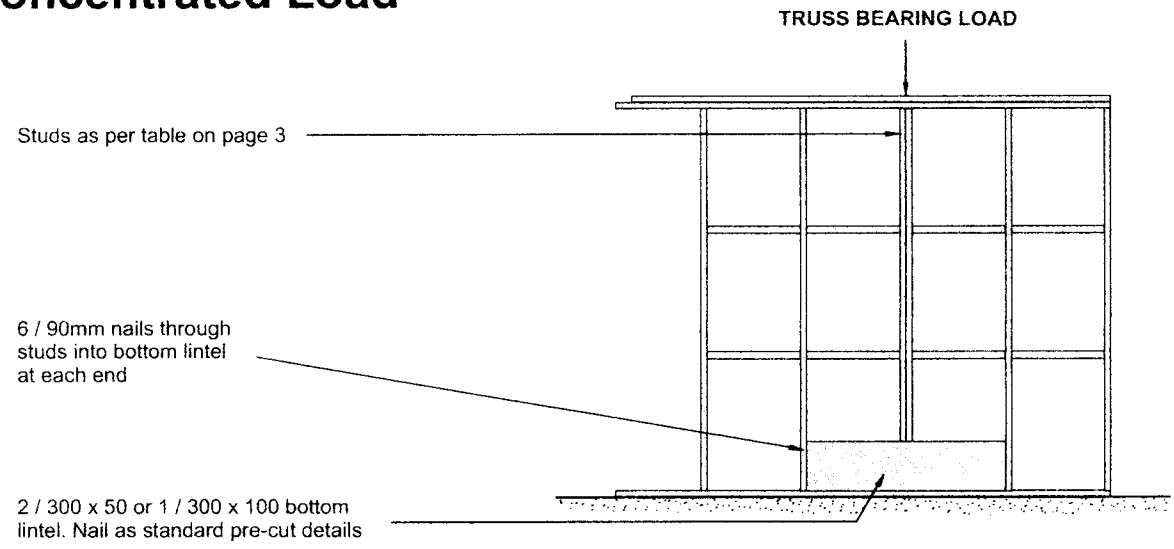
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GANG-NAIL®

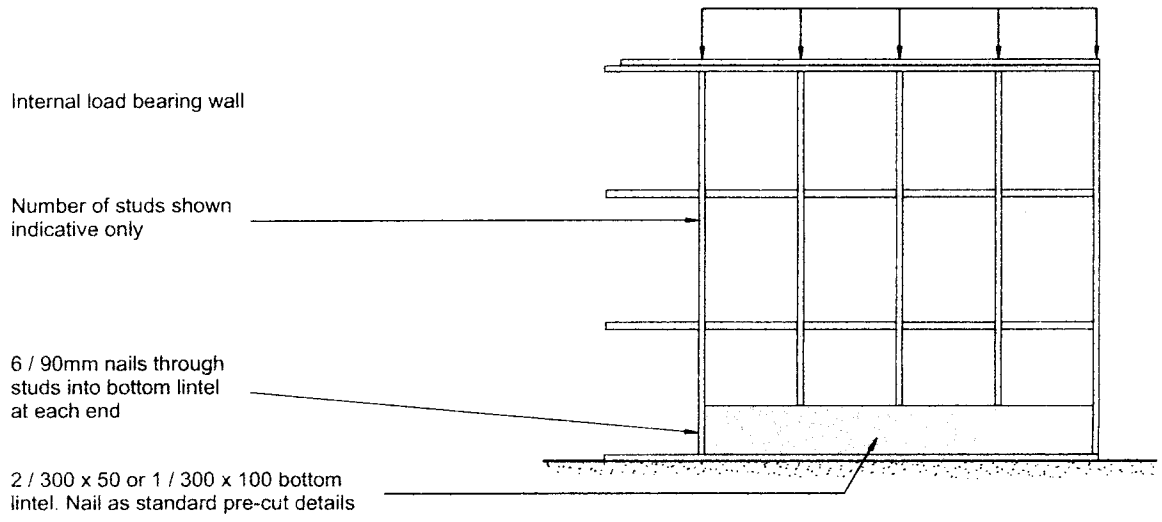
Note:

- Covers slab details where no thickening has been built into the foundation.
- For loads exceeding 10kN install bottom lintel (300x100) between two adjacent studs as detailed below. For loads 30kN or more, special design is required.
- Ensure the studs comply with requirements on page 3 and are located directly under concentrated loads. This may require on-site installation of these studs.

Concentrated Load



Uniformly Distributed Loads



MiTek New Zealand Ltd.

AUCKLAND
PO Box 58-014, Greenmount
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HOME OF GANG-NAIL® BUILDING SYSTEMS

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MiTek New Zealand Limited

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02 NOV 2011
BY:

MiTek 20/20 Engineering 4.6.6.121
Printed: 04:00:32 02 Nov 2011

PRODUCER STATEMENT for MiTek 20/20® TRUSS DESIGN - Version 4.6

ISSUED BY: **MiTek New Zealand Limited**

TO: **Christchurch Manufacturing**

IN RESPECT OF: **MiTek® Truss Designs**

This producer statement covers the MiTek 20/20® truss design and the structural performance of the GANG-NAIL® connector plate for the job reference **CD91052** and may be used by a Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

The MiTek 20/20® truss design program has been developed by MiTek New Zealand Limited for the design of MiTek ® 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 New Zealand Building Code.

On behalf of MiTek New Zealand Limited, 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 GANG-NAIL connector plates
iv) Correct input of Truss Design Data as shown in the Fabricator Design Statement for this job
v) The design being undertaken by the accredited fabricator under the terms of the software licence

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 New Zealand Building Code.

MiTek New Zealand Limited holds a current policy of Professional Indemnity Insurance no less than $500,000.

On behalf of MiTek New Zealand Limited, **Date: Wednesday, 2 November 2011**

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MiTek New Zealand Limited

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Christchurch Manufacturing

Job: CD91052 Client: Mike Greer Homes Site: Humpheys
Phone: 149 Hodgsons Rd
Ioburn

Description:
Building Consent No.:
Phone:

0 2 NOV 2011
BY

MITEK FABRICATOR DESIGN STATEMENT

This statement is issued by MiTek accredited fabricator **Christchurch Manufacturing**, being licensed to use the MiTek 20/20® software, to the client listed above and may be used by the Building Consent Authority to assist in determining compliance with the New Zealand Building Code.

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 Fabricator shall ensure that these job details are current and relevant to the project for the design of the MiTek ® trusses.

Job Details

Roof Truss					
Timber Group:	MSG8 DDP H1.2+MSG6	Pitch:	28.000 deg	Nominal Overhang:	600 mm
Roof		**Ceiling**		**Wind**	
Material:	Corona Shake	Material:	Standard	Area:	High (44.0 m/s)
Dead Load:	0.300 kPa	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Restraints:	400 mm centres	Restraints:	400 mm centres	**Snow**	
Live Load:	Qur = 0.250 kPa	Live Load:	Qc = 1.400 kN	Location:	Christchurch (N4) at 100 m
	Qc = 1.100 kN	**Occupancy Live Load**		Open Ground Load:	0.900 kPa
		Distributed:	Quf = 0.500 kPa	Basic Roof Load:	0.630 kPa
		Concentrated:	Qcf = 1.400 kN		
Attic Floor		**Attic Room Ceiling**		**Attic Wall**	
Material:	20mm Particle Board	Material:	Gib Board 12mm	Material:	Gib Board
Dead Load:	0.200 kPa	Dead Load:	0.200 kPa	Dead Load:	0.300 kPa
Restraints:	Continuous	Restraints:	600 mm centres	Restraints:	Continuous

Importance Level : 2

Design Working Life : 50 years

The timber for these MiTek® trusses shall be treated to the requirements of NZS 3602:2003 and shall be graded to the requirements of NZS 3603:1993. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in a **"closed environment"**, as defined by NZS3604:2011 Section 4.

MiTek® Truss List

Legend: * = detail only, ? = input only, ~~Txx~~ = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required
WB = windbeam required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
*BK1	16	855	0.000	900	J11	1	1292	28.000	900	T18	1	5044	28.000	900
*CN1	32	855	0.000	900	*R01	5	1791	28.000	900	T19	1	4671	28.000	900
CT01	1	858	28.000	900	*R02	15	891	28.000	900	T20	1	3352	28.000	900
CT01A	1	858	28.000	900	*R03	2	1636	28.000	900	T21	1	806	28.000	900
FJ1	7	3000	0.000	900	*R04	1	1614	0.000	900	T22	1	10892	28.000	869 LB
*HB01	6	6197	20.605	900	*R05	16	1600	28.000	900	T22A	1	10892	28.000	869 LB
*HB02	2	4361	20.605	900	*R06	1	1639	0.000	900	T23	1	8251	26.162	900 LB
HT01	2	7640	28.000	900 LB	S01	5	10892	28.000	869	T24	8	7640	28.000	900
HT01A	1	7640	28.000	900	T01	17	7640	28.000	900	T25	1	5067	28.000	900
HTG01	1	7640	28.000	900	T01A	1	7640	28.000	900	T26	1	4695	28.000	900
HTG01A	1	7640	28.000	900 LB	T01B	2	7639	28.000	900	T27	1	3511	28.000	900
J01	6	3000	28.000	900	T01C	4	7640	28.000	900	T28	1	965	28.000	900
J01A	1	3000	28.000	900	T01D	1	7640	28.000	900	T29	1	5053	28.000	900
J01B	1	3000	28.000	900	T01E	3	7640	28.000	900	T30	1	4680	28.000	900
J01C	1	3000	28.000	900	T02	1	8260	26.161	900	T31	1	3414	28.000	900
J01D	1	3000	28.000	900	T03	1	5575	28.000	900	T32	1	868	28.000	900
J01E	1	3000	28.000	900	T04	1	5576	28.000	900	T33	1	6236	28.000	900
J01F	1	3000	28.000	900	T05	1	10892	28.000	900 LB	T34	1	4063	28.000	900
J01G	12	3000	28.000	900	T05A	1	10892	28.000	900 LB	T35	1	3058	28.000	900
J02	5	2100	28.000	900	T06	1	7406	26.162	900	T36	1	7640	28.000	900
J02A	1	2100	28.000	900	T07	1	5033	28.000	900	T36A	1	7640	28.000	900 LB
J02B	6	2100	28.000	900	T08	1	2861	28.000	900	T37	1	3464	28.000	900
J03	1	1200	28.000	900	T09	1	1654	28.000	900	TG01	1	7640	28.000	900
J03A	1	1200	28.000	900	T10	1	4236	11.501	900 LB	TG01A	1	7640	28.000	900
J04	1	3404	28.000	900	T10A	1	4236	11.501	900 LB	TG02	1	4604	28.000	900
J05	1	1231	28.000	900	T11	1	4270	-28.000900		V01	1	2341	28.000	900
J06	1	3402	28.000	900	T12	1	3898	-28.000900		V02	1	1141	28.000	900
J07	1	1229	28.000	900	T13	1	3612	-28.000900		V03	2	2898	28.000	900
J08	2	1945	28.000	900	T14	1	1579	-28.000900		V04	2	1998	28.000	900
J08A	2	1945	28.000	900	T15	1	5604	26.162	900	V05	2	1098	28.000	900
J08B	1	1945	28.000	900	T15A	1	5604	26.162	900					
J09	1	1233	28.000	900	T16	1	3406	28.000	900					
J09A	1	1233	28.000	900	T16A	1	3406	28.000	900					
J09B	1	1233	28.000	900	T16B	1	3406	28.000	900					
J10	1	885	28.000	900	T17	2	5178	28.000	900					

Total quantity : 257

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Christchurch Manufacturing

Job: CD91052 Client: Mike Greer Homes Site: Humpheys
Phone: 149 Hodgsons Rd
Ioburn

Description:
Building Consent No.:

0 2 NOV 2011

The computer design input has been carried out by:

Name of Computer Operator: Brent Yellowlees

Qualifications and Title: Truss Detailer

Signed:

CARTERS
A Division of Carter Holt Harvey

Dated: Wednesday, 2 November 2011

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Christchurch Manufacturing

Job: CD91052
Description:
Building Consent No.:
MiTek 20/20 Engineering 4.6.6.121

Client: Mike Greer Homes
Phone:

Site: Humpheys
149 Hodgsons Rd
loburn

MiTek New Zealand Limited

0 2 NOV 2011
BY:

Printed: 04:00:46 02 Nov 2011

TRUSS BEARINGS EXCEEDING 10KN REPORT
- Ultimate Limit State Loads

MiTek® Truss List
Legend: ? = input only, ~~Tx~~ = failed design, Ø = non certified, Unmarked trusses = designed successfully

Critical Trusses	Qty	Span (mm)	Joint	Bearing Reactions (kN) Down	Uplift
HTG01	1	7640	K	14.772	10.372
HTG01A	1	7640	B	10.935	6.842
			M	12.319	8.482
T05	1	10892	B	10.911	6.102
			T	20.682	13.102
T05A	1	10892	Q	19.402	11.169
T10	1	4236	F	12.506	10.336
T10A	1	4236	H	12.104	5.359
			F	14.465	9.768
T36	1	7640	M	11.643	7.516
T36A	1	7640	K	21.546	13.385

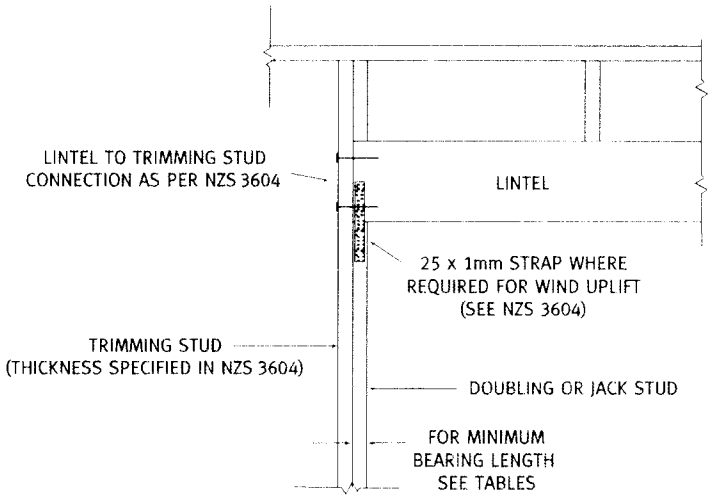
Note:
1) Select appropriate Slab Thickening Detail from the MiTek 'Internal Load Bearing On Concrete Floor Slabs' brochure.

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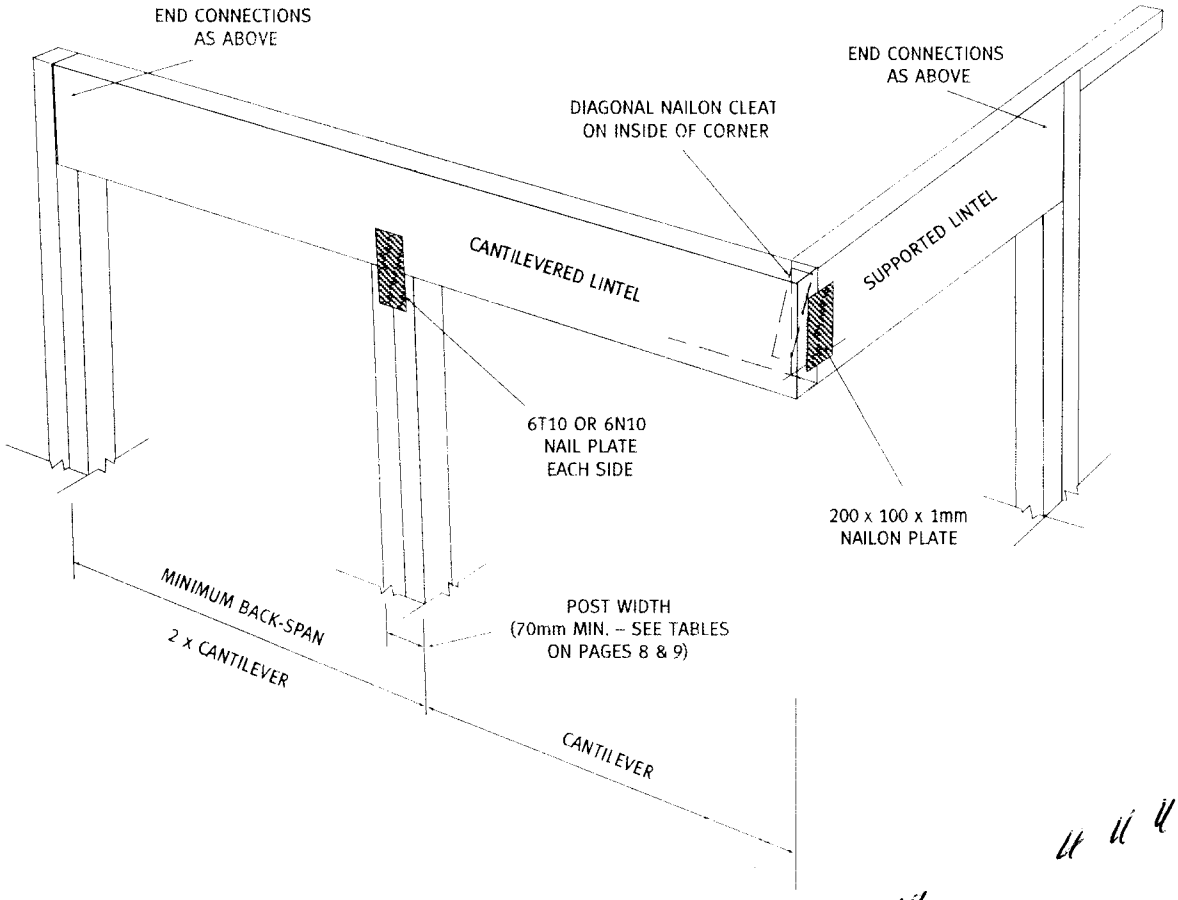
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Construction details

Lintel end connections



Cantilevered lintel connections



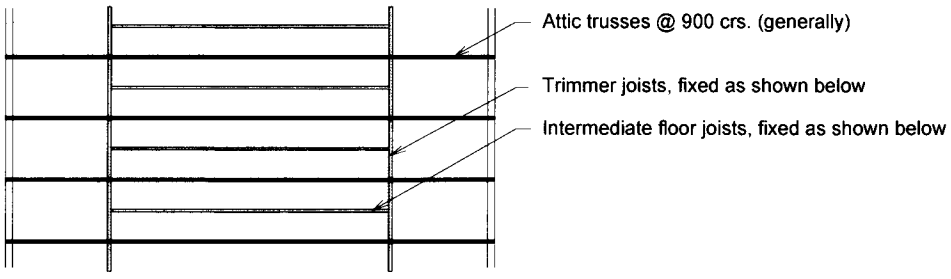
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Floor Details – 1.5kPa Live Load

Number of Supports	Max. Floor Span	Floor Joist Size
2 3400		190 x 45
2 4300		240 x 45
2 5000		290 x 45

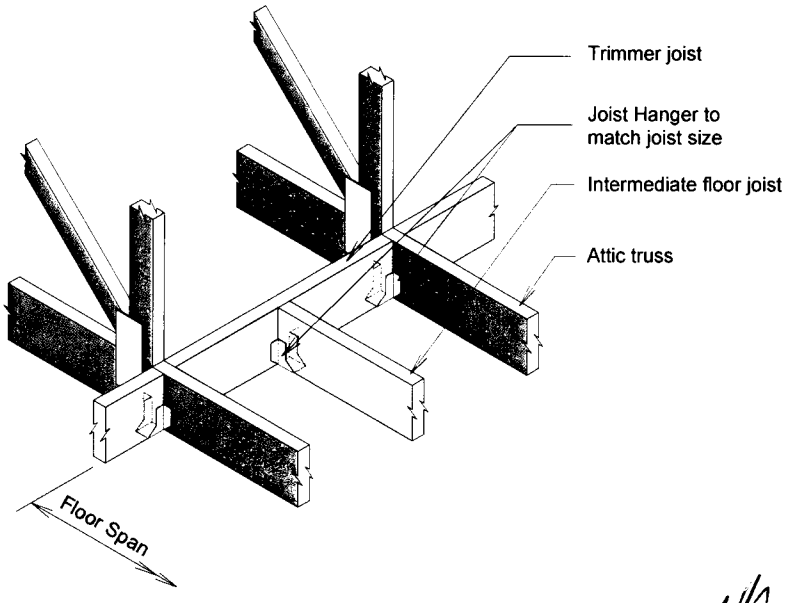
Definition



Attic Trusses – to be fixed to top plate with a minimum of 2 Wire Dogs each end.

Floor Joists

- Intermediate floor joist size as per NZS 3604:1999.
- Bottom chord size to be the same as the intermediate joist size.
- Trimmer joist size to match the intermediate floor joist size.
- Fix trimmer and intermediate floor joists with LUMBERLOK ® Joist Hangers, size and fixing as per LUMBERLOK ® "Joist Hanger Selection and Nailing / Screw Fixing" brochure.



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0 2 NOV 2011
BY:

CARTERS

Manufacturing Statement

This statement,supplied to the Carters customer listed below, has been provided to assist a Building Consent Authority in determining compliance with the NZ Building Code and is issued subject to Carters standard terms and conditions of sale.

02-November-2011
MIKE GREER NORTH CANTERBURY
149 HODGSONS ROAD, LOBURN
CD91052

Roof Trusses
Roof trusses supplied by Carters to the above project have been manufactured as per any Producer Statement Design issued by Carters for consent purposes on the above project using verified timber grades that meet the requirements of NZS3603 and NZS3622. Carters is a licensed MiTek fabricator.

Pre Nailed Wall Frames
Pre-nailed Wall frames supplied by Carters to the above project have been manufactured as per the plans, specifications and information provided by the customer using verified timber grades, where required, that meet the requirements of NZS3603 and NZS3622. Laminated veneer lumber (LVL) lintels that have been supplied as part of a pre-nailed wall frame meet the requirements of AS/NZS4357 and NZS3603.

Timber Treatment
All treated timber products used in any items manufactured by Carters in the above project, are not less than the minimum levels specified in the plans, specifications and information supplied by the customer.

NZ Standards
NZ Standards listed in this statement are cited as acceptable solutions in the approved documents NZBC B1/AS1 Structure or B2/AS1 Durability as a means of complying with the NZ Building Code.

Simon Bruce
CHRISTCHURCH MANUFACTURING

Carters, a division of Carter Holt Harvey.

L 110550

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636
PO Box 345
Christchurch 8140
P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz
www.ecan.govt.nz

23 May 2011

Mr D J & Mrs P G Humphreys
149 Hodgsons Road
RD 2
Rangiora 7472

Dear Sir/Madam

NOTICE OF RESOURCE CONSENT DECISION(S)
NUMBER(S): CRC111584
NAME: Mr D J & Mrs P G Humphreys

The decision of Environment Canterbury is to grant your application(s) on the terms and conditions specified in the attached resource consent document(s). Your resource consent(s) commences from the date of this letter advising you of the decision. The reasons for the decision are:

1) Any adverse effects on the environment as a result of the proposed activity will be minor.

For some activities a report is prepared, with officer recommendations, to provide information to the decision makers. If you require a copy of the report please contact our Customer Services section.

If you do not agree with the consent authority decision, you may object to the whole or any part. Notice of any objection must be in writing and lodged with Environment Canterbury within 15 working days of receipt of this decision.

Alternatively you may appeal to the Environment Court, PO Box 2069, Christchurch. The notice of appeal must be lodged with the Court within 15 working days of receipt of this decision, with a copy forwarded to Environment Canterbury within the same timeframe. If you appeal this decision, the commencement date will then be the date on which the decision on the appeal is determined. If you are in any doubt about the correct procedures, you should seek legal advice.

You can find online information about your consent document at http://ecan.govt.nz/publications/General/YourConsentDocumentBooklet09.pdf and also information regarding the monitoring of your consent at http://ecan.govt.nz/publications/General/monitoring-your-consent-booklet.pdf. If you have a resource consent for a **septic tank**, please also visit http://ecan.govt.nz/publications/General/FlushedWithSuccess.pdf for information about your on site wastewater treatment system. These booklets contain important information about your consent and answers some commonly asked questions about what will happen next in the life of your resource consent. There is an Annual Compliance Monitoring Charge associated with every consent. For details of this, please refer to page 10 of the "Monitoring Your Consent' booklet.

Environment Canterbury takes every measure to improve both applications and processes, and we appreciate your feedback as an important component in ensuring this occurs. You can complete a consents survey on-line at http://www.ecan.govt.nz/services/resource-consents/pages/surveys.aspx. Alternatively, you can call our Customer Services Section on 0800 EC INFO who will be happy to complete the survey with you.

Our Ref: ***CO6C/32251***
Your Ref:
Contact: ***Customer Services***

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

RMOG
Rev May 2008

Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Thank you for helping us make Canterbury a great place to live.

For all queries please contact our Customer Services Section by telephoning (03) 353 9007, 0800 ECINFO (0800 324 636), or email ecinfo@ecan.govt.nz quoting your CRC number above.

Yours Sincerely

Tania Harris
SECTION MANAGER CONSENTS
on behalf of the Canterbury Regional Council

Enc

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

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Mel Hansen Contractors Ltd
Attn: Peter Hansen
PO Box 32
Rangiora 7440

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.

Signed..... 13/7/11

1 110550

RESOURCE CONSENT CRC111584

Pursuant to Section 104 of the Resource Management Act 1991

The Canterbury Regional Council (known as Environment Canterbury)

GRANTS TO:	David John Humphreys and Paula Gail Humphreys
A DISCHARGE PERMIT:	To discharge contaminants to land.
DATE DECISION:	23 May 2011
EXPIRY DATE:	23 May 2046
LOCATION:	149 Hodgsons Road, LOBURN

SUBJECT TO THE FOLLOWING CONDITIONS:

1) The contaminants discharged shall be only domestic wastewater from two dwellings with a combined maximum of nine bedrooms.

2) The wastewater treatment and land application system shall not include chlorine disinfection.

3) The volume of wastewater discharged shall not exceed three cubic metres per day.

4) (a) The dwelling shall be located on Lot 2 DP 431621, 149 Hodgsons Road, Loburn, as shown on Plan CRC111584A, which forms part of this consent.
   (b) The wastewater shall be only discharged into land at or about map reference NZTM2000 BW23:6107-1086 (NZMS 260 M34:7107-7248), via the land application system labelled on Plan CRC111584B, which forms part of this consent.

5) (a) The wastewater shall be treated in an aerated wastewater treatment system, or an alternative wastewater treatment system which provides the same or better quality treatment.
   (b) The wastewater treatment system shall have a proprietary outlet filter installed.

6) After exiting the wastewater treatment system, the wastewater shall be discharged via a land application system as follows:
   (a) The land application system shall include at least 1200 metres of drip irrigation tubing.
   (b) Lines of drip irrigation tubing shall be at least one metre apart.
   (c) The drippers on the drip irrigation tubing shall be spaced at not more than 600 millimetres apart.
   (d) The wastewater shall be evenly dosed in fixed quantities over the land application system.
   (e) The wastewater shall be discharged at a loading rate not exceeding 2.5 millimetres per day.
   (f) The drip irrigation tubing shall be covered with between 100 and 150 millimetres of soil.
   (g) The soil above the drip irrigation tubing shall be grassed or planted with vegetation. The grass or plantings shall be kept in a healthy state. Replanting shall occur when erosion or die-off has resulted in bare or patchy soil cover.

7) The wastewater treatment and land application system shall ensure that the concentration of faecal coliform bacteria in the discharge 300 millimetres below the drippers, shall be less than 1,000 colony forming units per hundred-millilitre sample.

8) (a) The wastewater treatment and land application system installed shall be certified by a person suitably qualified and experienced in the design and operation of such wastewater treatment and land application systems, as complying with Conditions (4)(b), (5) and (6) and capable of meeting the standard specified in Condition (7).

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed .....

(b) A copy of the certificate shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, following the installation of the wastewater treatment and land application system.

9) The land application system shall be fenced to prevent stock, vehicle and public access.

10) The discharge shall not result in any wastewater being visible at the land surface.

11) (a) There shall be no discharge within 20 metres of any surface water body.
(b) There shall be no discharge to surface water as a consequence of the exercise of this consent.

12) The discharge shall not occur within the following distances from bores that existed or were authorised before 4th May 2011:
(a) 1,000 metres up-gradient (in relation to the direction of groundwater flow) and 200 metres in any other direction of any bore from which more than 20 cubic metres per day of water is taken for community supply purposes; and
(b) 200 metres up-gradient (in relation to the direction of groundwater flow) and 50 metres in any other direction of any bore from which less than 20 cubic metres per day of water is taken for community supply purposes; and
(c) 50 metres up-gradient (in relation to the direction of groundwater flow) and 30 metres in any other direction of any bore not used for community supply purposes.

13) (a) The wastewater treatment and land application system shall be serviced at least two times per year by a person suitably qualified and experienced in the maintenance of such systems.
(b) The servicing shall include, but shall not be limited to:
(i) measuring the depth of solids and scum in the wastewater treatment tank(s);
(ii) pumping out the wastewater treatment tank(s) if the solids and scum layers combined are greater than two thirds of the depth of the wastewater treatment tank(s);
(iii) inspecting the outlet filter and cleaning it if necessary;
(iv) checking that the pump is working and replacing pump as required; and
(v) checking the drip irrigation lines are working and replacing drip irrigation lines as required.
(c) Following every service a written report shall be prepared and kept by the consent holder. In addition, the consent holder shall also keep written records of all repairs made to any part of the wastewater treatment and land application system.
(d) The consent holder shall forward a copy of the written reports and records of repairs to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, on request.

14) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of:
(a) Dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or
(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

15) The lapsing date for the purposes of section 125 shall be 30th June 2016.

Issued at Christchurch on 23 May 2011

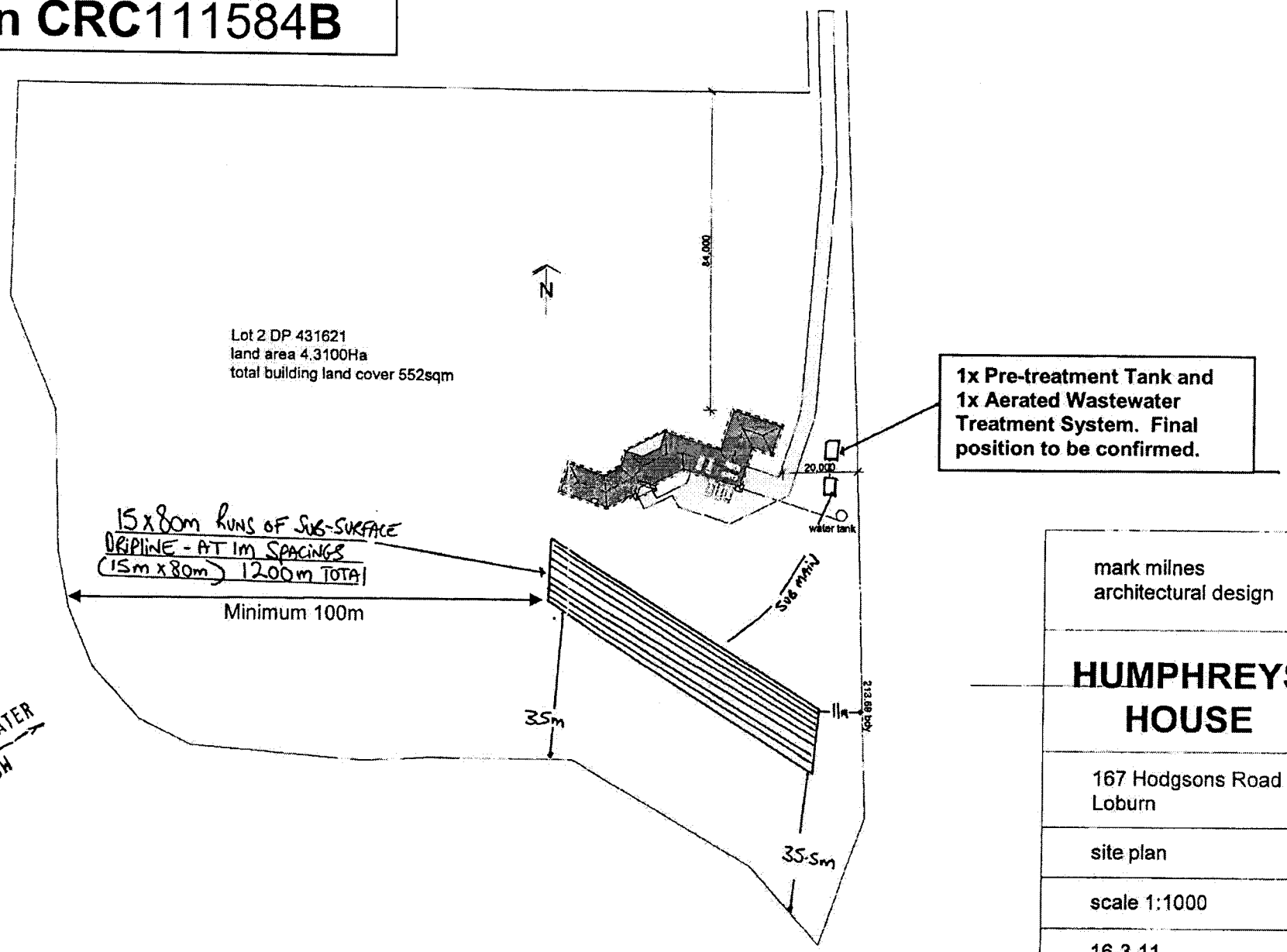
Canterbury Regional Council

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

Environment Canterbury is the promotional name of the Canterbury Regional Council


Plan CRC111584A
110550
Scale 1 : 8000
©Copyright 2010
Hodgsons Road
Applicants Property:
Lot 2 DP 431621
149 Hodgsons Road, Loburn
NZTM2000 BW23:6107-1086
(NZMS260 M34:7107-7248)
Waimakariri District Council
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Signed: 13/7/11

Plan CRC111584B



Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13.7.11

mark milnes architectural design
HUMPHREYS HOUSE
167 Hodgsons Road Loburn
site plan
scale 1:1000
16-3-11
sheet no **01**

110550

Consent No: CRC111584
Our Ref: CO6C/32251
110550

Exercising of resource consent

It is important that you notify Environment Canterbury when you first start using your consent.

GRANTED TO: David John Humphreys and Paula Gail Humphreys
A DISCHARGE PERMIT: To discharge contaminants to land.
LOCATION: 149 Hodgsons Road, LOBURN

Even if the consent is replacing a previous consent for the same activity, you need to complete and return this page.

Providing this information will:

- Validate your consent through to its expiry date
- Minimise compliance monitoring charges
- Help provide an accurate picture of the state of the environment.

If consent CRC111584 is not used before 30/06/2016 this consent will lapse and no longer be valid.

Declaration:

I have started using this resource consent.

Action taken: (e.g. pasture irrigated, discharge from septic tank/boiler/spray booth etc).

_____

Approximate start date (***Note: this may be different to the date the consent was granted):***: _____

Signed: _____ **Date:** _____

Full name of person signing (please print): _____

Please return to:

Environmental Protection - Administration
Environment Canterbury
PO Box 345
Christchurch

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11.....

aDC

110550

32 Newnham St
PO Box 32
Rangiora

MEL HANSEN CONTRACTORS LTD

PH (03) 313 8418
FAX (03) 313 8580
A/H 0274 545 775

DRAINAGE EXCAVATION

HANSEN CONTRACTORS LIMITED

EFFLUENT DESIGN

Date: *26 April 2011*

Applicant: *David John Humphreys and Paula Gail Humphreys*

Address: *149 Hodgesons Road, Loburn Lot 2 DP 431621*

Design No: *386*

Hansen Contractors Limited believe this is a widely accepted system and if maintained to a high standard should perform well. The life of a soakage bed is dependant on many variables and therefore no guarantee can be given.

The design is covered by a Professional Indemnity Insurance which is only valid if the system is installed by Hansen Contractors Limited.

Peter Hansen
Manager

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

Effluent Data

The dwelling will have 9 bedrooms therefore the total effluent discharged will be no more than 3000 litres per day.

Service Contract:

A service contract must be in place for this system and a copy sent to Environment Canterbury and the Waimakariri District Council. The service contractor must check the tank two times per year and carry out the seven steps listed in the Resource Consent.
Hansen Contractors Limited can provide a service contract - Phone 3130352

Effects on the Environment:

This system has been designed to comply with Environment Canterbury's outlines on effluent disposal and to the best of our knowledge complies fully with their requirements.

This system has been designed with this property's specific boundaries, soil type, coliform and nitrate levels, groundwater depth and waterways.

This system is designed with widely accepted principles and therefore should have minimal effects on the environment.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Effluent Design

Applicant: David and Paula Humphreys

Wells: No – community supply

Open drains: No – none within 20 m of effluent field

Soil type: As per test hole. Test hole revealed 300 mm top soil, 1 m + of medium clay loams.

Site: Rolling. Effluent area at 5° slope maximum.

Tanks

Tank 1 – Hansen 55 pre-treatment and
Tank 1 – Hansen 75 Extra Aerated Treatment System with additional media, a large blower and an audible visual high level alarm and Pedrollo Top Multi 2 submersible pump.

Land Application System

15 x 80 metre runs of sub surface irrigation at minimum 1 metre spacings giving 1200 m² of soakage area @ 2.08 mm of effluent per square metre per day maximum.
Based on AS/NZS 1547:2000. On Site Domestic Waste Water Management.

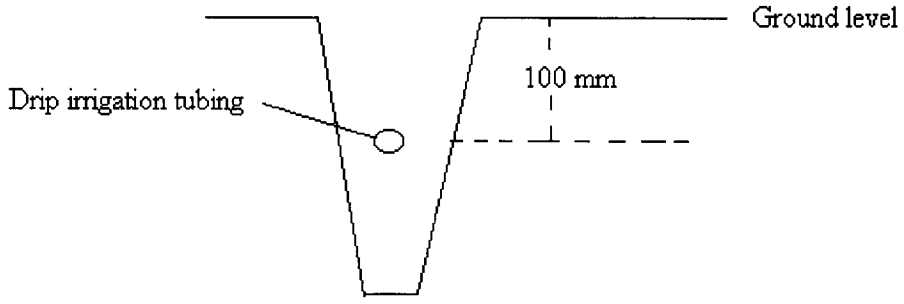
Effluent Piping

Emitters at 600 mm spacings.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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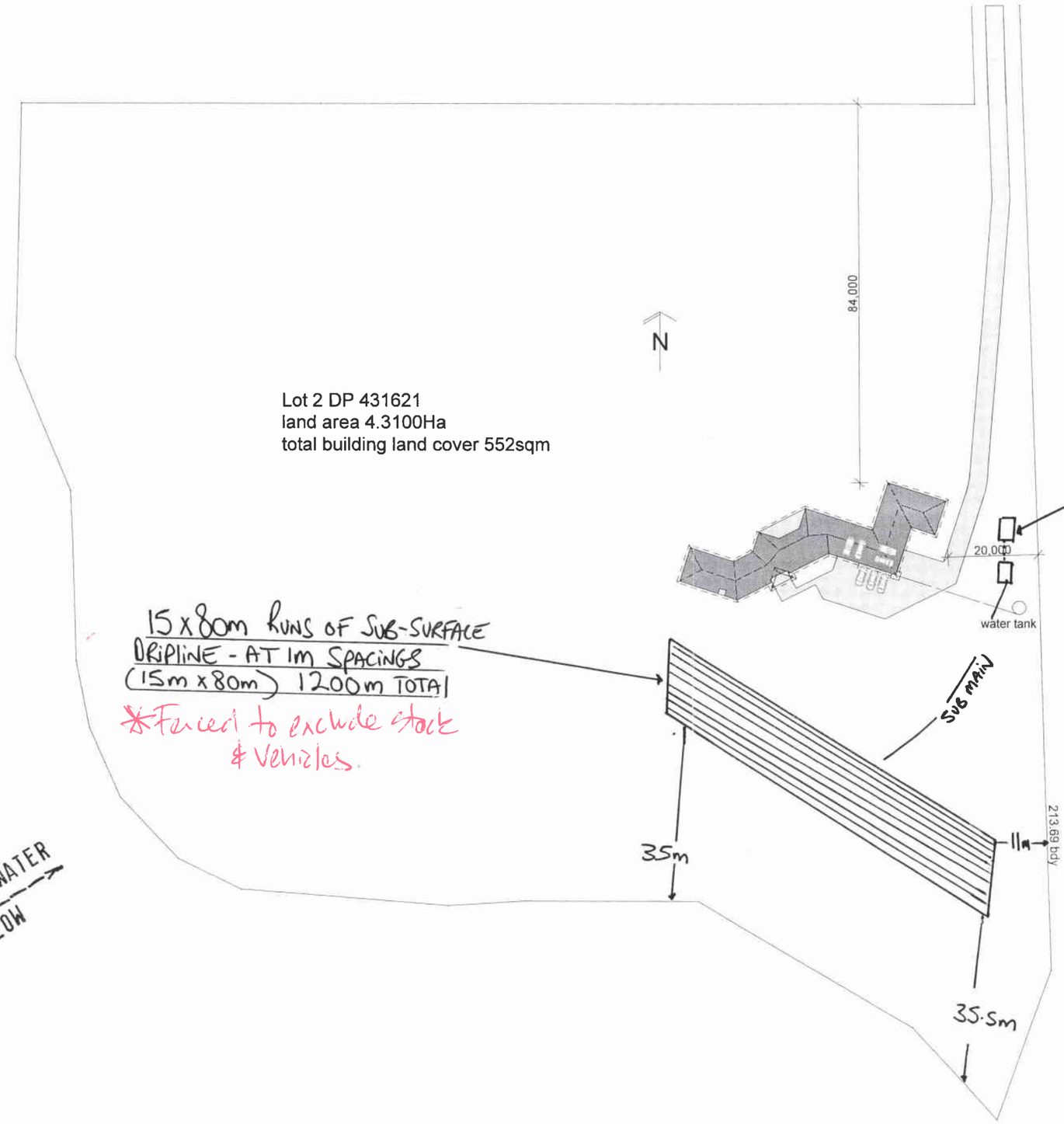
Land Application System Cross Section



Drip line irrigation tubing is to be covered with 100 mm of soil at completion.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 3/7/11

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Lot 2 DP 431621
land area 4.3100Ha
total building land cover 552sqm

1 x HANSEN 5S PRE-TREATMNT TANK + 1 x HANSEN 7S *EXTRA* A.W.T.S - FINAL POSITION TO BE CONFIRMED WITH OWNER ONSITE.

15 x 80m RUNS OF SUB-SURFACE DRIPLINE - AT 1m SPACINGS (15m x 80m) 1200m TOTAL
*Fenced to exclude stock & Vehicles.

GROUNDWATER FLOW

mark milnes
architectural design

HUMPHREYS HOUSE

167 Hodgsons Road
Loburn

site plan

scale 1:1000

16-3-11

sheet no **01**

110550

32 Newnham St
PO Box 32
Rangiora

MEL HANSEN CONTRACTORS LTD

PH (03) 313 8418
FAX (03) 313 8580
A/H 0274 545 775

DRAINAGE EXCAVATION

HANSEN 75
SEPTIC TANK SYSTEM

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Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

October 2010

HANSEN 75 SPECIFICATIONS

OPERATING CAPACITY - Litres

Chamber A	-	2,512 litres	}
" B	-	999 "	}
" C	-	2,049 "	} **Total operating capacity 7,618 litres**
" D	-	1,029 "	}
" E	-	1,029 "	}

OVERFLOW CAPACITY = **1,984 litres** (above inlet)

TOTAL HOLDING CAPACITY = **9,602 litres**

WEIGHT

Total tank weight – 10,500 kg (10.5 ton)

GENERAL TANK INFORMATION

The HANSEN 75 is an aerated treatment plant, comprising of 5 separate reinforced chambers with 800 mm turrets. The walls and floors are poured as 1 complete unit (no joins between walls and tank), to ensure the system remains completely water tight.

Sewage travels by gravity from chamber to chamber by 100 mm PVC pipes cast in the concrete.

CHAMBER PURPOSE

A. Inlet/solids chamber (Pre treatment 1.):
This chamber has 2 x drop pipes on the inlet and outlet.

B. Settle chamber (Pre treatment 2.):
This chamber has a Taylex TFS effluent filter on the outlet.

C. Aeration chamber:
This chamber has 2 x fine air diffusers and Bio-pac moving bed media.

D. Clarification chamber and sludge return:
This chamber has a Taylex TFG filter/clarifier and an air lift sludge return to Chamber A.

E. Pump chamber:
This chamber has a Davey D42A ~~/or a Pedr~~rollo Top Multi II pump. The delivery pipe work from the pump is fitted with a self cleaning filter and a non return valve and mac union for ease of servicing.

F. A high level alarm with visual and audible panel is installed in the garage or in a frequently accessed area.

ANTI-FLOTATION

The HANSEN 75 has a 150 mm foot around the base.

CONTROL BOX

The control box has a Thomas Linear blower (80 litre);
Control switch board;
On/Off isolator switch on outside of box.

LIDS

All lids are fastened with square head stainless screws and bolts.

WARRANTY

15 year warranty with a life expectancy of 50 years.

MAXIMUM LOADING

10 people/2000 litres per day.

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32 Newnham St
PO Box 32
Rangiora

MEL HANSEN CONTRACTORS LTD

PH (03) 313 8418
FAX (03) 313 8580
A/H 0274 545 775

DRAINAGE EXCAVATION

OWNERS MANUAL

Applicant:

Date:

Location:

Design No:

AS THE OWNER OF THIS SEPTIC TANK AND EFFLUENT SYSTEM, YOU ARE RESPONSIBLE FOR ITS OPERATION AND MAINTENANCE. AFTER THE SYSTEM HAS BEEN OPERATING FOR A WEEK YOU WILL NEED TO HAVE THE SYSTEM COMMISSIONED AND SET UP A SERVICE CONTRACT

LIFE OF SYSTEM

1. **Effluent Field and Septic Tank Area**
   It is imperative that these areas are fenced from stock and any other traffic.

2. **Pump**
   The pump is a mechanical item and with maintenance should last at least 5 years.

3. **Drains and Septic Tank**
   These should last at least 50 years.

4. **Effluent Soakage Bed**
   The life of soakage bed is dependent on many variables. Some are listed below:

a) The types of other products flushed into the system, (what kills bugs in the house will kill bacterial bugs in the septic tank).
b) Volume of effluent discharged per day.
c) What type of detergent is used.
d) Volume of solid particles discharged.
e) The maintenance of the system.
f) High rainfall.
g) Ground water height.

The life of your system will depend on how you as an owner treat it

1. Limit the amount of water that goes through your system
2. Limit the amount of excess food scraps that go down your drains
3. Use biodegradable cleaners, synthetic powders and soaps
4. Do not use standard soaps
5. Do not flush down your sinks or toilets: Napisan, nappies, wipes, condoms, tampons, pads, disinfectants, medicine, powerful bleach, oils or petrols etc.
6. Do not install a garbage disposal system
7. Do not empty a pool or spa into your system
8. **If you sell your property please give the new owners these Instructions.**
9. **Set up a Maintenance Contract - Phone Hansen Contractors Ltd - (03) 313 8418 or (03) 313 0352.**

If the Maintenance Contract is cancelled, the appropriate Council will be notified of this cancellation.

For further details on how to maintain your system please contact your service company.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11.....

MAINTENANCE CONTRACT

It is a condition of the Resource Consent that a maintenance contract is in place. Just as servicing your car will help it perform well and last longer, the same principle applies to your HANSEN 75.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CURE
The low pressure light is on and alarm is going	1. Check pressure sensor pipe is secure on both ends inside control box. 2. Check all pipe work is connected. 3. Check diffusers are sound. 4. Check time delay on control. 5. Check blower for faults.
The high level light and alarm are on	1. Check float switch is on pump and alarm. 2. Check pump and filter for blockages. 3. Check pump for faults. 4. Check loadings.
Drains are backing up	1. Is the high level alarm going 2. Check effluent filter and clean 3. Check pump 4. Are the drains between the house and tank blocked 5. Check effluent field is working

It is recommended that all maintenance and servicing is undertaken only by a professional knowledgeable in the system.

This tank should never be driven over with any vehicle!

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INSTALLATION GUIDE

HOLE SIZE

4.2 m long x 3.2 m wide.
Up to 2.380 mm depth required – the invert is 1.320mm

- Do not over-excavate the size of the hole.
- Make sure base is level – use laser level!

BACKFILLING

Backfill evenly around tank. Tank lids should be a minimum of 100 mm above finished ground level.

FILLING TANK

Always fill the tank with water as soon as the tank is in the ground.

Do not track diggers or other machinery/cars/trucks over the top of the tank or excavated hole.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 3/7/11

32 Newnham Street
P O Box 32
Rangiora

HANSEN CONTRACTORS

Ph. 03 313 0352
Mob. 0275 555 606
Fax. 03 313 8580

SERVICE REPORT

Client Name: _____ Council: _____

Site Address: _____

Phone: _____ Home _____ Work _____ (Mobile)

Serviced by: _____ Type of System: _____

HANSEN 75		COMMENTS	Phoned owner and informed
1. Measure the depth of solids and scum			
2. Check filter and clean if necessary			
3. Check pump and float switch and alarm			
4. Flush the lines until clear			
5. Pressure testing at end of pipe(s)			
6. PH test			
7. Control panel complete check			
8. Clarifier			
9. Lids and control box			
10. Blower			
11. Aeration			
12. Media			
13. Before leaving: All lids secured, power on, valves and piping in working order			

Signed: _____ Date: _____
(Service Contractor)

Comments: _____

8. 110550

HANSEN

Septic Systems Ltd

Septic Tank Electrical Installation Instructions

Newspring Ventures Ltd Control Panel

Model 2T24V - Series 1.1

Last update 27/09/10

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

Installation

A qualified electrician must be employed to install the panel and ancillary wiring. The wiring must be installed and tested in compliance with the New Zealand electrical wiring regulations.

Mains Supply
It is recommended that a ELCB is used to supply power to the septic tank.
Install an appropriate sized 2 core + E cable from the house supply through the internal entry chamber and permanently connect into the Isolator connection box mounted on the inside of the Septic Tank Blower Cabinet, see wiring diagram B.

Control Panel:
This is mounted in the Blower cabinet above the Tank. There is an isolator on the outside of the Blower container which isolates the control Panel inside, and also in the isolator enclosure; terminals to the remote alarm unit.
The Control Panel is mounted unfixed with plugs and leads attached to its peripheral items, to facilitate easy removal and changing. See diagram A.

Float & Pump
Thread the float and pump leads through the internal entry chamber into the Blower Cabinet. Plug the pump lead into the labelled 3 pin socket. See wiring diagram C[1].
Float switch flex is also plugged into its corresponding socket.

Aerator Blower
Aerator unit is mounted in the bottom of the Blower cabinet with its lead plugged into the labelled 3 pin socket.
Connect 4mm hose from Aerator pipe tee off to pipe at the bottom of the Control Panel.

Alarm Unit
Install a 3core cable (24 Volt) between the above isolator enclosure on the septic tank Blower Cabinet and the position chosen to mount the supplied Alarm unit, see wiring diagram D.

1

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Caution

When power is applied to the control panel, the wires to the pump, aerator, floats and pressure switch are energized. Do not service the pump or any electrical wiring in the pump vault without disconnecting the power supply. The pump vault area is a hazardous area, and may contain explosive or asphyxiating gases. Do not smoke or use a naked flame nearby. Take appropriate precautions before working in the pump vault.

Note: Damage to equipment due to ingress of water into the electrical connections is specifically excluded from Newspring Ventures Ltd warranty.

Commissioning

Having followed all the installation instructions, and checked wiring connections are correct. Confirm the Control Panel is plugged into the appropriate labelled leads.

Turn on the external Control Box Isolator, check that the controller unit, MCB's are all switched on.

If there is sufficient product in the outflow chamber the discharge pump will start and stop with its own independent float control.

The Timer 'TC' will cycle the Aerator off for 20 minutes and on for 20 minutes.

Alarm Unit

In normal run, power on, non fault mode the 'System On' lamp only, will illuminate constantly.

If the outflow level is high, the buzzer and 'High Level' Lamp will illuminate.
To test this; hold the float up to simulate a high level alarm.

If the aerator pressure is low while the Aerator is running, the buzzer and 'Low Pressure' lamp will illuminate.
To test this; pull the 4mm pipe off the alarm unit while the Aerator is running.

If the mute button is switched to mute, remember to return the switch to normal mode when the fault is cleared.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

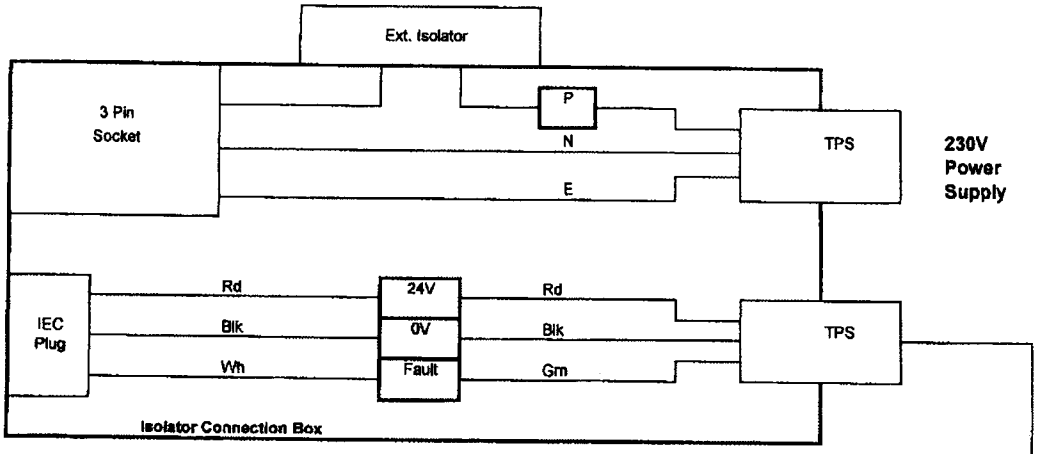


Diagram B (Septic Tank Aerator Box)

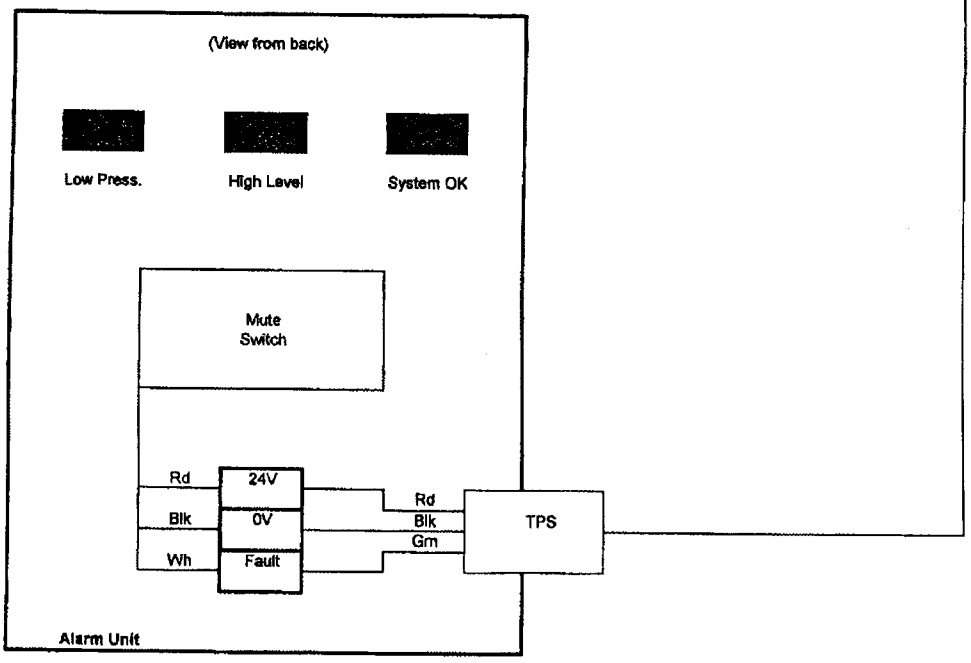
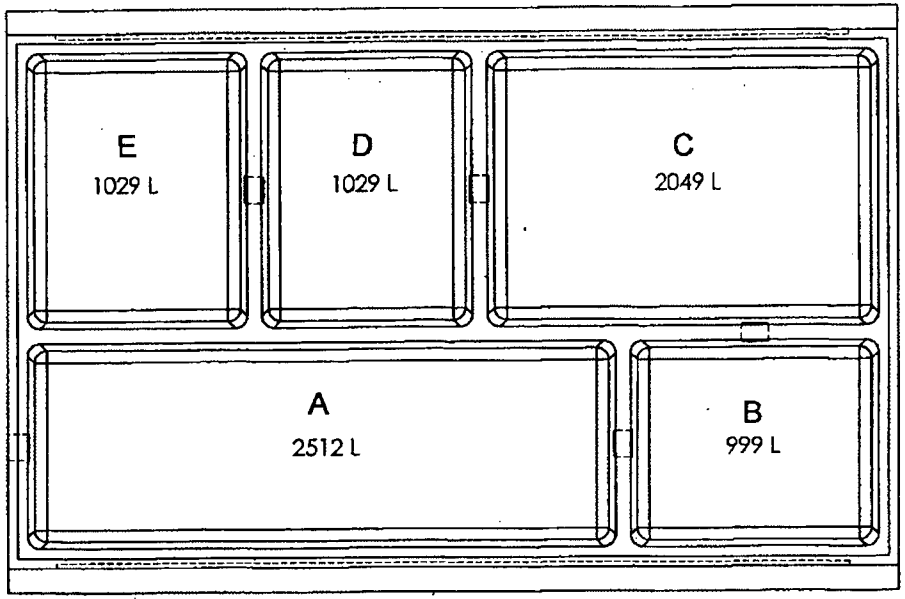


Diagram D (Alarm Panel)

12. 110550



WORKING VOLUME - 7,618 LITRES
TOTAL HOLDING VOLUME - 9,602 LITRES

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

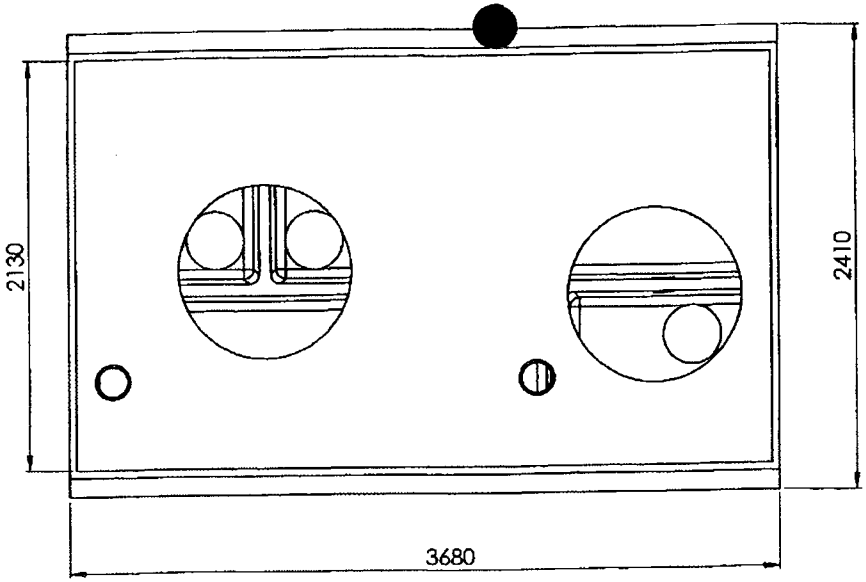
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info@bvt.co.nz
www.bvt.co.nz

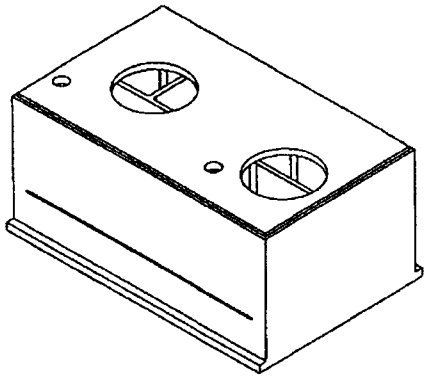
		Date
Designed	Hagen Stewart	3/5/10
Drawn	Hagen Stewart	3/5/10
Checked		
Approved		

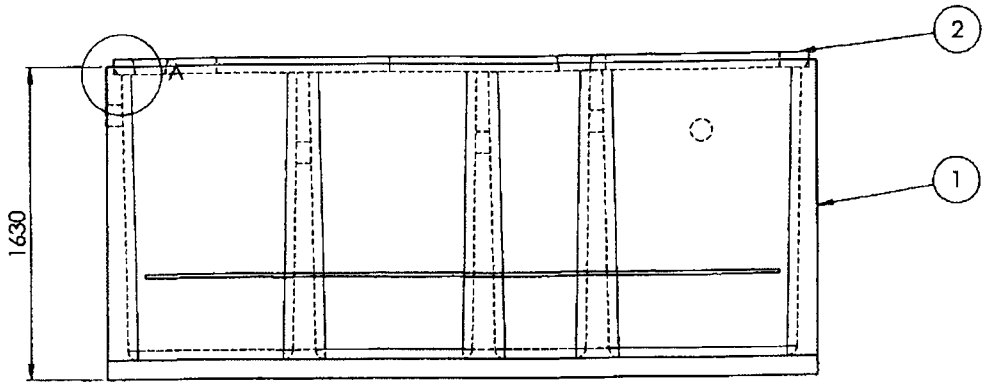
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All dim. in mm

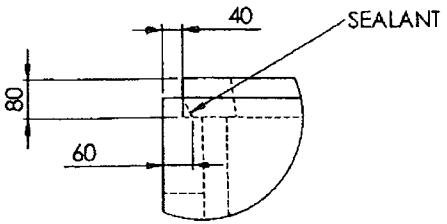
Hansen Contractors
7,500 l Septic Tank

Project	1003033	Scale: Do not Scale	Sheet: 5 of 5
DRG No.	1003033-10A	Date: 3/05/2010	BVTA3









DETAIL A
SCALE 1 : 10

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	MASS
1	1003033-10A	7,500 L SEPTIC TANK	1	8225 kg
2	1003033-11A	7,500 L SEPTIC TANK LID	1	1210 kg
3	Filter		3	

NOTE:
THE TANK SHALL BE INSTALLED PER THE STRUCTURAL SPECIFICATION, THIS INCLUDES A MAXIMUM OVERBURDEN DEPTH OF 500MM

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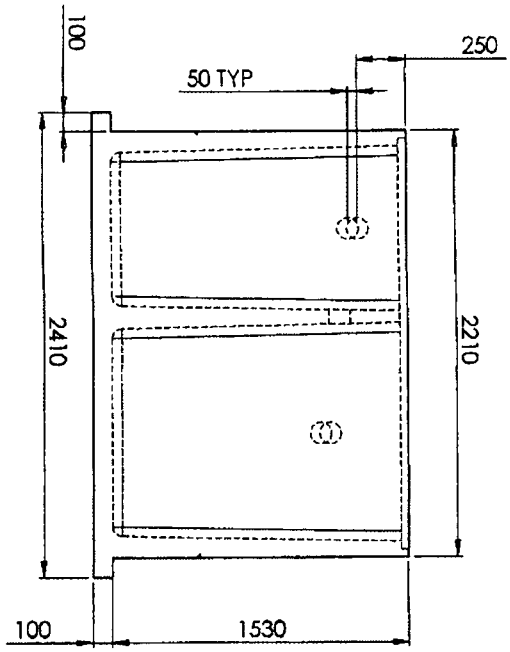
		Date
Designed	Hagen Stewart	5/5/10
Drawn	Hagen Stewart	5/5/10
Checked	Matt Bishop	2/6/10
Approved		

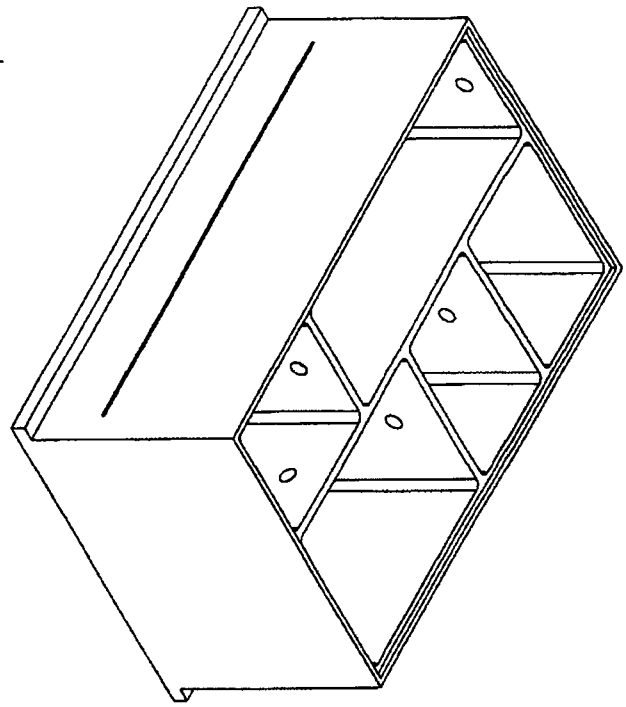
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All dim. in mm

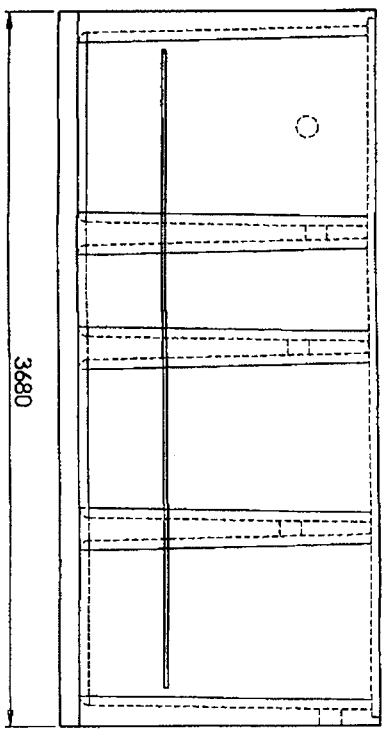
Hansen Contractors
7,500 l Septic Tank

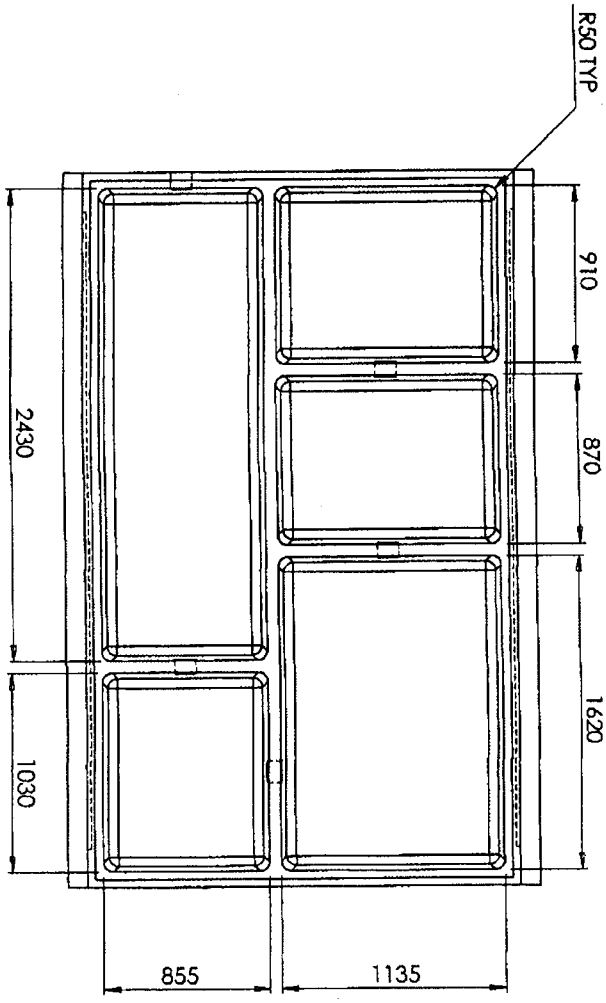
Project 1003033 | Scale Do not Scale | Sheet BVTA3
DRG No. 1003033-10 | Date 5/05/2010

110550









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Designed	Hagen Stewart	3/5/10	
Drawn	Hagen Stewart	3/5/10	
Checked	Matt Bishop	2/6/10	
Approved			

All dim. in mm — Tolerances (unless specified): 1-100 ±0.5; <1000 ±1; >1000 ±2

Hansen Contractors

7,500 l Septic Tank

Project: 1003033

DRG No.: 1003033-10A

Scale: Do not Scale

Date: 3/05/2010

Sheet: BVTA3 1 of 5

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.

Signed..... 13/7/11

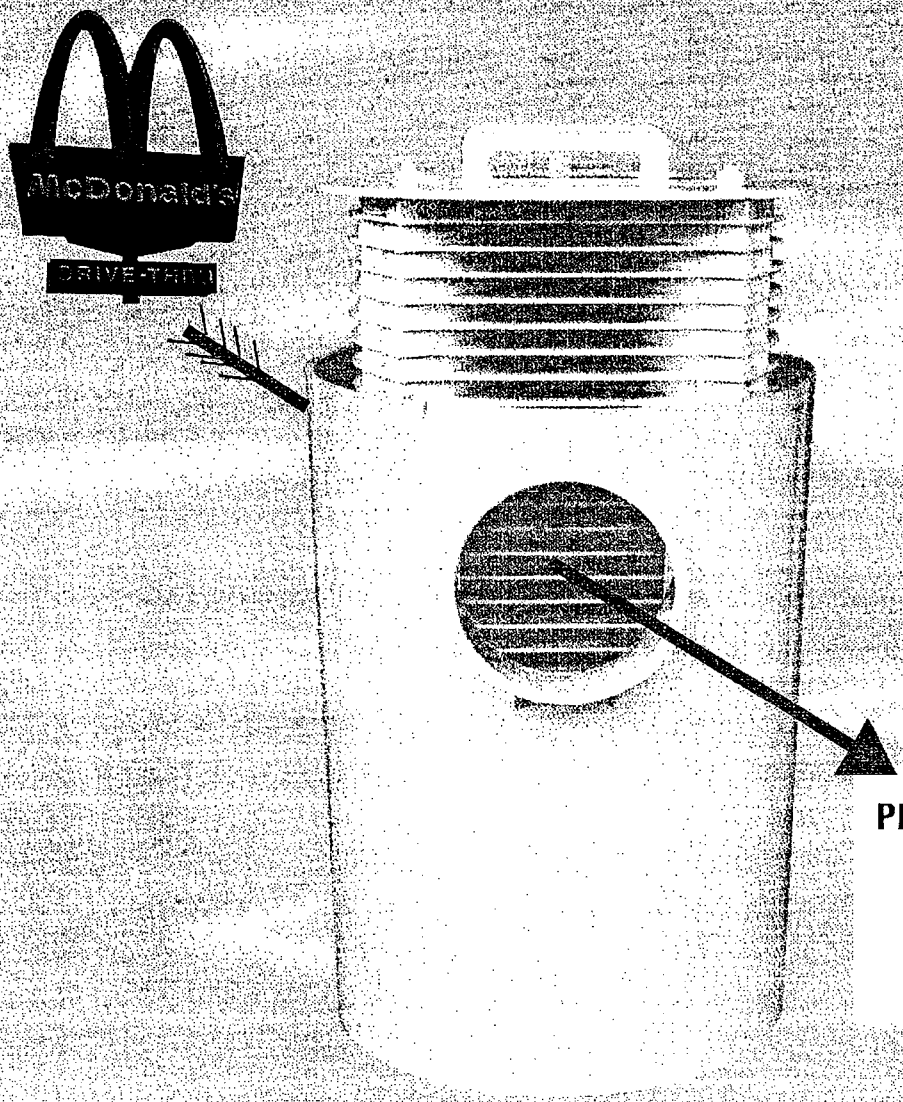
TAYLEX TREATS TRADE WASTE

TAYLEX

wastewater treatment systems

A Comprehensive Study of the TAYLEX TFG FILTER

fitted to the existing Grease Trap on a McDonald's Family Restaurant



PROVEN REDUCTION

BOD	37.5%
NFR	76.6%
TOG	51.3%
COD	48.5%

We wish to acknowledge the support from
Logan City Council and McDonald's Family Restaurant
at Loganlea Road Meadow Brook Qld to enable the compiling of the Report.

TFG 110550

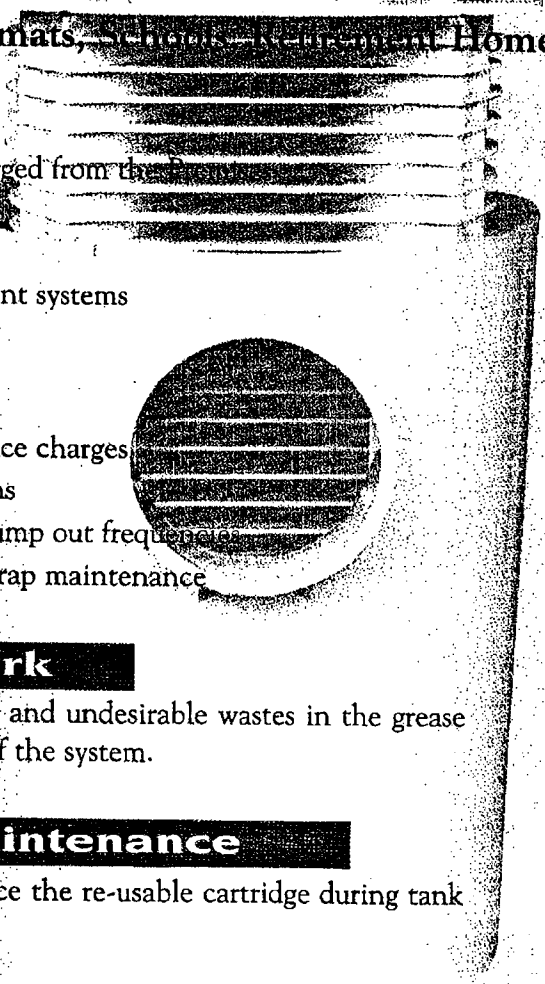
INDUSTRIAL AND COMMERCIAL FILTER

TAYLEX FILTERS PTY LTD ABN 65 072 567 590

THE BEST IN PRIMARY EFFLUENT FILTRATION

100's of Applications - It Filters Grease, Fat, Lint, Hair - Waste Water and more

Suitable for Shops, Factories, Restaurants, Food Preparation, Laundromats, Schools, Retirement Homes etc...



Stop

- Excess wastes being discharged from the Premises
- Sewer and Mains Blockages
- High discharge licence fees
- Overload to sewage treatment systems

Save

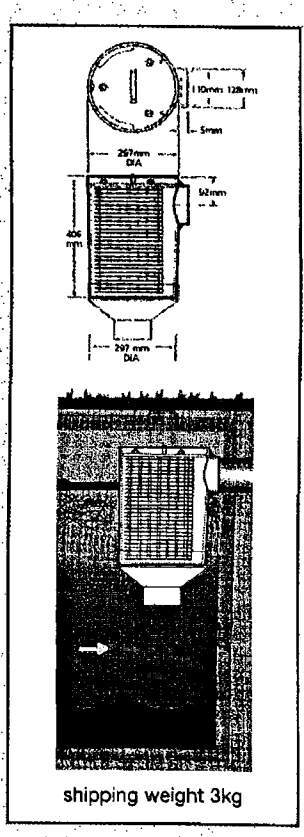
- On reduced sewer acceptance charges
- Maintenance to sewer mains
- Removal of solids during pump out frequencies
- Time and money in grease trap maintenance

How does it Work

The Taylex Filter retains solids and undesirable wastes in the grease trap and prevents surcharging of the system.

Service and Maintenance

Simply remove clean and replace the re-usable cartridge during tank cleaning.



shipping weight 3kg

Life Time Guarantee

Taylex Filters Pty Ltd Guarantee every Taylex Filter to be free of defects in materials and manufacturer for the lifetime of the purchaser.

Rated Capacity 10,000 LPD Modular Installation to 100,000 LPDay

TAYLEX FILTERS P/L
ABN 65 072 567 590

47 Highlands Road, Seymour 3660
PO Box 595, Seymour 3661

Phone +61 - 3 - 5799 0650
1800 111 023

Facsimile +61 3 5799 0651

For further information contact

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.

Signed 13/7/11

TFS

RESIDENTIAL AND COMMERCIAL FILTER

TAYLEX FILTERS PTY LTD ABN 65 072 567 590

PERFORMANCE PLUS THE BEST IN PRIMARY EFFLUENT FILTRATION

Why Install a Taylex Filter?

Protect your Home - Prevents premature failure of disposal area
your Family - A clogging septic tank is a health hazard
your Pets - Let them play in a safe environment
your Investment - Increase your property value
your Environment - Maintains a healthy garden/disposal area

How does it Work

A Taylex Filter prevents excess solids from leaving the tank which are the primary cause of system failure.

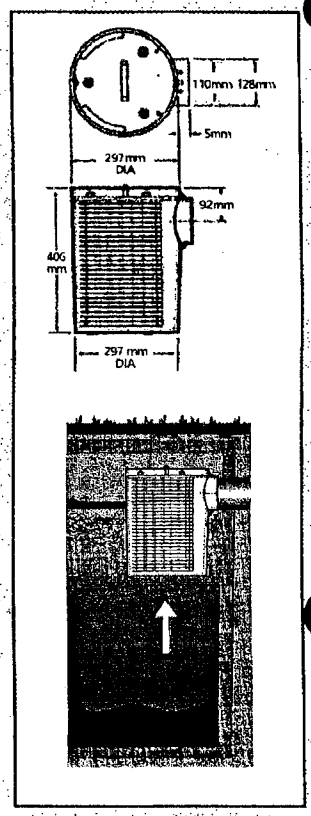
Service and Maintenance

Simply remove, clean and replace the re-usable cartridge.

Performance

Tested, proven and accepted by State and Local Authorities.
Reduces B.O.D. - Up to 70% • Suspends Solids - Up to 90%
Oil and Grease - Up to 90%

BETTER PROTECTION - 60 Metre of 1.5mm filtration.
EASIER TO SERVICE - Reusable cartridge removes easily for cleaning
PROVEN EFFECTIVE - Many years of successful performance.
FLOW RATE - 10,000 L.P.D. fits 100mm sewer pipe



Life Time Guarantee

Taylex Filters Pty Ltd Guarantee every Taylex Filter to be free of defects in materials and manufacturer for the lifetime of the purchase.

TAYLEX FILTERS P/L
ABN 65 072 567 590

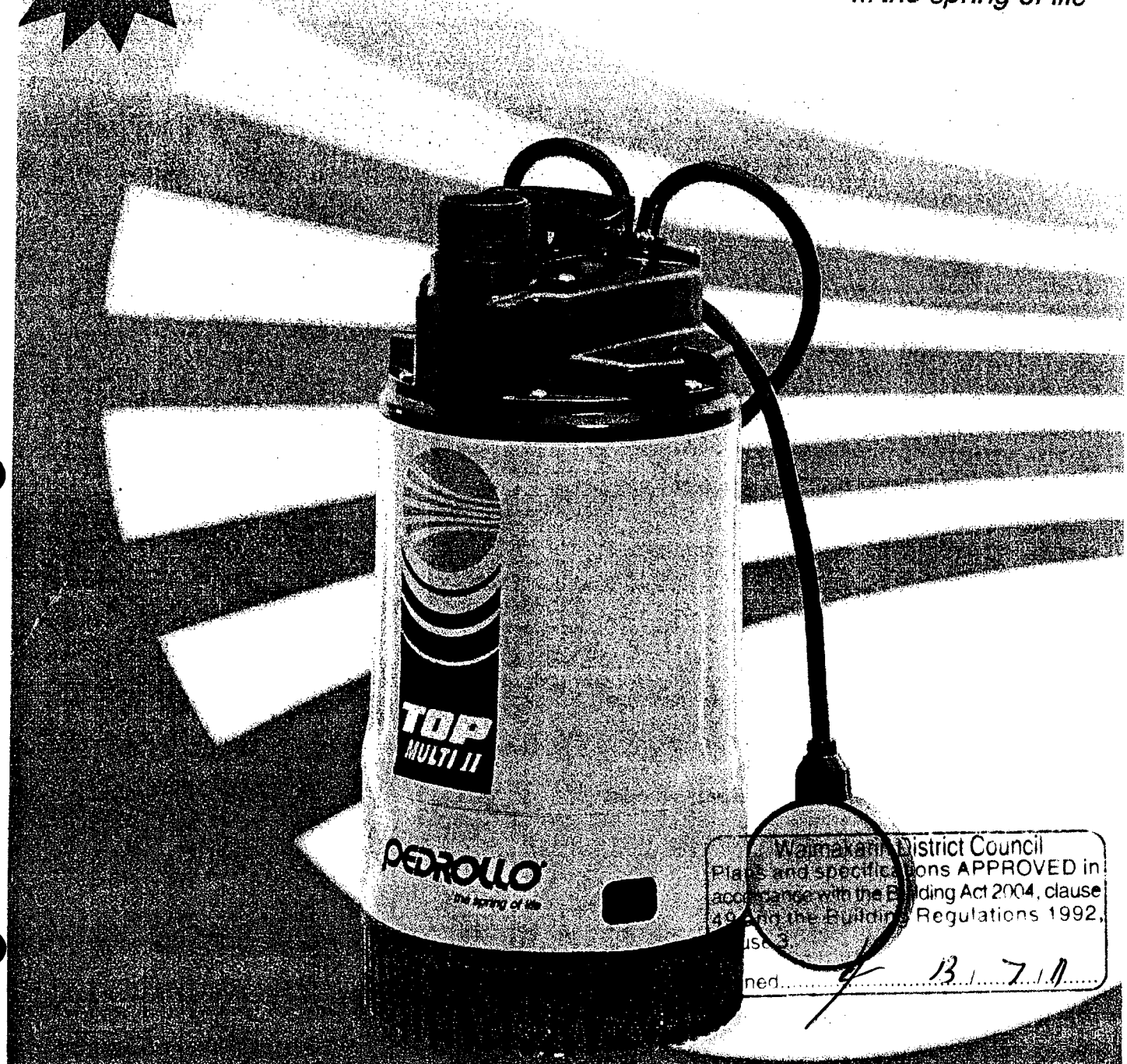
47 Highlands Road, Seymour 3660
PO Box 595, Seymour 3661
Phone +61 - 3 - 5799 0650
1800 111 023
Facsimile +61 3 5799 0651

For further information contact

110550

NEW

PEDROLLO®
... the spring of life



Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 of the Building Regulations 1992, use 3.
Signed ... 13/7/11

TOP MULTI® II

Multi-stage submersible pump for clear water

PEDROLLO
... the spring of life

RANGE OF PERFORMANCE
Flow rate up to 80 l/min (4.8 m^3/h)
Head up to 38 m

LIMITS OF USE
Submersion depth up to 10 m
Liquid temperature up to + 40°C
Emptying level up to 22 mm from the bottom

CONSTRUCTION AND SAFETY STANDARDS CE

EN 60 335-1	EN 60034-1
IEC 335-1	IEC 34-1
CEI 61-150	CEI 2-3

INSTALLATION AND USE
They are recommended for pumping clean water and liquids that are chemically non aggressive to the materials from which the pump is made.
Their high efficiency and reliability makes them suitable for supplying domestic water from tanks, reservoirs or relatively deep wells, drawing rainwater from cisterns, watering by hand or feeding.

GUARANTEE 2 YEARS subject to our general terms of sale.

CONSTRUCTION CHARACTERISTICS

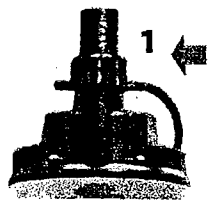
- **PUMP BODY, DELIVERY BODY AND SUCTION GRID:** glass filled **technopolymer**, particularly resistant to impact and corrosion, with threaded port ISO 228/1.
- **IMPELLERS and DIFFUSERS: technopolymer.**
- **MOTOR SUPPORT: stainless steel AISI 304.**
- **MOTOR SHAFT: stainless steel EN 10088-3 - 1.4104.**
- **DOUBLE MECHANICAL SEAL: alumina - silicon carbide - NBR** pump side and **alumina - graphite - NBR** motor side, with oil barrier chamber to protect the seal in the event of dry running.
- **MOTOR:** asynchronous, for continuous duty.
  TOP MULTI II: single-phase 220÷230 V - 50 Hz with capacitor and thermal overload protector.
- **INSULATION:** class F.
- **PROTECTION:** IP 68.
- **REGISTERED COMMUNITY DESIGN.**

STANDARD FEATURES:

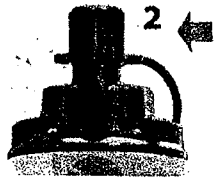
TOP MULTI® II: Float switch.
Neoprene power cable "H07 RN-F" length 10 metres with Schuko plug.
Hosetail.
Coupling with non-return valve.

OPTIONS ON REQUEST
- other voltages or 60 Hz frequency

Two sets of fittings included



Hose fitting



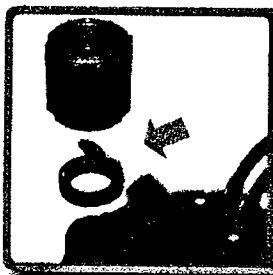
Coupling with check valve

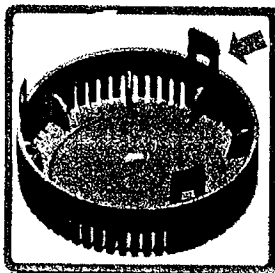

Double mechanical seal *increases the safety and life of the pump*

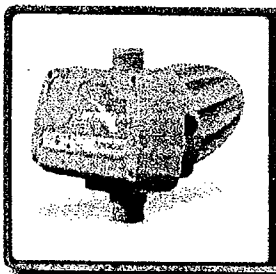

Built-in thermal overload protector *prevents the motor from overheating*



Float switch with adjustable cable length *permits the regulation of the pump start-up/cut-off*


Check valve: *prevents the hose from draining when the pump is switched off*


Removable grill *facilitates the cleaning of the filter*

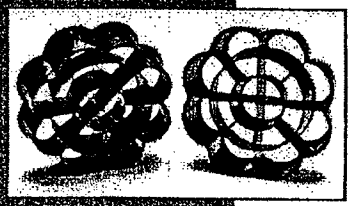

Possible to use with **EASYPRESS®**

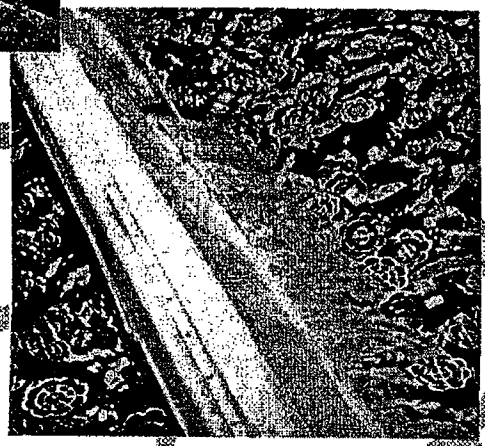
110550

Bio-Pac SF#30 media for trickling filters, submerged beds and anaerobic reactors.



Bio-Pac SF#30 is ideally suited for either replacing rock in existing trickling filters to improve treatment plant performance or for installation in new trickling filters.





Media Characteristics:

- 30 ft^2/ft^3 surface area
- 95% void ratio
- Manufactured of UV stabilized polypropylene
- Low installation cost
- Excellent for BOD reduction or nitrification
- Low minimum wetting rate, 150 gpd/ft^2
- For bed depths up to 30 ft

Bio-Pac SF#30 random dump media is successfully operating in over 100 trickling filters. With over 300 mixing and redistribution points for both air and water per cubic foot of media, Bio-Pac is capable of redistributing wastewater every 2" of media depth. This feature makes Bio-Pac ideal for shallow trickling filters.

Bio-Pac SF#30 has also been used extensively in upflow anaerobic and aerobic submerged bed reactors. Since the media floats, use of an underdrain support is eliminated.

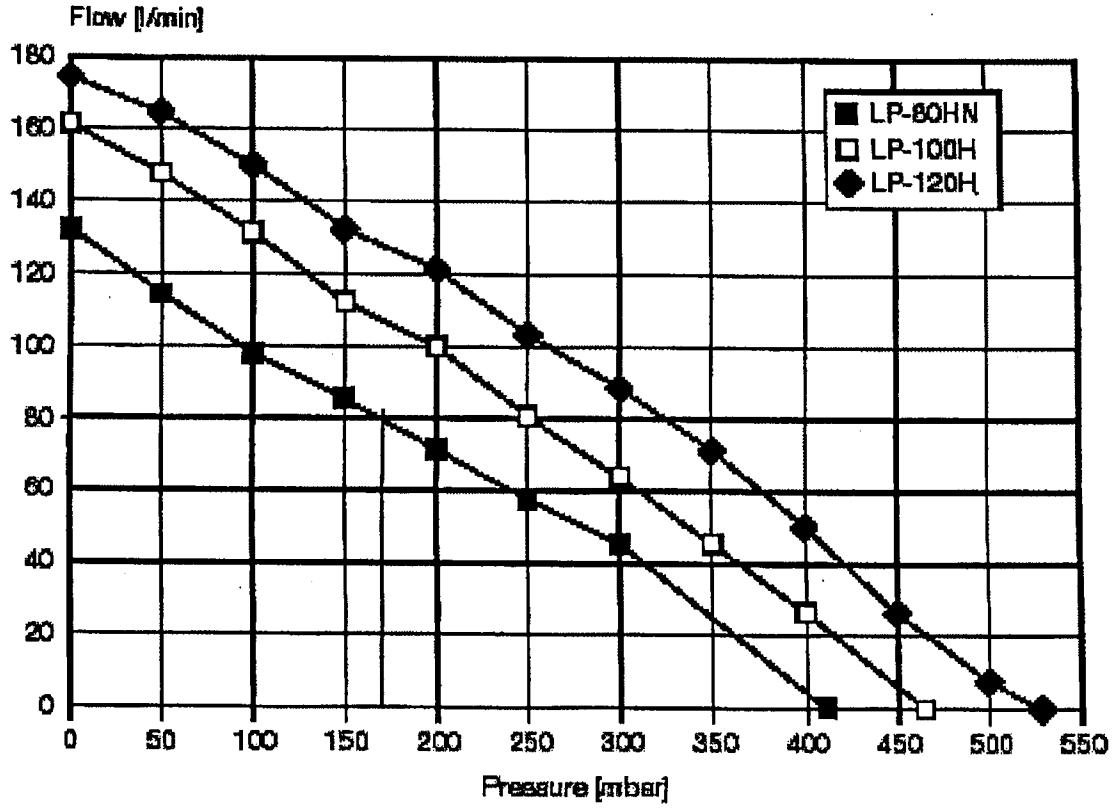
Furthermore, Bio-Pac's unique shape serves as a foam breaker when installed in anaerobic reactors.

NSW has been manufacturing trickling filter media since 1979 and has hundreds of installations worldwide. In addition to the Bio-Pac SF#30 random media, NSW offers several styles of structured media.

NSW
ENVIRONMENTAL SYSTEMS

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Flow Curves



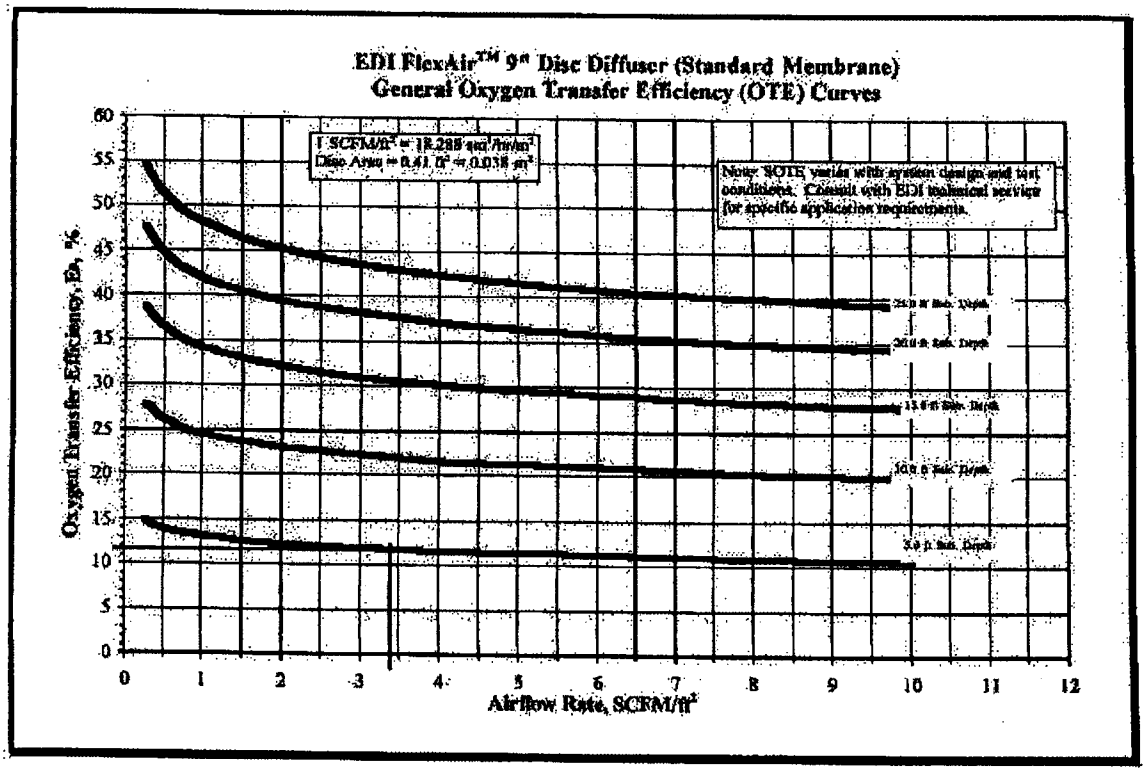
The flow curve for the blower is shown above. With an operating (discharge) depth of approximately 1.45m and assumed pressure losses within the pipework and through the diffusers of 0.25m the total pressure loss is 1.70m. From the curve at a pressure of 1.70m (approx 170 mbar) the blower flow rate will be approximately 80 litres per minute.

The blower will discharge through two FlexAir 9" EPDM Disc Diffusers. The flow rate per diffuser will therefore be 40 litres per minute (2.4m^3 per hour). This is within the recommended (design) operating range of the FlexAir diffuser of 1.7 – 13.6m^3/hour.

Each diffuser has an effective operating area of 0.0381m^2 the flow rate per m^2 is therefore 62.99m^3/hour/m^2 (3.44 scfm/ft^2).

From the FlexAir diffuser standard oxygen transfer efficiency (SOTE) curve below at a diffuser flow rate of 3.44 scfm/ft^2 the SOTE is approximately 11.5%. We have assumed the actual oxygen transfer efficiency (OTE) for typical domestic mixed liquor is 0.4 of the SOTE. Therefore the OTE is about 4.6%.

110550



Oxygen demand calculations

For an assumed flow rate of 1.0m^3 per day the BOD must be reduced from 120g/m^3 to 20g/m^3 = a reduction of 100g BOD/m^3 = 100g BOD/day.

Approximately 1.5kg of O_2 is required to remove 1.0kg of BOD. Therefore to remove 100g BOD per day, 150g of O_2 is required.

Assuming the TKN in the influent is 60g/m^3 and the required effluent TKN is less than 5 g/m^3. Then a total of 55g of TKN needs to be removed per day.

Approximately 4.6kg of O_2 is required to remove 1.0kg of TKN. Therefore to remove 55g TKN per day, 253g of O_2 is required.

Total oxygen requirement is therefore 403g/day. Given the actual oxygen transfer efficiency of 4.6% the actual daily oxygen requirement is 10,000g O_2 /day (10kg O_2 /day).

Given that oxygen is approximately 23% of air by weight the air requirement is therefore 43.48kg per day.

The approximate weight of air is 1.3kg/m^3 therefore the daily volume of air required is 33.44m^3 per day.

The LP-80HN blower will deliver 80 litres per minute at the proposed discharge depth as calculated above. If operated for 24 hours this the total air flow will be 115.2m^3 per day. Therefore in theory the blower would only need to operate for approximately 30% of the time to meet the oxygen demand. We therefore recommend the initial timer setting should be 10 minutes on followed by 20 minutes off repeated throughout the day. This could be adjusted (up or down) to suit actual loading and flow rate conditions.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

Media

It is proposed to use 0.4m^3 of BIOPAC treatment media. BIOPAC has a specific surface area of 98m^2 per m^3. Total media surface area is therefore 39.2m^2.

BOD loading rate at 120g/day is therefore 3.06g BOD/m^2.day

TKN loading rate at 60g/day is therefore 1.53g TKN/m^2.day

Manufacturer recommended media loading rate ranges are:

For BOD removal: 4 – 8 g BOD/m^2.day

For TKN removal: 1 – 4 g TKN/m^2.day

Performance

A New Zealand manufactured package treatment plant that utilises both BIOPAC media and FlexAir diffusers took part in the On Site Effluent Treatment (OSET) system trial at the Rotorua wastewater treatment plant run by Environment BOP and the Rotorua District Council.

The treatment plant obtained the following average results for the trial period:

BOD: 6.5 g/m^3

SS: 8.0 g/m^3

FC: 18198 cfu/100mL

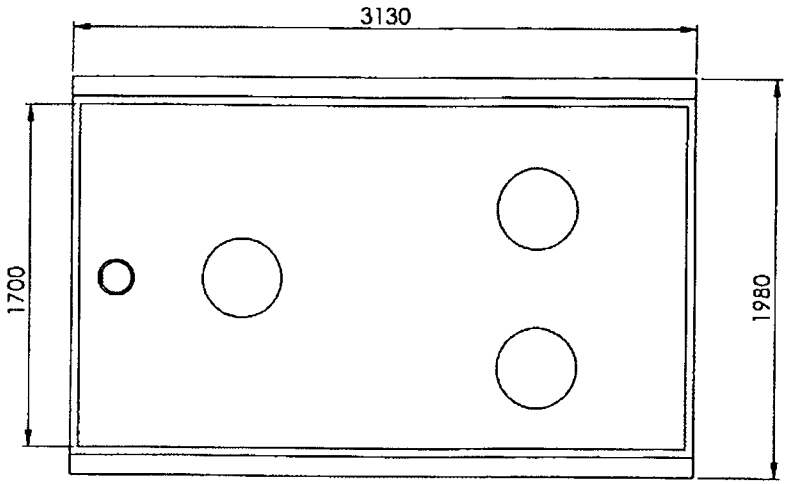
TN: 19.8 g/m^3

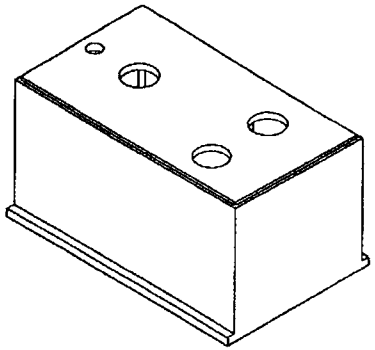
The trial system utilised a blower with a similar performance as the RT LP-80HN proposed for the PURE system and was operated with a similar frequency.

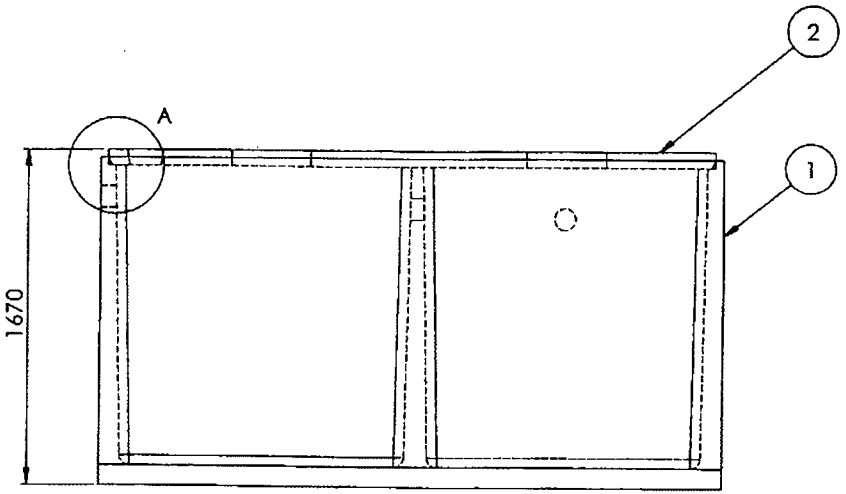
The trial system used slightly less BIOPAC media and the same type and quantity of FlexAir diffusers. However the trial system was set up to enhance denitrification with a recycle pump which the PURE system would not be so we would not necessarily expect similar total nitrogen results.

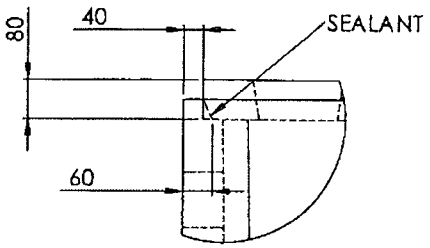
Sincerely,

ECOGENT LTD
Matt Riddell.
Engineer









DETAIL A
SCALE 1 : 10

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	MASS
1	1003033-20A	5,500 L SEPTIC TANK	1	5745 kg
2	1003033-21A	5,500 L SEPTIC TANK LID	1	910 kg

© BVT Consulting Limited
170 Wordsworth St
Christchurch
Ph: 03 669 0748
info@bvt.co.nz
www.bvt.co.nz

		Date
Designed		
Drawn	Hagen Stewart	25/5/10
Checked	Hagen Stewart	25/5/10
Approved		

Tolerances (unless specified): 1-100 ±0.5; <1000 ±1; >1000 ±2

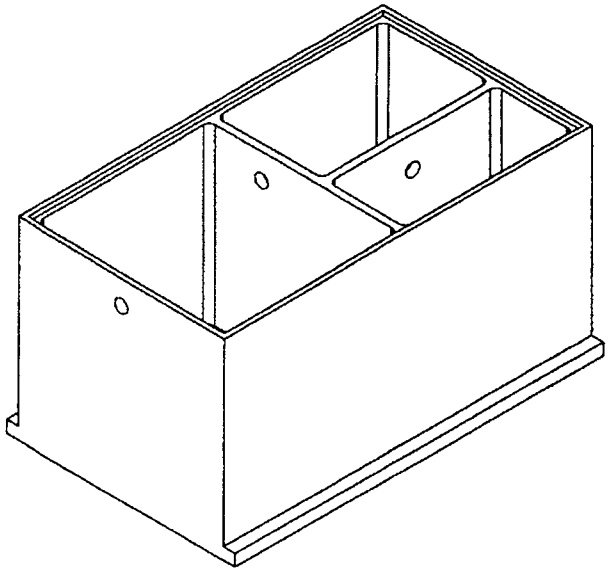
All dim. in mm

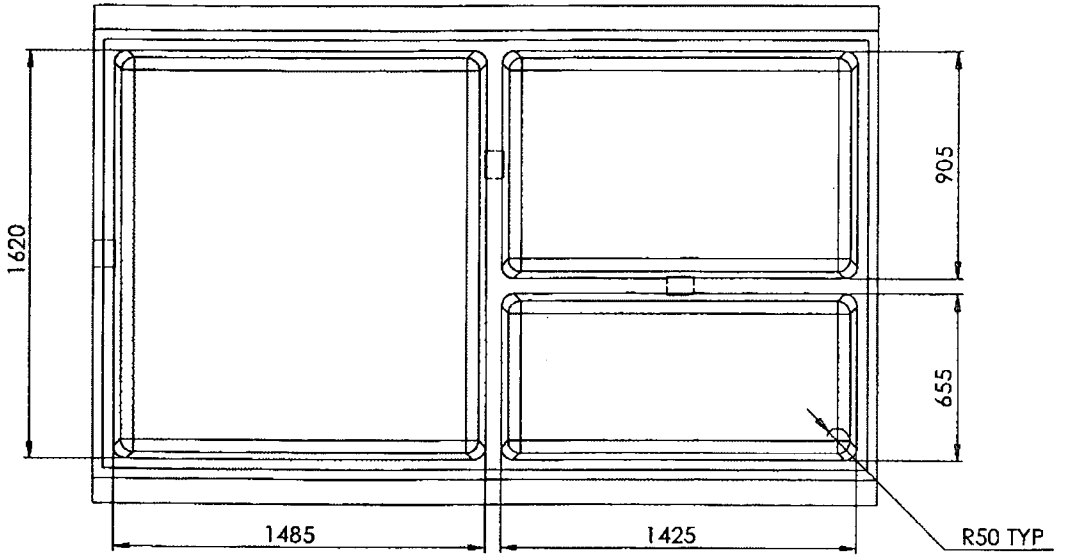
Hansen Contractors
5,500 l Septic Tank

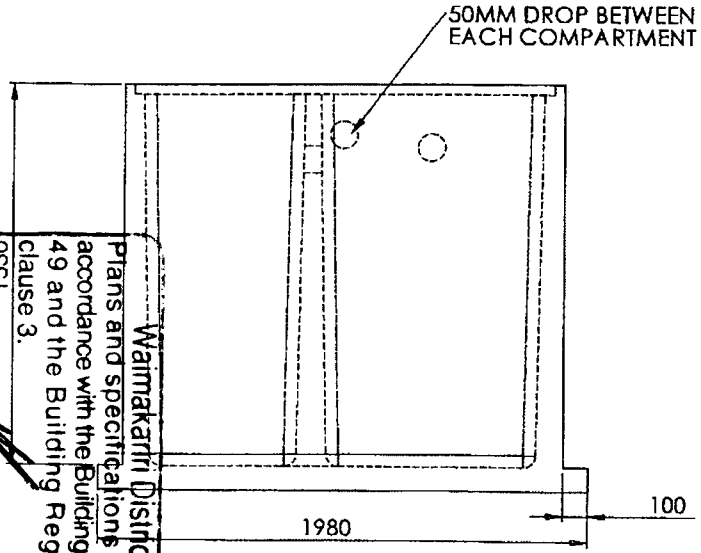
Project 1003033 | Scale Do not Scale | Sheet BVTA3
ORG No. 1003033-20 | Date 25/05/2010

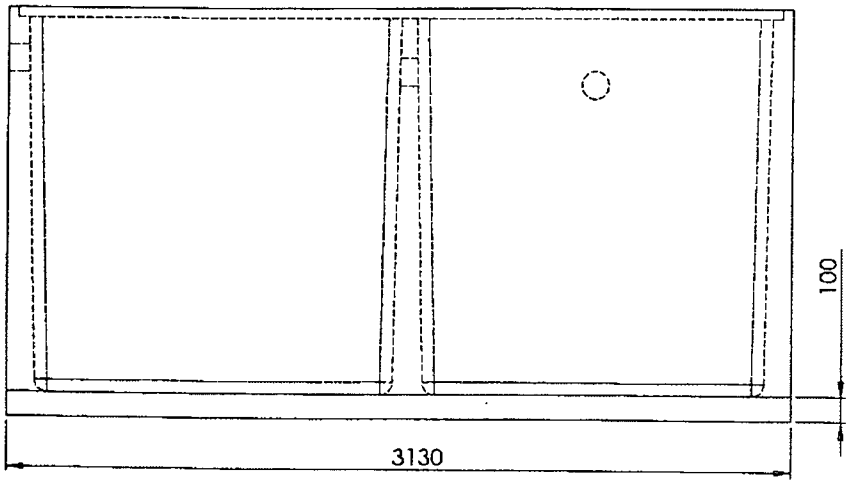
Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13.7.11

110550









Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
1530
Signed.....

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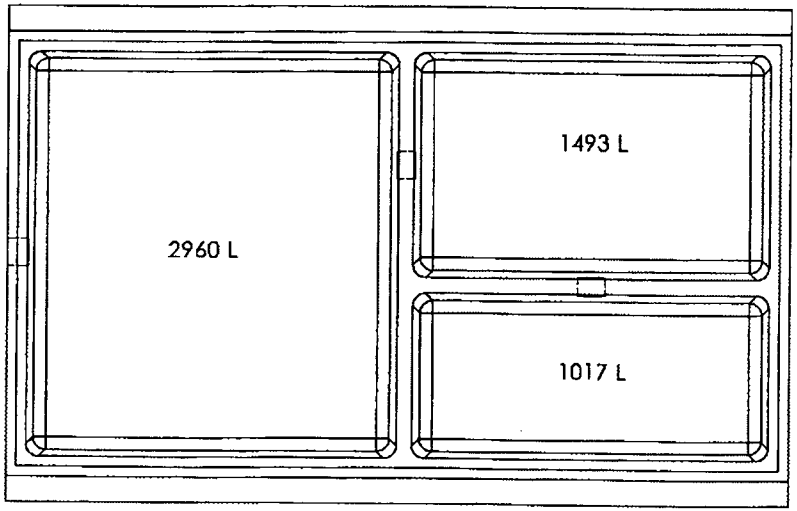
		Date
Designed	Hagen Stewart	25/5/10
Drawn	Hagen Stewart	25/5/10
Checked		
Approved		

Tolerences (unless specified): 1-100 ±0.5 | <1000 ±1 | >1000 ±2
All dim. in mm

Hansen Contractors
5,500 l Septic Tank

Project 1003033 | Scale Do not Scale | Sheet 1 of 5
DRG No. 1003033-20A | Date 4/05/2010 | BVTA3

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WORKING VOLUME - 5471 LITRES
TOTAL HOLDING VOLUME - 6541 LITRES

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Signed.....
.....

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		Date
Designed	Hagen Stewart	25/5/10
Drawn	Hagen Stewart	25/5/10
Checked		
Approved		

Tolerences (unless specified)	1-100	<1000	>1000
	±0.5	±1	±2

All dim. in mm

Hansen Contractors
5,500 l Septic Tank

Project	1003033	Scale: Do not Scale	Sheet: 5 of 5
DRG No.	1003033-20A	Date: 25/05/2010	BVTA3

TFG 110550

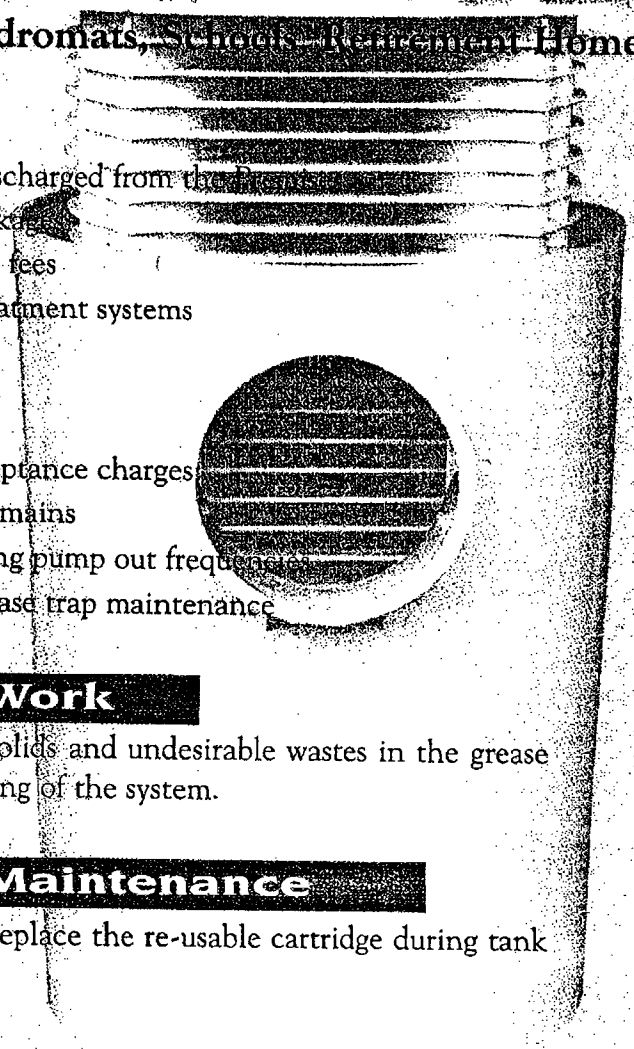
INDUSTRIAL AND COMMERCIAL FILTER

TAYLEX FILTERS PTY LTD ABN 65 072 567 590

THE BEST IN PRIMARY EFFLUENT FILTRATION

100's of Applications - It Filters Grease, Fat, Lint, Hair
- Waste Water and more

Suitable for Shops, Factories, Restaurants, Food Preparation, Laundromats, Schools, Retirement Homes etc...

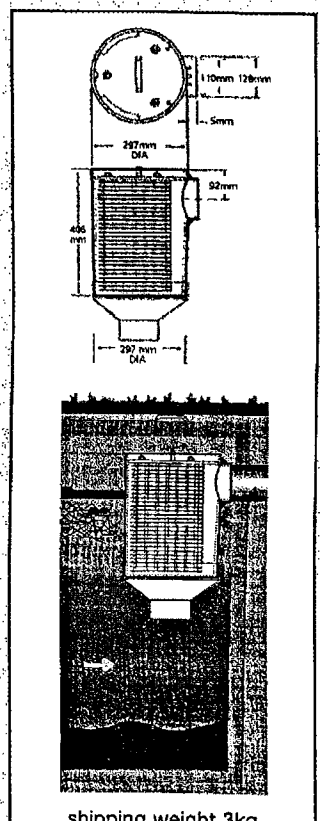


Stop

- Excess wastes being discharged from the Premises
- Sewer and Mains Blockages
- High discharge licence fees
- Overload to sewage treatment systems

Save

- On reduced sewer acceptance charges
- Maintenance to sewer mains
- Removal of solids during pump out frequencies
- Time and money in grease trap maintenance



shipping weight 3kg

How does it Work

The Taylex Filter retains solids and undesirable wastes in the grease trap and prevents surcharging of the system.

Service and Maintenance

Simply remove clean and replace the re-usable cartridge during tank cleaning.

Life Time Guarantee

Taylex Filters Pty Ltd Guarantee every Taylex Filter to be free of defects in materials and manufacturer for the lifetime of the purchaser.

Rated Capacity 10,000 LPD Modular Installation to 100,000 LPDay

TAYLEX FILTERS P/L
ABN 65 072 567 590

47 Highlands Road, Seymour 3660
PO Box 595, Seymour 3661

Phone +61 - 3 - 5799 0650
1800 111 023

Facsimile +61 3 5799 0651

For further information contact

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

WDC

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32 Newnham St
PO Box 32
Rangiora

MEL HANSEN CONTRACTORS LTD

PH (03) 313 8418
FAX (03) 313 8580
A/H 0274 545 775

DRAINAGE EXCAVATION

HANSEN CONTRACTORS LTD

STORMWATER

DESIGN AND SPECIFICATIONS

Date: *26 April 2011*

Applicant: *Mr D J and Mrs P G Humphreys*

Address: *149 Hodgesons Road, Loburn*

This report was prepared in accordance with the New Zealand Building Code, Clause E1: Surface Water.

Peter Hansen
Manager

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

On 23 March 2011 a soakage test was conducted at 149 Hodgesons Road, Loburn for Mr and Mrs Humphreys.
The following results were found.

Test Hole:

300 mm top soil, into medium clays of 15 m +?

No soakage was found.

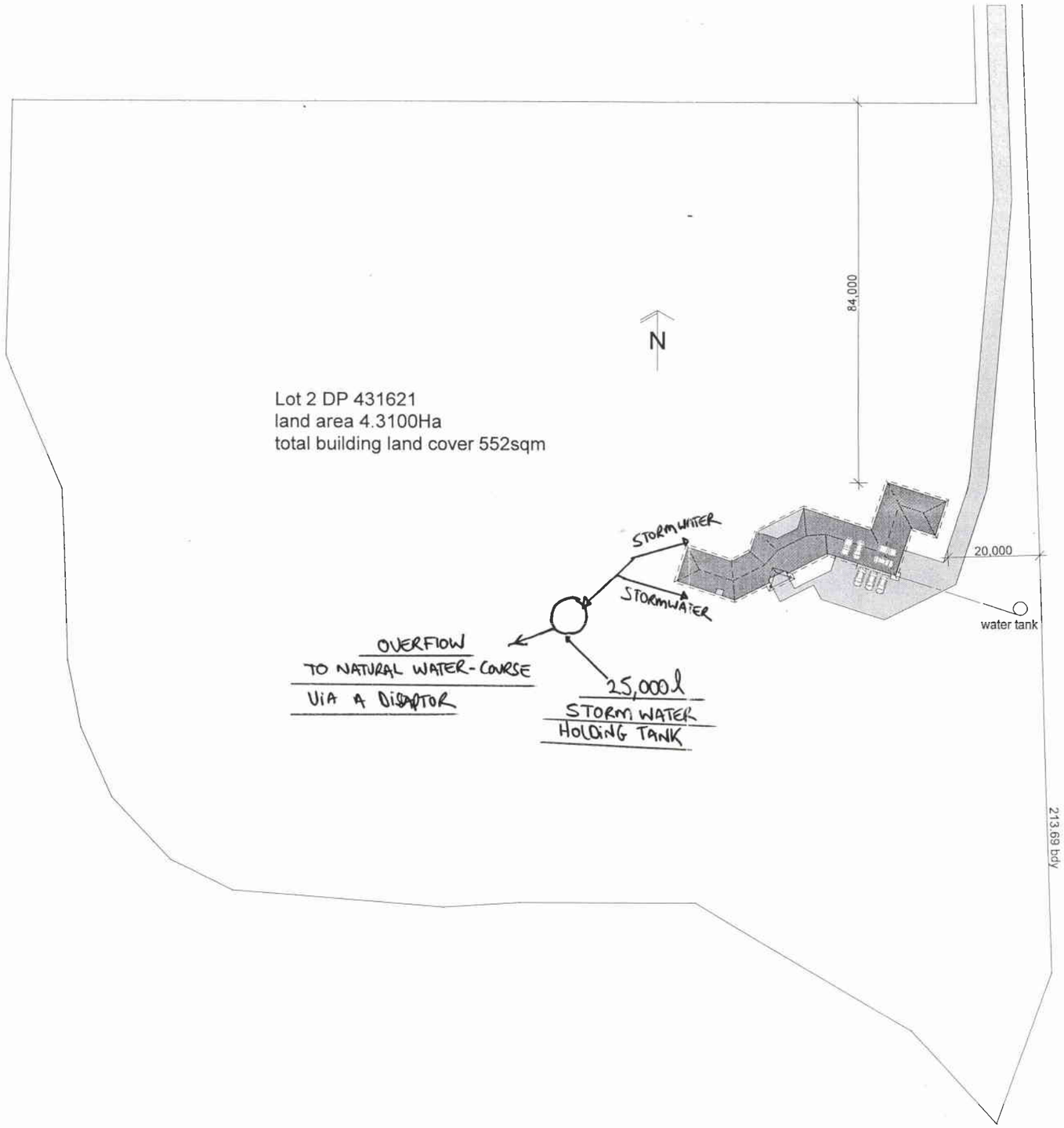
Stormwater Dispersal:

Stormwater linked around the house to a 25,000 litre holding tank.
Overflow to natural water course/swale as per attached plan.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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RECEIVED
17 MAY 2011
BY:



Lot 2 DP 431621
land area 4.3100Ha
total building land cover 552sqm

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

mark milnes
architectural design

HUMPHREYS HOUSE

167 Hodgsons Road
Loburn

site plan

scale 1:1000

16-3-11

sheet no **01**

RECEIVED
17 MAY 2011
BY:

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S/W DISPOSAL — DISSIPATOR

1. BRICK CLADDING TO COMPLETE
2. AS BUILT DRAINAGE PLAN.
3. COMPLETE DISSIPATOR FOR S/W DISPOSAL
4. MIN STEP FROM DWELLING TO BE 190mm

110550

plans & specifications

PROPOSED HOUSE
FOR PAULA & DAVID HUMPHREYS
167 Hodgsons Road
Loburn

DESIGNER: Mark Milnes Architectural Design Ltd.
Architectural Designer
7 Park Street, Rangiora
Ph. / Fax. 313 5946

ENGINEER: B.L.S Consulting Ltd.
Consulting Engineer
200 Heywards Road, Kaiapoi R.D.2
Ph. 327 8062, Fax. 327 8021

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INDEX

CERTIFICATE OF TITLE

ENGINEER PRODUCER STATEMENT

BRACING SCHEDULE

TRUSS DESIGN

H1 COMPLIANCE REPORT

RISK MATRIX

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2 EXCAVATOR

3 CONCRETOR

4 REINFORCING

5 CARPENTER
- WINDOW SEALING SYSTEM
- CONNECTION DETAILS

6 STEELWORKER

7 ALUMINIUM JOINERY

8 ROOFER
- METAL TILE FIXING DETAILS

9 BRICKLAYER

10 PLUMBER
- LOG FIRE DETAILS
- GUTTER TYPE & SIZE

11 DRAINLAYER

12 ELECTRICIAN

13 TILER
- UNDER TILE MEMBRANES

14 JOINER

15 PAINTER

110550 COPY

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**522121**
Land Registration District	**Canterbury**
Date Issued	24 August 2010

Prior References
499184

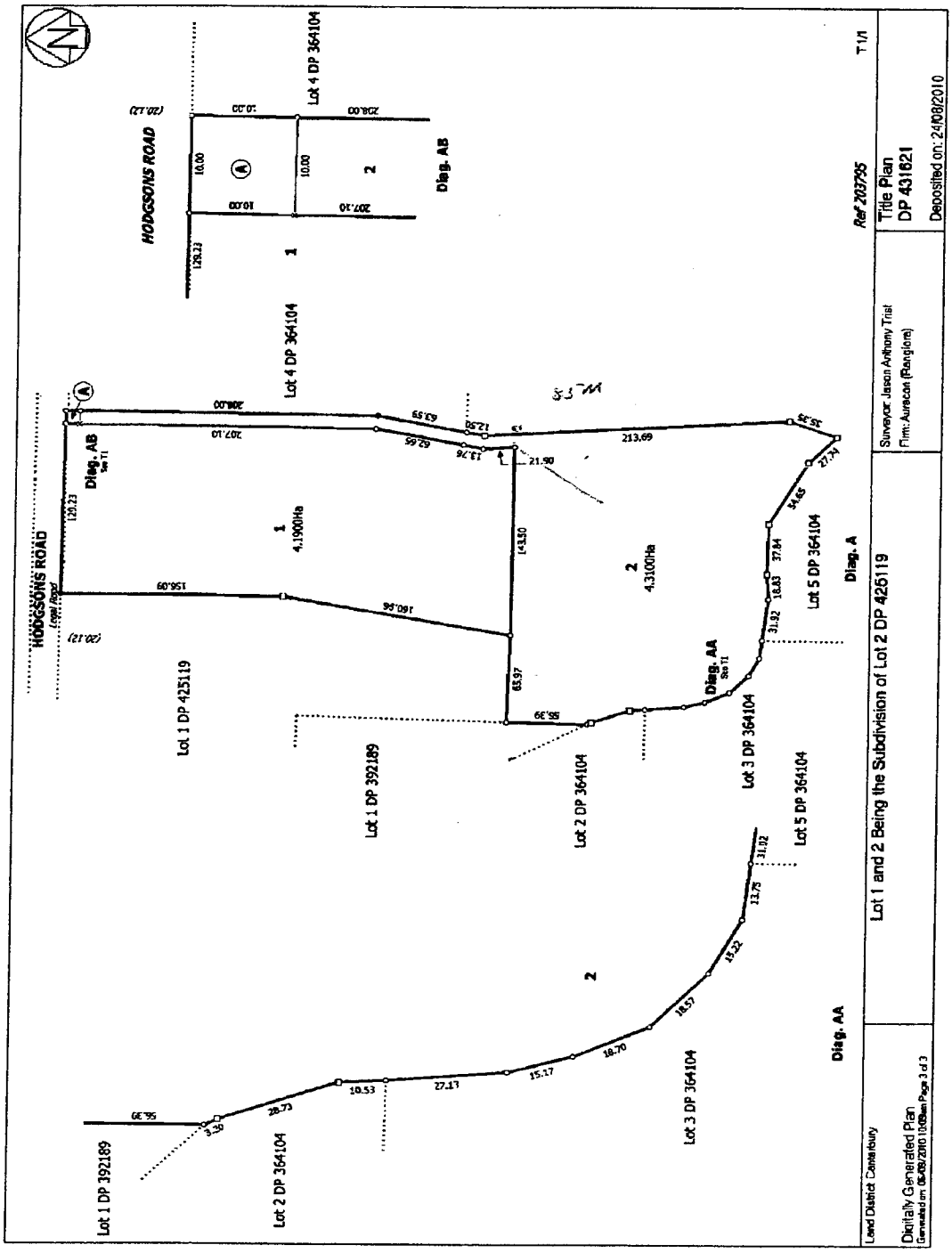
Estate	Fee Simple
Area	4.3100 hectares more or less
Legal Description	Lot 2 Deposited Plan 431621

Proprietors
David John Humphreys and Paula Gail Humphreys

Interests

Subject to a right of way over part marked A on DP 431621 created by Easement Instrument 8568971.3 - 24.8.2010 at 5:33 pm

The easements created by Easement Instrument 8568971.3 are subject to Section 243 (a) Resource Management Act 1991


Lot 1 and 2 Being the Subdivision of Lot 2 DP 425119
Title Plan DP 431621
Deposited on: 24/08/2010
Surveyor: Jason Anthony Trist
Firm: Aurecon (Rangiora)
Ref 203795
Land District Canterbury
Digitally Generated Plan
HODGSONS ROAD
Lot 4 DP 364104
Lot 1 DP 425119
Lot 1 DP 392189
Lot 2 DP 364104
Lot 3 DP 364104
Lot 5 DP 364104
Diag. AB
Diag. A
Diag. AA
4.1900Ha
4.3100Ha

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BRANZ Appraised
Appraisal No.614 [2008]

BRANZ Appraisals

Technical Assessments of products for building and construction

BRANZ APPRAISAL No. 614 (2008)

ALUBAND™ / ALUMINIUM WINDOW SEALING SYSTEM

Thermakraft Industries (N.Z.) Ltd
PO Box 58-112
Greenmount
Auckland

Tel: 0800 806 595
Fax: 09 273 3726
Web: www.thermakraft.co.nz

BRANZ
BRANZ Limited
Private Bag 50 908
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz

1.1 The Aluband™ / Aluminium Window Sealing System comprises Aluband™ / Aluminium Window Sealing Tape and the Aluband™ Corner Moulded Piece™. The system is used around framed joinery openings as a secondary weather resistant barrier.

1.2 The system is installed into and around the framed joinery opening over the building wrap and exposed frame to cover both the face and edge of the opening framing. Aluband™ / Aluminium Window Sealing Tape is also used at joinery heads to seal flashing upstands to the building wrap.



Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

2.1 The Aluband™ / Aluminium Window Sealing System has been appraised as a flexible flashing system for use around window and door joinery openings for buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- with wall cladding systems complying with NZBC Acceptable Solution E2/AS1 or a valid BRANZ Appraisal that specifies a flexible flashing system; and,
- with wall wraps compatible with the flashing tape; and,
- situated in NZS 3604 Building Wind Zones up to, and including, 'Very High'.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

2.2 The Aluband™ / Aluminium Window Sealing System has also been appraised as a flexible flashing system for use around window and door joinery openings for steel framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, with regards to building height and floor plan area; and,
- constructed with steel framing complying with the NZBC; and,
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- with wall cladding systems covered by a valid BRANZ Appraisal that specifies a flexible flashing system; and,
- with wall wraps compatible with the flashing tape and steel frame; and,
- situated in NZS 3604 Building Wind Zones up to, and including, 'Very High'.

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, the Aluband™ / Aluminium Window Sealing System, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1(b), 15 years and B2.3.2. The Aluband™ / Aluminium Window Sealing System meets these requirements. See Paragraphs 8.1 and 8.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. The Aluband™ / Aluminium Window Sealing System contributes to meeting this requirement. See Paragraphs 7.1 - 7.4 and 11.1.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. The Aluband™ / Aluminium Window Sealing System meets this requirement and will not present a health hazard to people.

3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance. See Paragraph 7.1.

4.1 System components and accessories supplied by Thermakraft Industries (N.Z.) Ltd are:

- Aluband™ / Aluminium Window Sealing Tape is a polymeric faced, high quality, bituminous modified, self adhesive tape with a polyethylene release backing paper. The tape is supplied in rolls 200, 150, 75 and 50 mm wide x 25 m long and 150 mm wide x 10 m long. The product is printed with the Aluband™ / Aluminium Window Sealing System logo repeated along the length of the roll. The rolls are wrapped in clear polythene film.
- The Aluband™ / Aluminium Corner Moulded Piece™ is made from inert polyethylene and is coloured orange. It is used in conjunction with the Aluband™ / Aluminium Window Sealing Tape and building wraps as part of the Aluband™ / Aluminium Window Sealing System.
- The Aluband™ / Aluminium Tool is used to ensure proper adhesion of the Aluband™ / Aluminium Window Sealing Tape and to achieve a tight fit into corners.

4.2 Accessories used with the system which are supplied by the installer are:

- Aluband™ / Aluminium Corner Moulded Piece™ fixings - staples, clouts or other temporary fixings to attach the corner mould to the framing prior to the installation of the Aluband™ / Aluminium Window Sealing Tape.

Handling and Storage

5.1 Handling and storage of all materials supplied by Thermakraft Industries (N.Z.) Ltd, whether on or off site, is under the control of the installer. The Aluband™ / Aluminium Window Sealing System components must be protected from damage and weather. Rolls must be stored under cover, in clean, dry conditions away from direct exposure to sunlight.

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Aluband™ / Aluminium Window Sealing System. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

General

7.1 The Aluband™ / Aluminium Window Sealing System meets the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.5(b). Refer to the Technical Literature for details of the wall wraps that are compatible with the system. The installation method for the Aluband™ / Aluminium Window Sealing System is an alternative solution to the installation method shown within NZBC Acceptable Solution E2/AS1, Figure 72.

7.2 The use of flexible flashing systems around window and door joinery openings is critical to assist the overall weathertightness performance of window and door joinery installations.

7.3 The Aluband™ / Aluminium Window Sealing System is designed to prevent air leakage and water penetration around window and door openings at framing junctions (e.g. at the sill trimmer and opening stud junction), and to keep any water that gets past the cladding, or through the joinery, from direct contact with the framing timber.

7.4 The Aluband™ / Aluminium Window Sealing System is not designed to overcome poor detailing and workmanship of the window or door joinery installation. The system must not be considered in isolation, but be considered as part of the wall cladding system. The Aluband™ / Aluminium Window Sealing System is designed to be used in conjunction with air seals and joinery flashing systems, not as a substitute.

7.5 When the Aluband™ / Aluminium Window Sealing System is used in conjunction with LOSP (light organic solvent preservative) treated timber, the solvent from the timber treatment must be allowed to evaporate (generally at least one week) prior to the installation of the system.

Durability

8.1 Assessment of durability to meet the NZBC is based on difficulty of access and replacement, and the ability to detect failure of the Aluband™ / Aluminium Window Sealing System both during normal use and maintenance of the building.

Serviceable Life

8.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 90 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, the Aluband™ / Aluminium Window Sealing System is expected to have a serviceable life equal to that of the cladding.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

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Maintenance

9.1 No maintenance is required for the Aluband™ / Aluminium Window Sealing System. Regular checks, at least annually, must be made of the junctions between the joinery and wall cladding to ensure that they are maintained weathertight and that the primary means of weather resistance for the junction e.g. flashing, sealant, etc continues to perform its function, to ensure that water will not penetrate the cladding.

Outbreak of Fire

10.1 The Aluband™ / Aluminium Window Sealing System 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

11.1 Where a cladding manufacturer specifies the use of generic flashing tapes around window and door joinery openings at framing junctions as part of their system, or they specify the use of flexible flashing tapes that comply with NZBC E2/AS1, Paragraph 9.1.5(b), the Aluband™ / Aluminium Window Sealing System may be used.

Installation Skill Level Requirements

12.1 Installation of the Aluband™ / Aluminium Window Sealing System must be completed by tradespersons with an understanding of flexible flashing systems, in accordance with instructions given within the Aluband™ / Aluminium Window Sealing System Technical Literature and this Appraisal.

General

13.1 The selected building wrap must be installed in accordance with the manufacturer's instructions, and must completely cover the joinery opening. The wrap is then cut on a 45° angle away from each corner of the opening so the flaps can be folded into the opening and secured to the interior face of the timber framing.

13.2 Fit an Aluband™ / Aluminium Moulded Corner Piece™ into each of the bottom corners to create a seal at the corner junction. The corner piece must be fixed to the framing with staples or clouts.

13.3 Before the Aluband™ / Aluminium Window Sealing Tape is applied, the substrate surfaces must be clean, dry and free from any surface contaminants such as dust and grease that may cause loss of adhesion.

13.4 A length of Aluband™ / Aluminium Window Sealing Tape must be cut to the length of the sill plus 400 mm. The tape is installed flush with the interior face of the opening and is applied along the entire length of the sill and 200 mm up each jamb. The overhanging tape is cut at the corner of the opening to allow the tape to be folded onto the face of the building wrap. The Aluband™ / Aluminium Tool must be used to ensure that adequate adhesion of the tape is achieved and that the tape is installed tight into the sill/jamb junction.

13.5 A 400 mm length of Aluband™ / Aluminium Window Sealing Tape must be installed 200 mm down the jamb and 200 mm along the lintel at each of the top corners of the window or door joinery opening. A 50 mm wide x 100 mm long sealing tape 'butterfly' must be installed at 45° across the corner of the head/jamb junction overlapping the corner by 3 mm to create a seal at the corner junction.

13.6 Aluband™ / Aluminium Window Sealing Tape must not be stretched. To avoid wastage, the tape can be lapped 100 mm minimum onto itself without reducing the performance of the Aluband™ / Aluminium Window Sealing System.

13.7 If the Aluband™ / Aluminium Window Sealing System is exposed to the weather or UV light for more than 90 days, then it must be replaced with new material.

Installation Temperature

13.8 The Aluband™ / Aluminium Window Sealing System must not be installed at temperatures of less than 10°C.

Inspections

13.9 The Technical Literature must be referred to during the inspection of Aluband™ / Aluminium Window Sealing System installations.

The following is a summary of the technical investigations carried out:

Tests

14.1 Testing of Aluband™ / Aluminium Window Sealing Tape has been completed by BRANZ to the requirements of ICC Evaluation Service Acceptance Criteria for Flashing Materials AC148. The adhesion of Aluband™ / Aluminium Window Sealing Tape to black bituminous Kraft building paper complying with the requirements of NZBC Acceptable Solution E2/AS1, Table 23 and selected other synthetic wall wraps has been tested and found to be satisfactory.

Other Investigations

15.1 An assessment was made of the durability of the Aluband™ / Aluminium Window Sealing System by BRANZ technical experts.

15.2 Site inspections were carried out by BRANZ to examine the practicability of installation.

15.3 The Technical Literature has been reviewed by BRANZ and found to be satisfactory.

Quality

16.1 The manufacture of the Aluband™ / Aluminium Window Sealing System has not been examined by BRANZ, but details of the quality and composition of the materials used were obtained and found to be satisfactory.

16.2 The quality of supply to the market is the responsibility of Thermakraft Industries (N.Z.) Ltd.

16.3 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and building wraps in accordance with the instructions of the designer.

16.4 The quality of installation, handling and storage on site is the responsibility of the installer in accordance with the instructions of Thermakraft Industries (N.Z.) Ltd.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

BRANZ Appraised
Appraisal No.356 [2005]

BRANZ Appraisals

Technical Assessments of products for building and construction

BRANZ APPRAISAL CERTIFICATE No. 356 (2005)

This Certificate replaces BRANZ Appraisal Certificate No. 356 (1998) issued June 1998.

THERMAKRAFT COVER-UP™ BREATHER-TYPE BUILDING WRAP

Thermakraft Industries (NZ) Ltd
P O Box 58 112
Greenmount
Auckland

Tel: 09 273 3727
Fax: 09 273 3726
Free phone: 0800 806 595

BRANZ

BRANZ Limited
Private Bag 50 908
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz

BRANZ Pty Ltd
P O Box 630
Brookvale
NSW 2100
Australia
Tel: +61 2 9938 6011
Fax: +61 2 9938 6911
www.branz.com.au

WFTAO

Product

1.1 Thermakraft Cover-Up™ is a synthetic breather-type building wrap for use as a wall wrap and air barrier under direct and non-direct fixed wall cladding on timber framed buildings. The product is manufactured from tapes of high density polyethylene woven into sheet form, and is coated on both sides with pigmented low density polyethylene. Micro-perforations are made through the coated membrane to permit the passage of water vapour.



Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

Scope

2.1 Thermakraft Cover-Up™ has been appraised for use as a wall wrap on timber framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- with absorbent wall claddings directly fixed to framing; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZS 3604:1999; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

2.2 Thermakraft Cover-Up™ has also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of Thermakraft Cover-Up™ into their design in accordance with the declared properties and the instructions of Thermakraft Industries (NZ) Ltd.

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.

across the cavity battens to limit deflection to a maximum of 5 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.2.

7.7 Thermakraft Cover-Up™ may also be used as a slip layer over rigid backings for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.3(b).

Structure

7.8 Thermakraft Cover-Up™ is suitable for use in all Building Wind Zones of NZS 3604 up to, and including, 'Very High'.

Durability

8.1 Thermakraft Cover-Up™ meets code compliance with NZBC Clause B2.3.1 (a), 50 years for building wraps used where the cladding durability requirement or expected serviceable life is not less than 50 years, and code compliance with NZBC Clause B2.3.1 (b), 15 years for building wraps used where the cladding durability requirement is 15 years.

Serviceable Life

8.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 60 days, Thermakraft Cover-Up™ is expected to have a serviceable life of at least 50 years.

Control of Internal Fire and Smoke Spread

9.1 Thermakraft Cover-Up™ has an AS 1530 Part 2 Flammability Index of 1 and meets the requirements of NZBC Acceptable Solution C/AS1 Part 6, Table 6.2 for surface finish requirements for suspended flexible fabrics, and therefore it may be used with no restrictions in all buildings.

Outbreak of Fire

10.1 Thermakraft Cover-Up™ must be separated from fireplaces, heating appliances, flues and chimneys in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

External Moisture

11.1 Thermakraft Cover-Up™ must be used behind claddings that meet the requirements of the NZBC, e.g. such as those covered by NZBC Acceptable Solution E2/AS1, or claddings covered by a valid BRANZ Appraisal Certificate.

11.2 Thermakraft Cover-Up™, when installed in accordance with the Technical Literature and this Certificate, will assist in the total cladding systems compliance with NZBC Clause E2.

11.3 When used as an air barrier, particular care must be taken to ensure an air tight barrier is achieved, and weather sealing at all openings and penetrations through the cladding meets the requirements of the NZBC.

Installation Information

Installation Skill Level Requirements

12.1 Installation must always be carried out in accordance with the Technical Literature and this Certificate, by competent tradespersons with an understanding of wall wrap installation.

Wrap Installation

13.1 Thermakraft Cover-Up™ must be fixed to all framing members at maximum 300 mm centres with hot-dip galvanised, large-head clouts 20 mm long, zinc plated 6-8 mm staples, or proprietary wrap fixings. The membrane must be pulled taut over the framing before fixing.

13.2 Thermakraft Cover-Up™ must be run horizontally and must extend from the upper-side of the top plate to the under-side of the bearers or wall plates supporting ground floor joists, or below bottom plates on concrete slabs. Horizontal laps must be no less than 75 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the membrane. End laps must be made over framing and be no less than 150 mm wide.

13.3 The wall wrap should be run over openings and these left covered until windows and doors are ready to be installed. Openings are formed in the membrane by cutting on a 45 degree diagonal from each corner of the penetration. The flaps of the cut membrane must be folded inside the opening and stapled to the penetration framing. Excess wrap may be cut off flush with the internal face of the wall frame.

13.4 Thermakraft Cover-Up™ can be added as a second layer over head flashings in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.7(e).

13.5 When fixing the product in windy conditions, care must be taken due to the large sail area created by the wide roll width.

13.6 Any damaged areas of Thermakraft Cover-Up™, such as tears, holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with new material lapping the damaged area by at least 150 mm and taping, or by taping small tears.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

14.1 The following tests have been carried out on Thermakraft Cover-Up™ by Ensis Papro: Cold extract pH in accordance with AS/NZS 1301.421s; edge tear resistance and tensile strength in accordance with AS/NZS 4200.1; shrinkage in accordance with AS/NZS 4201.3, water resistance in accordance with AS/NZS 4201.4, and air resistance in accordance with BS 6538-3.

14.2 The following tests have been carried out on Thermakraft Cover-Up™ (marketed in Canada as Airgard®) by an independent laboratory for the Canadian Construction Materials Centre (CCMC), in accordance with the requirements of CAN/CGSB-51.32-M77: pliability; tensile strength; water vapour permeance, and water ponding.

14.3 The following tests have been carried out on Thermakraft Cover-Up™ by BRANZ: flammability, in accordance with AS 1530.2, and tensile tear strength before and after two months of natural UV ageing.

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Other Investigations

15.1 A durability opinion was given by BRANZ technical experts.

15.2 Site inspections were carried out by BRANZ to assess methods used for the installation of Thermakraft Cover-Up™, and to examine completed installations.

15.3 The marketer's Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Thermakraft Cover-Up™ Breather-Type Building Wrap, if used, designed, 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 B2 DURABILITY: Performance B2.3.1(a), 50 years and B2.3.1(b), 15 years. Thermakraft Cover-Up™ meets these requirements. See Paragraphs 8.1 and 8.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the cladding system, Thermakraft Cover-Up™ will contribute to meeting this requirement. See Paragraphs 11.1 - 11.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Thermakraft Cover-Up™ meets this requirement and will not present a health hazard to people.

3.2 This Certificate appraises an **Acceptable Solution** in terms of the New Zealand Building Code compliance. Thermakraft Cover-Up™ meets the requirements for wall wraps and air barriers specified in accordance with NZBC Acceptable Solution E2/AS1, Table 23.

Technical Specification

4.1 Thermakraft Cover-Up™ is a 95 g/m² white sheet membrane material approximately 0.25 mm thick.

4.2 The product is supplied in rolls 2.54 and 2.74 m wide by 18.5, 27.5 and 36.5 m long and 1.37 m wide by 18.5, 27.5 and 73.0 m long. The product is printed with a two colour Thermakraft Cover-Up™ logo repeated along the length of the roll and is labelled with the marketing or construction company's name. The rolls are wrapped in clear polythene film.

Accessories

4.3 Accessories used with Thermakraft Cover-Up™ which are supplied by the installer are:

- Fixings - staples, clouts or proprietary wrap fixings, or other temporary fixings to attach the wall wrap to the framing.
- Building wrap support - polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens where required to support the wall wrap in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

Handling and Storage

5.1 Handling and storage of the product, whether on or off site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on end, under cover, in clean, dry conditions and must not be crushed.

Technical Literature

6.1 Refer to the Appraisals listings on the BRANZ website for details of the current Technical Literature for Thermakraft Cover-Up™. 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

Timber Framing

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

General

7.2 Thermakraft Cover-Up™ is intended for use as an alternative to conventional building papers which are fixed over timber framed walls in order to limit the entry of wind into building cavities, and to act as a secondary barrier to wind-driven rain.

7.3 The material also provides a degree of temporary weather protection during early construction. However, the product will not make the building weathertight and some wetting of the underlying structure is always possible before the building is closed in. Hence, the building must be closed-in and made weatherproof before moisture sensitive materials such as wall or ceiling linings and insulation materials are installed.

7.4 Thermakraft Cover-Up™ is suitable for use under wall claddings as a wall wrap and air barrier as called up in NZBC Acceptable Solution E2/AS1, Table 23, except that it must not be used with non-absorbent wall claddings such as vinyl or metal based sidings or weatherboards in direct fixed installations. Refer to Table 1.

Table 1: NZBC E2/AS1 Table 23 Requirements

NZBC E2/AS1 Table 23 Wall Wrap Properties	Property Performance Requirement	Actual Property Performance
Absorbency	≥ 100 g/m²	Does not comply
Vapour Resistance	≤ 7 MN s/g	2.7 MN s/g
Water Resistance	≥ 20 mm	Pass
pH of Extract	≥ 6 and ≤ 9	6.8
Shrinkage	≥ 0.5%	-0.015%
Mechanical	Edge tear and tensile strength	Edge tear: Machine direction = 380 N Cross direction = 299 N Tensile strength: Machine direction = 7.82 kN/m Cross direction = 5.90 kN/m
Air Barrier	Edge tear strength: 90 N Air resistance: ≥ 0.1 MN s/m³	Pass 0.205 MN s/m³

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7.5 In cavity installations where the cavity battens are installed at greater than 450 mm centres, the building wrap must be supported between the battens to prevent the wrap bulging into the cavity space when bulk insulation is installed in the wall frame cavity in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

7.6 Thermakraft Cover-Up™ is suitable for use as a non-rigid backing material for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.1. The wrap must be supported with 75 mm galvanised mesh or plastic tape or wire at 150 mm centres run

Quality

16.1 The manufacture of Thermakraft Cover-Up™ has not been examined by BRANZ, but details of the methods adopted for quality control and the quality of the materials used, have been obtained.

16.2 The quality management system of the wrap manufacturer, Fabrene Corporation, has been assessed and registered as meeting the requirements of ISO 9001: 2000 by TUV ESSEN, Registration Number 02-1308.

16.3 The quality of supply to the market is the responsibility of Thermakraft Industries (NZ) Ltd.

16.4 Building designers are responsible for the design of the building, and for the incorporation of the wall wrap into their design in accordance with the instructions Thermakraft Industries (NZ) Ltd.

16.5 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Industries (NZ) Ltd.

Sources of Information

- AS 1530.2 - 1993 Test for flammability of materials.
- AS/NZS 1301.421s: 1988 Determination of the pH value of aqueous extracts of paper, board and pulp - cold extraction method.
- AS/NZS 4200.1: 1994 Pliable building membranes and underlays - materials.
- AS/NZS 4201.3: 1994 Pliable building membranes and underlays - Methods of test - Shrinkage.
- BS 6538-3: 1987 Method for determination of air permeance using the Garley apparatus.
- CAN/CGSB-51.32-M77 Technical Guide for Sheathing, Membrane, Breather-Type.
- NZS 3604: 1999 Timber Framed Buildings.
- Compliance Document for the 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.

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BRANZ

In the opinion of BRANZ, Thermakraft Cover-Up™ Breather-Type Building Wrap 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, Thermakraft Industries (NZ) 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 to product specification or quality assurance measures prior to the product being marketed;
   c) abides by the BRANZ Appraisals Services Rules 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

[redacted]

Date of issue: 13 December 2005

110550

metrofires

Wood Fire
Installation Manual

ECO Freestanding Models

Radiant Fires
- ECO Tiny Rad
- ECO Wee Rad
- ECO Wee Curve
- ECO Xtreme Rad
- ECO Euro Rad

Pedestal Fires
- ECO Tiny Ped
- ECO Wee Ped
- ECO Xtreme Ped
- ECO Euro Ped

Traditional Fires
- ECO Tiny Trad
- ECO Wee Trad
- ECO Euro Trad

*Refer to the other side of this manual for Metro owners operation and warranty details

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NZHHA
New Zealand Home Heating Association Inc.

NEW ZEALAND MADE

⚠ WARNING! Important Information

- **IF YOU DON'T READ THIS ENTIRE MANUAL, YOU MUST READ THIS FIRST PAGE!**
- **The appliance and flue-system shall be installed in accordance with AS/NZS 2918 and the appropriate requirements of the relevant building code or codes**
- **Any modification of the appliance that has not been approved in writing by the testing authority is considered to be in breach of the approval granted for compliance with AS/NZS 4013**

⚠ CAUTION! Important Information

- **Mixing of appliance or flue-system components from different sources or modifying the dimensional specification or components may result in hazardous conditions. Where such action is considered, the manufacturer should be consulted in the first instance.**
- **Do not install this Metro if there is any sign of visible damage**

This Metro wood fire has been tested to and complies with AS/NZS2918:2001 when installed in accordance with this manual. Please ensure you are fully conversant with this relevant standard and the contents of this manual. Correct installation is critical to the safe operation and performance of this wood fire.

Please take particular note of the following:

- It is recommended that Metro's be installed with a Metro ECO flue system which has been developed to enhance the performance of Metro wood fires. Any alternative flue system must have a minimum flue pipe length of 4.2 metres of 150mm diameter flue pipe.
- The 150mm active flue pipe must be fully encased from the ceiling to the underside of the flashing cone at the top of the flue system, (i.e. there must not be any 150mm flue pipe exposed).
- All flue pipe joints must be sealed and riveted. The bottom of the flue pipe in particular MUST be fully sealed into the flue outlet of the Metro wood fire.
- In New Zealand, the Metro must be bolted through the floor protector into the floor to comply with the seismic restraint provisions of AS/NZS2918:2001
- All Metro's are extremely heavy, varying in weight from 85kgs up to 150kgs. During the installation process do not lift the appliance by yourself, and take care not to damage the panel coating.

Assembling your Metro wood fire

All Metro wood fires are packed in a single heavy-duty carton, and bolted to a wooden pallet. Having removed the packaging and located this manual, familiarise yourself with the illustrations on page A & B, and proceed as detailed below.

Note: The Metro carton shows the model Metro you are about to install, enabling you to select the apppropriate model's assembly instructions.

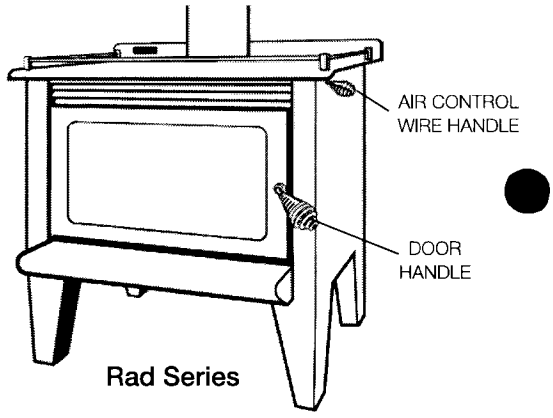
Metro ECO Radiant & ECO Traditional Fires

These Metro's are supplied virtually fully assembled. Packed inside the firebox you will find bricks in a cardboard wrapper, a door handle, and in the Metro Radiant Series the air control wire handle.

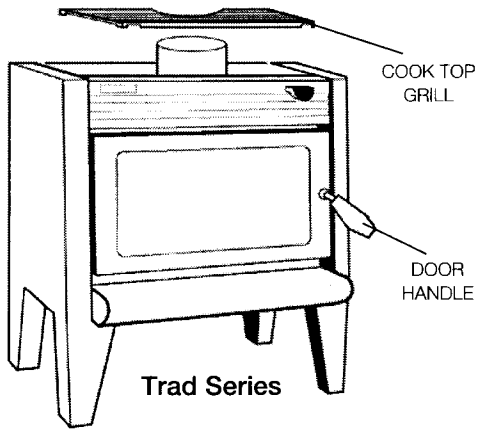
- Remove the two securing bolts located at the base of each rear leg which secure the Metro to the wooden pallet, and carefully "walk" the Metro off the pallet.
- Open the door fully and fit the side bricks to each side of the firebox. Location lugs are fitted to the base and rear of the firebox to retain the side bricks in position. Refer to Diagram 2.

Note: The ECO Wee Rad and ECO Wee Trad have an additional "3rd brick" which fits to the rear face of the firebox, locating under/into a bracket provided in the middle of the firebox's rear face, under the top baffle.

- Attach the door handle to the door latch assembly by screwing it on clockwise.
- Metro Radiant Series only: Attach the air control wire handle by screwing it on clockwise.



Rad Series



Trad Series

Assembling your Metro wood fire

110550

Metro ECO Pedestal Fires

To minimise freight damage, the pedestal has not been attached but is packaged inside the firebox. Some assembly is required as illustrated in Diagram 1 (right). Open the door of the Metro and remove the following:

- The pedestal packed in a cardboard tray
- The pedestal mounting plate
- The pedestal heat shield (X-treme Ped and Euro Ped models only)
- Side bricks in a cardboard wrapper
- Door handle and bolt bag.

- Remove the two securing bolts from the base of the firebox which secure the Metro to the wooden pallet, close and latch the door.
- Remove the "cook top" grill and lay the collapsed Metro carton on the floor behind the Metro. Place one hand into and securely grip the flue outlet, place your other hand under the front of the pallet base and gently tip the Metro backwards until it is resting on its back.
- Fully open the Metro's door, taking care that the door does not fall closed. Take the four 6mm bolts from the bolt bag and insert them through holes provided in the firebox base.

  Metro X-treme Ped & Euro Ped models only: Fit the pedestal heat shield over the four bolts as shown in Diagram 1, with the open edge facing the front of the Metro (up).
- Position the pedestal with its front facing up over the four bolts and fit the nuts and washers supplied. Check to ensure the pedestal is correctly aligned and securely tighten the nuts.
- Close and latch the door. Gripping the flue outlet once more, gently raise the Metro until it is upright. Refit the "cook top" grill and attach the door handle to the door latch assembly by screwing it on clockwise.
- Open the door fully and fit the side bricks to each side of the firebox. Location lugs are fitted to the base and rear of the firebox to retain the side bricks in position - refer to Diagram 2.

Note: The ECO Tiny Ped model utilises a slightly different pedestal to that detailed in Diagram 1. The rear panel must be turned around with the return fold facing back the opposite way.

All Metro ECO Models

Check to ensure the top baffle is in its correct position in the top chamber of the firebox. It should be resting on four support lugs (two on each side of the firebox). The baffle must be hard back against the rear of the firebox with the "promet extension" (white board) facing forward as illustrated in Diagram 2.

Diagram 1

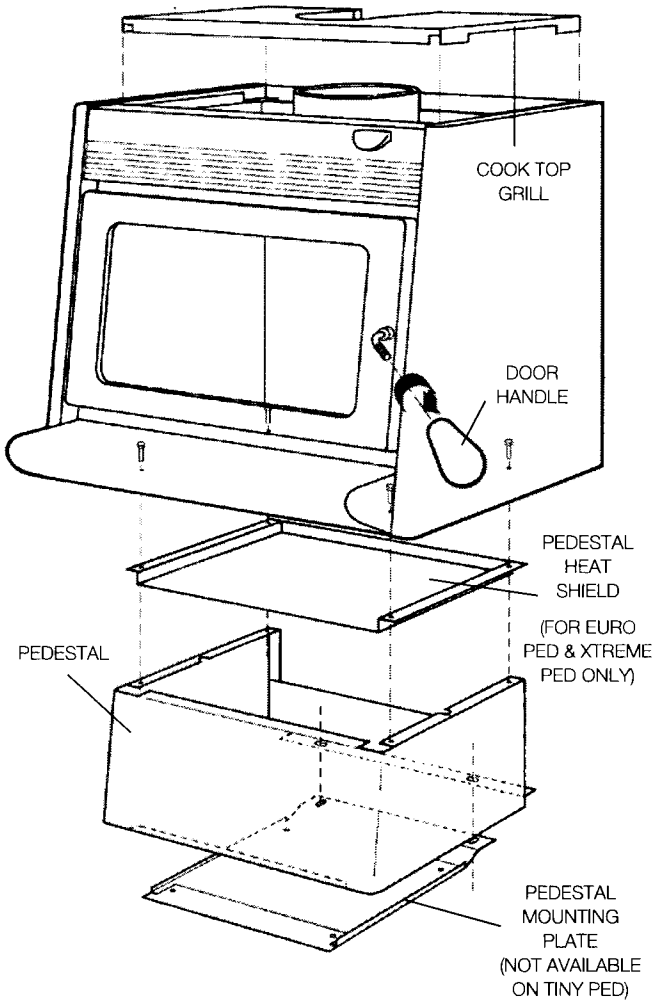
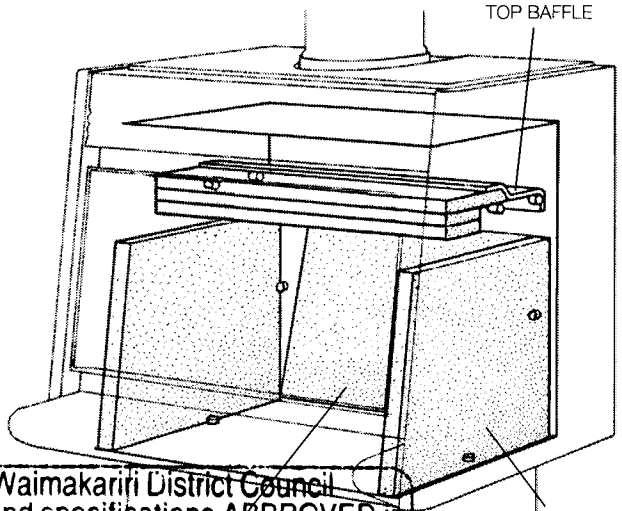


Diagram 2



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Note: The ECO Wee Ped has an additional "3rd brick" which fits to the rear face of the firebox, locating under/into a bracket provided in the middle of the firebox's rear face, under the top baffle.

Direct Vent Option

The ECO Xtreme Ped, ECO Euro Ped, ECO Euro Trad, ECO Wee Curve, ECO Euro Rad and ECO Xtreme Rad models have the option to be installed as "Direct Vent" appliances, thereby drawing all primary and secondary combustion air from outside the home. Once connected, this direct venting option ensures the air that is heated within the home, stays in the home improving efficiency and reducing fuel usage.

Note: Connection of the Metro's direct vent inlet to outside the home is optional. If not connected these Direct Vent models still offer greatly improved performance and lower emissions due to the unique pre-heated air path for all primary and secondary combustion air that these models consume.

Direct Vent Options

Three "Direct Vent kits" are available to connect the ECO DV Metro to an air supply from outside the living environment of the home. The kits available include;

- DV WALL KIT – For installations when the Metro is installed against an outside wall.
- DV FLOOR KIT– For installations onto a floor which has a free air supply below it.
- DV CEILING KIT– For installations when the Metro is installed against an internal wall and on a concrete floor

(DV Ceiling kit goes into the wall cavity, then up inside the wall into the ceiling cavity, where the air supply is drawn from)

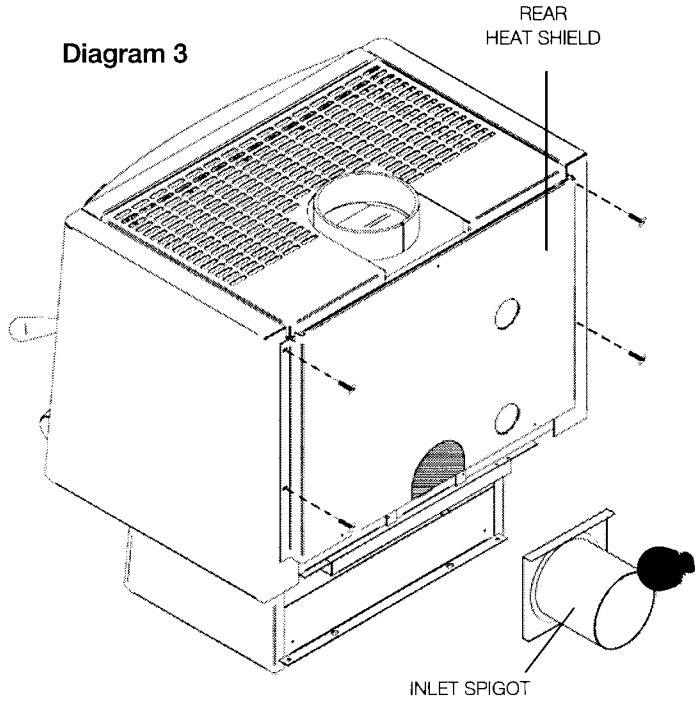
Installing the Direct Vent Option

Remove the rear heatshield from the Metro wood fire by unscrewing the four self tapping screws illustrated in Diagram 3 and proceed as follows;

1. Remove the section of panel illustrated with a "hatch", from the mid/bottom section of the rear heatshield. This section to be removed has been pre-punched and only requires a few small tabs to be cut.
2. Take the "inlet spigot" supplied in the "Direct Vent kit" and slide it fully down into position into the brackets provided on the rear of the firebox.
3. Replace the Metros rear heatshield with the four screws previously removed.

The Metro wood fire is now ready for installation once you have pre-fitted the Direct Vent kit into the wall or floor. Full instructions for this procedure are supplied with the Direct Vent kits.

Diagram 3



1 10550

Floor Protector Size, Construction & Fitting

Pioneer manufacture an extensive range of what Pioneer term "Ash Floor Protectors" which comply with the minimum floor protector requirement of AS/NZS2918:2001, and can be installed with any freestanding Metro wood fire.

Metro freestanding wood fires DO NOT require an insulating floor protector as they comply with the minimum floor protector requirements of AS/NZS2918:2001. These minimum floor protector requirement are;

- They must be of adequate size to give appropriate wall, rear and front clearances/projections as detailed below and in the chart illustrated on page E. Note;
- The floor protector must extend 200mm horizontally to the rear and each side directly below the door opening, and 300mm forward of the door opening.
- The upper surface of the floor protector must be made of non combustible material.
- A suitable floor protector for a Metro freestanding wood fire is therefore any non-combustible material which could include;
- Ceramic tiles with grouted joints fixed directly to timber flooring.
- A sheet of toughened glass, panel steel etc. laid directly onto a wooden or other combustible floor.

Note: If being installed onto a concrete or non-combustible floor a floor protector is not required.

Fitting the Floor Protector

Once the floor protector is constructed and laid in final position, you are ready to locate the position where the Metro will sit on the floor protector. This procedure varies depending on the model:

Metro ECO Radiant and ECO Traditional Series

Lift the Metro onto the floor protector and using a tape measure to ensure that the minimum wall clearances and front floor protector projections as detailed in the chart on opposing page E are met or exceeded. Once the Metro's location on the floor protector is established and if the installation is in New Zealand, seismic restraint is required.

Using masonry anchors if the floor protector is on a concrete floor or coach bolts if a wooden floor, secure through the holes provided at the base, behind both rear legs.

Note: the anchors must pass through the floor protector and securely anchor the Metro to the floor.

Metro ECO Pedestal Series

These models (excluding the ECO Tiny Ped) are supplied with a "pedestal mounting plate". Refer to Diagram 1 on page B. Place the mounting plate on the floor protector with the two slots at the rear. A flue centre hole is marked on this plate and a chart is attached enabling you to locate the position of the Metro without placing the Metro onto the floor protector. Once the location of this mounting plate is established, secure it through the floor protector into the floor using a minimum of two of the four holes provided, diagonally opposite each other. Suitable anchors are as detailed below left for the Metro ECO Radiants/Traditionals Series

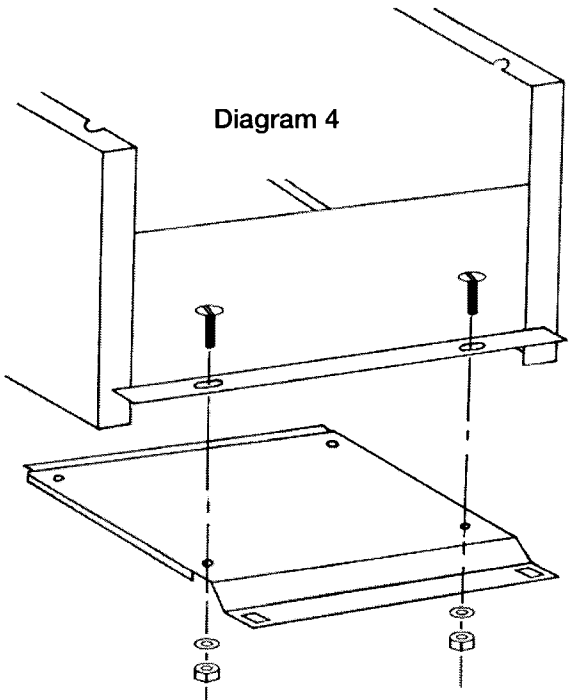
Alternative Metro mount plate installation

For installations when it is desirable to position the assembled Metro prior to bolting down, it is possible to "invert" the mounting plate and use it as a means of bolting the Metro direct to the floor, through the hearth. Refer to Diagram 4 and note;

1. Rotate the mount plate 180 degrees so the label faces downwards.
2. Remove the two "slide nuts" from the rear face of the mount plate.
3. Secure the mount plate to the pedestal with 6mm bolts through holes provided as illustrated.

You can then bolt down the Metro through the two rectangular slots in the rear edge of the mount plate. These slots are more accessible than bolting direct through the pedestal, and it also eliminates the need for spacers.

Diagram 4



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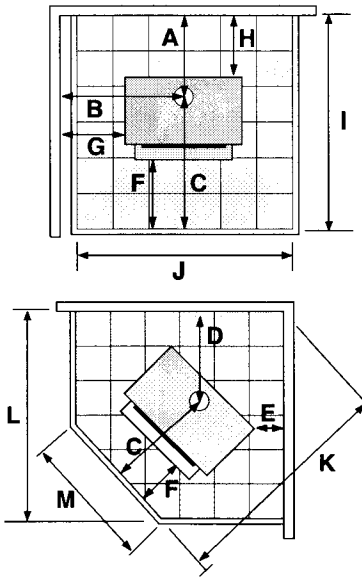
Clearance Chart

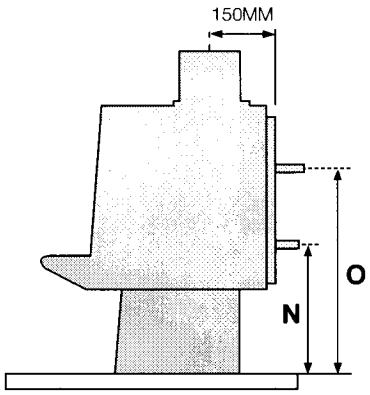
Measurements listed below are the minimum required, stated in millimetres. Measurements are taken from the following reference points as illustrated:

- From the nearest combustible wall or surface (A, B, D, E, G, H)
- From the Metro's flue centre (A, B, C, D)
- From the outermost point of the Metro's cabinet construction (E, F, G, H)
- To the edge of the ash floor protectors non-combustible surface (C, F, I, J, K, L, M)

The Metro ECO Euro Ped, ECO Xtreme Ped and ECO Euro Trad installed with a "Pioneer Double Flue Mounted Shield with side extensions fitted" reduces minimum corner clearance E from 170mm to 110mm. In this situation use the LTD Euro Ped chart for ECO Euro Ped measurements E, D, K & L.

Note: If you are installing any of the above wood fires onto a Pioneer 1150 corner floor protector the flue shield side extensions MUST be fitted.





Note: Wetback connections for the Tiny Models are 92mm left of the flue centre, all other Metro models are 140mm left of the flue centre facing the Metro/wall.

Metro Installation Clearances

Minimum clearances shown are in mm, with a Pioneer double flue mounted shield fitted.

Model	A	B	C	D	E	F	G	H	I	J	K	L	M
ECO Tiny Rad	225	552	580	420	150	200	300	75	805	650	1165	925	250
ECO Wee Rad	260	525	580	385	80	200	220	110	840	825	1125	950	425
ECO Wee Curve	300	555	580	405	100	200	250	150	880	825	1150	975	425
ECO Xtreme Rad	250	575	625	435	80	200	200	100	875	905	1240	1065	505
ECO Euro Rad	250	625	625	435	80	200	250	100	875	905	1240	1065	505
ECO Tiny Ped	210	430	580	290	25	200	185	60	790	650	990	875	250
ECO Wee Ped	260	595	580	385	85	200	300	110	840	825	1120	950	425
ECO Xtreme Ped	230	585	625	495	170	200	250	80	855	905	1325	1120	505
ECO Euro Ped	230	585	625	495	170	200	250	80	855	905	1325	1120	505
ECO Tiny Trad	210	430	580	290	25	200	185	60	790	650	990	875	250
ECO Wee Trad	260	595	580	385	85	200	300	110	840	825	1120	950	425
ECO Euro Trad	230	585	625	495	170	200	250	80	855	905	1325	1120	505

Metro Specifications

Measurements shown are in mm.

Model	WIDTH	DEPTH	HEIGHT	N	O
ECO Tiny Rad	505	530	665	280	470
ECO Wee Rad	607	530	665	295	485
ECO Wee Curve	607	530	665	280	470
ECO Xtreme Rad	750	575	745	338	528
ECO Euro Rad	750	575	745	338	528
ECO Tiny Ped	490	530	665	280	470
ECO Wee Ped	590	530	665	295	485
ECO Xtreme Ped	670	575	715	325	515
ECO Euro Ped	670	575	715	325	515
ECO Tiny Trad	490	530	665	280	470
ECO Wee Trad	590	530	665	295	485
ECO Euro Trad	670	575	715	325	515

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Wetbacks

⚠ WARNING! Important Information

- **Do not connect to an unvented hot water system.**
- **Install in accordance with AS 3500.4.1 Or NZS 4603 and the appropriate requirements of the relevant building code or codes.**

Wetbacks

If the home is in a classified "clean air zone", and dependent on requirements/restrictions which may be imposed by your local council, you may or may not be able to install a water heating device. If in doubt consult your local Metro retailer. Only Pioneer's cast jacket wetback system as illustrated on Page 2 (reverse side of this manual) should be fitted to a Metro; alternative wetbacks will void the Metro's emission approvals and may seriously affect the performance of the appliance and void the owner's warranty.

Note; Wetback systems are not suitable for use in locations where the water supply has lime content, lime build up inside the coil will eventually block the coil causing the wetback to fail.

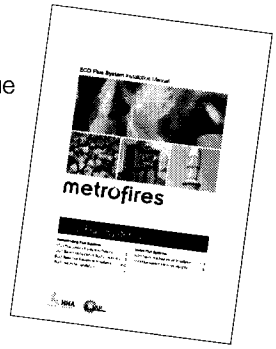
The 2kW, 3kW and 4kW wetback options are fitted to the inside rear of the firebox, with the connection pipe heights illustrated and detailed on the previous page E. Please note:

- Wetback connections for the Tiny models are 92mm left of the flue centre, and all other Metros wetback connections are 140mm left of the flue centre, facing the Metro/wall; the return pipe connection is directly above the inlet connection.
- Reduced height pedestals are available for certain models to reduce wetback connection heights.
- It is recommended the return pipe has a minimum rise of 1 in 12; performance will reduce as the distance to the storage cylinder increases.

To fit the Wetback proceed as follows:

1. Remove the rear panel of the Metro by removing the four pozi drive screws. Remove the two pre-punched knockouts from this panel.
2. Two further knockouts will be visible on the inner rear heatshield; remove these also. Once these are removed 6mm nuts will be visible through the knockout holes.
3. Open the Metro's door and locate two bolts securing the pressed washers which are visible on the left hand side of the firebox for both inlet and outlet connection points.
4. A further three bolt heads will also be visible on the inside rear wall of the firebox; these are threaded into the 6mm thick firebox. Remove all three.
5. Using the tube of sealant supplied with the wetback, apply a liberal bead of sealant around both connection holes on the inside of the firebox. On the rear of the wetback casting apply the remaining contents of the tube equally around both connection pipes.
6. Fit the wetback into the firebox and carefully pass the connection pipes through the holes in the rear of the firebox. Securely attach the wetback using the three bolts previously removed from the rear face of the firebox, fitting them through the slots provided in the wetback's jacket.
7. The wetback is now ready for connection to the storage cylinder by a registered plumber.

Flue Installation



It is recommended that all Metro freestanding wood fires be installed with the energy efficient Metro ECO flue system which comes complete with a detailed installation manual. This installation manual must be presented with your application to gain consent with your local council. A copy of the installation manual can be downloaded from www.metrofires.co.nz, under Flue Systems, or a copy can be obtained from your Metro retailer. Any alterative flue system must comply with and be installed as detailed AS/NZS 2918:2008, and a copy of the installation manual must also be presented with your application to gain consent with your local council.

All Metro's require a 150mm diameter flue. Please note:

- All joints in the flue pipe must be sealed with Pioneer fire cement (or similar) and riveted.
- The base of the flue pipe must be sealed into the outlet of the Metro's flue stub.
- Refer "Important Information" on page A.
- The flue systems 150mm diameter flue pipe must terminate a minimum of 4.6 metres above the top surface of the floor protector.

Pioneer Flueshield

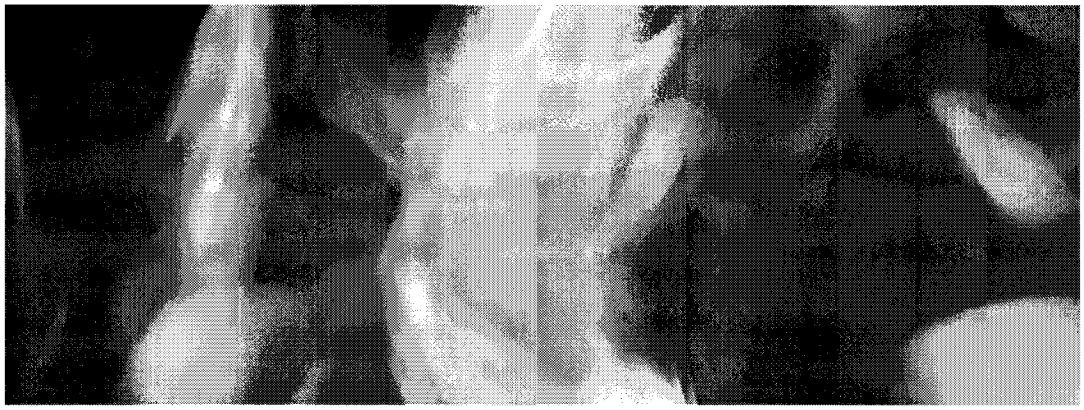
All Metro's have been tested with a Pioneer Double Flue Mounted Shield. For the Metro to be installed with minimal clearances as the Clearance Chart states, ONLY the Pioneer Double Mounted Flue Shield can be used. All other flue shields will invalid the installation.

The Metro can be installed without a flue shield, if this is the case it needs to be installed as AS/NZS2918:2001 stipulates.

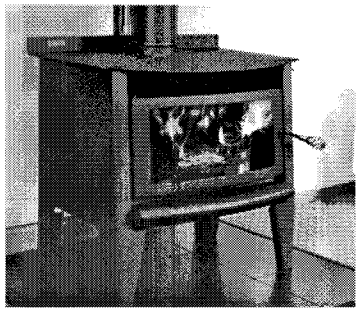
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Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, Clause 3
Signed 13/7/11

Wood Fire Owner's Operation and Warranty Manual









metrofires

ECO Freestanding Models

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Operating your Metro 3
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*Refer to the other side of this manual for Metro installation details

NZHHA
New Zealand Home Heating Association Inc.

NEW ZEALAND MADE

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⚠ WARNING! Important Information

- **IF YOU DON'T READ THIS ENTIRE MANUAL, YOU MUST READ THIS FIRST PAGE!**
- **Any modification of the appliance that has not been approved in writing by the testing authority is considered as breaching AS/NZS 4013**
- **Do not use flammable liquids or aerosols in the vicinity of this appliance when it is operating**
- **Do not use flammable liquids or aerosols to start or rekindle the fire**
- **Never operate your Metro with the door ajar, except on initial start up**
- **Do not store fuel within the Metro's specified installation clearances**
- **Do not dry clothes on or near this appliance**
- **Open the air control before opening the Metro's door**
- **Never operate your Metro Ped or Trad with the cook top grill removed**

⚠ CAUTION! Important Information

- **This appliance should be maintained & operated at all times in accordance with this instruction manual**
- **This appliance should not be operated with a cracked glass or faulty/missing door seal**
- **Do not use driftwood, treated or unseasoned (wet) fuel, the use of most types of preservative treated wood as fuel can be hazardous**
- **Do not empty ash into a combustible container**

Congratulations on the purchase of your Metro wood fire

This low-emission, slow combustion appliance is designed to give you many years of warmth and service, subject to six critical factors. These six factors, if not adhered to are the major causes of unsafe installation, poor performance and flue blockages and failure.

1. Your Metro wood fire must be installed correctly, by a competent or suitably qualified installer.

   As correct installation is critical to the performance and safe operation of your Metro, it is recommended your Metro be installed by a registered installer or a person suitably qualified in the installation of wood fires. Your Metro retailer will be able to arrange professional installation for you.

2. The only fuel to be used in this appliance shall be wood that meets the following criteria.
   - Less than 25% moisture,
   - Has not been treated with preservatives or impregnated with chemicals or glue,
   - Is not chipboard, particle board, or laminated board, and
   - Is not painted, stained or oiled

3. The appliance shall be operated at all times in accordance with the "Installation and Operating Instructions" supplied.

4. There shall be no heat re-circulating fan fitted to the appliance

5. In some clean air zones (Urban Canterbury) Metro ECO wood fires can only be installed with a Metro ECO Flue System, as fitting any other flue system will void the ECO Metros approvals to AS/NZS4013:1999. If in doubt consult your Metro retailer.

Please note the following important points:

- This manual is in two sections, with the installation section detailed at the rear of this booklet. Keep this instruction manual for future reference.
- In New Zealand a building consent is required from your local building authority; the homeowner is responsible for obtaining this consent.
- During the very first fire your Metro will give off an odour and fumes as the firebox paint cures. Do not be alarmed; open all windows and externally opening doors in that room and close any internally opening doors. This curing process will last for approximately one hour and is likely to happen this one time.
- Properly seasoned (dry) timber is necessary for the Metro to operate efficiently; firewood that contains a high moisture content will result in flue pipe blockages and reduce the heat output.

Note: Softwood usually takes 12 months to season - Hardwood can take up to 24 months to season - Wood must be stored in a location that enables free air circulation. Wet wood stored in a closed woodshed without air circulation will still be wet 12 months later.

- All freestanding Metro's covered by this manual make ideal cooking appliances.
- It is critical that the fire not be operated with faulty or missing door seals, faulty or missing promet extension (front white board on the baffle plate) cracked or broken door glass. These three areas require regular inspection/maintenance and if not maintained will void the firebox warranty.
- For optimum performance fuel must be loaded so the logs lay "front to rear" in preference to laying across the width of the firebox. Spaces should be left between the logs to enable oxygen to get to as much of the surface of the fuel as possible.
- A small hot fire loaded frequently is more efficient than a large fire burning on a low setting.
- Your Metro is covered by a full twelve-month warranty, and a five-year firebox warranty. You can extend this firebox warranty to twenty years if you purchase the optional extended firebox warranty as detailed on page 7.

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Where to install a Metro wood fire in your home

Wood fires are usually installed in the main living area, which is the section of the home that is usually kept the warmest, being the area in the home most frequently occupied. However, before deciding on the best location for your Metro wood fire you may wish to consider:

- Water heating. If you are intending to have a wetback it is important that the wood fire is as close as practically possible to the water storage cylinder.
- Split level homes are best heated when the wood fire is installed on the lower level, as the heated air will rise to the higher levels.
- Building construction is another consideration. Specified clearances from walls, curtains etc must be maintained and you need to ensure no structural beams or internal gutters etc are directly above your preferred site. If you have a two storey dwelling you need to consider the second storey to ensure you don't have the flue directly outside a second storey window.

Generally, you can install your Metro in your home anywhere that suits you; Pioneer offer various fan systems to transfer heat to sections of the home that are not heated sufficiently. It is necessary if using a fan system that the Metro you have purchased has sufficient output to heat the total area you wish to heat. Your Metro retailer or installer will be able to advise if you are uncertain.

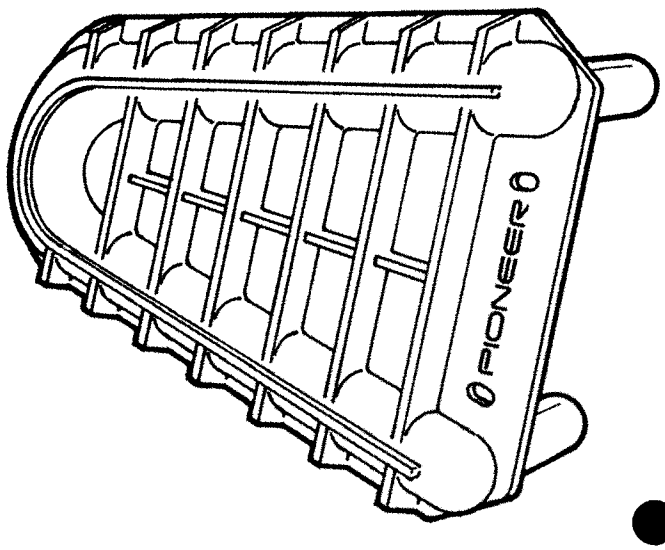
Optional wetbacks and boilers

If your home is in a classified "clean air zone", and dependent on requirements/restrictions which may be imposed by your local territorial authority (council) you may or may not be able to install a water heating device. If in doubt consult your local Metro retailer.

Water heating is another key feature of your Metro wood fire, and on offer are a number of options depending on the model you have purchased. Metro offer a 2kW wetback suitable for the Tiny Rad, Tiny Ped and the Tiny Trad. All other Metro's have a choice of a 3kW and a 4kW wetback. Only Pioneer's cast wetback illustrated should be installed into a Metro wood fire, as alternative wetbacks will seriously affect the performance of the appliance and void its warranty.

Note: Wetbacks are not suitable for use in locations where the water supply has lime content. Lime build up inside the coil will eventually block the coil causing the wetback to fail.

THE PIONEER WETBACK DESIGNED FOR METRO WOOD FIRES



Cost Savings

Wetbacks can enable substantial power savings, dependent on the climate in the area in which you live. If you live in a cold climate you are likely to use your Metro for many months of the year, in which case a Pioneer wetback will reduce or even eliminate your water heating costs over those months. If however you live in a warmer climate and use your Metro for only a few hours a day over the colder months, electricity savings will be considerably less.

3kW or 4kW

The 3kW wetback is usually adequate for most homes; however, if your hot water use is considerable the 4kW would be preferable. Other considerations are:

Distance from the Metro to the storage cylinder will affect the amount of hot water produced. If it is more than 2 metres away the 4kW is usually preferable.

Your climate and the manner in which you will "fire" your Metro are the most relevant factors in choosing the correct output wetback. If you are in a moderate climate or have a modern well-insulated home you are likely to be running your Metro on lower output settings, in which case the 4kW should be used. If however you live in a cold climate, or have an older, cold or large home you are more likely to be "firing" your Metro on a higher burn rate, in which case the 3kW would be better suited.

Water Pressure

A common misconception is that you must have a low-pressure system to have a wetback; this is not true. You must have a "vented" system and high-pressure cylinders are usually not vented. However you can install an "indirect" cylinder which contains a secondary coil inside the storage cylinder, enabling you to have a wetback while retaining a high-pressure system.

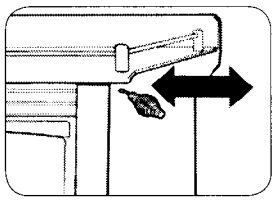
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Getting to know your Metro wood fire

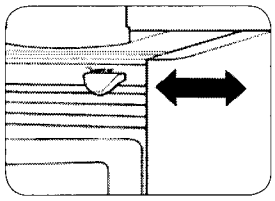
Operating your Metro wood fire is simple and you will quickly learn how to get the best from it. First take a minute to familiarise yourself with your new Metro:-

- Raise the door handle anticlockwise until the latch releases, then slowly pull the door open. You will note that if you let the door go before it is at 90° to the appliance, it will fall closed. This is a safety feature that ensures the door cannot fall open if it is not latched securely. For the door to remain open, you must open it fully.
- There is a single air control making your Metro easy to adjust. This control moves from left to right, which is "low to high".

The Metro Radiant Series have a wire air control handle located at the upper right hand side of the appliance. Simply pull out to increase burn rate or push in to reduce burn rate.



RADIANT SERIES AIR CONTROL



ALL OTHER SERIES AIR CONTROL

All other model Metro's have an air control knob located on the upper front of the appliance.

Slide this control knob gently from right to left until you reach a stop. This is a pre-set "low" position. Your Metro must not be operated at a lower burn rate than this pre-set low allows.

Operating your Metro wood fire

If your Metro has only been installed within the past few days, the fire cement seal at the base of the flue will not be fully cured. To ensure the cement sets without blistering it is recommended you burn 2-3 sheets of loosely crumpled newspaper at a time, approximately once every hour over a 6-8 hour period.

During the very first fire your Metro will give off an odour and fumes as the firebox paint cures. Do not be alarmed; open all windows and externally opening doors in that room and close any internally opening doors. This curing process will last for approximately one hour and will only happen this one time.

Start up

Place a quantity of loosely crumpled newspaper on the base of the firebox until it is approximately 50% full of paper, or place firelighters on the base of the firebox. Add dry kindling move the air control knob fully to the right, being the "full open" position.

Light the paper at two or three locations across the front of the door opening and leave the door slightly ajar if necessary for a few minutes while the fire establishes. Once the kindling is burning well, open the door and add 2-3 small logs at a time until you have a well-established fire. Usually this will take approximately 30 minutes, during which time the air control should be set on "high" and the door should be closed, except for the initial few minutes and when fuel is being added.

Normal operation

Once the fire is well established, regulate the air control to achieve the desired burn rate and heat output. As you move the air control to the right, burn rate, firebox temperature and heat output will increase, if you move the control to the left they will decrease.

Note:

- Always open the air control fully prior to opening the door, then open the door slowly.
- When loading logs, place them end-on, "front to back"; air spaces should be left between the logs to enable oxygen to get to as much of the surface of the fuel as possible.
- Every time you refuel, leave the air control on "high" for a minimum of 20-25 minutes.
- Never use the door to force wood into the firebox, as this is likely to break the glass.

Cooking

All Metro's are designed to enable cooking of soups, stews and casseroles including whole chickens etc, and your Metro will easily boil a flat bottom stainless steel kettle. The Radiant Series have a dedicated cooking top enabling large pots to be placed on the cook top, while all other models have a lift-off grill.

Note: Metro's supplied with a lift-off top grill have this feature to enable the grill to be removed for cleaning if you have a spill. The lift-off top grill must be left on when cooking, because if removed the wall temperatures next to the appliance may become excessive and the top of the firebox is generally too hot to cook on directly. Please note: Although very durable, Metro's in a satin stainless look are not recommended to be used to cook on.

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Cleaning and Maintenance for your Metro wood fire

The Radiant Series and the HT Series are coated with "Pioneer Metallic Black" high temperature paint and will require periodic repainting.

All other model Metro's are coated with either;

- Vitreous enamel in a range of darker colours which is extremely durable and designed to last the life of the appliance. As vitreous enamel is glass, a solid or heavy object dropped or banged against a panel could chip the enamel surface.
- Selected model Metro's are offered in a satin stainless steel look. Although very durable it is not recommended that Metro's with this finish be used to cook on.

All model Metro's can be cleaned with a damp cloth when the appliance is not operating.

Door glass

Providing your fuel is properly seasoned, under normal operating conditions the air-wash design of the Metro's firebox will keep the door glass clear. If the glass requires cleaning
you may use either a razor blade scraper or an oven cleaner, or you may take a ball of crunched up newspaper, moisten it on one side and dab it in the ash from the firebox; all these work well.

If your door glass breaks it must be replaced with 5mm thick ceramic glass, as other types of glass, including tempered or toughened glass, will explode due to the intense heat inside the firebox.

Door seals

Over time, usually 3-5 years, the door and glass seals will become hard and cause air to leak into the firebox, reducing burn time; at this point they require replacing. Your Metro retailer stocks replacement woven fibreglass door and glass seals, and if required will fit these for you.

The door of your Metro is easily removed. Hold it in both hands and lift the hinge end of the door up and over the top hinge pin, then lower the door from the bottom hinge pin.

Side bricks

Hair-line cracks in the side bricks are not uncommon and are a result of the intense heat within the Metro's firebox, coupled with mechanical damage caused by accidental impact when fuel is being loaded. However if the side bricks become cracked to the extent that they start to break up, they must be replaced.

Door adjustment

Provision is available on both sides of the door to enable adjustment as the door seal compresses causing air to leak into the firebox.

To adjust the hinge end of the door, open the door fully, loosen the top hinge nut and slightly lift the latch end of the door; you will see the hinge assembly move back - 1mm will usually be sufficient. Retighten, then repeat by loosening the lower hinge nut, this time applying a slight downwards pressure onto the door to move the lower hinge assembly back a similar distance, then retighten.

The door latch is also adjustable, as the latch pin on the right side of the firebox is fitted through a slot which enables the latch pin to be loosened, moved back and re-tightened.

Ash removal

Over a period of time ash will build up in the base of the Metro's firebox and require removal. The time this build-up takes depends on the density and cleanliness of your fuel. remove the excess ash your Metro should not be operating.

- Open the door, and using a hearth shovel or similar, empty the excess ash directly into a steel or non-combustible container.
- If the ash is not disposed of immediately, be careful where you store it, as the ash can retain heat for many days and become a fire hazard.
- You must leave a bed of ash in the base of the firebox approximately 10mm deep; this insulates the base of the firebox and improves combustion.

Top baffle

This is a **'sacrificial'** part of the firebox and should be checked monthly. Usually only the "Promet" (white board) front section needs to be replaced when it starts to disintegrate.

Note: Cracks in the promet are not uncommon and have no adverse effect on the operation of your Metro. These cracks are the result of intense heat coupled with expansion and contraction.

Note: Burning wood which is not properly seasoned, i.e. to 25% moisture content or less, will expedite this disintegration.

To remove and replace your top baffle, refer to the flue pipe cleaning instructions on page 5.

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Cleaning and Maintenance for your Metro wood fire - continued

Flue systems

Should be checked annually, particularly the bottom end of the lower flue section at its rear lock formed joint. If deterioration is noticed contact your Metro retailer or installer.

The flue pipe should also be swept a minimum of once a year, or as required during the winter season. If smoke enters the room when you open the Metro's door this usually indicates the flue pipe is becoming restricted and needs cleaning. The frequency of flue pipe cleans depends on many factors, with the main variables being:

- The seasoning of the wood. If not properly seasoned you will require frequent flue pipe cleans.
- The density of the wood. Softwoods generally result in more creosote build-up in the flue pipe. Pioneer Manufacturing Ltd produce a telescopic fluebrush system which is available from your Metro retailer.

To clean the flue pipe of your Metro, proceed as follows:-

- Open the Metro's door fully, reach inside with the palm of your hand face-up and extended, lift the top baffle approximately 20mm, then lift it forward out through the door opening, placing it on a sheet of newspaper you have placed on the front of the floor protector.
- Close the door and slide the air control to the left.
- Once on the roof, remove the cowl from the top of flue system and sweep the flue pipe using a 150mm-diameter flue pipe brush as detailed in the instructions provided with the fluebrush.
- Once the flue pipe is clear, clean and refit the cowl. Remove the excess soot which has fallen into the firebox, leaving a layer of ash 10mm deep on the base of the firebox, then refit the top baffle.

Note: the baffle must be fitted so its rear is touching the back of the firebox; if uncertain refer to page B in the installation section at the rear of this manual, which shows illustrations of the baffle location.

Troubleshooting your Metro wood fire

If your Metro has been correctly installed, your fuel is dry and you operate it correctly you will find it is a pleasure to use. Pioneer's many years of experience within the wood heating industry has shown that 95% of complaints and customer dissatisfaction are due to fuel, installation or operational problems. The following may be of assistance if you experience any of these symptoms:

A. Smoke enters the room when the Metro's door is opened

This usually indicates the flue pipe needs cleaning and if left, the smoking problem will get worse. To remedy; clean the flue pipe, and to avoid the necessity of regular repeat cleans, ensure your fuel is properly seasoned. If however the Metro has always smoked into the room from the day it was installed, it is likely to be due to insufficient flue pipe length or a faulty/unsealed flue system. To remedy contact your installer or Metro retailer.

B. Occasionally a puff of smoke comes into the room

This is most likely a result of two possible causes:

1. There is insufficient flue pipe height in relation to your roofline, trees or other high obstacles near your home, which is creating a downdraft. Usually a problem when the wind is coming from one particular direction and requires an experienced installer to remedy, by either extending your flue pipe height or fitting a directional or "H" cowl.
2. If the Metro is refuelled but the air control is left on a low setting or the fuel is unseasoned, the fuel will smoulder filling the firebox with smoke and combustible gases. The fuel will eventually ignite and as it does so, the build up of gases causes a pressurisation forcing smoke into the room. To remedy, ensure your fuel is seasoned and you open the air control to full every time you refuel your Metro.

C. I can smell smoke in the room after a low burn cycle

The smell is creosote that will be seeping through the flue joints or out of the flue spigot onto an external surface, thus creating the smell in your room. The cause will be either unseasoned fuel or incorrect operation on low burn cycles. Creosote is very corrosive and excessive buildups will result in the flue pipe and potentially the flue spigot and upper burn chamber failing. Failure of flue pipe or firebox due to creosote build up is not covered under warranty as creosote build up is only possible from either unseasoned fuel or incorrect operation.

D. The Metro is noisy as it heats up and cools down

1. There will always be some expansion and contraction noise as the Metro heats and cools, however this can be usually reduced substantially by loosening three nuts at the rear of the appliance. To remedy, locate the 25mm deep cavity at the rear of your Metro between the "rear panel" and the "inner rear heat shield", so you will see a 6mm nut and two 6mm bolt heads in this cavity. Using a 10mm ring or open ended spanner, loosen all three so they are finger tight only.

Note: 1. Is not applicable on the ECO DV models.

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Warranty Details for your Metro wood fire

Your Metro is covered by a full twelve month warranty, and a five year firebox warranty. You can extend this firebox warranty to ten years if you purchase the optional extended firebox warranty. The standard warranty is detailed below and the optional extended warranty is detailed on the opposite page.

Standard Metro Warranty

(NZ Consumer laws apply to this warranty)

Pioneer Manufacturing Limited warrants the steel firebox against defective materials and workmanship which would render it unfit for normal domestic use within a period of five years after date of original purchase.

All other parts including cabinet, door, door seal, glass, baffle, trim, bricks and if applicable wetback are warranted for a period of one year from date of original purchase for domestic use against defective materials and workmanship.

Warranty Conditions:

- The heater must be installed, operated and maintained strictly in accordance with the building code and the manufacturer's installation and operation manuals.
- This warranty covers replacement or repair at the manufacturer's discretion but excludes freight, travel and/ or any other associated costs.
- Operation of this appliance in violation of the warnings in the operation and installation manual will void this warranty.
- Failure to do the necessary inspection & maintenance of this appliance in accordance to the instructions in the operation manual will void this warranty. It is critical that the fire not be operated with faulty or missing door seals, faulty or missing top baffle including the promet extension (front white board on the baffle plate) cracked or broken door glass. These three areas require regular inspection/maintenance and if not maintained will void the firebox warranty.
- The manufacturer or their agents are not liable for any loss or expense direct or indirect arising from the failure of any part or operation of the appliance.
- A claim under this warranty should be directed to the retailer who supplied the Metro wood fire, or if this is not possible write direct to the manufacturer stating details of fault, serial number of your Metro, proof of purchase and name of retailer.

Warranty Exclusions:
This Manufacturers Warranty DOES NOT cover:

- Service calls which are not related to any defect in the Product (i.e. operational, installation or fuel issues). The cost of a service call will be charged if the problem is not found to be a product fault.
- Defects caused by factors other than normal domestic use or use in accordance with the product's operation manual.
- Defects caused through the product being operated in an "over-fired" manner resulting in sections of the firebox operating excessively hot to the point that sections glow red. (note – This will result in distortion of the firebox)
- Defects to the Product caused by accident, neglect, misuse or act of God.
- The cost of repairs carried out by non-authorised repairers or the cost of correcting such unauthorised repairs.
- Normal recommended maintenance as set out in the Product's Owners Operation Manual.

Service under this manufacturer's warranty must be provided by a repairer authorised by Pioneer Manufacturing Ltd. Such service shall be provided during normal business hours.

PIONEER
MANUFACTURING LIMITED

Mamaku Street, Inglewood 4330, New Zealand
PO Box 11, Inglewood 4347, New Zealand
Ph (06) 756 6520 • Fax (06) 756 6540
info@metrofires.co.nz • www.metrofires.co.nz

⚠ IMPORTANT! Complete and retain these details at time of purchase:

WARRANTY • WARRANTY • WARRANTY • WARRANTY • WARRANTY • WARRANTY
metrofires

Purchase Date	
Serial Number	
Model	
Colour	
Retailer	

The Optional Ten Year firebox warranty is detailed on the opposite page

110550

Optional 10 Year Warranty for your Metro wood fire

Pioneer Manufacturing Limited ("Pioneer") offers an extended firebox warranty of ten years from date of original purchase, being an additional five years beyond the standard firebox warranty offered by Pioneer with every Metro wood fire.

Conditions of extended warranty

(NZ Consumer laws apply to this warranty)

- The Metro wood fire must be installed in New Zealand.
- The Metro wood fire must be installed, operated and maintained strictly in accordance with the building code and the manufacturer's installation and operation manual.
- This warranty covers replacement or repair of the firebox at the manufacturer's discretion and includes all direct material, freight and labour costs.
- The firebox covered by this extended warranty is the 6mm steel firebox only and excludes baffles, bricks, door glass and door components.
- "Pioneer" is not liable for any loss either direct or indirect arising from the failure of any part or operation of the Metro wood fire.
- This warranty is transferable if the Metro wood fire, or the home in which the Metro wood fire is installed, is sold.
- The Metro wood fire must be installed and used in a domestic application.

Registration of this extended warranty option is direct with "Pioneer" the manufacturer. To register, complete the section at the bottom of this page and return it to "Pioneer" together with a cheque for $100.00 inclusive of GST. You will be sent confirmation that your extended warranty is registered on Pioneer's warranty data base together with a tax invoice and warranty registration number.

Note: Your extended warranty card must be sent to and received by Pioneer Manufacturing within 30 days of the appliance purchase. Included with the completed warranty card and payment must be a copy of the purchase receipt.

Extended Warranty Five-Year Service

It is recommended, but not a condition of this warranty, that a full service of the Metro wood fire be carried out at the end of the fifth winter season.

To register the 10-year warranty detach and complete the section below and post to Pioneer together with your cheque for $100.00



Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

Pioneer Manufacturing Ltd - Extended Warranty Card

Please print in BLOCK letters. Post to: Pioneer Manufacturing Limited, PO Box 11, Inglewood

Metro Owner Details

Surname	
First name	
Address	
Phone	
Fax	
Email	

Metro Purchased

Model	
Colour	
Serial No.	
Wetback	
Purchase Date	
Retailer	

☐ Payment by cheque for $100.00 attached

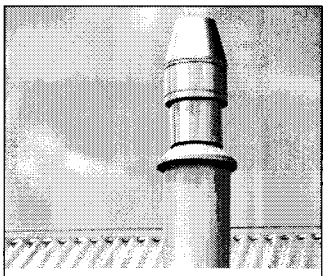
To register this 10-year warranty please post together with your cheque for $100.00 to Pioneer Manufacturing Ltd.

Pioneer Manufacturing heating accessories

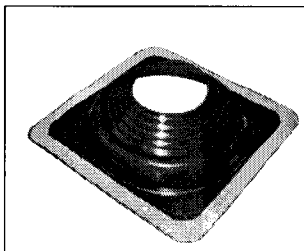
All the accessories you'll ever need!

Pioneer Manufacturing Limited distribute a wide range of heating accessories, and shown below are some of the heating accessories readily available from your local Metro retailer.

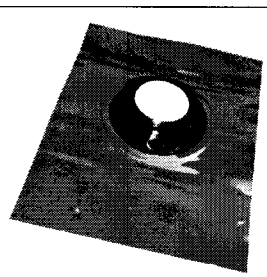
Some of these heating accessories are designed to compliment your Metro wood fire, and some are to assist with the up-keep and maintenance of your Metro wood fire, keeping it in good order for many years to come.



ECO Flue Systems



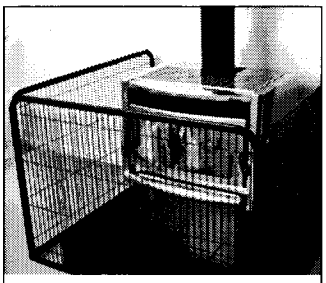
Pioneer Flashrites



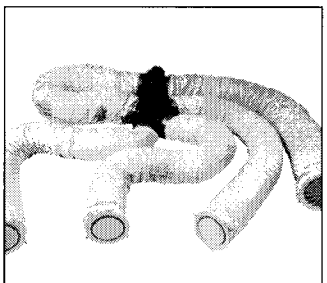
Pioneer Versatiles



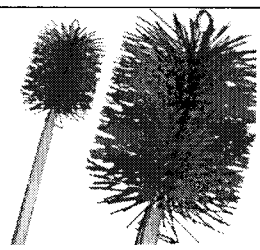
Pioneer High Temperature Paint



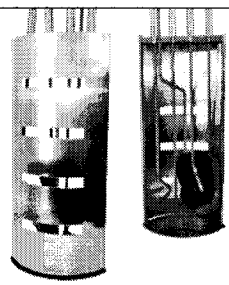
Pioneer Fireguards



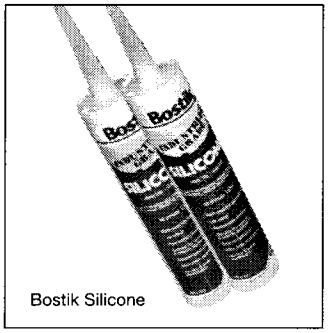
Pioneer Heat Transfer Ducts



Telescopic Flue Brushes
4 or 6 inch



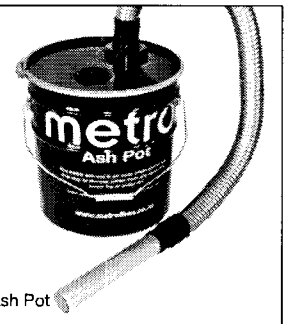
Fireside Toolset



Bostik Silicone



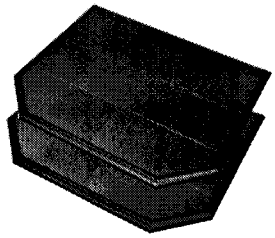
Pioneer Fire Cement



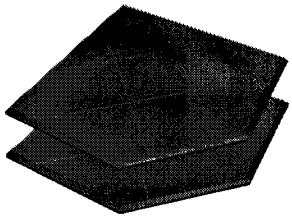
Ash Pot



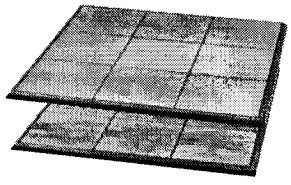
Chubb Smoke Detectors



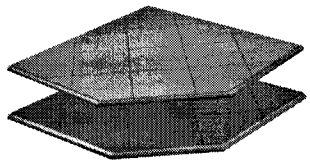
Alloy Wall Floor Protectors



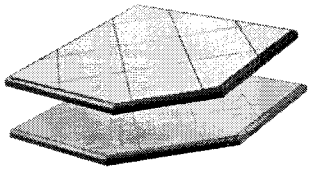
Alloy Corner Floor Protectors



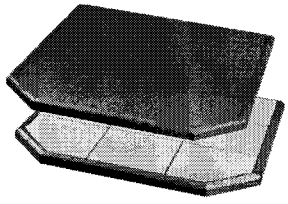
Pine Wall Floor Protectors



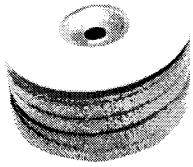
Pine Corner Floor Protectors



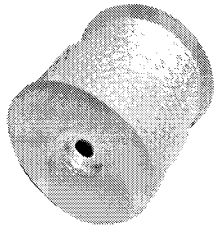
Rimu Corner Floor Protectors



Rimu Wall Floor Protectors



Glass Tape - available in 1.5m lengths



Door Rope - available in 1.5m lengths

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LOG FIRE:

Metro Eco Xtreme Rad

LTD & ECO Inserts



LTD Mega Built-In

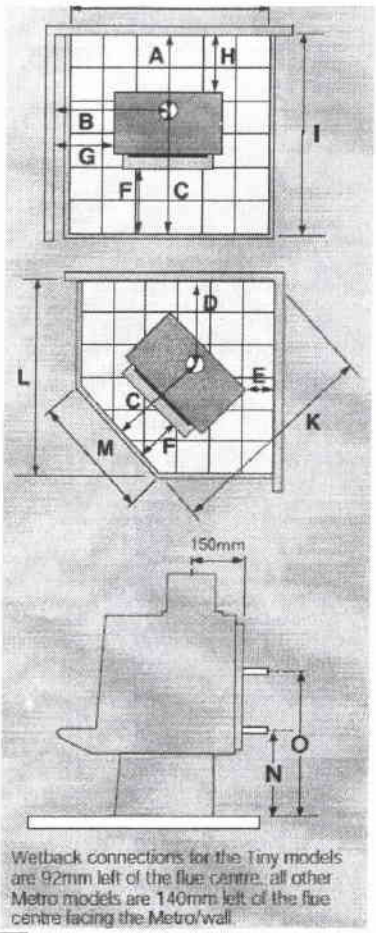


Model Clearances	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ECO Tiny Rad	225	552	580	420	130	200	300	75	805	650	1165	925	250	280	470
ECO Tiny Trad	210	430	580	290	25	200	185	60	790	650	990	875	250	295	485
ECO Tiny Ped	210	430	590	290	25	200	195	60	790	650	990	875	250	280	470
ECO Wee Rad	260	525	580	385	80	200	220	110	840	825	1125	950	425	295	485
ECO Wee Trad	260	595	580	385	85	200	300	110	840	825	1120	950	425	295	485
ECO Wee Ped	260	595	580	385	85	200	300	110	840	825	1120	950	425	295	485
ECO Wee Curve (DV)	360	555	580	385	80	200	250	150	880	825	1125	950	425	280	470
ECO Xtreme Rad (DV)	250	575	625	435	80	200	200	100	875	905	1240	1065	505	338	528
ECO Xtreme Ped (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515
ECO Euro Rad (DV)	250	625	625	435	80	200	250	100	875	905	1240	1065	505	338	528
ECO Euro Trad (DV)	230	595	625	485	170	200	250	80	855	905	1325	1120	505	325	515
ECO Euro Ped (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515
LTD Wee Rad	250	555	580	400	80	200	250	100	830	825	1145	950	425	295	485
LTD Wee Ped	250	595	580	400	85	200	300	100	830	825	1145	950	425	295	485
LTD Xtreme Rad	250	575	625	455	80	200	200	100	875	905	1265	1065	505	353	543
LTD Xtreme Ped	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530
LTD Euro Ped	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530
LTD Mega Rad	270	675	725	500	125	200	300	120	995	905	1425	1175	505	353	543
LTD Mega Ped	270	610	725	465	130	200	275	120	995	905	1400	1140	505	340	530

Fascia Model	Base width	Body Width
LTD & ECO Trend Fascia	810mm	810mm
LTD & ECO Trad Fascia	900mm	810mm
LTD Mega Built-In Fascia	900mm	900mm

Firebox Model	A	B	Width
ECO Insert	500mm	405mm	660mm
LTD Insert	500mm	405mm	660mm
LTD Mega Built In	600mm	340mm	800mm

LTD & ECO Inserts - The wall opening cavity size required		
Width of opening	Height of opening	Depth of opening
700mm Suggested	685mm Suggested	575mm Minimum
800mm Maximum	690mm Maximum	
690mm Minimum	685mm Minimum	



Wetback connections for the Tiny models are 92mm left of the flue centre, all other Metro models are 140mm left of the flue centre facing the Metro/wall.

Floor Protector Requirements											
Height (Floor Protector)	0mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	41mm	45mm	50mm+
LTD Insert (Dimension X)	455mm	455mm	455mm	436mm	424mm	408mm	396mm	366mm	350mm	350mm	350mm
LTD Mega Built-In	Dimension X = 330mm minimum projection is required irrespective of the height of the floor protector.										
ECO Insert	Dimension X = 300mm minimum projection is required irrespective of the height of the floor protector.										

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LOG FIRE:

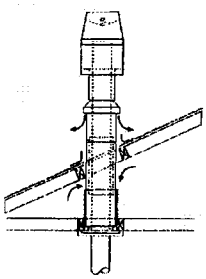
metrofires

ECO Flue Systems

Installation Options ECO Flue Systems

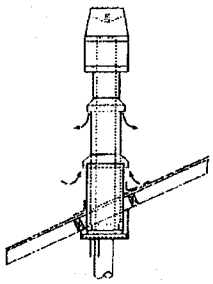
Detailed below are the more common installation methods for installing Metro ECO Flue Systems. To ensure a safe and efficient installation, this flue system must be installed as detailed below by either a registered installer, or someone competent in installing solid fuel appliances.

Single Storey Installations



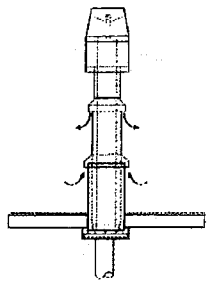
FLAT CAVITY CEILING

ECO Base Flue System only required as air is drawn into the flue system direct from the ceiling cavity.



SLOPING CEILING

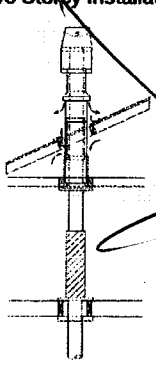
Both the ECO Base Flue System and Option kit are required to enable air to be drawn from outside the home.



FLAT CEILING/ROOF

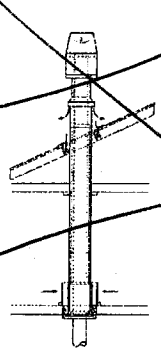
Requires both ECO Base Flue System and Option kit as per sloping ceiling unless a vented ceiling cavity exists.

Two Storey Installations



2ND FLOOR EXPOSED FLUEPIPE

Requires an ECO Base Flue System only with additional lengths of Fluepipe, a floor penetration kit, 1 x 1200mm long mesh/screen.



2ND FLOOR ENCLOSED FLUEPIPE

Requires an ECO Base Flue System only with additional lengths of Fluepipe, 200mm & 250mm inner/outer combination liners, an ECO 2nd floor vent cover and an additional ceiling plate with a 250mm diameter hole.

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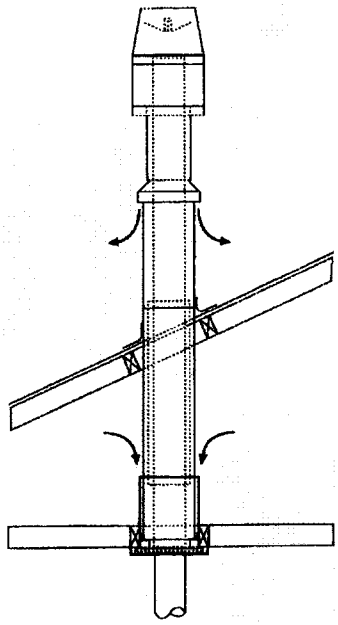
Component Checklist ECO Base Flue System Kit & ECO Option Kit

Metro offer both the ECO Base Flue System, which is designed to be installed on its own and the ECO Option kit which is designed to be installed in conjunction with the ECO Base Flue System. The specific application for each of these two options is detailed below.

Metro ECO Base Flue System Kit - Metro ECO Base Flue Systems are designed for installation into a building that has a "ceiling cavity" with unrestricted air supply as is the case with conventional homes. A vented ceiling cavity is required as the base kit draws its cooling air from the ceiling cavity.

Metro ECO Option kits - The Metro ECO Option kit is designed to be "added to" the Metro ECO Base Flue System for installations that do not have a vented ceiling cavity and require the flue systems cooling air to be drawn in from above the roofline (outside the building).

ECO BASE FLUE SYSTEM ASSEMBLED



ECO BASE FLUE SYSTEM COMPONENTS

(A) 1 x Stainless steel weather butterfly

(B) 1 x Stainless steel ECO cowl housing

(C) 1 x 225mm x 200mm diameter stainless steel outer casing extension

(D) 1 x 480mm long stainless steel flue pipe extension with flashing cone

(E) 1 x 1200mm x 150mm diameter stainless steel flue pipe

(F) 1 x 1200mm x 250mm diameter galvanised outer casing with 750mm long slip section

(G) 1 x 800mm x 200mm diameter galvanised inner casing

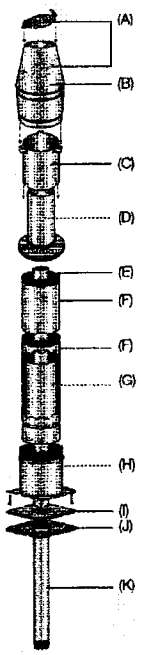
(H) 1 x Galvanised mounting plate with brackets and 300mm long x 300mm diameter casing attached

(I) 1 x Insulation gasket

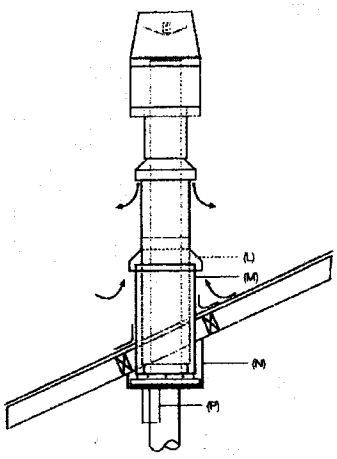
(J) 1 x black clip-on ceiling plate

(K) 2 x 1200mm lengths of 150mm diameter stainless steel flue pipe painted metallic black

(+) - 1 x Plastic bag of assembly bolts



ECO BASE FLUE SYSTEM & ECO OPTION KIT ASSEMBLED



ECO OPTION KIT COMPONENTS

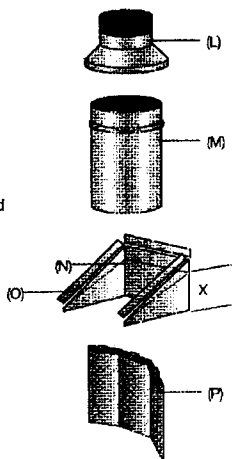
(L) External intake flashing cone

(M) 300mm diameter outer liner extension

(N) Drop box infill panel

(O) Drop box edge covers

(P) Ceiling plate mounted heat shield



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Minimum Heights Metro Flue Systems ALL

The Metro ECO Flue Systems comply with AS/NZS2918:2001 and its 4.6 metre height requirement (4.6 metre minimum from the top of the floor protector to the top of the flue pipe). However as external structures and the proximity of other buildings will differ for every installation, some situations will require additional flue height to comply with the standard.

Refer to Diagrams 3 and 4 below. (All measurements in mm)

Note: AS/NZS2918:2001 Section 4, details flue system installation requirements in full.

Diagram 3

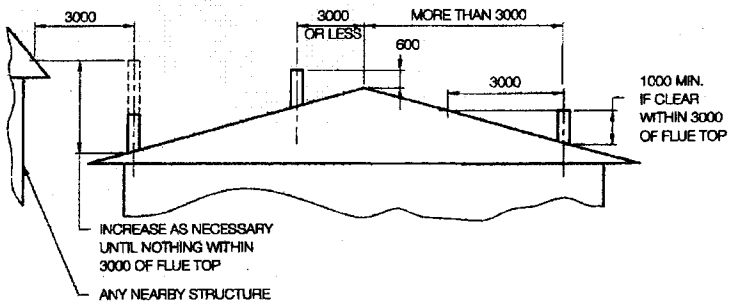
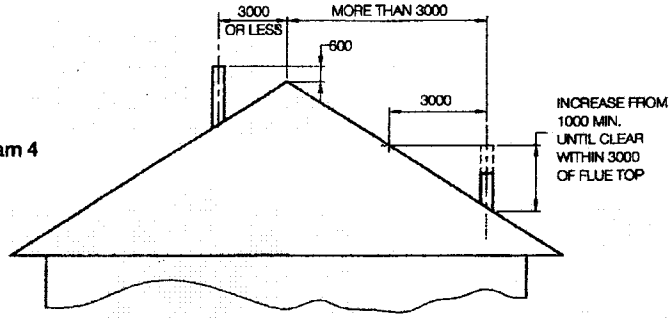


Diagram 4



PIONEER
MANUFACTURING LIMITED
Mamaku St PO Box 11 Inglewood New Zealand
info@metrofires.co.nz www.metrofires.co.nz

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Design Navigator H1 Compliance Report

110550

Project Summary

H1 Report created by:	Mark Milnes Architectural Design ltd
Project Name:	Humphreys
Client:	Humphreys
Lot No:	lot 2
Comment:	
Project Id:	26593
Report Date:	08/04/2011

Compliance Result

This building **complies with H1 via the following methods** :

- the Calculation Method in NZS4218:2004 (Sept 2008 R-values)
- the BPI Method

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

H1 Compliance Details

NZS4218:2004 Calculation Method Compliance

The use of the Calculation Method is **permitted** .

In order to comply the Actual Heat Loss must be the same or smaller than the Reference Heat Loss AND all component R-values must be the same or larger than 60% of the R-values in the '60% Rule' table below.

This design **complies** with the NZS4218:2004 Calculation Method.

Heat Loss:	*Reference building*	*Proposed building*
	1027	716

Minimum R-values ("60% rule"):

	Permitted Minimum	*Proposed Minimum*	
Floor:	0.8	434	✓
Non-solid Walls:	1.2	2.31	✓
Glazing in Non-solid Walls:	0.15	0.26	✓
Roof:	2	3.33	✓
Skylights:	0.2		✓

The Reference building has the following areas and R-values.

				Non-solid	Solid Timber	Other Solid
				100.0 %	0.0 %	0.0 %
Floor:	Area: 432 m²	R-values:		1.3	1.3	1.5
Walls excl. glazing:	Area: 183 m²	R-values:		2	1.4	1.2
Glazing (up to 30%):	Area: 94.3 m²	R-values:		0.26	0.26	0.26
Glazing (surplus of 30%):	Area: 37.1 m²	R-values:		0.34	0.34	0.34
Roof:	Area: 432 m²	R-values:		3.3	3.5	3.5
Skylights:	Area: 0 m²	R-values:		0.34	0.34	0.34
Heat Loss:				1027	1058	1036

For mixed constructions the heat loss of the reference building is calculated as the sum of the heat losses for each type of wall construction multiplied by the fraction of the wall area of each type. This approach is based on clause 4.2.6 of NZS4218:2009 because NZS4218:2004 has no clear guidance on mixed constructions. Note that all other requirements (window area (30%) and skylight area (1.2m²) threshold for Schedule Method, maximum R-value tradeoff (40%), etc.) are still using NZS4218:2004 including the 2007 H1 amendments because this is the Acceptable Solution for Clause H1.

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Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Design Details

Building Dimensions

Floor Area	432
Gross Wall Area	314.4
Net Wall Area	183
Wall (North) Area	45.8
Wall (East, South and West) Area	137.2
Gross Roof Area	432
Net Roof Area	432
Glazing Area	131.4
Window (North) Area	65.8
Window (East, South and West) Area	65.6
Skylight Area	0

Glazing Area Percentages

Total Glazing Percentage	41.8%
East, South and West Window Percentage	32.3%
Total over 30%	yes
East, South and West over 30%	yes
Total over 50%	no

Information required for BPI calculation

Living Floor Area	554	Note: This includes also internal floors.
Average Room Height	2.4	
Thermal Mass Level	Medium weight	Slab floor with some carpeting or direct glued timber, timber framed walls.

Climate

Location	Rangiora
Climate Zone	3

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Heat Loss Details

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	ID	Orient.	Width	Height	Gross Area	Net Area	R-value*	Heat Loss	Shad. Coeff.**	Solid Wall***
Floors										
Floor 1					432	432	434	1		
Walls -										
Wall 1	1	North	46.5	2.4	111.6	45.8	2.31	19.8		C
Window 1-1	W5		1.6	1.5		2.4	.26	9.2		
Window 1-2	D9		3.3	2.1		6.9	.26	26.7		
Window 1-3	D8		2.4	2.1		5	.26	19.4		
Window 1-4	D7		3.3	2.1		6.9	.26	26.7		
Window 1-5	W2		3.3	2.1		6.9	.26	26.7		
Window 1-6	D4		3.3	2.1		6.9	.26	26.7		
Window 1-7	D2		3.3	2.1		6.9	.26	26.7		
Window 1-8	D1		3.3	2.1		6.9	.26	26.7		
Window 1-9	D5		4.7	2.1		9.9	.26	38		
Window 1-10	D3		3.3	2.1		6.9	.26	26.7		
Wall 2	2	East	36.5	2.4	87.6	60.1	2.31	26		C
Window 2-1	W6		1.8	1.5		2.7	.26	10.4		
Window 2-2	W7		1.8	1.1		2	.26	7.6		
Window 2-3	W8		2.4	1.5		3.6	.26	13.8		
Window 2-4	W10		2.3	1.2		2.8	.26	10.6		
Window 2-5	W11		.9	1.2		1.1	.26	4.2		
Window 2-6	W12		2.7	1.2		3.2	.26	13.5		
Window 2-7	D11		2.4	2.1		5	.26	19.4		
Window 2-8	W13		1.8	1.5		2.7	.26	10.4		
Window 2-9	W14		.7	1.2		0.8	.26	3.2		
Window 2-10	W15		2.4	1.5		3.6	.26	13.8		
Wall 3	3	South	20	2.4	48	38	2.31	16.4		C
Window 3-1	D10		1.8	2.1		3.8	.26	14.5		

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Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Window 3-2	W9		.6	.8		0.5	.26	1.8		
Window 3-3	D12		1.4	2.1		2.9	.26	11.3		
Window 3-4	W16		1.6	1.2		1.9	.26	7.4		
Window 3-5	W17		.6	1.5		0.9	.26	3.5		
Wall 4	4	West	28	2.4	67.2	39.2	2.31	17		C
Window 4-1	W4		.8	.8		0.6	.26	2.5		
Window 4-2	W3		2.4	1.5		3.6	.26	13.8		
Window 4-3	D6		3.3	2.1		6.9	.26	26.7		
Window 4-4	W1		3.3	2.1		6.9	.26	26.7		
Window 4-5	D13		3.3	2.1		6.9	.26	26.7		
Window 4-6	W18		2.0	1.5		3	.26	11.5		
Roofs										
Roof 1			432	1	432	432	3.33	129.7		
Total Heat Loss								715.7		

* Any slab floor regardless of its dimensions can be assumed to have an R-value of at least R-1.3 (H1/VM1 and H1/AS1, Replacement Table 1, Note (4)).
** The Shading Coefficient is only required for BPI calculations.
*** C: Cavity Construction (any construction that is not solid), T: Solid Timber, S: Other Solid Construction (Note that the use of solid timber and other solid construction types is discretional, i.e. solid timber walls and other solid walls can be treated as if they are non-solid (NZS4218:2004 section 3.1.4.).)

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Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Floor Construction Details

1 Slab floor

internal surface 0.09

Flooring: none (Example: polished surface of a concrete floor)

R-value: 0

Insulation value of the slabfloor

Slab floor area [m²]:	432		
Perimeter length [m]:	131		
External wall thickness [mm]:	90		
Soil conductivity [W/m °C]:	1.2		
Underslab insulation:	none	Insulation:	
Slab edge insulation:	none	Insulation:	

R-value: 1.63

1.72

m²K/W.

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Wall Construction Details

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1 Veneer wall with timber framing and bulk insulation (vented)

external surface 0.03

Veneer: 70mm brick

R-value: 0.06

15-90mm vented cavity (all R-values on ext. side of cavity will be halved), R: 0.08

Air Barrier: Building paper

R-value: 0.01

Timber Frame & Cavity: 90mm, studs @ 600mm, dwangs @ 800mm

Frame Area: 15.1%

Timber Frame
R-value: 0.75

Cavity Area: 84.9%

Pink®Batts® Ultra R2.8 Wall: 2.8

still Airgap

20-90mm airgap (non-reflective)

R-value: 0.16

Wall Lining: Gypsum plasterboard 10mm

R-value: 0.04

internal surface 0.09

2.31

m²K/W.

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Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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H1 Compliance Details

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Building Performance Index Compliance

The use of the Building Performance Index (BPI) method is **permitted** .

This design **complies** with the BPI.

In order to comply the design must have a BPI smaller or equal to 1.55 kWh/DegMonth.m². Your building has a BPI of 1.53 kWh/DegMonth.m².

Please refer to www.design-navigator.co.nz/BPICorrelation.pdf regarding the recognition of the BPI for NZBC compliance verification. An alternative BPI calculation tool is the BRANZ ALF software.

Compliance with Clause E3

This building **complies with the R-value targets in NZBC Clause E3** .

Component	*Minimum R-value*	*Project R-value*
Framed wall constructions with cavities	1.5	
Single skin masonry wall without a cavity	0.6	
Solid timber wall no less than 60 mm thick	0.6	
Roof or ceilings	1.5	

Roof Construction Details

1 Timber framed roof, flat ceiling

external surface 0.03

Roofing: Metal tiles with building paper

R-value: 0.01

Roof space (still air) 0.11

Insulation

Timber Frame & Cavity

94mm rafters or joists @ 900mm, battens (covered with insulation)

Frame Area: 5%

Trusses and dwangs
R-value: 0.78

Cavity Area: 95%

Pink®Batts® R3.6 Ceiling 3.6

Ceiling Lining: Gypsum plasterboard 10mm

R-value: 0.04

internal surface 0.09

Recessed downlights

Ceiling area [m²]:	Number of downlights:	Clearance from lamp holder side [m]:
432	0	

3.33 **m²K/W.**

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Matrix Table

Proposed Dwelling Humphreys House at Hodgsons Road Loburn

Wall Number east	Risk Severity				Risk Factor	
Risk Factor	Low	Med	High	V High	Subtotals	
Wind Zone			1		1	
Number of Storey	0				0	
Roof/Wall Junctions	0				0	
Eave Width		1			1	
Envelope Complexity	0				0	
Decks	0				0	2

Wall Number south	Risk Severity				Risk Factor	
Risk Factor	Low	Med	High	V High	Subtotals	
Wind Zone			1		1	
Number of Storey	0				0	
Roof/Wall Junctions	0				0	
Eave Width		1			1	
Envelope Complexity	0				0	
Decks	0				0	2

Wall Number west	Risk Severity				Risk Factor	
Risk Factor	Low	Med	High	V High	Subtotals	
Wind Zone			1		1	
Number of Storey	0				0	
Roof/Wall Junctions	0				0	
Eave Width		1			1	
Envelope Complexity	0				0	
Decks	0				0	2

Wall Number north	Risk Severity				Risk Factor	
Risk Factor N/A	Low	Med	High	V High	Subtotals	
Wind Zone			1		1	
Number of Storey	0				0	
Roof/Wall Junctions	0				0	
Eave Width		1			0	
Envelope Complexity	0				0	
Decks	0				0	2

Total Risk Factor 8

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Signed..... B/7/11

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IPENZ ENGINEERS NEW ZEALAND | NEW ZEALAND INSTITUTE OF ARCHITECTS | ACENZ

Building Code Clause(s) B.1

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on the reverse side)*

ISSUED BY: BLS CONSULTING LIMITED
(Design Firm)

TO: MR & MRS HUMPHREYS
(Owner/Developer)

TO BE SUPPLIED TO: WAIMAKARIRI DISTRICT COUNCIL
(Building Consent Authority)

IN RESPECT OF: STEEL ROOF BEAM (310UB40) & SUPPORT
(Description of Building Work)

AT: 167 HODGSONS ROAD
(Address)

LOBURN LOT ..... DP ..... SO .....

We have been engaged by the owner/developer referred to above to provide ENGINEERING DESIGN services in respect of the requirements of
(Extent of Engagement)

Clause(s) B.1 of the Building Code for

○ All or ☑ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☑ Compliance Documents issued by Department of Building & Housing B.1 / VM.1
(verification method / acceptable solution) or

☐ Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled HUMPHREYS HOUSE 167 HODGSONS ROAD, LOBURN and numbered 3 (PLAN); & 12 (BEAM FIXING DETAILS) together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions .....

(ii) All proprietary products meeting their performance specification requirements;

I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

I, BRIAN LLOYD SPENCE am: ☑ CPEng 36224 #
(Name of Design Professional)

☐ Reg Arch ..... #

I am a Member of : ☑ IPENZ ☐ NZIA and hold the following qualifications: BE(HONS)CIVIL, BSc, Int. PE.

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.
The Design Firm is a member of ACENZ ☑ YES ○ NO

SIGNED BY BRIAN SPENCE ON BEHALF OF BLS CONSULTING LTD
(Design Firm)

Date 25/04/2011 *(signature)* .....

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000.*

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

CONSULTING LIMITED
Civil & Structural
Engineer

200 Heywards Rd., Kaiapoi R.D.2.
P.O. Box 3268 Christchurch.

Ph (03) 327 8062
Fax (03) 327 8021

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CALCULATIONS

Following calculations were prepared by the designer for the sole purpose of establishing compliance with NZBC, Clause B.1 Structure.

These calculations should not be interpreted nor reviewed without reference to the designer.

B. L. SPENCE
CONSULTING ENGINEER

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed..... 13/7/11

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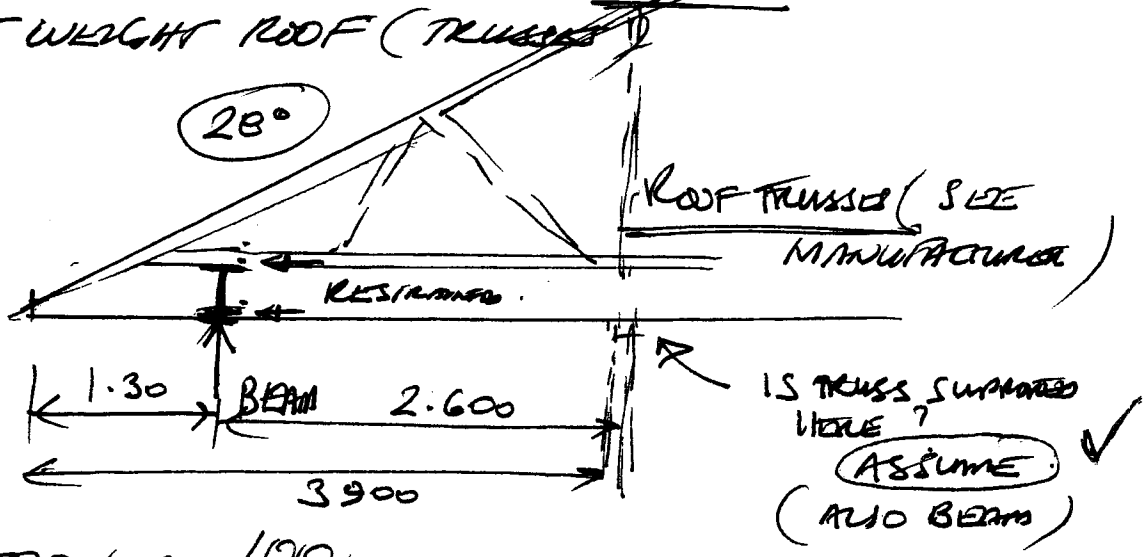
APRIL 11 — ENGINEERING CALCULATIONS — 2351/01

167 HODGSONS ROAD, LOBURN.

ROOF EDGE SUPPORT BEAM, BEYOND DINING.
(REFER MARK MILNES PLAN & SECTION DETAILS)

DESIGN BASED ON NZS 1170:02 (LOADINGS) & NZS 3404:97 (STEEL)

BEAM SPANS 10·20 + 0·10 = 10·30m & SUPPORTS LIGHT WEIGHT ROOF (TRUSSES)



ELEVATION ≈ 100m.

BEAM LOADINGS: (DEFLECTION CRITERIA SHOULD GOVERN)

DEAD LOADS: ROOF TRUSSES SAY 0·5 kPa (Conservative)

∴ $W_G = 0.5 \times (1.3 + 2.6/2) + 0.4_{\text{steel}} = 1.7$ kN/m

($W_{1.2G}$ = 2.04 kN/m)

SNUM: S_s, S_g = 0·9 kPa SUBALPINE, N4.

$\mu = 0.45$

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$\Rightarrow S = 0.45 \times 0.9 = 0.41$ kPa

∴ $W_{Su} = 2.6 \times 0.41 = 1.1$ kN/m

& $W_{1.2G+Su} = 3.14$ kN/m (ULS)

... 02

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2351/02

SERVICEABILITY: (S_s)

PROBABILITY = 1/25 $K_p = 0.84$ $S_g = 0.84 \times 1.2 \left(3 \times 100/1000 + 0.3 \right)$

$= \underline{0.60 \text{ kPa}}$.

$\therefore S_s = C_{e,s} \mu_i \times S_g$

$= 1.0 \times 0.45 \times 0.6$

$= 0.27$ SAY $\underline{0.3 \text{ kPa}}$ ($? Q_s$)

$\therefore W_{Ss} = 2.6 \times 0.3 = 0.8 \text{ kN/m}$

$\therefore \sum W_{G+Ss} = \underline{2.5 \text{ kN/m}}$. (SLS)

CHECK DEFLECTIONS: $\delta = \frac{5}{384} \frac{wL^3}{EI}$

my 310UB40. $I_x = 85.2 \times 10^6 \text{ mm}^4$

$= \frac{5}{384} \times \frac{(2.5 \times 10^{-3}) \times 10^3 \times (10^{-3})^3 \times 10^6}{\times 2 \times 10^5 \times 85.2 \times 10^{-6}}$

$= \underline{21.5 \text{ mm}}$ *

OK $10300/21.5 \Rightarrow$ span/480 ✓OK

U.L.S.: BEAM RESTRAINED.

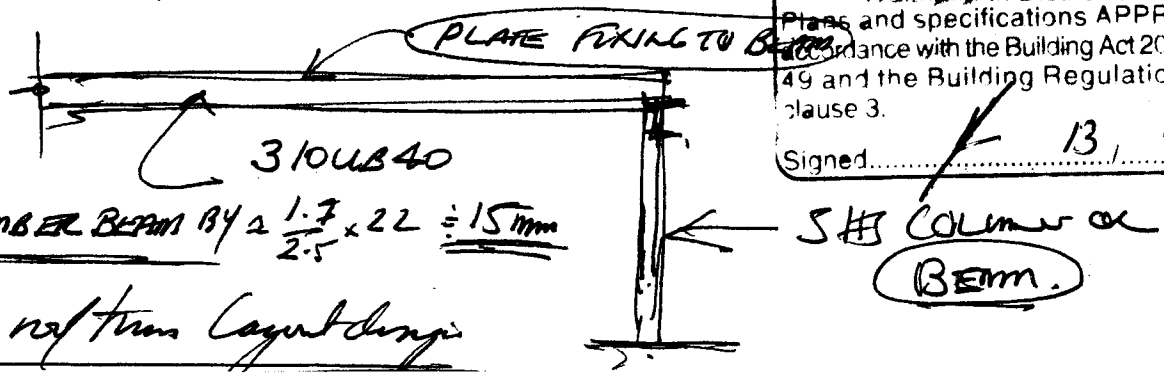
$M^* = wL^2/8 = 3.14 \times 10.3^2/8$

$= \underline{41.6 \text{ kNm}}$

$\phi M_{sx} = 174 \text{ kNm} >> 41.6$ OK

$R^*_{A,B} = 3.14 \times 10.3/2 = 16.2 \text{ kN}$

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* PRECAMBER BEAM BY $\Delta \frac{1.7}{2.5} \times 22 \doteq 15 \text{mm}$

Need not/from Cayuta dwgs

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2351/03

UPLIFT(?) DUE TO WIND LOADINGS

BY AS/NZS 1170.2 : 2002.

$$V_{sit.\beta} = V_R M_d M_{z,cat} . M_s M_t .$$

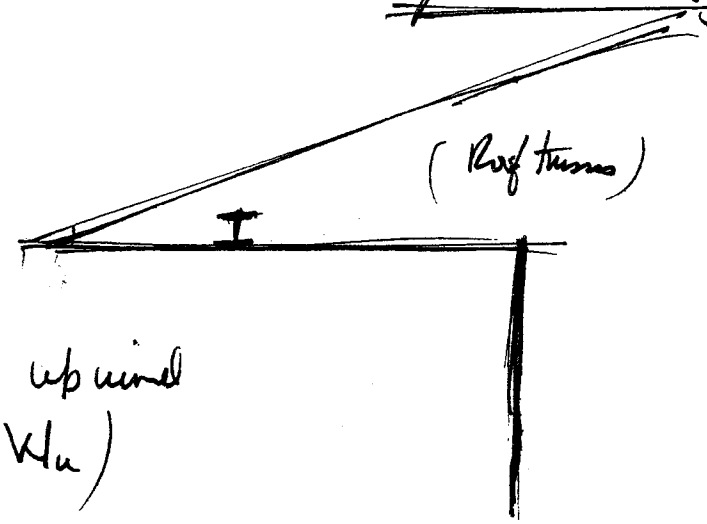
ULS ONLY RELEVANT
UNIDIRECTIONAL $M_d = 1.0$
TERRAIN CAT 2 $\Rightarrow M_{z,cat} = 0.91$
$M_s = M_t = 1.0$

REGION A7
$V_R = 45$ m/sec (1/500)

$\therefore V_{sit\beta} = 45 \times 1.0 \times 0.91 \times 1.0$
$= \underline{41 \text{ m/sec}}$

$\Rightarrow p = 1.0\, C_{fig} \times C_{dyn}$ 2.4(1)
$C_{dyn} = 1.0$

$\underline{p = 1.0\, C_{fig}}$



$h/d = 3.5/11.5$
$= 0.3$ (SAY 0.25)

$b/d =$ large $/11.5$

Downwind (⇐ Wu) $= 60/11.5$
$= \underline{5.0}$

$\therefore$ BASED ON ROOF SLOPES,

UPWIND (U) $C_{pe} = -0.2$, $\underline{-0.4}$ ↓

DOWN WIND (D) $C_{pe} = -0.06(\alpha + 5)$
$= \underline{-0.72}$ ↑

AREA $A = 2.6 \times 10.2 = 26.5\,m^2$ (Beam area)

$K_a = 0.9$

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2351/04

$C_{pi} = 0$, $\Rightarrow$ $C_{fij} = C_{pe} \times k_a \times \underline{k_l k_p}$ (1.0)

$P_{upward} = 1.0 \times 0.4 \times 0.9$ kPa ↓

$= \underline{0.36 \text{ kPa} \downarrow}$ (ULS)

(Note $W_s \doteq 2/3\, W_u$, $\Rightarrow$ LESS THAN SLS)

$P_{downward} = 1.0 \times -0.72 \times 0.9$ ↑

$= \underline{0.65 \text{ kPa} \uparrow}$ (GOVERNS)

$\therefore W_{u\uparrow} = 2.6 \times 0.65 = \underline{1.7 \text{ kN/m} \uparrow}$

$0.9G = 0.9 \times 1.7 = \underline{1.53 \text{ kN/m} \downarrow}$

$\Delta_{0.9G+W_u} = \underline{0.17 \text{ kN/m} \uparrow}$ (ULS)

NOTE: VERY SMALL UPLIFT LIKELY AND WILL PROBABLY BE ABLE TO BE CARRIED BACK BY TRUSSES TO MAIN (CENTRAL) SUPPORT

CONCLUSION, WIND LOADING ON CANTILEVERED SECTION, NOT LIKELY TO BE SIGNIFICANT & WILL NOT GOVERN DESIGN.

$\therefore$ USE 310UB40 BEAM.

PRECAMBER SAY 15-20

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

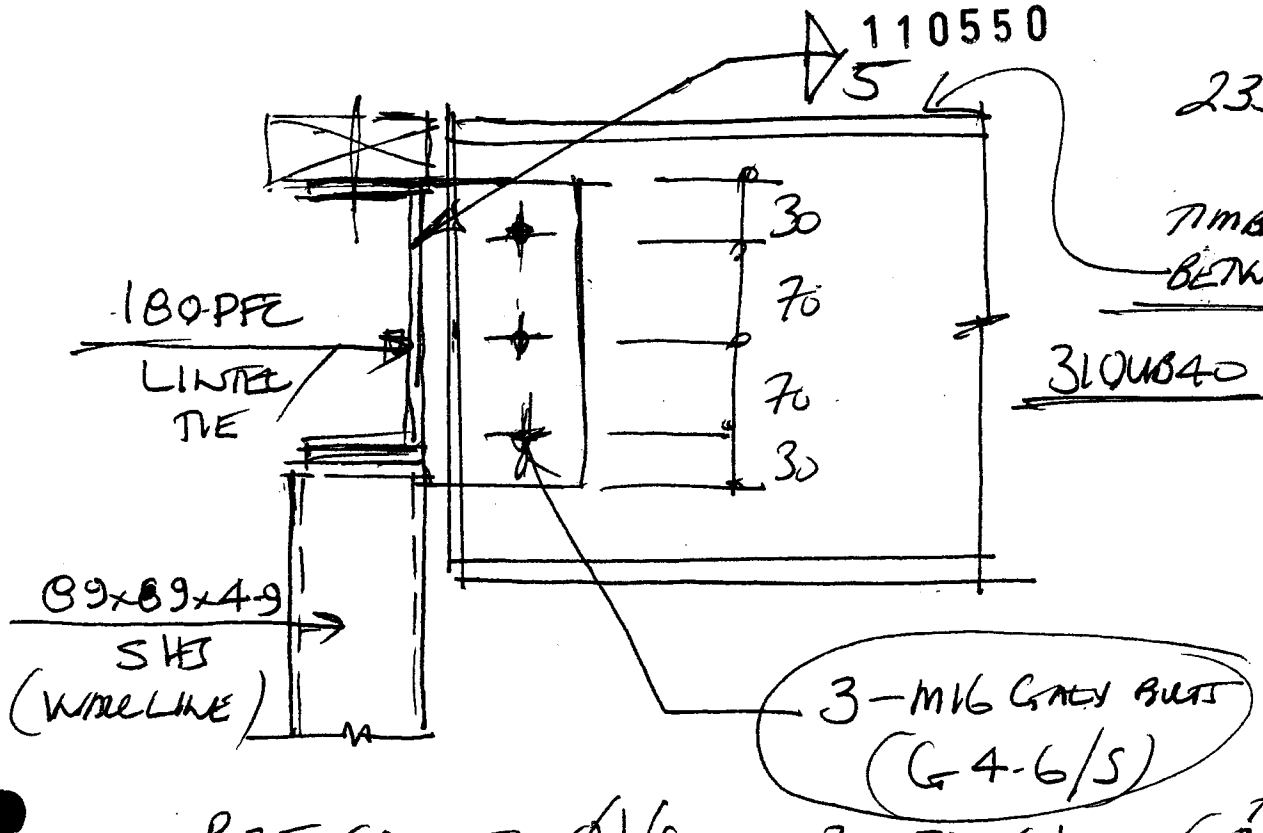
END SUPPORT:

$W^*_{1.2G+S_u} = 3.14$ kN/m

$\Rightarrow R_A^*, R_B^* = \underline{16.2 \text{ kN}}$

89×89×4.9 SHS Column G350,

(NB 76×76×4.0 would suffice) $\phi N_c = \underline{342 \text{ kN}}$ (>> 16.2)



2351/05

BOLT CAPACITY, ϕV_{fn} = 3 x 28.6 kN (THREADS IN SHEAR PLY)

= 85.8 kN >> 16.2 ✓

⇒ 2-M16 BOLTS WOULD SUFFICE.

NOTE: ROOF TRUSS LAYOUT DESIGN BY PRYDA (MCALPINE) CONFIRMS TRUSS LAYOUT ASSUMPTIONS USED IN THIS DESIGN

BRIAN L. SPENCE

CPEng 36224, Int PE.

CONSULTING ENGINEER: (APRIL 2011)

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
Signed 13/7/11

Southbrook Rd RANGIORA Ph (03) 313-8339 Fax 313-3767

PRODUCER STATEMENT

110550

Job Ref: M4965

TRUSS DESIGN CRITERIA

Customer name : HUMPHREYS RESIDENCE

Site address : 149 HODGSONS RD - LOBURN

DESIGN CRITERIA

Roofing	Metal Tile
Ceiling	Gib Board (13mm)
Top chord battens	380 mm
Bottom chord restraints	600 mm
Standard truss spacing	900 mm
Standard roof pitch	28.00 deg
Design wind speed	45 m/s (ultimate)
Region	W
Terrain category	3.0
Max.eaves height	3 m
Max.ridge height	12 m
Shielding Classification	Full
Topographic Classification	T3
Internal pressure coefficient up	0.3
Snow Load (U.L.S.)	567 Pa

The truss designs for this job have been determined using computer software provided by the Technical Division within Pryda Truss Systems. These designs are in accordance with sound and widely accepted engineering principles and comply with the following New Zealand Standards:-

AS/NZS1170.1:2002 Loading Code Part 1: Dead and live loads and
AS/NZS1170.2:2002 Loading Code Part 2: Wind loads
NZ3603 : 1993 Timber Design
AS1649 : 1974 Determination of Basic Working Loads for Metal Fasteners for Timber

All trusses shall be manufactured in accordance with the fabrication specifications provided by Pryda, and installed, connected and braced in accordance with the recommendations given in - :
AS4440:2004 "Installation of nailplated timber roof trusses"
and any other supplementary details that may be provided.

Name : Warren McMillan Position: Branch Manager

Signed : Date : 21 June 2011

Waimakariri District Council
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pryda

To Whom it may Concern. 04 February 2009

SNOW LOADING IN REGION N4 (CANTERBURY)

Since 1st December 2008, the code NZS1170:2002, **Structural Design Actions**, took effect. Amendment 7 to the compliance document **B1 Structure** changes the snow loading in regions N4 & N5 to a minimum ground snow load, sg of 900Pa for both regions. Snow loading is dealt with in Part 3 of NZS1170:2002 and clause 4.2.1 states that:

$S := s_g \cdot C_s \cdot \mu_1$

Where s_g = characteristic ground snow value
C_s = Exposure reduction coefficient taken as 1.0 (conservative).

$\mu_1 := 0.7 \cdot \frac{60 - \alpha}{50}$ roof shape coefficient which ranges from 0.7 for 10° or less to zero for 60°.

Note that both factors reduce the ground snow value. Once the end of the plateau of 900Pa has been 400m for N5 region, the snow loading increases by following formula from clause 5.4.3 :

$s_g := k_p \cdot 1.2 \cdot \left(3 \cdot \frac{h_0}{1000} - 0.3 \right)$

This with the minimum 900Pa gives rise to the following table showing roof design loads for variable roof pitch and altitude.

Altitude m	Ground Snow load (N)	Design Snow loads (NZS1170:2002) - N (Newtons)					
		Roof Pitch					
		<10°	15°	20°	25°	30°	35°
50	900	675	473	425	378	331	284
100	900	900	630	567	504	441	378
150	1125	1125	788	709	630	551	473
200	1350	1350	945	851	756	662	567
250	1575	1575	1103	992	882	772	662
300	1800	1800	1260	1134	1008	882	756
350	2025	2025	1418	1276	1134	992	851
400	2250	2250	1575	1418	1260	1103	945

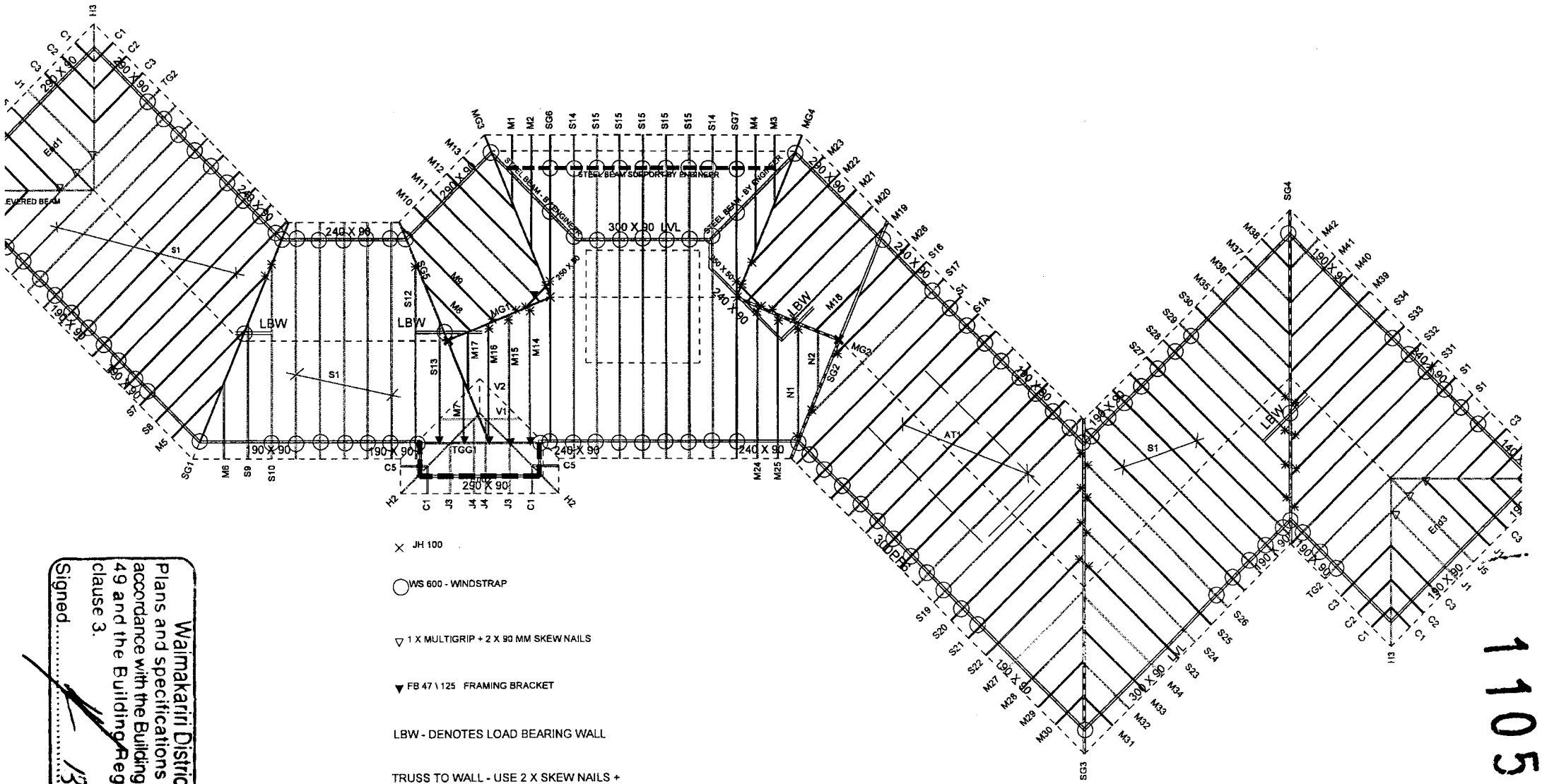
In all cases the roof design roof is less than the sg, characteristic ground snow value is somewhat greater than the design snow load, e.g. at altitude 100m, and for a 30° pitch the characteristic ground snow value reduces to 441Pa. Steeper roofs attract less snow and in the above table, C_s is taken as 1.0 for a non-wind swept roof. A totally exposed roof would be 0.6. All of the above is taken into account in the current Pryda software and will in the near future report both the characteristic ground snow value as well as the design snow loads.

The above technical note is to bridge any misunderstandings arising from the lower design value in terms of NZS1170:2002.

André van Blerk
BSc (Eng) MIPENZ (214689) CPEng IntPE

Pryda NZ (a division of ITW New Zealand)
Engineering Department

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Signed..... 13/7/11



× JH 100

◯ WS 600 - WINDSTRAP

▽ 1 X MULTIGRIP + 2 X 90 MM SKEW NAILS

▼ FB 47 \ 125 FRAMING BRACKET

LBW - DENOTES LOAD BEARING WALL

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:: Flitch Beams

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Design Certification

Pryda Flitch Beams

The design tables and manufacturing details contained in this manual have been prepared in accordance with sound and widely accepted engineering principles and comply with the relevant requirements of NZS 3603:1993 Timber Structures Standard and amendment 4.

Certified for and on behalf of **Pryda New Zealand.**

A division of **ITW New Zealand Limited.**

André van Blerk B.Sc (Eng) MIPENZ

Introduction

Pryda Flitch Beams comprise 2 engineered timber beams made of commonly available timber sizes which sandwich a 6mm or 10mm steel flat. The 3 layers are joined together using Reid powder actuated drive pins to make up a beam capable of longer spans than the equivalent sized timber beam. Pryda Flitch Beams are suitable for beams and lintels as they do not require the specialized packing and fixing systems associated with the use of steel beams.

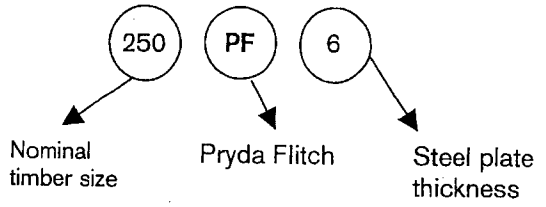
Pryda Flitch Beams of sizes up to 300mm x 100mm and lengths up to 6m can be readily fabricated from stock timber.

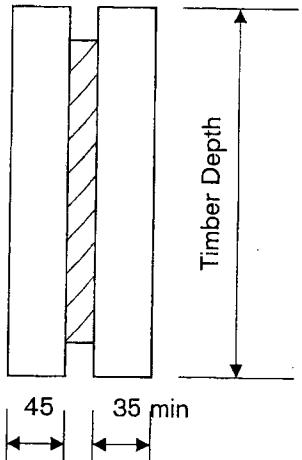
Pryda Flitch Beams are composite beams. It is relatively easy to introduce a camber during fabrication to overcome any problem with beam deflections. This often leads to the use of a smaller size than the required solid timber section.

Pryda Flitch Beams can be adapted to suit any span or continuous beam application as the product is custom made using ex stock steel plates and standard timber sizes.

Sizes and Product Codes

EXAMPLE: A **250PF6** beam is as follows:





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Design Criteria & Definitions

Flitch Beam	Timber Depth	Steel flat bar	Drive pins One side fixings	Drive pins Both sides fixings
150PF6	140	130x6	DP890	DP875
200PF6	190	180x6	DP890	DP875
200PF10	190	180x10	DP890	DP875
250PF6	240	230x6	DP890	DP875
250PF10	240	230x10	DP890	DP875
300PF6	290	280x6	DP890	DP875
300PF10	290	280x10	DP890	DP875

pryda

:: Flitch Beams

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Scope of this Brochure

The tables and other design information contained in this brochure specifically apply to Pryda Flitch Beams used as lintels or beams to support roof, ceiling and floor loads from light timber structures in domestic/residential construction. The tabulated sizes are 100mm nominal width, fabricated from 2 ex 50mm nominally wide gauged timber. The one lamination is reduced in width to accommodate the steel flitch plate.

The compression edge (usually the top edge) of each lintel must be fully restrained against sideways movement (lateral instability). It is assumed that the beam will be restrained at 900mm for heavy and 1200mm minimum centres for light roofs. Floor joists are restrained in accordance with NZS3604:1999.

The design tables do not apply to the following situations and specialist advice should be sought from the Design Department of Pryda:

1. Ridge beams in high wind areas, unless the bottom edge is continuously braced by rafters, ceiling linings etc.
2. Beams in situations other than closed as defined in NZS3604:1999 or used in a damp/corrosive environment.
3. Continuous spans.
4. Beams of nominal width other than 100mm.

Pryda Flitch Beams are designed and intended to be used at their original, fabricated length. Notching or birdsmouthing are not permitted.

Design Criteria & Definitions

Lintel Span: The clear opening distance between lintel supports measured parallel to the lintel.

Light Roof: Self weight of entire roof structure (roofing, purlins, sarking, trusses, battens and ceiling) not greater than 40kg/sq.m. Usually profiled metal roof with 9.5mm plaster board ceiling.

Heavy Roof: Self weight of entire roof structure not greater than 90kg/m2. Usually concrete tile roof with 9.5mm plaster board ceiling.

Domestic Floors: Self weight of floor structure not greater than 40kg/m2. Usually particle board flooring with 9.5mm plaster board ceiling. The live load allowance is 1.5 kPa and 1.8 kN.

Wind loads: Wind loads are given as Low, Medium, High and Very High as per NZS3604. Wind speeds are as follows:

Low - 30 m/sec

Medium - 37 m/sec

High - 44 m/sec

Very High- 50 m/sec

Snow loads: The tables allow for up to 0.5kPa snow load. For higher snow loads UP TO 1.0 kPa, apply the factors below to the roof span to obtain a heavier beam section:

Light roof = 1.65 x roof span

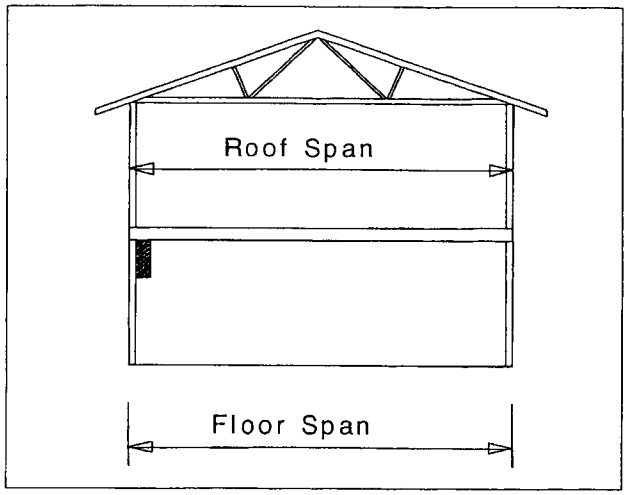
Heavy roof = 1.37 x roof span

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Roof / Wall / Floor Loads

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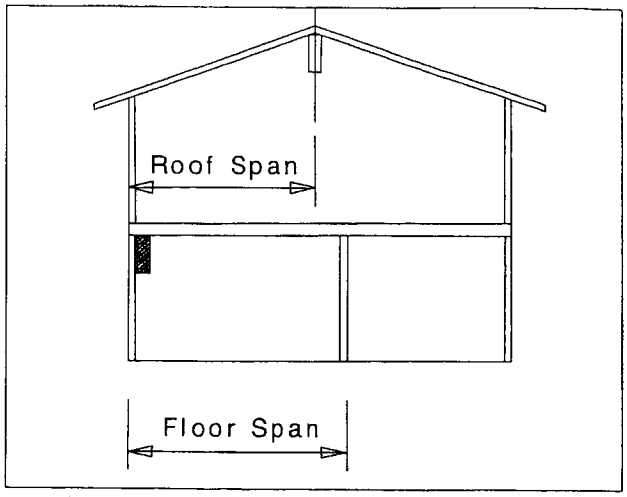
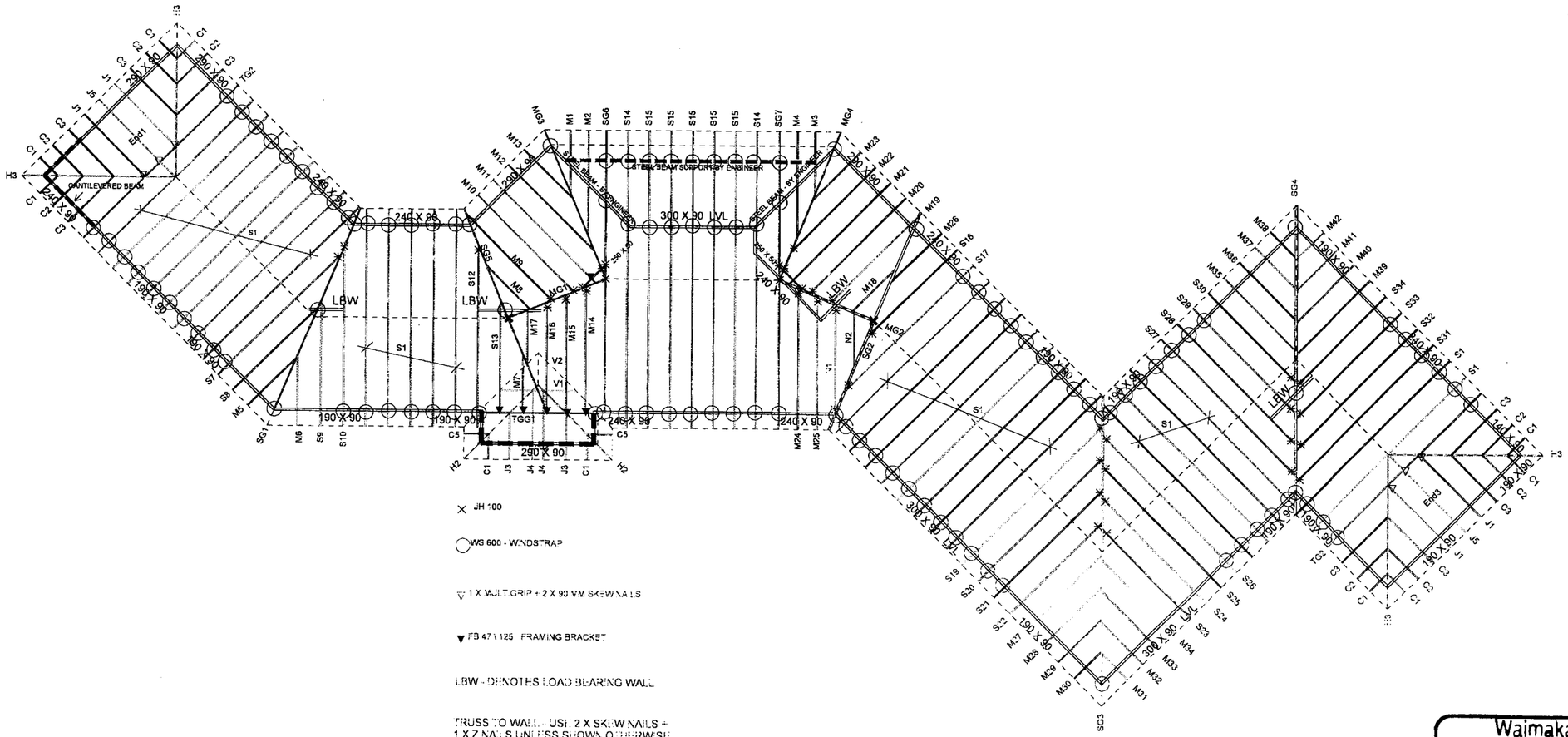


Table 7	LINTEL SIZE supporting FLOOR, 2.4 WALL & LIGHT ROOF									
Lintel Type	Roof Span	MAXIMUM LINTEL SPAN Floor Span								
		4	5	6	7	8	9	10	11	12
150PF6	2	2.49	2.32	2.19	2.07	1.98	1.89	1.82	1.75	1.69
	4	2.29	2.16	2.05	1.95	1.87	1.80	1.73	1.68	1.62
	6	2.13	2.02	1.93	1.85	1.78	1.72	1.66	1.61	1.56
	8	2.00	1.91	1.84	1.77	1.70	1.65	1.60	1.55	1.51
	10	1.89	1.82	1.75	1.69	1.64	1.59	1.54	1.50	1.46
	12	1.80	1.74	1.68	1.62	1.58	1.53	1.49	1.45	1.42
200PF6	2	3.97	3.70	3.48	3.30	3.14	3.00	2.88	2.77	2.68
	4	3.70	3.48	3.30	3.14	3.00	2.88	2.77	2.68	2.59
	6	3.48	3.29	3.14	3.00	2.88	2.77	2.68	2.59	2.51
	8	3.29	3.14	3.00	2.88	2.77	2.68	2.59	2.51	2.44
	10	3.13	3.00	2.88	2.77	2.67	2.59	2.51	2.44	2.37
	12	3.00	2.88	2.77	2.67	2.59	2.51	2.44	2.37	2.31
200PF10	2	4.83	4.51	4.25	4.02	3.83	3.66	3.52	3.39	3.27
	4	4.51	4.24	4.02	3.83	3.66	3.52	3.39	3.27	3.16
	6	4.24	4.02	3.83	3.66	3.52	3.39	3.27	3.16	3.07
	8	4.02	3.83	3.66	3.51	3.38	3.27	3.16	3.07	2.98
	10	3.82	3.66	3.51	3.38	3.27	3.16	3.07	2.98	2.90
	12	3.66	3.51	3.38	3.27	3.16	3.07	2.98	2.90	2.82
250PF6	2	4.64	4.36	4.13	3.94	3.77	3.61	3.48	3.36	3.25
	4	4.49	4.24	4.03	3.85	3.69	3.55	3.42	3.30	3.20
	6	4.36	4.13	3.94	3.76	3.61	3.48	3.36	3.25	3.15
	8	4.24	4.03	3.85	3.69	3.54	3.42	3.30	3.20	3.11
	10	4.13	3.93	3.76	3.61	3.48	3.36	3.25	3.15	3.06
	12	4.03	3.84	3.68	3.54	3.42	3.30	3.20	3.11	3.02
250PF10	2	5.92	5.73	5.39	5.11	4.87	4.66	4.47	4.31	4.16
	4	5.49	5.39	5.11	4.87	4.66	4.47	4.31	4.16	4.03
	6	5.18	5.11	4.87	4.66	4.47	4.31	4.16	4.03	3.90
	8	4.95	4.86	4.65	4.47	4.30	4.16	4.02	3.90	3.79
	10	4.75	4.65	4.47	4.30	4.16	4.02	3.90	3.79	3.69
	12	4.59	4.47	4.30	4.15	4.02	3.90	3.79	3.69	3.59
300PF6	2	5.63	5.30	5.02	4.78	4.57	4.39	4.23	4.08	3.95
	4	5.45	5.15	4.89	4.67	4.48	4.31	4.15	4.02	3.89
	6	5.29	5.02	4.78	4.57	4.39	4.23	4.08	3.95	3.83
	8	5.15	4.89	4.67	4.48	4.31	4.15	4.02	3.89	3.78
	10	5.01	4.78	4.57	4.39	4.23	4.08	3.95	3.83	3.72
	12	4.89	4.67	4.48	4.30	4.15	4.01	3.89	3.77	3.67
300PF10	2	6.79	6.79	6.53	6.19	5.90	5.65	5.43	5.23	5.05
	4	6.30	6.30	6.19	5.90	5.65	5.42	5.22	5.05	4.89
	6	5.95	5.95	5.90	5.64	5.42	5.22	5.04	4.88	4.74
	8	5.68	5.68	5.64	5.42	5.22	5.04	4.88	4.74	4.60
	10	5.46	5.46	5.42	5.22	5.04	4.88	4.73	4.60	4.48
	12	5.28	5.28	5.22	5.04	4.88	4.73	4.60	4.48	4.36

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× JH 100

◯ WS 600 - WINDSTRAP

▽ 1 X MULTIGRIP + 2 X 90 MM SKEW NAILS

▼ FB 47 \ 125 FRAMING BRACKET

LBW = DENOTES LOAD BEARING WALL

TRUSS TO WALL - USE 2 X SKEW NAILS + 1 X Z NAILS UNLESS SHOWN OTHERWISE

Medium wind zone => SN25 Top Plate Fixing

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Level 1

pryda roof

Customer : HUMPHREYS RESIDENCE
Site Address: 149 HODGSONS RD - LOBURN
:

Roofing: Metal Tile
Pitch : 30.00 deg
Spacing: 900 mm
Design Wind Velocity: 45.00 m/s (Ult.)

Job Ref: M4965L
Scale 1:200
Size: A3
Page 1 of 1

110550

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB

GIB® Wall Bracing Calculation Sheet A — single storey — V01/09

Job Details

Name	Humphreys ONE
Street and Number	Hodgsons Road
Lot and DP Number	Lot 2 dp431621
City/Town/District	Loburn
Designer	Mark Milnes
Company Name	Mark Milnes Architectural Design ltd
Date	

BRANZ Appraised
Appraisal No.294 [2009]

Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		heavy	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		28	15
Roof height above eaves (m)		2.6	1.0
Building height to apex (m)		5.0	
Ground to lower floor level (m)		0.2	
			3.0
Stud Height (m)		2.4	2.4
Building Length (m)		14.2	10.0
Building Width (m)		8.8	10.0
Building Plan Area (m2)		90	200

Building Location

Wind Zone	***High***	**Earthquake Zone**
Region	Preference selected	A
Terrain	Preference selected	
Exposure	Preference selected	*Consult GIB® EzyBrace™ Systems, 2009*
Topography	Preference selected	*for Wind Zone definitions*
Select by Building Consent Authority Map		
or Preference	High	

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	668
across	slab	1051

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single
slab		491

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Humphreys

Mark Milnes

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Along

V01/09

Along

Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
A	167	1	1.8		2.4	EP1	Ecoply	234	234
	OK								
line totals									
W	234								
EQ	234								
B	167	1	2.6		2.4	GS2(10)	GIB®	234	208
	OK								
line totals									
W	234								
EQ	208								
C	167	1	1.2		2.4	EP1	Ecoply	156	156
	OK	2	1.2		2.4	EP1	Ecoply	156	156
line totals									
W	312								
EQ	312								
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									

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						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	117%	EQ	153%	780	754
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						668	491

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Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Along

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Ecoply	EP1	0.6	130	130
Ecoply	EPG	0.4	120	125
Ecoply	EPG	1.2	150	150
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

BRANZ Appraised
Appraisal No.294 [2009]

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Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	167	BU

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Humphreys | Mark Milnes

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Across — V01/09

Across

Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
M	197	1	1.2		2.4	EPG	Custom	180	180
	not enough								
line totals									
W	180								
EQ	180								
N	197	1	2		2.4	GS2(10)	GIB®	180	160
	not enough								
line totals									
W	180								
EQ	160								
O	197	1	3.5		2.4	GS2(10)	GIB®	315	280
	OK								
line totals									
W	315								
EQ	280								
P	197	1	1		2.4	EPG	Ecoply	120	125
	OK	2	1		2.4	EPG	Ecoply	120	125
line totals		3	1.2		2.4	BLG	GIB®	180	162
W	420								
EQ	412								
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									

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						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	104%	EQ	210%	1095	1032
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						1051	491

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Signed..... 13/7/11

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Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Across

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Ecoply	EP1	0.6	130	130
Ecoply	EP2	0.6	145	150
Ecoply	EPG	0.4	120	125
Custom	EPG	1.2	150	150
Custom				
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

BRANZ Appraised
Appraisal No.294 [2009]

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Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	197	BU

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GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet A — single storey — V01/09

Job Details

Name	Humphreys TWO
Street and Number	Hodgsons Road
Lot and DP Number	Lot 2 dp431621
City/Town/District	Loburn
Designer	Mark Milnes
Company Name	Mark Milnes Architectural Design ltd
Date	

BRANZ Appraised
Appraisal No.294 [2009]

Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		heavy	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		28	15
Roof height above eaves (m)		3.4	1.0
Building height to apex (m)		5.8	
Ground to lower floor level (m)		0.2	
			3.0
Stud Height (m)		2.4	2.4
Building Length (m)		29.6	10.0
Building Width (m)		13.3	10.0
Building Plan Area (m2)		212.7	200

Building Location

Wind Zone	***High***
Region	Preference selected
Terrain	Preference selected
Exposure	Preference selected
Topography	Preference selected
Select by Building Consent Authority Map or Preference	High

Earthquake Zone: A

Consult GIB® EzyBrace™ Systems, 2009 for Wind Zone definitions

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	1130
across	slab	2926

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single
	slab	1161

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GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Along — V01/09

Along

Bracing Line		Bracing Elements provided						Wind	Earthq.
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
A	290	1	1.2	45	2.4	EP1	Ecoply	110	110
	OK	2	1.2	45	2.4	EP1	Ecoply	110	110
line totals		3	1.2	45	2.4	EP1	Ecoply	110	110
W	441	4	1.2	45	2.4	EP1	Ecoply	110	110
EQ	441								
B	290	1	0.9		2.4	EP1	Ecoply	117	117
	not enough								
line totals									
W	117								
EQ	117								
C	290	1	3.2		2.4	GS2(10)	GIB®	288	256
	not enough								
line totals									
W	288								
EQ	256								
D	290	1	1.2			EP1	Ecoply	156	156
	OK	2	1.2			EP1	Ecoply	156	156
line totals		3	1.2			EP1	Ecoply	156	156
W	585	4	0.9			EP1	Ecoply	117	117
EQ	585								
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									

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Totals Achieved	Achieved/Demand	W	127%	EQ	121%	Wind 1431	Earthq. 1399
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						1130	1161

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Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Along

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Ecoply	EP1	0.6	130	130
Ecoply	EPG	0.4	120	125
Ecoply	EPG	1.2	150	150
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

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Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	218	BU

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GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Across — V01/09

Across

Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
M	313	1	1.2	45	2.4	EPG	Custom	127	127
	not enough								
line totals									
W	127								
EQ	127								
N	313	1	0.9		2.4	BLG	GIB®	133	122
	OK		2		2.4	BL1(10)	GIB®	278	200
line totals									
W	411								
EQ	322								
O	313	1	3.3		2.4	BL1(10)	GIB®	459	330
	OK								
line totals									
W	459								
EQ	330								
P	313	1	1.8		2.4	BLG	GIB®	270	243
	OK	2	1.8		2.4	BLG	GIB®	270	243
line totals									
W	540								
EQ	486								
Q	313	1	1		2.4	BLG	GIB®	148	135
	OK	2	2.6		2.4	BL1(10)	GIB®	361	260
line totals									
W	510								
EQ	395								
R	313	1	5.2	45	2.4	BL1(10)	GIB®	511	368
	OK								
line totals									
W	511								
EQ	368								
S	313	1	4	45	2.4	BL1(10)	GIB®	393	283
	not enough								
line totals									
W	393								
EQ	283								
line totals									
W									
EQ									

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						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	101%	EQ	199%	2951	2310
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						2926	1161

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Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Across

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Ecoply	EP1	0.6	130	130
Ecoply	EP2	0.6	145	150
Ecoply	EPG	0.4	120	125
Custom	EPG	1.2	150	150
Custom				
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

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Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	313	BU

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GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet A — single storey — V01/09

Job Details

Name	Humphreys THREE
Street and Number	Hodgsons Road
Lot and DP Number	Lot 2 dp431621
City/Town/District	Loburn
Designer	Mark Milnes
Company Name	Mark Milnes Architectural Design ltd
Date	

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Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		heavy	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		28	15
Roof height above eaves (m)		2.6	1.0
Building height to apex (m)		5.0	
Ground to lower floor level (m)		0.2	
			3.0
Stud Height (m)		2.4	2.4
Building Length (m)		20.1	10.0
Building Width (m)		19.9	10.0
Building Plan Area (m2)		233.7	200

Building Location

Wind Zone	***High***	**Earthquake Zone**
Region	Preference selected	A
Terrain	Preference selected	
Exposure	Preference selected	*Consult GIB® EzyBrace™ Systems, 2009*
Topography	Preference selected	*for Wind Zone definitions*
Select by Building Consent Authority Map		
or Preference	High	

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	1410
across	slab	1454

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single
	slab	1275

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GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Across — V01/09

Across

Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
M	197	1	4.1		2.4	BL1(10)	GIB®	570	410
	OK								
line totals									
W	570								
EQ	410								
N	197	1	1.2		2.4	EP1	Ecoply	156	156
	OK	1	1.2		2.4	EP1	Ecoply	156	156
line totals									
W	312								
EQ	312								
O	197	1	5.6		2.4	GS2(10)	GIB®	504	448
	OK								
line totals									
W	504								
EQ	448								
P	197	1	0.6		2.4	EP1	Ecoply	78	78
	OK	2	1.2		2.4	EP1	Ecoply	156	156
line totals									
W	234								
EQ	234								
Q	197	1	4		2.4	GS2(10)	GIB®	360	320
	OK								
line totals									
W	360								
EQ	320								
R	197	1	1.2		2.4	EP1	Ecoply	156	156
	OK	2	1.2		2.4	EP1	Ecoply	156	156
line totals									
W	312								
EQ	312								
line totals									
W									
EQ									
line totals									
W									
EQ									

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						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	158%	EQ	160%	2292	2036
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						1454	1275

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Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Across

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Ecoply	EP1	0.6	130	130
Ecoply	EP2	0.6	145	150
Ecoply	EPG	0.4	120	125
Custom	EPG	1.2	150	150
Custom				
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

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Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	182	BU

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GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Along — V01/09

Along

Bracing Line		Bracing Elements provided						Wind	Earthq.
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
A	211	1	1.2		2.4	EP1	Ecoply	156	156
	OK	2	1.2			EP1	Ecoply	156	156
line totals									
W	312								
EQ	312								
B	211	1	3		2.4	GS2(10)	GIB®	270	240
	OK								
line totals									
W	270								
EQ	240								
C	211	1	2		2.4	GS2(10)	GIB®	180	160
	OK	2	1.2		2.4	EP1	Ecoply	156	156
line totals									
W	336								
EQ	316								
D	211	1	0.6			EP1	Ecoply	78	78
	OK	2	1.2			EP1	Ecoply	156	156
line totals		3	2.6			GS2(10)	GIB®	234	208
W	468								
EQ	442								
E	211	1	0.6		2.4	EP1	Ecoply	78	78
	OK	2	1.2		2.4	EP1	Ecoply	156	156
line totals		3	1.2		2.4	EP1	Ecoply	156	156
W	390								
EQ	390								
line totals									
W									
EQ									
line totals									
W									
EQ									
line totals									
W									
EQ									

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						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	126%	EQ	133%	1776	1700
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						1410	1275

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Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Along

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Ecoply	EP1	0.6	130	130
Ecoply	EPG	0.4	120	125
Ecoply	EPG	1.2	150	150
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

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Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

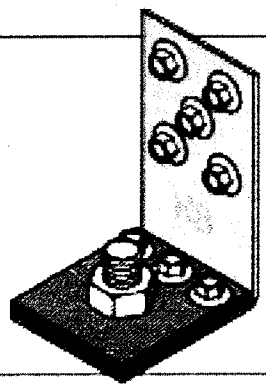
Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	211	BU

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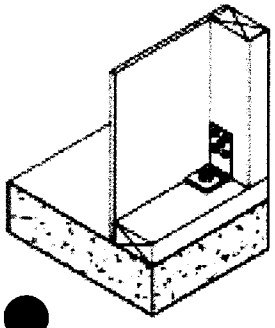
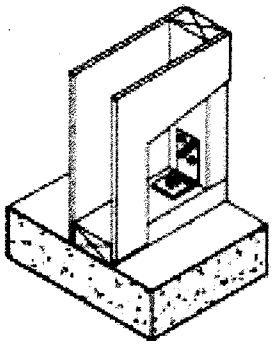
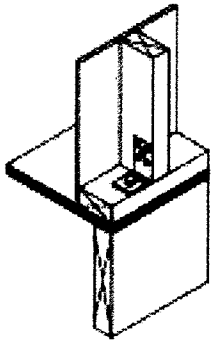
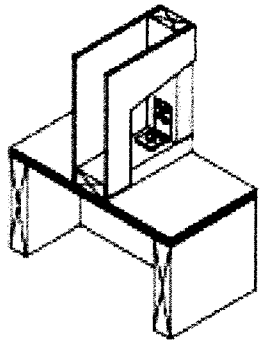
Panel Hold-down Details

GIB Handibrac® – RECOMMENDED METHOD



Developed in conjunction with MiTek™ NZ, the GIB HandiBrac® has been designed and tested for use as a hold-down in GIB® BL and UP bracing elements

- The GIB HandiBrac® registered design provides for quick and easy installation
- The GIB HandiBrac® provides a flush surface for the wall linings because it is fitted outside the framing. There is no need to check in the framing as recommended with conventional straps
- The GIB HandiBrac® is suitable for both new and retrofit construction
- The design also allows for installation and inspection at any stage prior to fitting internal linings

Concrete Floor		Timber Floor	
External walls	**Internal walls**	**External walls**	**Internal walls**
			
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate	Position GIB HandiBrac® at the stud / plate junction	Position GIB HandiBrac® in the centre of the perimeter joist or bearer	Position GIB HandiBrac® in the centre of floor joist or full depth solid block
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN		12x150mm galvanised coach screw	

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Ceiling Diaphragms – Steel Battens

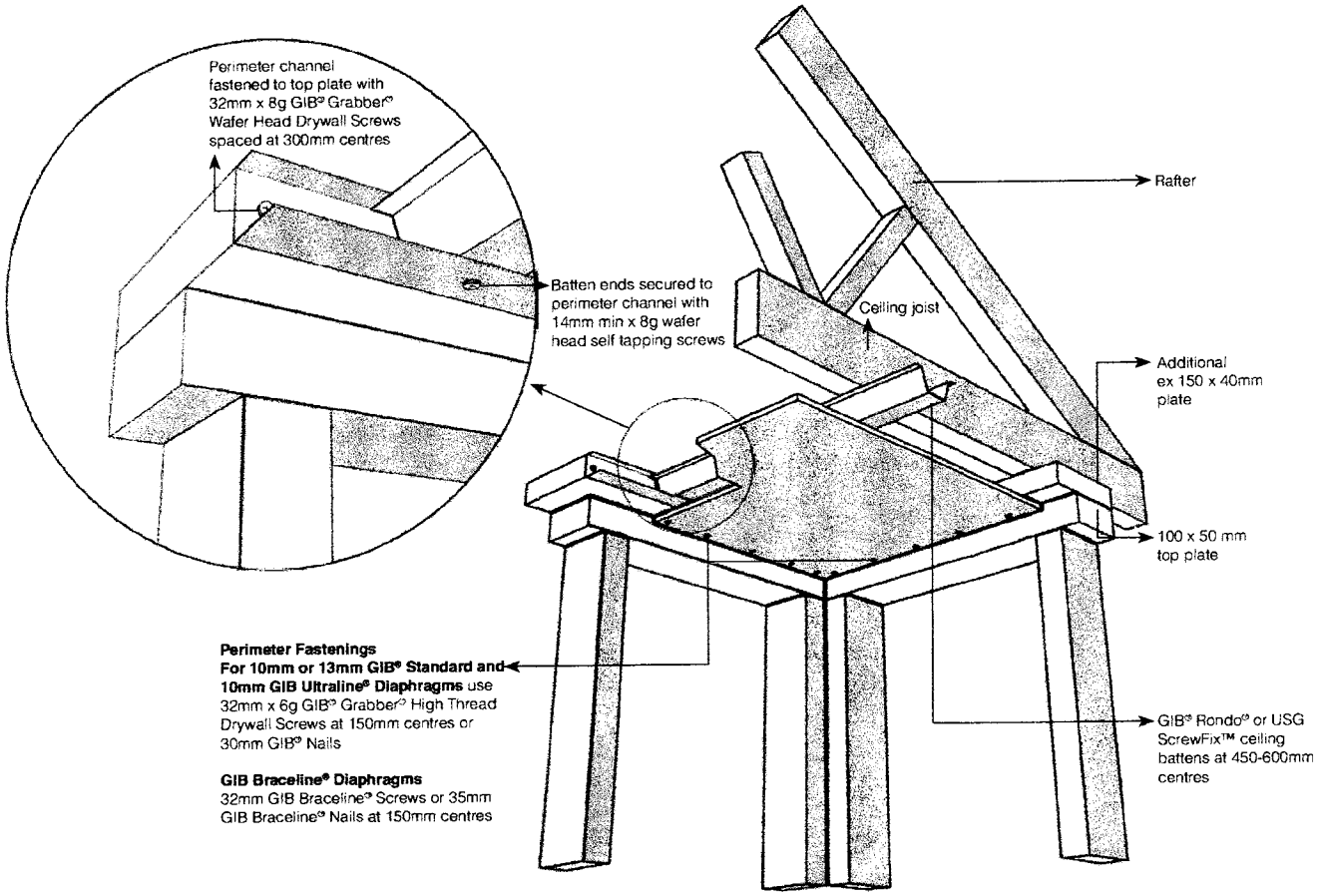
MARCH 2006

Steel Battens

The GIB® Rondo® and USG DONN Screwfix™ (FC37 and FC50) battens may be used to construct GIB® plasterboard ceiling diaphragms.

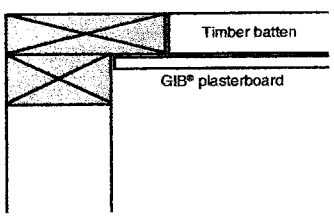
- The battens shall be spaced at 450mm centres maximum for 10mm GIB® plasterboard and at no more than 600mm centres for 13mm GIB® plasterboard. The battens are fastened through both flanges directly to the ceiling framing with 32mm x 8g GIB® Grabber® Wafer Head Self Tapping Drywall Screws.
- A steel perimeter channel is required at the perimeter of the diaphragm. The channel shall be fastened to the top plate with 32mm x 8g GIB® Grabber® Wafer Head Self Tapping Drywall Screws spaced at 300mm centres maximum.
- The linings are fastened to the perimeter channel at 150mm centres maximum with 25mm x 6g Self Tapping Screws.
- Within the diaphragm area sheets may be fastened as described in "General Fixing Requirements for GIB® Ceiling Diaphragms".

Ceiling Diaphragm on Steel Battens – Typical Fixing Detail

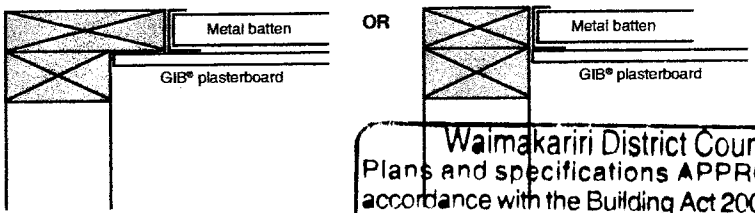


The perimeter of a ceiling diaphragm must be connected to a single continuous member along all edges. Connection to dwangs between trusses is not acceptable.

Timber battens example



Steel battens with perimeter channel example



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In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GIB® BRACING SYSTEMS

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PLYWOOD BRACING:

Figure 8: Typical detailing for wall and framing on concrete floor and foundations

Typical detailing for wall and subfloor framing on concrete floor and foundations.

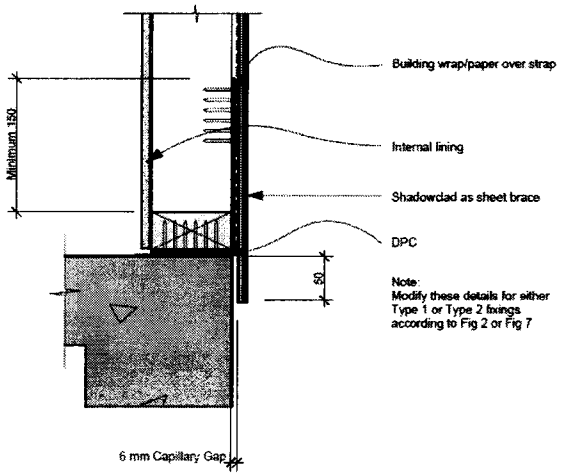


Figure 8A:
Shadowclad as sheet brace

Typical detailing for wall and subfloor framing on concrete floor and foundations.

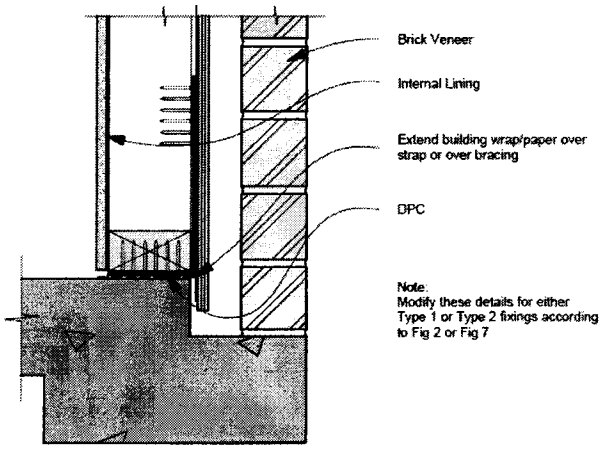


Figure 8B:
Ecoply sheet brace under brick veneer

Typical detailing for wall and subfloor framing on concrete floor and foundations.

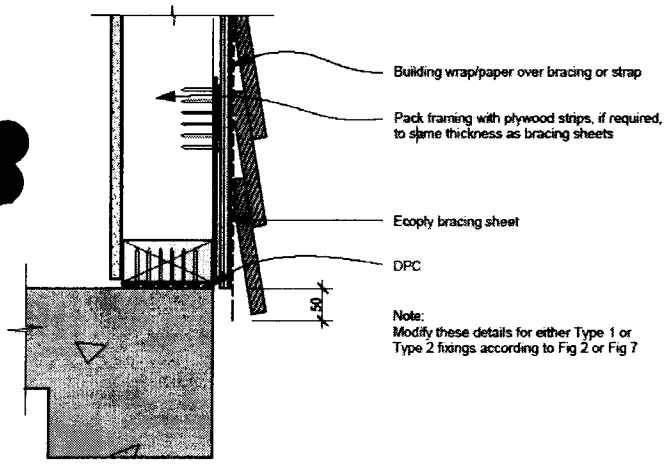


Figure 8C:
Ecoply sheet brace under cladding

Typical detailing for wall and subfloor framing on concrete floor and foundations.

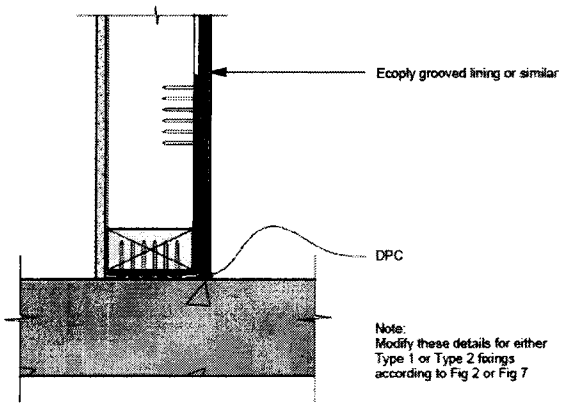


Figure 8D:
Ecoply internal lining as sheet brace

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PLYWOOD BRACING:

Figure 2: Type 1 strap fixings and capacities to each end stud of braced panels on concrete

Type 1 strap fixings and capacities to each end stud of Ecoply sheet braces on concrete.

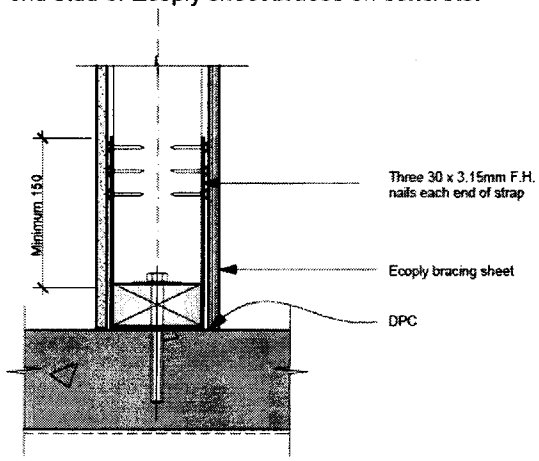


Figure 2C:
Type 1 strap wrapped under plate. Three 30 x 3.15mm F.H. nails each end of strap

Figure 3: Fixing of plywood bracing sheets

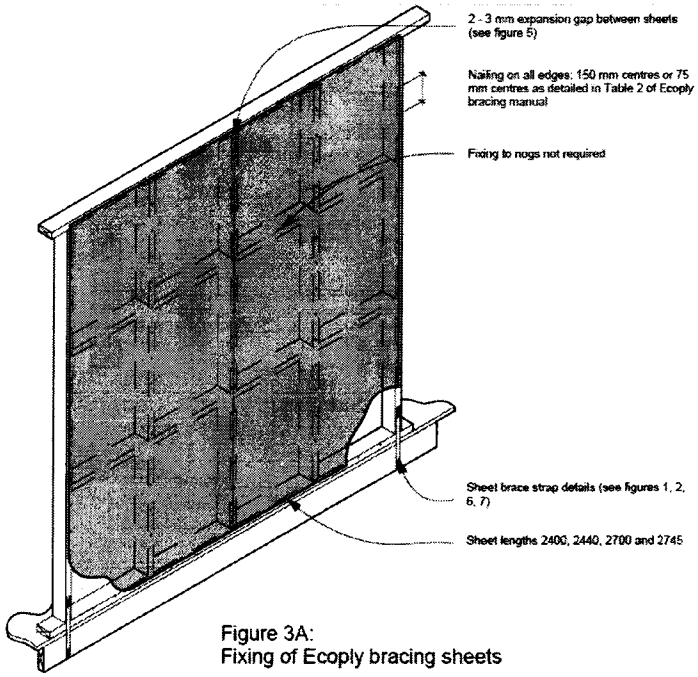


Figure 3A:
Fixing of Ecoply bracing sheets

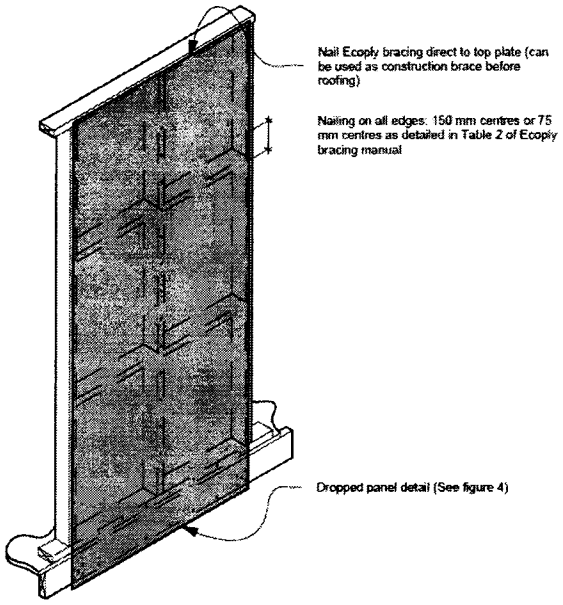


Figure 3B:
Dropped panel fixing

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GIB EzyBrace® System Specification – GS1-N

JUNE 2011

Specification Code	Minimum Length (m)	Lining requirement
GS1-N	0.4	Any 10mm or 13mm GIB® Standard Plasterboard to one side only

WALL FRAMING

Wall framing to comply with;

- NZBC B1 - Structure; AS1 Clause 3 Timber (NZS 3604:2011)
- NZBC B2 - Durability AS1 Clause 3.2 Timber (NZS 3602)

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber Floor

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or
Three power driven 90 x 3.15 nails at 600mm centres.

Concrete floor

INTERNAL WALL BRACING LINES

In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and 600mm centres thereafter.

EXTERNAL WALL BRACING LINES

In accordance with the requirements of NZS 3604 for external plate fixing.

WALL LINING

Any 10mm or 13mm GIB® Plasterboard lining.
Sheets can be fixed vertically or horizontally.
Sheet joints shall be touch fitted.
Use full length sheets where possible.

PERMITTED SUBSTITUTION

For permitted GIB® Plasterboard substitutions refer to Page 21 in GIB Ezybrace® Systems 2011.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® high thread screws; or
30mm GIB® Nails.

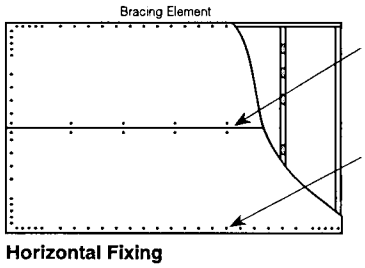
Fastener centres

50,100,150, 225, 300mm from each corner and 150mm thereafter around the perimeter of the bracing element.
For vertically fixed sheets place fasteners at 300mm centres to intermediate sheet joints.
For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud.
Use daubs of GIB Fix® adhesive at 300mm centres to intermediate studs.
Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

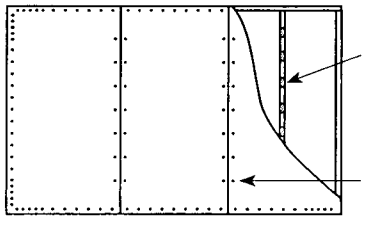
JOINTING

All fastener heads stopped and all sheet joints paper tape reinforced and stopped in accordance with the GIB® Site Guide.

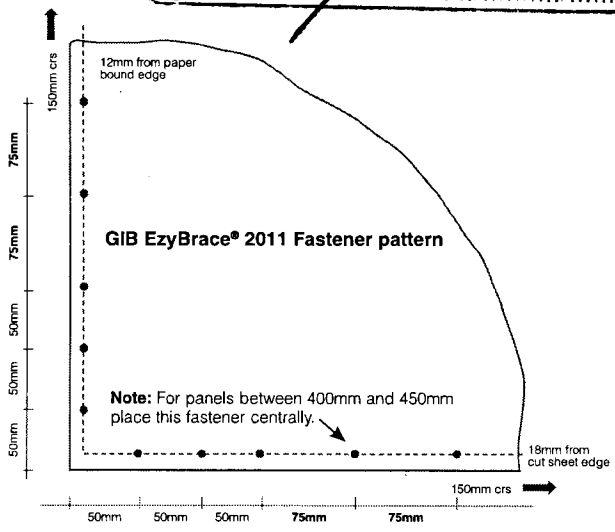
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Horizontal Fixing



Vertical Fixing



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This Specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems 2011 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2011).

BRANZ Appraised
Appraisal No.294 [2011]

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GIB EzyBrace® System Specification – GS2-N

JUNE 2011

Specification Code	Minimum Length (m)	Lining requirement
GS2-N	0.4	Any 10mm or 13mm GIB® Standard Plasterboard fixed to each side of the wall framing.

WALL FRAMING

Wall framing to comply with;

- NZBC B1 - Structure; AS1 Clause 3 Timber (NZS 3604:2011)
- NZBC B2 - Durability AS1 Clause 3.2 Timber (NZS 3602)

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber Floor

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or
Three power driven 90 x 3.15 nails at 600mm centres.

Concrete floor

INTERNAL WALL BRACING LINES

In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and then 600mm centres thereafter.

WALL LINING

One layer 10mm or 13mm GIB® Plasterboard to each side of the wall.
Sheets can be fixed vertically or horizontally.
Sheet joints shall be touch fitted.
Use full length sheets where possible.

PERMITTED SUBSTITUTION

For permitted GIB® Plasterboard substitutions refer to Page 21 in GIB® Ezybrace Systems 2011.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® high thread screws; or
30mm GIB® Nails.

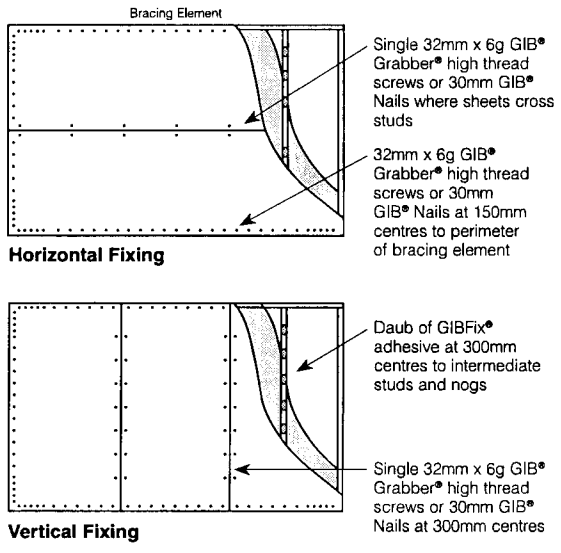
Fastener centres

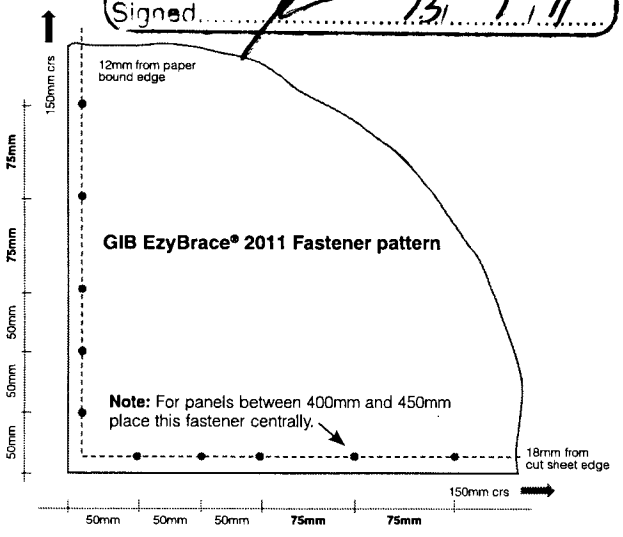
50,100,150, 225, 300mm from each corner and 150mm thereafter around the perimeter of the bracing element.
For vertically fixed sheets place fasteners at 300mm centres to intermediate sheet joints.
For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud.
Use daubs of GIB Fix® adhesive at 300mm centres to intermediate studs.
Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING

All fastener heads stopped and all sheet joints paper tape reinforced and stopped in accordance with the GIB® Site Guide.

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Plans and specifications APPROVED in accordance with the Building Act 2004, clause 49 and the Building Regulations 1992, clause 3.
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Construction

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This Specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems 2011 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2011).

BRANZ Appraised
Appraisal No.294 [2011]

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9. BRICKLAYER

GENERAL:

All brickwork shall be in accordance with clauses B1 Structure, and E2, External Moisture, of the N.Z. Building Code and shall comply with SNZ HB 4236:2002. Provide weep holes to all brickwork. A cavity of not less than 40mm shall be maintained between building paper and veneer. Flush the mortar to the back of the brickwork as work proceeds and keep the 50mm cavity free from mortar.

MORTAR:

Shall be composed of one part Portland cement and four parts sand. It may also contain an approved plasticiser, should problems be encountered with workability. All mortar shall be used within 90 minutes, after which it shall be discarded.

WALL TIES:

Ties shall be in accordance with Clauses 2.1.9 & 2.9.7 of NZS 4210, Lumberlok – 'Screw Tie grade EM'.

TIE FIXINGS:

Ties shall be fixed in accordance with Clause 2.9.7 of NZS 4210,Screws to be galv 35mm x 12g Type 17 hex head screws for timber fixing. Generally to framing at every second course vertical and 600mm max (every stud). centres horizontally. Fix ties immediately adjacent to all openings, at all corners, and the ends of all walls. Minimum plan length of brick veneer wall is 300mm. Fix ties sloping down towards bricks.

BRICKS:

70 series clay brick: 'Clay Brick': type: 'Austral Bricks'.

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10. PLUMBER

GENERAL:

All plumbing work to be in accordance with the New Zealand Building Code and Approved Documents in particular B2, E1, G13, & G14 and any Local Authority by-laws. Give all notices and arrange for the inspection of the works and materials.

RAINWATER SYSTEM:

Spouting to be supplied and fitted by Roofer. Supply and fix 75mm dia precoated G2Z steel downpipes, secured with adjustable cast brass stand off brackets-2 per downpipe. All downpipes shall be plumb and straight without offsets into sumps.

FLASHINGS:

Provide and fix all flashings where required for the complete weatherproofing of the building. All flashings shall be shop formed and to approval, accurately fitted with all joints well lapped. Flash all vents and other upstands through the roof.

COLD WATER SUPPLY:

Allow to lay 25 diam alkathene supply buried not less than 450mm. Alkathene to be used in compliance with the relevant sections of the N.Z.S. Connect supply pipe in garage through a gate valve. Insulate all pipework with preformed fibreglass insulation where water is likely to become frozen. All cold water pipework within house shall be run in polybutylene or pvc.

HOT WATER SUPPLY:

Water supply system shall be installed in accordance with NZBC G12/ASI. Supply and install a 300 litre 'Superheat' mains pressure hot water cylinder in hall cupboard & 180 litre in guest wing cupboard. Cylinders to be complete with elements and thermostats, allow to fit tempering valve to the outlets. Ensure H.W.C. is fitted with a Seismic restraint. Hot water pipework shall be copper and insulated with Armaflex flexible pipe insulation, to comply with NZS 4603 cl 303. The hot and cold water supplies shall be arranged to give priority feed to the showers

TESTS:

Subject all pipework to a 1500kPa pressure test before closing in.

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10. PLUMBER

FITTINGS:

Owner will supply the W.C. pans, cisterns & seats, bath & basin, washing machine, (tub to be part of joinery), dryer, dishwasher & waste disposer. Allow to install. Supply and fit wastes and plugs to all fittings with easi clean wastes to all showers. Owner to supply rangehood to Joiner ready for building in. Allow to supply and install duct work and roof cowl. Joiner to install rangehood.

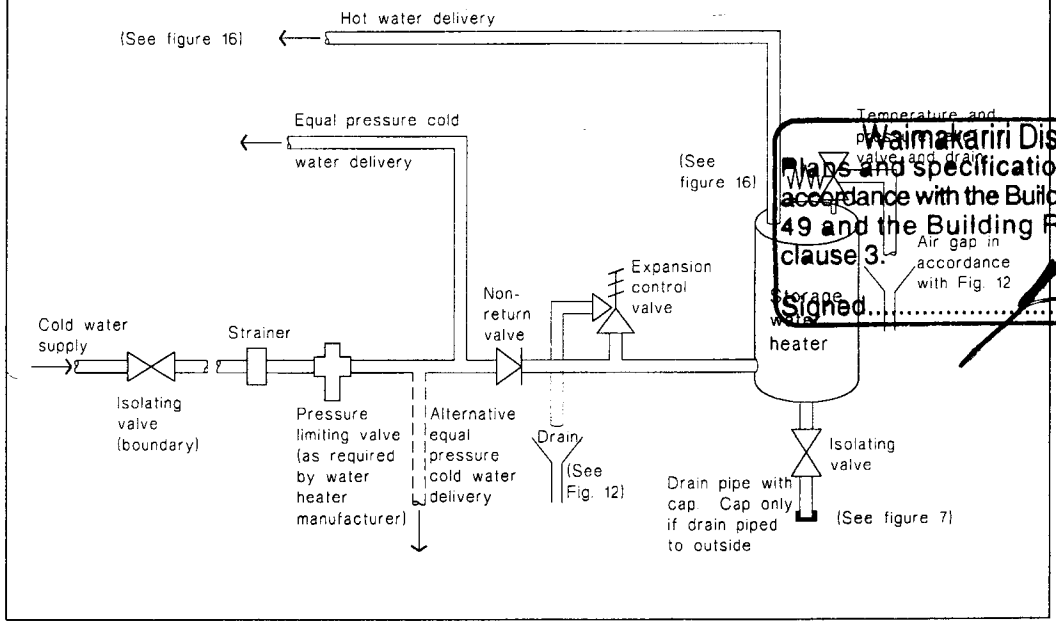
TAPS ETC:

Allow to supply and install three brass hose taps, also one exterior hot water tap, confirm with Owner for location. Shower mixers, single lever taps, bath faucets, taps, shower rose etc. will be supplied by the Owner. Allow to install fittings.

SANITARY SYSTEM:

The Sanitary System shall be in accordance with clause G13 / VM1, Foul Water, of the N.Z. Building Code. Install and connect all soil, waste and vent pipes as required to comply with G13 / AS1, NZBC .Generally all pipework shall be PVC to comply with NZS 7643. All discharge pipes, vent pipes and traps shall be to sizes as required to suit fixture. Pipe sizes shall not decrease with direction of flow. All pipes shall be laid to gradients; 1:20 for 32mm dia. pipes, 1:40 for up to 65mm dia, 1:60 for up to 100mm dia. Provide support to all pipework as required with expansion joints to accomodate thermal movement. Wrap all pipes in bituminuous felt at supports and where they pass through concrete slabs and foundations, also wrap with densotape at concrete. All joints to be neatly made and all wastes to discharge over gully traps. Combine vent pipes where possible within the roof space to reduce the number of pipes penetrating the roofing. Terminate vent pipes 150mm above roof line & 600mm min. above windows.

Figure 8: Mains Pressure Storage Water Heater System (unvented)
Paragraphs 6.1.2 and 6.2.1 b)



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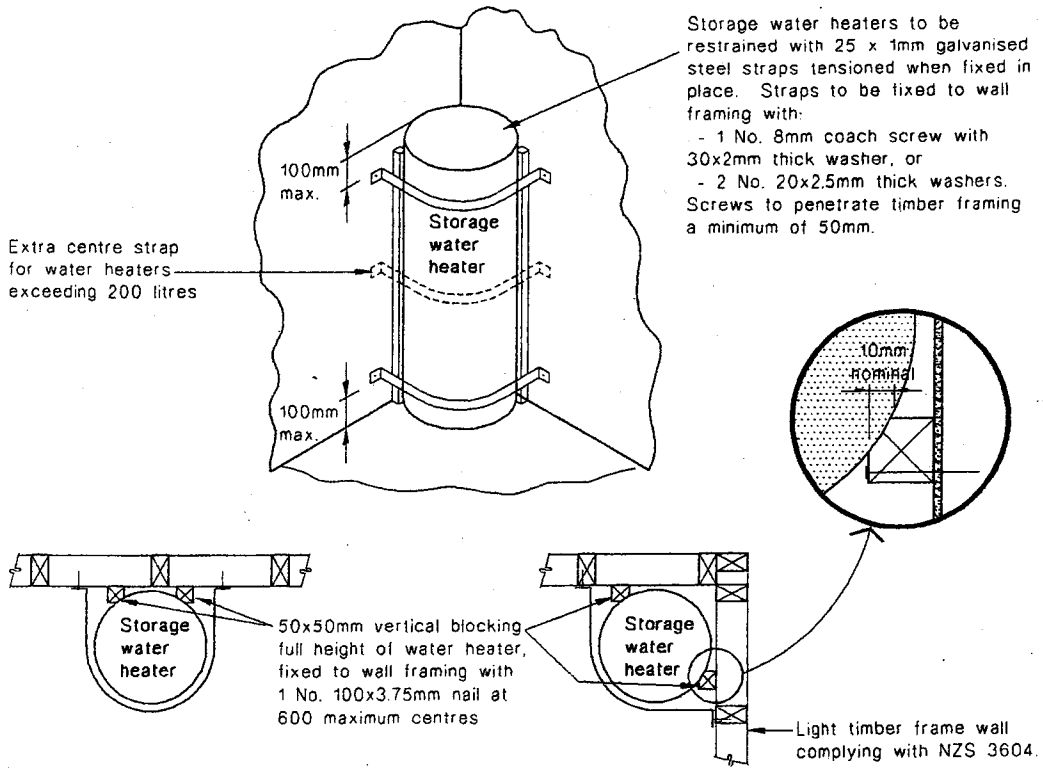
GAS FITTER:

Allow to install gas hobbs in Kitchen. Installation to be NZS 5261 Code of Practice of Gas burning Appliances and Equipment.
Gas cylinder to be fitted in position as indicated on sheet 3 floor plan, no closer than 1m from kitchen window. Note all gas work to be carried out by a registered gas fitter and in accordance to the manufacturers instructions.

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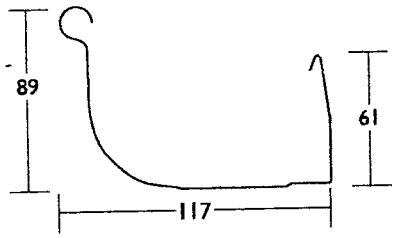
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H.W.C. RESTRAINT DETAILS



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3.1.4.9 QUAD SI



All dimensions given are nominal.

Effective cross sectional area (with 10mm free board)	5485mm^2		
Flow capacity	75 litres/min		
Minimum recommended fall	1:500		
Minimum downpipe	Circular	63mm	
	Rectangular	min. cross sectional area of 3250mm^2, smallest dimension at least 50mm.	

Catchment area per downpipe based on the above flow capacity is given in Table 3.1L. Use Table 3.1B (Section 3.1.4) to determine the Rainfall Intensity to be used.

Table 3.1L

Rainfall Intensity, I (mm/hr)	40	50	60	70	80	90	100	120	140	160	180	200
Catchment Area per downpipe A_c (m^2)	112	90	75	64	56	50	45	37	32	28	25	22

Material options including thickness and grade	Steel	0.55mm G300	
Roll-forming facility	Christchurch		
Gutter bracket material and thickness	Internal	Zincalume®	1.15mm
	External	Zincalume®	1.15mm
		Brass	1.2mm
Recommended maximum spacings	900mm (1200mm spacing can be used with caution but must not be used in areas where snow fall is possible – in heavy snow fall areas brackets should be at 450mm maximum and snow straps should be used).		
Recommended fixings	Screw or nail fastenings to suit substrate and bracket material.		
Stop ends	Zinc cast stop ends are available powder coated to match fascia colour.		

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Dimond

11. DRAINLAYER

GENERAL:

Provide all materials, labour and plant necessary to complete the work in accordance with the NZ building code. Give all notices, pay all fees and arrange for the inspection of work materials. The Drainlayer shall provide protection and security to the public and all property near to or liable to be affected by the work.

DRAINAGE:

All pipes shall be laid with greatest possible accuracy to give true and even gradients. 100mm dia. drains shall be laid to a minimum gradient of 1:60. Lay pipes on compacted clean granular non-cohesive material with maximum particle size of 20mm. The whole of the drainage and sanitary arrangements to comply with G13/AS2. and to the entire satisfaction of the sanitary inspector.

SEWER:

Excavate for and lay all necessary drains for gully traps and W.C. to connect to Approved Multi Chamber effluent system. (see Hansen design)

STORMWATER:

Stormwater drainage system shall comply with NZBC E1/AS1. Excavate and lay stormwater disposal from downpipes Form downpipe sumps using 100mm dia. PVC riser finish 75mm above ground level. Fit cast aluminium grate to downpipe riser. (Soak pit design attached)

GULLY TRAPS:

All gully traps shall be PVC with cast aluminium grates. Set gully trap in concrete haunched around pipe 75mm above finished ground level with a plaster finish.

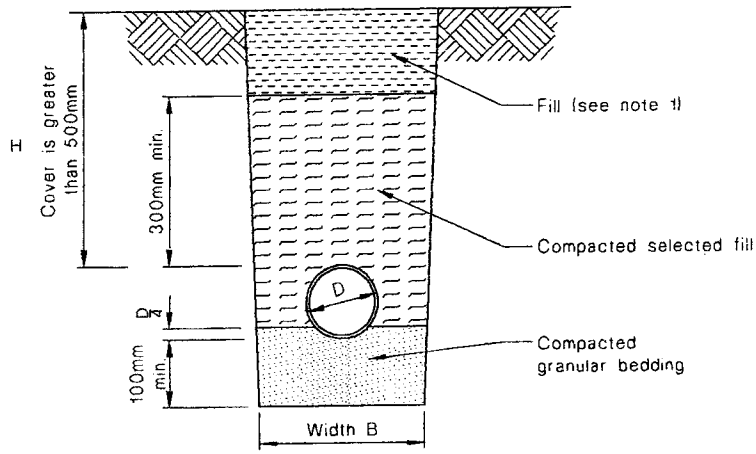
BACKFILLING:

No trench is to be backfilled before it has been inspected and approved by the Territorial Authority Drainage Inspector. Bedding and backfill around pipe shall be compacted clean granular non-cohesive material with maximum particle size of 20mm. Ordinary fill to top of trench may be excavated material. All drains and fittings under driveways with less than 375mm cover shall be topped with selected compacted fill of fine grain soil or granular material free from topsoil and rubbish and with maximum particle size of 20mm. Granular bedding and selected fill shall be placed in layers 100mm thick and compacted.

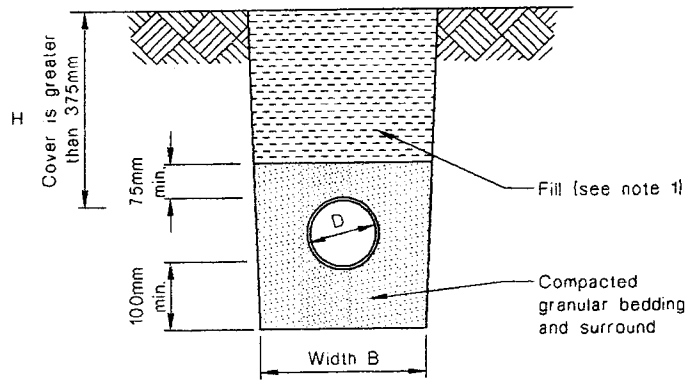
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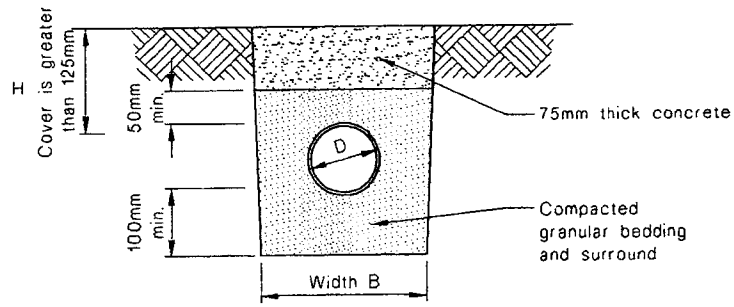
Figure 7: Bedding and Backfilling
Paragraphs 5.2.1, 5.3.1 and 5.4.1



(a) Bedding type 'B' of NZS 7643
Cover greater than 500mm



(b) Bedding type 'D' of NZS 7643
Cover greater than 375mm



(c) Cover between 125mm and 375mm

NOTE:
1. Fill shall be:
-Ordinary fill where drains are located below gardens and open country.
-Compacted selected fill where the drains are located below residential driveways and similar areas subject to light traffic.

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Table 6. Vent Pipe Sizes
Paragraphs 5.3.4, 5.6.1, 5.6.3 c) and Table 5; G13/BS Paragraph 4.2.2 and Table 3

For fixture vent pipes

Diameter of fixture discharge pipe (mm)	Minimum diameter of fixture vent pipe (mm)
32	32
40	32
50	40
65	40
80	40
100	40

For branch vent, branch drain vent, relief vent (see Note) and discharge stack vent pipes

Maximum discharge units connected to the discharge pipe	Minimum diameter of open vent pipe (mm)
Up to 15	40
16 to 65	50
66 to 376	65
More than 376	80

For main drain vents

Maximum discharge units connected to the discharge pipe	Minimum diameter of open vent pipe (mm)
Not applicable	80

Note:

Relief vent sizes are acceptable for a maximum developed length of 12 m.

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12. ELECTRICIAN

GENERAL:

The electrical work shall be carried out in accordance with the New Zealand Building Code and Approved Documents and the Electrical Safety Regulations 1993. All wiring shall be concealed. The Electrician shall obtain all consents, arrange all inspections and issue a compliance certificate at the completion of the contract.

SETTING OUT:

The exact position of power outlets and lighting circuits shall be determined on the job by the Owner. Co-operate with the Builder for the forming of ducts and chases, etc. where any wiring is built in concrete, position wiring and supervise the building in of same.

SCOPE:

Allow to install Meter Board on the outside wall of the north-east corner of bedroom 5 (shown on sheet 02.). Mains cable to run underground from front boundary, take main through 40mm alkathene pipe under slab to rise in wall to meter cabinet. Take supply from meter board to a flush mounted distribution board in porch. Protect switch board with copper driven rod. All power and lighting circuits to be protected with miniature circuit breakers on the switch board. All wiring TPS cable run concealed within walls and ceilings. The Electrician shall supply all wiring, switchboard, switches, power outlets, etc, as required by the contract.

Owner will supply the following but the Electrician will allow to install or co-operate with Plumber when installing. (check electrical schedule attached)

- oven
- microwave
- dishwasher
- dryer
- light fittings
- bathroom extractors
- smoke detectors
- water pump
- fridge/ freezer
- washing machine
- kitchen extractor
- heated towel rails
- TV aerial
- bathroom wall heater

Light switches, socket outlets etc selected from the HPM Excel range, colour white. (check with Owner)
Allow to supply and fit dimmer controls to light circuits in the familyand lounge areas. Any down lights to be CA rated.

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12. ELECTRICIAN

TELEPHONE:

Wire for one telephone line and four jack points. Final positions to be located on site by Owner.

TV AERIAL:

Allow to supply and fit a splitter box to enable four TV sets to operate from aerial point. Allow to install TV aerial (supplied by Owner) and to supply and install cabling from aerial to splitter box/outlets. Discuss TV aerial location with Owner before erection.

TEMPORARY POWER SUPPLY:

Provide and wire temporary power supply at start of contract. Meter box erected by Builder in its true position.

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Operations and Troubleshooting

Problem	Cause	Remedy
Alarm sounds and the Red LED is blinking rapidly.	Smoke has activated the smoke alarm.	Vacate the building and call the fire brigade (see what to do if alarm sounds).
Green LED ON.	240V Mains Power ON.	Normal Operating Condition.
Green LED OFF Mains power may be disconnected.	240V Mains Power OFF.	Check mains power ON. MCB may have tripped. Wiring could be reversed.
Red LED Flashes every 40 to 60 seconds.	Red LED indicates the smoke alarm is functioning correctly.	Normal Operating Condition.
Red LED not flashing.	Battery may be reversed. No Battery present. Battery completely flat.	Reinstall battery around the correct way or replace Battery.
Audible 'Beep' is heard every minute.	Low battery indicator is warning the battery needs replacing.	Replace 9V battery with a specified new battery.
When Test/Hush button is pressed for 3 seconds Alarm sounds briefly.	The Smoke Alarm horn is indicating all electronic circuitry, horn and battery are working.	Normal Test condition. Test weekly to ensure proper operation.
When 'Test/Hush Button' is pressed for 3 seconds alarm does not sound.	Check Green LED is ON and Red LED is flashing once every 40 to 60 seconds.	Turn mains power back ON and replace battery. If smoke alarm still won't 'TEST' replace.
Smoke Alarm is sounding you press the 'test button' and it stops.	Hush feature has been activated for 10 minutes providing the smoke density does not increase.	Normal condition. Clear the smoke as soon as you can.
Smoke alarm is sounding and you press the 'Test' button and nothing happens.	Smoke Density is too high for the 'Hush' feature to activate.	Vacate the building and call the Fire brigade (see what to do if alarm sounds).
Smoke Alarm body will not close on the Base..	9V battery not present.	Install a 9V Battery.

Maintenance, Repairs and Service

Maintenance: It is recommended that the Smoke Alarm is inspected monthly to ensure it is free from dirt or dust. The alarm can be vacuumed or brushed with a soft brush to remove dust, dirt or kitchen grease that has accumulated.
ALWAYS TEST THE SMOKE ALARM AFTER CLEANING.
Repairs/Service: The Smoke Alarm uses a very small amount of radioactive element, which is safely contained within the chamber assembly. If the Smoke Alarm is defective in any way, do not tamper with the unit. If the warranty period has expired then dispose of the unit as indicated below.
DO NOT, UNDER ANY CIRCUMSTANCES, TAMPER WITH THE SEALED RADIOACTIVE SOURCE.
The Smoke Alarm does not contain any user serviceable parts except the battery.
For disposal of this Smoke Alarm return by hand or a forwarding agency (courier) to supplier or Department of Health in your State (Australia).
Do not dispose with household rubbish in Australia. Disposal with normal rubbish is permitted in New Zealand.
Please Note: It is illegal to send radioactive material through the Australian Post. Please check for similar conditions with any forwarding agency before sending this article.

Limited 5 Year Warranty

Schneider Electric warrants your PDL product to be free from defects in material and workmanship for a period of 5 years from the date of purchase. The Warranty applies only to the original consumer purchaser and only to products used in normal use and service. If this product is found to be defective, Schneider Electric's only obligation, and your exclusive remedy, is the repair or replacement of the product, at Schneider Electric's discretion, provided that the product has not been damaged through misuse, abuse, accident, modifications, alteration, neglect or mishandling (excluding any labor cost relating to removal or re-installation of product and transport cost). This Warranty shall not apply to any product, which is found to be improperly installed, set-up or used in any way not in accordance with the instructions supplied with the product. This Warranty shall not apply to any batteries used in the product or to any damage caused by such batteries.
If your PDL product fails to operate satisfactorily, please return it to the point of purchase or Schneider Electric.

SCHNEIDER ELECTRIC DOES NOT WARRANT AND SPECIFICALLY DISCLAIMS ANY WARRANTY, WHETHER EXPRESS OR IMPLIED, OF FITNESS FOR A PARTICULAR PURPOSE OTHER THAN THE WARRANTY CONTAINED HEREIN. NO IMPLIED WARRANTY ON THIS PRODUCT, CREATED BY STATE LAW, SHALL EXTEND BEYOND THE TERM OF THIS WARRANTY UNLESS SUCH LAW DOES NOT PERMIT. SCHNEIDER ELECTRIC SPECIFICALLY DISCLAIMS ANY LIABILITY AND SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE, INCLUDING, BUT NOT LIMITED TO, DAMAGES TO ANY EQUIPMENT WITH WHICH THIS PRODUCT IS USED.

No agent, representative, dealer, or employee of the company has the authority to increase or alter the obligations or terms of this Warranty.

This Smoke Alarm Complies With: AS3786:1993
AS3100:1997
Australian Electrical Authority
Certificate of Suitability CS00253V

THIS DEVICE CONTAINS A SMALL QUANTITY OF RADIOACTIVE MATERIAL

Certified Product
Australian Standard

PDL

New Zealand Head Office: PO Box 15 555, Auckland, New Zealand
Telephone +64-9-829 0900, Fax +64-9-829 0901
www.schneider-electric.co.nz
Australian Head Office: Locked Bag 5100, Baulkham Hills Business Centre, NSW 2153, Australia
Telephone +61-2-9851 2600, Fax +61-2-9829 8518
www.schneider-electric.com.au

Waimakariri District Council
Plans and specifications APPROVED in accordance with the Building Act 2004, clause 13, 7 / 11
Use the Building Regulations 1992, clause 3.

PDL Smoke Alarm SD100

240V a.c Mains Power Ionisation Smoke Alarm with 9V d.c Battery Backup.

Certified Product
Australian Standard

PLEASE LEAVE THESE INSTRUCTIONS WITH THE OWNER. OWNER TO RETAIN THESE INSTRUCTIONS FOR THE LIFE OF THE ALARM.
THIS SMOKE ALARM REQUIRES INSTALLATION BY A LICENSED ELECTRICAL CONTRACTOR.

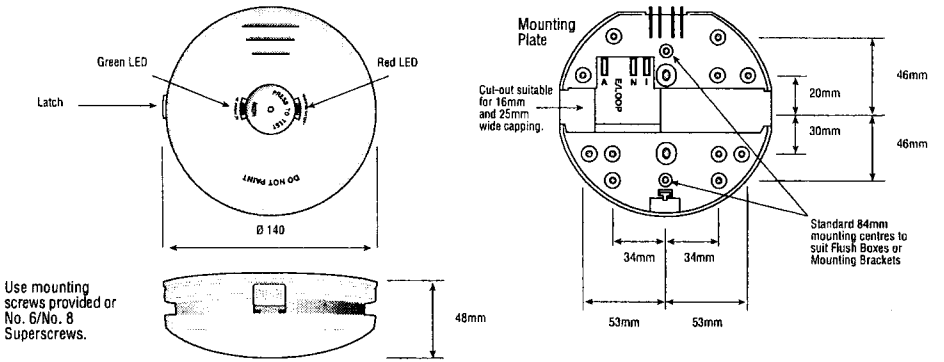
Read all Instructions Before Installation and Operation

This Smoke Alarm has a recommended service life of at least 10 years under normal conditions. We recommend the Smoke Alarm be replaced after 10 years. The Smoke Alarm uses an extremely small amount of radioactive material in the Ionisation chamber.
DO NOT try to open or repair the Smoke Alarm yourself. No user serviceable parts are inside.

Specifications

Main Power Source:	230-240V a.c. 50Hz	Horn Level:	85dB at 3 meters minimum
Secondary Power Source:	9V d.c. Carbon Zinc or Alkaline Battery	Visual Indictors:	Green LED for Mains Power ON
Operating Current:	35mA		Red LED for Warning and Low Battery indication
Battery Life:	1 year approximately	Approvals:	Listed by SSL Scientific Services Laboratory
Sensing Type:	Ionisation. Americium 241 – one micro curie	Complies with:	AS3786:1993
Operating Temperature:	5°C to 45°C		AS/NZS 3100:1997
Ambient Humidity:	10% to 90%	Certificate of suitability:	CS00253V
Inter-connecting:	20 Alarms over 150 metres maximum.		

Dimensions



Information on Smoke Alarms

WHAT SMOKE ALARMS CAN DO

Smoke Alarms can only HELP protect your family and home against loss from a fire. For maximum protection install Smoke Alarms in every bedroom, and every other area of the home, making sure the people in the home will be able to hear and respond to the alarm sound.

WARNING – Smoke Alarms may give you a warning of fire and smoke but only if you install, use and maintain them as recommended in this instruction leaflet.

WHAT SMOKE ALARMS WILL NOT DO

A Smoke Alarm will not work without power – Your Smoke Alarm needs Mains Power (230-240V) and a good battery (9V) that is installed correctly to operate.

A Smoke Alarm will not sense a fire when smoke cannot reach the unit – If a fires starts in a chimney, wall, roof, the other side of a closed door or any other isolated area, the Smoke Alarm may not sense the smoke and may not give a warning. If you do not have a Smoke Alarm in the bedroom and sleep with the door closed, a fire inside the bedroom may not sound an alarm located in another room. Therefore it is recommended that a Smoke Alarm be installed inside and outside all bedrooms. A Smoke Alarm will not promptly sense a fire except in the area in which the Smoke Alarm is installed.

All types of Smoke Alarms have limitations – No type of Smoke Alarm can sense every kind of fire or smoke every time. Ionisation Smoke Alarms (such as this unit) are a good overall choice for reliability and fast response time since they quickly sense small 'invisible' smoke particles and also sense large 'visible' smoke particles.

Using a Smoke Alarm in a smokey area like a kitchen or in a high humidity area such as a bathroom can cause false alarms. Do not remove the battery to quieten the alarm, or take the alarm down. A Smoke Alarm will not protect you if it is not powered or if the unit is not present.

A Smoke Alarm may not always warn you about fires caused by the following:
- Smoking in bed
- Incorrect storage of flammable materials
- Children playing with matches or lighters
- Over-loaded electrical circuits

So please remain vigilant against fire risks at all times. Fire prevention is your best safeguard.

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Technical Data

IN-LINE FAN KITS - ELLP Extract-a-lite Low Profile

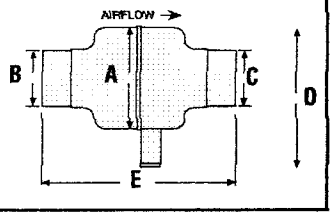
GENERAL INFORMATION

Models	Diffuser Cut-Out	Interior	Exterior Grille	Duct Type	Length of Duct included
ELLP125W	140mm	White Extract-a-lite incl light	White Low Profile	Flexible PVC	4m supplied (can be extended up to 6m)
ELLP125C	140mm	Chrome Extract-a-lite incl light	White Low Profile	Flexible PVC	4m supplied (can be extended up to 6m)
ELLP150W	160mm	White Extract-a-lite incl light	White Low Profile	Flexible PVC	5m supplied (can be extended up to 12m)
ELLP150C	160mm	Chrome Extract-a-lite incl light	White Low Profile	Flexible PVC	5m supplied (can be extended up to 12m)

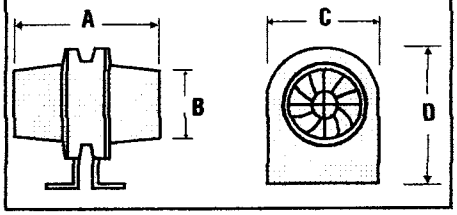
DIMENSION INFORMATION

Models	A	B	C	D	E	F	G	H
ELLP125	155	125	125	195	258	165	66	118
ELLP150	200	143	170	185	-	200	66	148

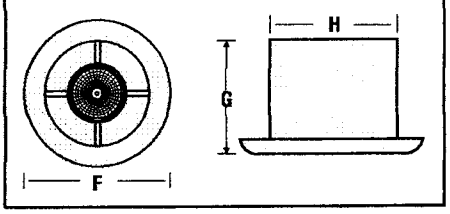
Dimensions - ELLP125 Fan



Dimension - ELLP150 Fan



Dimensions - ELLP Extract-a-lite Diffuser

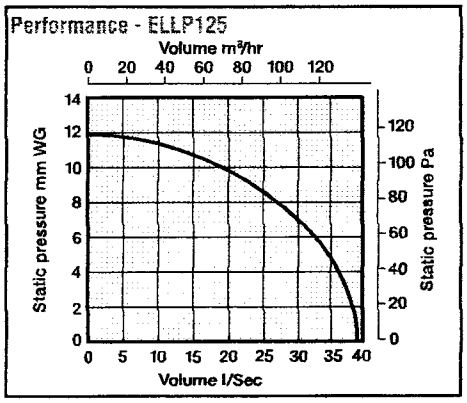


TECHNICAL SPECIFICATION

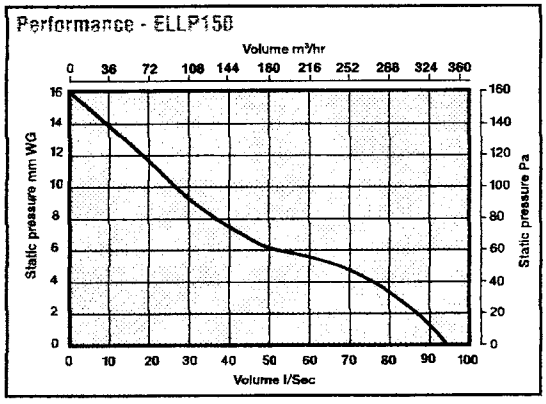
Models	ELLP125	ELLP150
Fan	CFD225	WhisperVent
Power	220 - 240V	220 - 240V
Fan Performance	39l/s, 140m³/hr	94l/s, 340m³/hr
Fan Wattage	49W	46W
Maximum Pressure	120Pa	160Pa
Fan Speed	1400 rpm	2750 rpm
Light	12V 50W Halogen	12V 50W Halogen
Total Wattage	99W	96W
Sound Level	45 dB(A)	38 dB(A)
Max. Operating Temp	40°C	80°C
IP Rating	IPX4	IPX2

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Signed..... 13/7/11.....

Performance - ELLP125



Performance - ELLP150



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13. TILER

GENERAL:

All work shall be carried out by skilled tradesmen in accordance with best trade practices and the manufacturer's instructions. All surfaces shall be properly prepared for the specified finishes and allowances made for the varying thickness so that the finished levels will coincide. All materials shall be the best of their respective kinds. On completion, clean down all tiles and leave free from any grout, stains or defects.

WALL TILING:

Before commencing work, thoroughly check all surfaces to be tiled to ensure that they are well fixed, true, plumb and level, and are clean and free from all dust, dirt and foreign matter.
Completely cover area to be tiled with 'ABA' Superflex 1 Waterproof membrane. Fix tiles with 'ABA' multipurpose tile adhesive, with adhesive ribbed in a horizontal direction using a notched trowel. Allow 24 hours for adhesive to set. Grout joints with coloured cementitious grout modified using 'ABA' Flexible Waterproof grout additive. Allow for movement by including silicone expansion gaps at each change of tile direction. Clean off surplus grout with clean water before it sets. All sealers, adhesives and grouts shall used in accordance with the manufacturer's instructions.

FLOOR TILING:

Before commencing work, thoroughly check all surfaces to be tiled to ensure that they are clean and free from all dust, dirt and foreign matter. Concrete shall be allowed to cure for 28 days before tiling. Acid etch smooth concrete prior to tiling. Fix tiles to bathroom and ensuite floors with 'ABA' Multipurpose tile adhesive, with adhesive ribbed using a notched trowel. Grout joints with coloured cementitious grout modified using 'ABA' Flexible Waterproof grout additive. Allow 48 hours for adhesive to set before subjecting to foot traffic. Clean off surplus grout with clean water before it sets. All sealers, adhesives and grouts shall be used in accordance with the manufacturer's instructions.

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Premixed Bathroom & Balcony

PRODUCT DESCRIPTION

Superflex Premixed Bathroom & Balcony is a tough, ready to use waterproofing membrane specifically designed for use under tiles. The product has been uniquely formulated with synthetic microfibres to increase its strength and eliminate the need for a separate reinforcement mat. Superflex Premixed Bathroom & Balcony is based on the most advanced acrylic polymer technology, and is totally resistant to re-emulsification, even in fully immersed situations. Superflex Premixed Bathroom & Balcony is safe to use, low in odour, and is fully compatible with polymer modified tile adhesives. Superflex Premixed Bathroom & Balcony is one of the fastest drying one part acrylic membranes on the market – ready to tile in 24-48 hours @ 23°C.

FEATURES/BENEFITS

- Liquid reinforced –Excellent strength, eliminates need for reinforcing mat
- Flexible –Accommodates normal building movement
- Advanced acrylic polymers –Will not re-emulsify (even under constant immersion)
- Designed for tiling systems –Fully compatible with Ardex tile adhesives
- Water based –Safe to use, low odour & easy cleaning
- ABSAC opinion No.91 –Approved for shower recesses by independent testing authority

APPLICATION RANGE

Performance Levels
Commercial and residential

Location
Internal wet areas, balconies, decks, and other areas that will be tiled or otherwise protected from regular foot traffic.

Surfaces
Walls & floors

Substrates

Concrete	Cured for min. 28 days
Renders and screeds	Cured for min. 7 days
Fibre cement sheets	Suitable for wet conditions
Plasterboard	Wet area grade only

Contact Ardex for use over existing membranes, covering materials, and any other substrates not listed.

SPECIFICATION CLAUSE

The waterproofing membrane shall be Superflex Premixed Bathroom & Balcony: a one part acrylic modified membrane formulated to provide a tough, long lasting water barrier under tiling systems.

PACKAGING

Single component: 20kg (approx 15 litres) or 6.5kg (approx 5 litres)

SHELF LIFE

12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within 3 months.

COVERAGE

One 20kg unit will cover around 9-11m² (based on two coats, applied at a wet film thickness of 1.0mm per coat). Coverage will vary depending on the condition of the surface.

DRYING TIMES

Recoat time
1-2 hours between first and second coats. Alternatively, if a polyester mat is used between coats then the second coat can be applied whilst the first coat is still wet.

Dry through
The slowest drying areas are those where the membrane has been applied over a silicone bond breaker, eg. wall and floor junctions. The membrane cannot be tiled over until these critical areas are completely dry. The membrane is totally dry in 48 hours at 23°C/50% RH, but can take up to 72 hours at 10°C/50% RH.

Fully cured
The shower should not be used until the membrane has reached its full strength. The membrane is fully cured 3 days after it has been applied at 23°C, or after 5 days at 10°C. Drying times will vary depending on humidity, temperature and surface porosity. Do not apply on substrates where the surface temperature is below 10°C or above 35°C.

CLEANING

Wash hands, brushes, rollers, etc, with water while the membrane is still fresh. Remove cured material with mineral turpentine.

PRECAUTIONS

Do not use the product in the following situations:

- Areas subject to negative hydrostatic pressure or rising damp
- Where the substrate is not dry or rain is imminent
- Where the membrane will be left exposed and subjected to regular foot traffic
- On glazed, glass or other totally impervious surfaces (eg. areas pre-treated with water repellants)
- Where the surface temperature is below 10°C or greater than 35°C

All floor areas must have adequate falls either built into the substrate or achieved with a sand/cement screed. For substrates or situations other than those listed contact Ardex.

DURABILITY

In the opinion of CSIRO Appraisals, Technical Assesment 91, the 'Superflex Premixed Bathroom & Balcony' Liquid Waterproofing Membrane System is designed to have a serviceability life compatible to that of the overlaying tiles.

SAFETY DATA

Superflex Premixed Bathroom & Balcony is non-toxic. However, the contents should not be swallowed or inhaled. In case of eye contamination, rinse thoroughly with clean water. If irritation continues seek medical advice.

QUALITY PRODUCT

Superflex Premixed Bathroom & Balcony is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001. Material Safety Data Sheets are available from Ardex upon request.

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is the responsibility of the user to ensure that the product is used in accordance with Ardex instructions and in applications for which they are intended.

APPLICATION TOOLS

Apply Superflex by brush or roller. We recommend using a medium nap (8-12mm pile) paint roller. New rollers should be dampened with water before being used for the first time. For best results with a paint brush use a good quality, 50mm long bristle variety.

INTERNAL WET AREAS

- ensure wall & floor sheets are installed as per sheet manufacturers recommendations, with a 5-6mm gap between the bottom of the wall sheet and the floor
- ensure suitable substrate coatings are used (do not

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Superflex
Under Tile Membranes

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Fig.1 – Shower Recess – Critical Areas

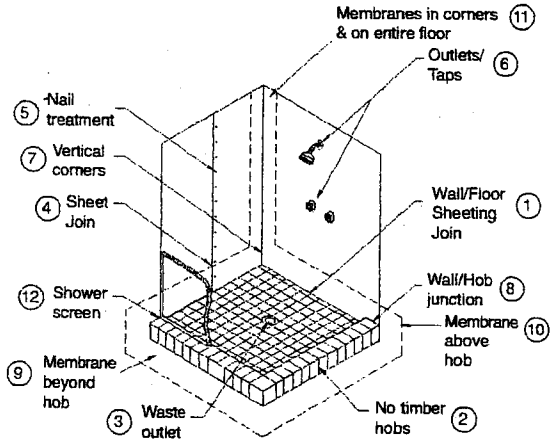
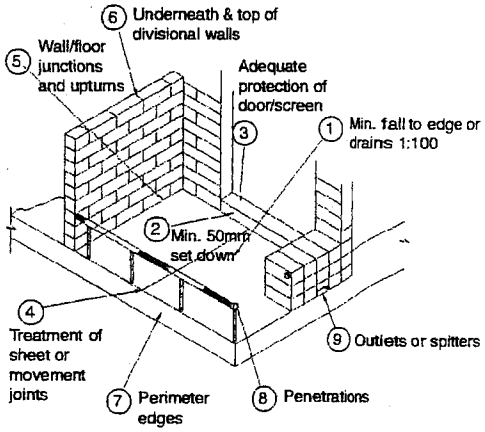


Fig.2 – Balcony – Critical Areas



use timber), and that the top of the hob does not slope outwards

- ensure that falls to the waste are min 1:80 (ie. 25mm in 2m) before waterproofing
- ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor
- avoid sheet joints in shower recess floor
- ensure that sheets are securely fixed to the wall at the bottom edge, and sheet joints are treated with silicone sealant or PVC duct tape
- treat nail and screw holes with silicone sealant • seal the perimeters of taps, shower outlets and waste outlets with silicone sealant
- apply a bead of silicone sealant to all horizontal and vertical corners
- apply a bead of silicone sealant to the junction of the hob or angle and walls
- apply the membrane to the entire shower recess floor and down into waste or drainage flange
- apply the membrane over the hob and at least 100mm beyond the outside edge of the hob (ideally to entire wet area floor)
- apply the membrane 1800mm up the walls or to the height of the shower rose within the shower recess
- install the shower screen to inside edge of the hob

BALCONIES AND DECKS

- ensure that the deck is constructed with falls to edge/ drains of min 1:100 (ie. 20mm in 2m) or else achieve the fall with a sand/cement screed
- ensure a min set down (step down) of 50mm to the finished floor level (ie. top of tiles)
- ensure suitable flashing is installed, ideally prior to the installation of the balcony screen/ sliding door
- treat any sheet joints with silicone prior to water proofing
- prepare and seal all wall/floor junctions with a bead of silicone
- apply the membrane up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door)
- where possible, apply the membrane prior to building divisional walls
- apply the membrane to the entire balcony floor and at least 50mm up the wall (or to the first course of bricks)
- apply the membrane to the top of the parapets and divisional walls, or else install suitable metal capping
- apply the membrane down over the front edge of the balcony onto the drip rail
- carefully seal any gaps around balcony penetrations prior to applying the membrane
- apply the membrane down into outlets and drains, ensuring excess material is removed

APPLICATION NOTES

Surface preparation

- Ensure all surfaces are structurally sound and totally dry. All sheet substrates must be securely fixed in accordance with the manufacturers instructions.
- Falls to outlets of at least 1:80 or 25mm in 2m (wet areas) or 1:100 externally, must be achieved prior to tiling.
- The surface to be coated should be free from dust, oil, paint, curing compounds and any other contaminating materials.
- Damaged concrete should be repaired (levelled) and surface defects including all cracks and sharp protrusions should be treated prior to the application of the membrane.
- Remove laitance on concrete or screeds by mechani cal means.
- Highly dense (>40MPa) or steel trowelled concrete should be roughened by mechanical means (shot blasting, grinding, etc).

Priming

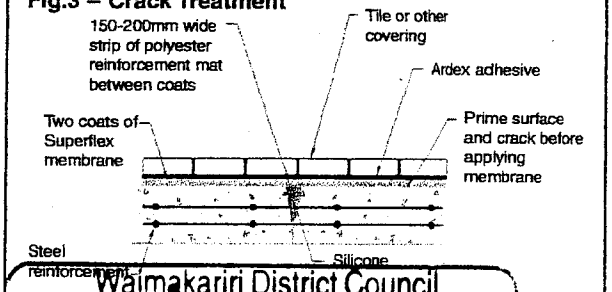
The primer is a critical part of the waterproofing system. Apply one coat of Superflex primer by brush or roller to all areas to be waterproofed including the floor waste. Allow the primer to be completely dry prior to the application of the Superflex membrane. This will take around 20-30 minutes depending upon weather conditions and porosity of the substrate. Coverage is approximately 6m² per litre. Plastic (eg. PVC) pipes should be primed with a solvent based plumbers primer. Prime metal surfaces with a suitable metal primer.

GENERAL APPLICATION

Crack preparation

Cracks <2mm: clean and remove any loose particles in the crack. Prime the area carefully before applying two coats of Superflex membrane, in a 200mm wide band, along the length of the crack.

Fig.3 – Crack Treatment

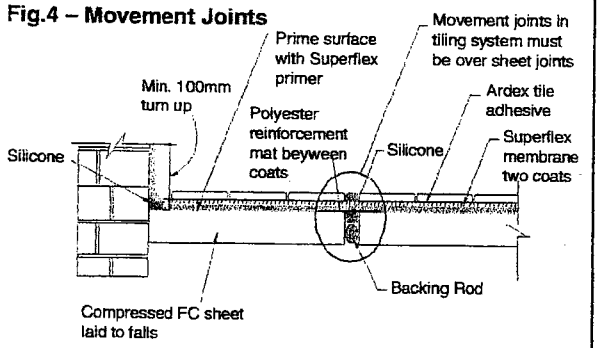


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Cracks 2-6mm: (Refer Fig. 3) prepare and prime the crack as opposite. Apply a bead of neutral cure silicone into the crack and extend it 5mm either side. Apply a 300mm wide band of Superflex Premixed Bathroom & Balcony along the entire length of the crack. Place a 200mm wide band of polyester reinforcement mat into the wet membrane. Remove any creases or air pockets in the mat. Immediately apply a second coat to completely fill the mat.
Cracks>6mm: contact your local Ardex representative.

Movement/construction joints
Movement joints (<6mm): clean and prime the joint before filling it with a bead of neutral cure silicone and extending it 5mm each side of joint. Apply a 300mm wide band of Superflex Premixed Bathroom & Balcony along the entire length of the joint and whilst still wet install a 200mm wide strip of reinforcing mat into the membrane. Whilst still wet apply a second coat of the membrane removing any air pockets in the mat.
Construction joints (>6mm): use the same procedure as above, but replace the reinforcing mat with the Superflex

Fig.4 – Movement Joints

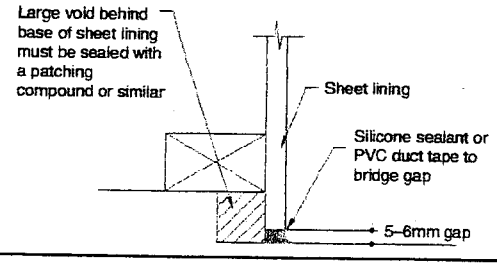


Joint Bridging Band.
Note: if tiling, movement joints should be taken to the surface of the tiles. Fill the joints between the tiles immediately above the movement joints with an appropriate joint sealant. (Refer Fig.4)

Corners & coving areas
After priming apply a generous bead (10mm) of neutral cured silicone sealant in coving areas and corners. (Refer Fig.5) Smooth over the silicone so that it extends 5mm up the wall and 5mm over the floor. Apply a first coat of Superflex Premixed Bathroom & Balcony to the area and allow the membrane to dry. Apply a second coat ensuring that excess product is removed from the junction (the final dry film thickness should be around 1.2-1.5mm) Alternatively, if a polyester reinforcement mat is used between coats then the second coat can be applied as soon as the mat is fully bedded into the first coat.

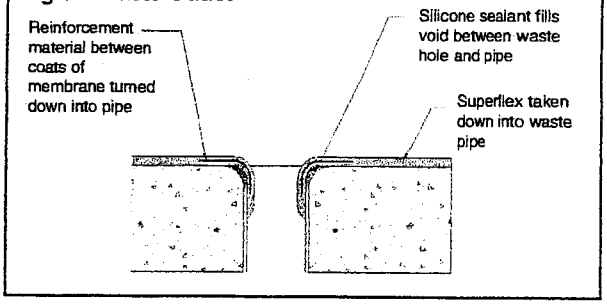
Walls
After priming apply two coats of Superflex Premixed Bathroom & Balcony in two opposite directions on vertical surfaces. Wall sheets joints should be treated with silicone, PVC duct tape or base jointing compound. In balcony situations take the membrane up underneath any existing cover flashing or install appropriate flashing. Allow the first coat to dry before applying the second coat.

Fig.5 – Wall/Floor Junction



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Fig.6 – Waste Outlet

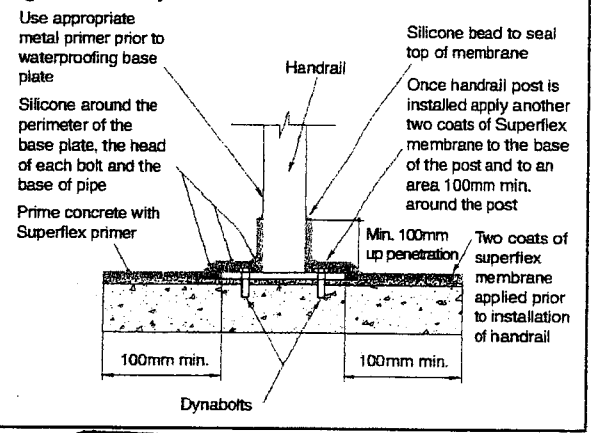


Floors
Two coats of Superflex Premixed Bathroom & Balcony are required to achieve the correct dry film thickness of 1.2-1.5mm. Apply the first coat over the primed surface and allow it to dry (1-2 hours at 23°C, 50%RH) before applying a second coat in an opposite direction. In shower recesses a drainage flange must be installed on all timber/sheeted floors, and are strongly recommended on all other substrates. Where possible rebate the flange into the floor. Seal the perimeter of the flange with neutral cure silicone treatment. If a flange is not installed the membrane must be applied down into the pipe. (Refer Fig.6) Allow the membrane to dry completely before tiling. Refer drying times above.

Balcony penetrations (Refer Fig.7)
Place a suitable flanged metal upstand around the penetration. Prime the metal with an appropriate metal primer and allow to dry. Apply a 10mm bead of silicone around the perimeter of the penetration. Apply the first coat of Superflex Premixed Bathroom & Balcony on the substrate and the flanged metal. Allow first coat to dry before applying a second coat ensuring a finished dry film thickness of no less than 1.2mm is achieved. Place a suitable flashing collar around the penetration sealing it with a suitable sealant.

Tiling systems
It is advisable to conduct a flood test of the shower once the membrane is cured (normally after 3 days), and before the tiling commences. A broad range of Ardex tile adhesives can be used over Superflex membranes. Contact Ardex or your nearest ABA merchant for advice on the most suitable system.

Fig.7 – Balcony Penetration



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14. JOINER

GENERAL:

Supply all joinery as required and shown on the plans. All materials and fittings must be top quality and shall be supplied to the site pre-finished or ready for finishing as indicated.
The Joiner must site measure and verify all opening heights, for fitted joinery and confirm final appliance sizes and models, and tolerances required for all built-in fittings. Joiner shall liaise with the Builder to allow all necessary tolerances, shadow margins etc. to allow building in.

KITCHEN / SKULLERY:

Fabricate the kitchen units as shown on the drawings complete with doors, drawers, shelves, bench tops, etc. Verify with the Owner the styles and finishes required.
Bench top shall be 'Koris' ADVANTE Acrylic solid surface with stainless steel sink. Colour: Confirm with owner.
All surfaces to interior of cupboards and drawers, and to shelves shall be finished in white melamine. Fit doors with concealed metal cup hinges and fit the drawers with metal guides and runners.

LAUNDRY:

Fabricate the laundry units as shown on the drawings complete with doors, shelves, bench top, etc.
Bench top shall be laminated formica on sealed 36mm customwood. Set in stainless steel tub, selected by Owner.

INTERIOR DOORS:

Supply standard interior solid core, flush panel doors to sizes and styles as shown on the drawings. Interior doors shall be prehung on 1 1/2 pairs of 89mm butt hinges on loose pins. All reveals shall be 25mm thick, Dressing A Pine, with planted stoppers, width to suit 10mm Gibralter Board linings. Allow to supply 45x12mm Architraves and 60x 12mm skirtings.

WARDROBES & CUPBOARDS:

Supply reveals to suit openings shown on drawings. All reveals shall be 25mm thick, Dressing A Pine.
Supply shelves, rails, etc. for building in as shown on drawings. Check with Owner on exact position of shelves before starting.

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15. PAINTER

MATERIALS:

All materials shall be of approved brand, delivery in unbroken packages, bearing the brand and makers name complete. Materials to be supplied and applied strictly in accordance with the Manufacturer's instructions.

WORKMANSHIP:

All work shall be of the highest standard performed by skilled and experienced tradesmen and finished to satisfaction. No painting shall be carried out in temperatures above or below that recommended by the manufacturer or in adverse weather conditions when painting outside. Before commencing work the Painter shall check all surfaces and draw the Contractor's attention to any defects which will prevent him from producing a satisfactory finish. It is the Painter's responsibility to see that all surfaces are thoroughly cleaned down. Adequate precautions shall be taken to protect all adjoining work from paint splashes, marks or other damage. Any such splashes or marks shall be removed and made good.

EXTERNAL WORK:

Allow 1 coat undercoat and 2 coats semi-gloss acrylic to soffits.

Allow 1 coat primer, 1 coat under coat and 1 coat enamel to timber facings etc.

INTERNAL WORK:

Allow to seal all water resistant Gib board as specified by Winstones.
Allow to seal Gib board with Gib Sealer as specified by Winstones.
Allow to seal customwood with customwood sealer.
Allow to prime all timber and apply 2 coats semi-gloss enamel.
Ceiling and walls of W.C., and bathrooms - apply 1 coat enamel undercoat, 1 coat semi-gloss enamel.
To all other walls and ceilings - supply 2 coats acrylic.

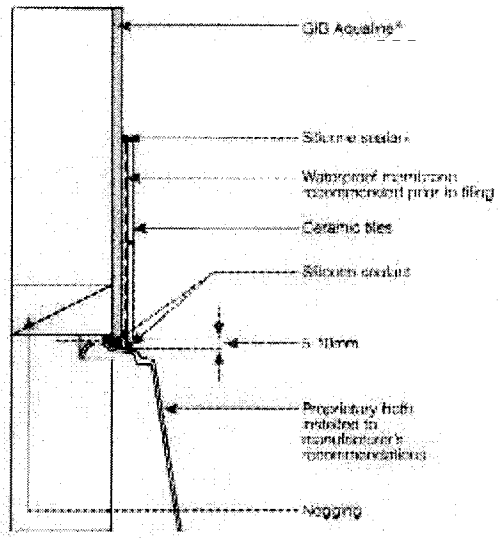
All colours and finishes are to be selected by the Owner, and the Painter shall provide the Owner with standard colour samples prior to commencing.

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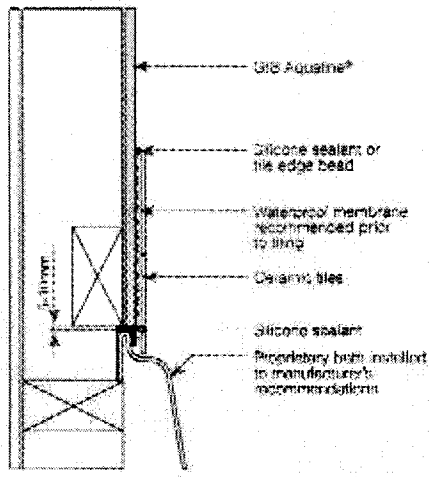
Bath – Tiled Upstand

MARCH 2017

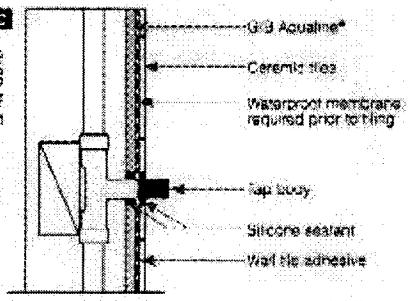
A



B

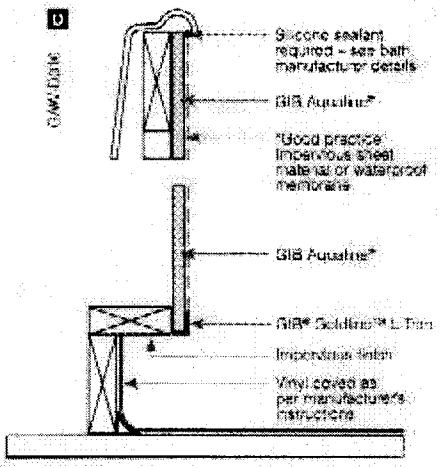


C

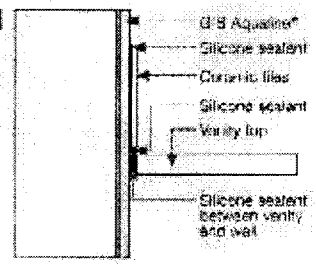


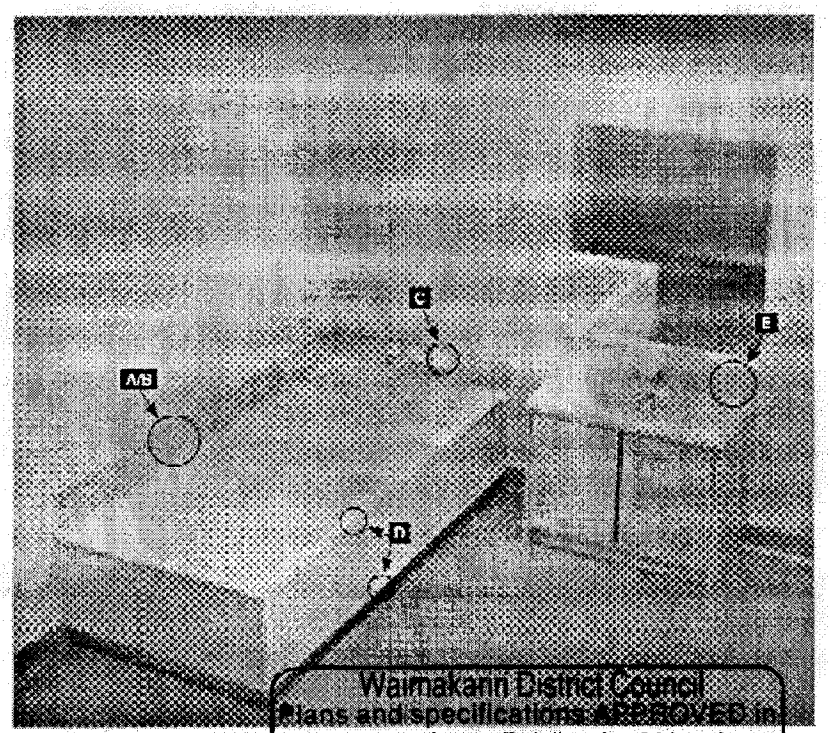
Note:
Where impact noise from pipes is an issue, fix all pipes on resilient brackets.

D



F





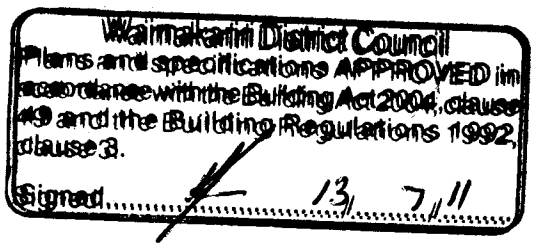
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Signed 13/7/11

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plans & specifications

PROPOSED HOUSE
FOR PAULA & DAVID HUMPHREYS
167 Hodgsons Road
Loburn

DESIGNER: Mark Milnes Architectural Design Ltd.
Architectural Designer
7 Park Street, Rangiora
Ph. / Fax. 313 5946



ENGINEER: B.L.S Consulting Ltd.
Consulting Engineer
200 Heywards Road, Kaiapoi R.D.2
Ph. 327 8062, Fax. 327 8021

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- METAL TILE FIXING DETAILS

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1. PRELIMINARY AND GENERAL

SETTING OUT:

The Contractor is responsible for the accuracy of the setting out. Should there be any discrepancy, consult the Designer before any work is carried out. If the Designer is not consulted then no responsibility can be accepted for incorrect work on site.

VARIATIONS:

No variations of any kind shall be made to the contract without direct instruction from the Designer. The price of any variations must be agreed to before being proceeded with. The Designer and Territorial Authority shall be notified of any variation that affects the requirements of the Building Code. If notification is not given, the Designer and Territorial Authority can not be held responsible. Due notice of rectification can be enforced by the Territorial Authority as stated in the New Zealand Building Act.

DIMENSIONS:

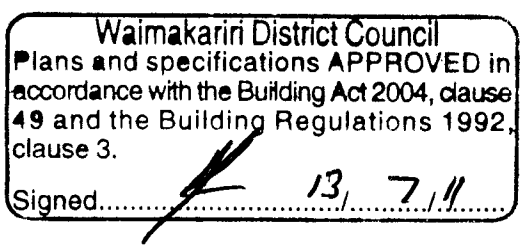
Unless expressly stated otherwise, all dimensions shall be taken to define bare surface of concrete, timber frames, etc. All dimensions shall be verified on site before commencing any work.

MATERIALS AND WORKMANSHIP:

All materials shall be the best of their respective kinds and shall comply with the requirements of the relevant New Zealand Standards. It should be clearly understood that a high standard of workmanship and finish is required throughout this contract. Should any trade consider that any surface finish or fitting is not in a satisfactory condition to ensure a proper fitting for his own trade, it shall be his responsibility to notify the Contractor before any further work is done and under no circumstances whatever shall such work be proceeded with until the necessary improvements have been made. Failing such notification and correction, the finishing trade concerned will be held responsible for a poor finish due to such unsatisfactory conditions.

ATTENDANCE OF TRADES:

Each trade shall leave all necessary holes, chases, sleeves, ducts, etc. as required by subsequent trades. Make good after all trades.



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2. EXCAVATOR

GENERAL:

The area of the site to be covered by the building shall be stripped of all top growth and vegetable matter down to good ground suitable for placing hardfill. Allow a minimum of 150mm under the slab. Excavate cut to allow floor levels given on site plan sheet 1, also cut and fill to form new ground levels as indicated on site plan sheet 1.

TRENCHES:

Excavate for foundations and footings as shown on the drawings (see foundation details) to give a solid bearing to the various depths, levels and grades.

BACKFILLING:

Backfill around foundations and under slab with compacted hardfill screened off level ready to receive the damp proof membrane.

REMOVAL OF SPOIL:

Any surplus material replaced on site according to site plan sheet 1, Existing topsoil and vegetable matter to be removed before placement of clay. Clay to be compacted before placement of topsoil. Finished site to have natural flowing ground appearance, ie no terrace, banks or need for retaining walls.

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3. CONCRETOR

GENERAL:

Supply and place concrete for foundations and floor slabs. The whole of the concrete work shall comply with appropriate sections of NZS 3910:1987.

CONCRETE GRADES AND SRENGTH:

All concrete shall have a minimum compressive strength of 25Mpa at 28 days. Concrete shall be properly compacted to avoid honeycombing. No concrete shall be poured in frosty or wet weather.

DAMP PROOF MEMBRANE:

Lay Moistop 748 or similar approved D.P.M under floor slab. All joints shall have 150mm laps and be securely taped with 50mm wide pressure sensitive tape. Cut carefully around all pipes and protrusions and seal with tape.

FOUNDATIONS:

All foundations or footings shall be taken down to 300mm below natural existing ground level, ensure reinforcing steel is not displaced.

CONCRETE FLOOR SLABS:

100mm floor slab shall have a U2 (with power float) finish in accordance with NZS 3114:1987.Form control joints with saw cuts 25mm deep, made not more than two days after concrete has been placed. Control joints shall be at approximately 3.5m centres each way. Unless shown as a free control joint reinforcing shall be continuous across all control joints.

CURING:

Once concrete has hardened and is still green the concrete shall be cured for a minimum of three days. If concrete is poured in warm weather it shall be cured for seven days. Curing shall be by spraying water onto hessian sheeting.

EMBEDDED ITEMS:

As the work proceeds, build in all bolts, fixings, etc. as necessary. Co-operate with all other trades and build in all items required by them.

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4. REINFORCING

MATERIALS AND WORKMANSHIP:

All reinforcing bars shall comply with N.Z.S. 3402, all reinforcing mesh shall comply with N.Z.S. 3422. All reinforcement and workmanship shall comply with the requirements of N.Z.S. 4671; in accordance with B1/AS1. The bars shall be cut and bent to the dimensions and shapes required for the concrete foundations and concrete slab, as shown on the drawings. Bending or straightening shall not be done in such a way as to damage or weaken the bar. Bars shall be positioned accurately and securely tied . Reinforcement as fixed shall be clean and free from loose rust.

REINFORCEMENT:

Reinforcement shall be two continuous deformed Steel D16 rods tied to D10 floor ties at 600mm centres. Laps are to be at least 32 diameters for deformed bars and 40 diameters for plain bars unless otherwise detailed.All slabs shall have 665 mesh where indicated.To support mesh off the damp proof membrane flat bottomed spacers shall be used at 900mm centres each way to reduce the risk of puncturing the DPM.
To be read in conjunction with foundation details.
All steel reinforcing shall be grade 300 steel class E
Free control joints to have dowel bars in accordance with B1/AS1

All reinforcing bars & mesh are to meet ductility class E requirements in accordance with NZS 4671 as prescribed by the Department of Building and Housing 19 May 2011

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5. CARPENTER

TIMBER:

All construction to comply with NZS 3604:1990. All timber shall conform to new grades defined by N.Z.S.S. 2007 and shall comply with the New Zealand Building Code. Treated timber shall comply with Clause B2. NZS 3602:2003

MOISTURE CONTENT:

Framing timbers shall have a moisture content of 16%, as per Winstones recommendations before the application of gib board linings.

WALL FRAMING:

All framing to be gauged on all faces. Generally all walls, fix 90x45 studs at 600mm crs max. Between studs fix rows of dwangs at 800mm crs max. Fix bottom plate over malthoid DPC with M12 galv bolts at maximum 900mm crs.

TIMBER SCHEDULE:

Treatment:
General framing H1.2 MSG8
Lintels H1.2 VSG8/MSG8.

Designation	Size
Wall plates	90x45
Ceiling plates	140x35
Studs / dwangs	90x45
Opening studs	2/90x45
Ceiling battens (or Gib rondo)	70x35
Tile battens	50x40
Lintels (see truss plan attached)	

ROOF FRAMING:

Gangnail trusses where shown are to be fixed at 900mm centres with two 'Z' nails and two 100mm nails into top plate.

BUILDING WRAP:

Line over the framing with thermakraft, fixed in accordance with Manufacturers' Specifications. (see attached).

SOFFIT LININGS:

Soffit linings shall be painted hardie groove fixed in accordance with the manufacturer's instructions.

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5. CARPENTER

INSULATION:

Allow to install in walls R2.8 fibreglass batts, and R.3.6 fibreglass batts to ceilings to meet zone 3 NZ standard for insulation: 2004 NZS 4218
Recessed downlights to be fitted with 'Heat Can' to enable insulation to meet H1 values as calculated.

INTERNAL LININGS:

Generally to all walls and ceilings line with 10mm Gibraltar board. Bathroom and en-suite walls and ceilings to have 10mm Aqualine Gib Board. All Gib. board shall be fixed to Manufacturer's specifications and recommendations. Protect external corners of Gib. board with Beadex tape. Use Beadex tapes to internal corners. Finish joints to sheets by laying in 'Gib Bedding Compound' and 'Gib Reinforcing Tape' and finish joints with Gib Finishing Compound and a light sand. Gib. board is to be stopped to a **Level 4 finish**. Walls and ceilings are to be painted. Walls and ceilings are to be painted. The Stopper shall suitably protect all timber surfaces adjacent to Gib. board that are to be stopped to prevent stopping plaster marking timber and trim, windows and door frames etc.

SKIRTINGS:

60x12mm beveled painted.

HARDWARE:

Allow a nett sum for the supply of all hardware as selected by Owner. Fit all hardware as required, including locks, latches, door furniture, cupboard door and drawer handles, door stops, bathroom furniture etc. All door handles to be fixed 1000mm above floor level.

INTERNAL DOORS:

Each internal door shall be flush hollow core, hung with one and a half pairs of 90 B.S. butts with 25mm pine jambs.

WARDROBES:

Bedroom wardrobes will be constructed as shown on plan with aluminium sliding doors. In each case a shelf and hanging rail will be provided. Note extra shelving to be provided in master bedroom to Owner instructions.

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5. CARPENTER

GARAGE ATTIC FLOORING:

Allow to install square edge Ecoply flooring.

Fixing of sheets:
Use combination of stainless steel screws and polyurethane foam adhesive.
(Holdfast Gorilla Nailpower or similar)
Do not over-drive screws.
Fix at least 7mm from the sheet edges.
Space screws at 150mm centres on all edges, and 300mm centres in the body of the sheet.
Ensure top edges of joists are properly aligned.
Use kiln dry joists to minimize shrinkage in the depth of the floor.
250x50mm joists at 400mm centres.
Block all edges of plywood sheets.

Sheet layout:
Ensure Ecoply sheets are dry before installation.
Place face grain at right angles to the supports.
Sheets must be continuous over at least two spans.
Lay the sheets in a staggered pattern.
Allow a 2 to 3mm expansion gap between sheets.

GARAGE ATTIC ACCESS:

Allow to install pull down wooden ladder with hinged trap door
Opening approx 1200x800mm

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CARPENTER

OPENINGS:

Where lintels (over 1350mm wide) support roof trusses a 25mm x 1mm metal strap under the bottom plate and up 150mm on the stud, fixed with 6 nails to both sides of the stud. A 25mm x 1mm metal strap taken up the stud, over the face of the lintel, up and over the top plate and return down the other side. Fixing same as bottom. Bolt or dowel within 150mm of bottom. Both ends of opening.

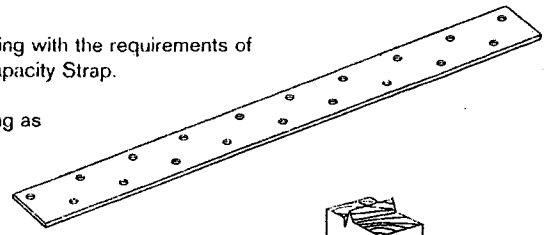
Pryda Sheet Brace Straps

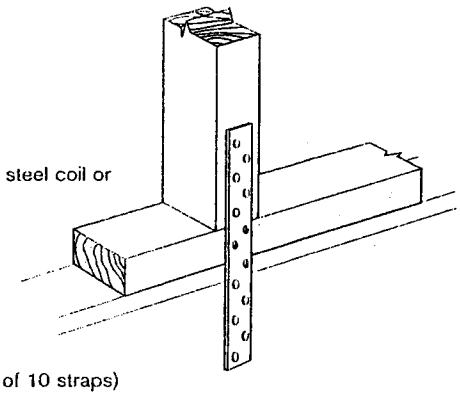
6kN or 12kN Capacity fixing for sheet-braced wall panels

FEATURES

Mild steel strap fixing complying with the requirements of NZS3604:1999 for a 6kN Capacity Strap.

Use 2 straps, each with nailing as below, where 12kN Capacity fixing is required.





SPECIFICATIONS

Size: 25mm x 1.0mm x 300mm
25mm x 1.0mm x 400mm
25mm x 1.0mm x 600mm

Material: 1.0mm G250 Z275 galvanised steel coil or stainless steel.

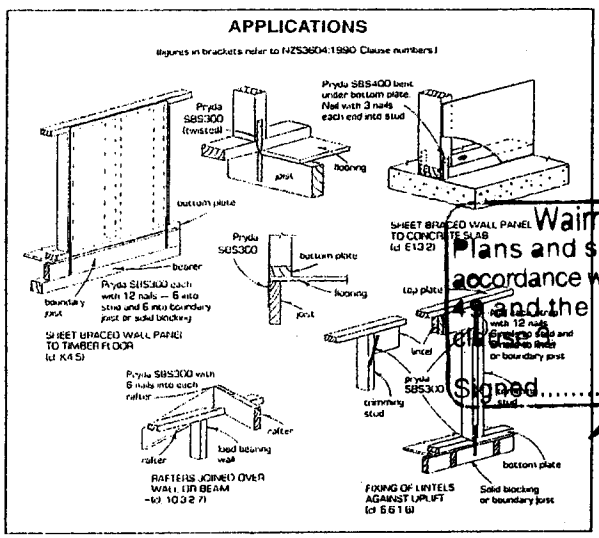
PRODUCT

Code: SBS300 (300 long)
SBS400 (400 long)
SBS600 (600 long)

Packing: 50 per carton (5 bundles each of 10 straps)

APPLICATION

Nail with 6 nails at each end of strap for 6kN Capacity fixing.
Use Pryda product nails (30 x 3.15 Hot Dip Galvanised Bracket Nails).



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CARPENTER

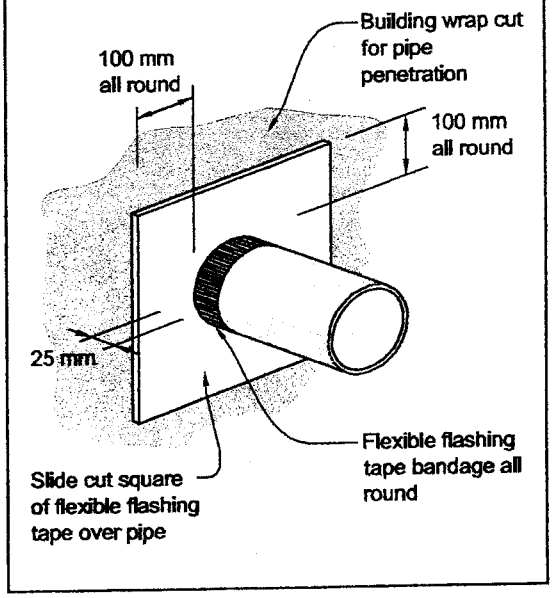
WALL BEHIND CAVITY:

Restrain the building wrap and insulation from bulging into the cavity by installing polypropylene tape at 300mm centres.

PENETRATIONS THROUGH CAVITIES:

Pipes and service penetrations shall be made weathertight by using flashing tape. See Fig 68 E2 / AS1

Figure 68: General pipe penetration
Paragraph 9.1.9 3, Figure 126



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WALLPLATE/STUD JOINT FOR 45mm & 35mm WALL FRAMES NZS 3604:1999

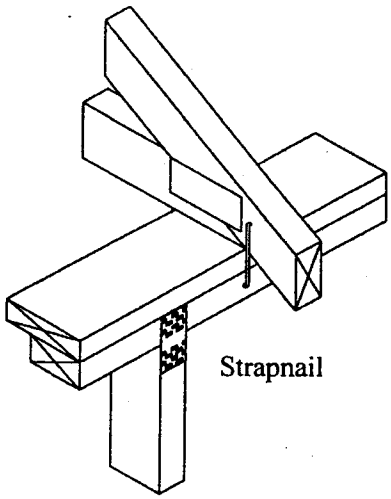
The acceptable solutions in NZS 3604:1999 requires, in addition to 2 nails as per table 8.19 of NZS 3604:1999, other connectors between the wall plate/stud joint in wall frames. The connection varies with the intensity of the wind as per Table 8.18 of NZS 3604:1999. It is proposed that Pryda Strapnails & Stud Ties are used as opposed to Z and U nails for ease of fixing and lesser interference with the cladding. The characteristic values of the Strapnails & Stud Ties for the above joint applies to dry timber wall frames.

Based on the tested nail values we can, on reasonable grounds, state that the joint between the wall plate/stud joint be secured, in additon to 2 nails as per table 8.19 of NZS 3604:1999, by Strapnails and Stud Ties for the following conditions:

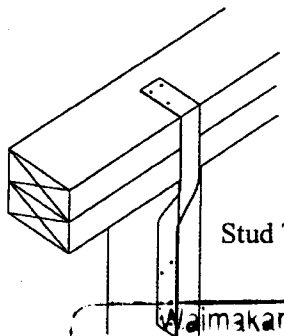
- *Dry wall framing*
- *Framing at least made of Number 1 framing, f5, MGP10*
- *Moisture content less than 18%*

LIGHT WEIGHT ROOF TRUSSES AT 900 CENTRES					HEAVY WEIGHT ROOF TRUSSES AT 900 CENTRES				
Loaded dimension	Wind Zone				Loaded dimension	Wind Zone			
	L	M	H	VH		L	M	H	VH
3.0	SN25	SN25	SN50*	SN50*	3.0	2/nails	2/nails	SN25	SN50*
3.5	SN25	SN25	SN50*	SN50*	3.5	2/nails	2/nails	SN25	SN50*
4.0	SN25	SN25	SN50*	1/STS3	4.0	2/nails	2/nails	SN25	SN50*
4.5	SN25	SN25	SN50*	2/STS3	4.5	2/nails	2/nails	SN25	SN50*
5.0	SN25	SN25	SN50*	2/STS3	5.0	2/nails	2/nails	SN25	SN50*
5.5	SN25	SN25	SN50*	2/STS3	5.5	2/nails	SN25	SN25	SN50*
6.0	SN25	SN50*	SN50*	2/STS3	6.0	2/nails	SN25	SN50*	SN50*

LEGEND SN25 - 25x1mm Strapnail
SN50* - 50x1mm Strapnail for use with 45mm framing only. For 35mm framing substitute with STS3 Stud Tie.
STS3 - LH or RH Stud Tie



Strapnail



Stud Tie

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TRUSS SYSTEMS, TIMBER CONNECTORS, TIMBER JOINTING, SOFTWARE.

Manufactured & Marketed in New Zealand by Pryda NZ
Phone 0800 88 22 44

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LINTEL – FIXING SCHEDULE

Acceptable solutions in conjunction with table 8:14 and Fig 8:12 of NZS 3604:1999

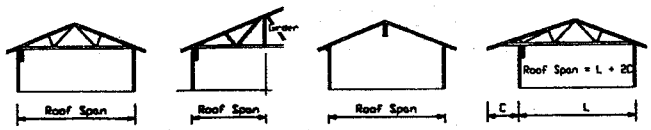
NOTES:

Lintel spans and loaded dimensions measured in metres.
All frame nailing not indicated, refer to table 8.19 of NZS 3604:1999.
In all cases a 90 mm thick external wall is assumed.
For girder truss loads use a minimum of:
Fixing C where girder carries more than 10sq.m. of roof and
Fixing D where girder carries more than 18sq.m. of roof.
* designates that a specific design is required.

SPAN metres	WIND ZONE	LIGHT ROOF LOADED DIMENSION metres				HEAVY ROOF LOADED DIMENSION metres			
		1.0	1.5	2.0	2.5	1.0	1.5	2.0	2.5
0.3	L	A	A	A	A	A	A	A	A
	M	A	A	A	A	A	A	A	A
	H	A	A	A	A	A	A	A	A
	VH	A	A	A	A	A	A	A	A
0.6	L	A	A	A	A	A	A	A	A
	M	A	A	A	A	A	A	A	A
	H	A	A	B	B	A	A	A	B
	VH	A	B	B	B	A	B	B	B
0.9	L	A	A	A	A	A	A	A	A
	M	A	A	B	B	A	A	A	A
	H	B	B	B	C	A	B	B	B
	VH	B	B	C	C	B	B	B	C
1.2	L	A	A	A	B	A	A	A	A
	M	A	B	B	B	A	A	A	B
	H	B	B	C	C	B	B	B	C
	VH	B	C	C	C	B	C	C	C
1.5	L	A	A	B	B	A	A	A	A
	M	B	B	B	C	A	A	B	B
	H	B	C	C	C	B	B	C	C
	VH	C	C	C	C	B	C	C	C
1.8	L	A	B	B	B	A	A	A	A
	M	B	B	C	C	A	B	B	B
	H	C	C	C	C	B	C	C	C
	VH	C	C	C	C	C	C	C	C
2.4	L	B	B	B	C	A	A	A	A
	M	B	C	C	C	B	B	B	C
	H	C	C	C	C	C	C	C	C
	VH	C	C	D	D	C	C	C	D
3.0	L	B	B	C	C	A	A	A	B
	M	C	C	C	C	B	B	C	C
	H	C	C	C	D	C	C	C	C
	VH	C	D	D	D	C	C	D	D
3.6	L	B	C	C	C	A	A	B	B
	M	C	C	C	C	B	C	C	C
	H	C	C	D	D	C	C	C	D
	VH	C	D	D	*	C	D	D	D
4.2	L	B	C	C	C	A	A	B	B
	M	C	C	C	D	B	C	C	C
	H	C	D	D	D	C	C	D	D
	VH	D	D	*	*	C	D	D	*
4.8	L	C	C	C	C	A	B	B	B
	M	C	C	D	D	C	C	C	C
	H	C	D	D	*	C	C	D	D
	VH	D	D	*	*	D	D	*	*

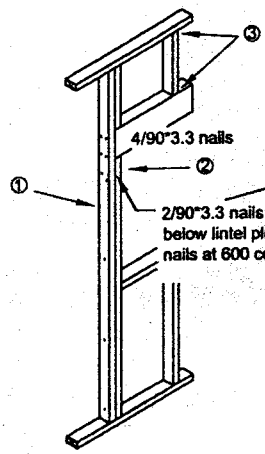
Loaded Dimension

Loaded Dimension = ½ X Roof span + Overhang.



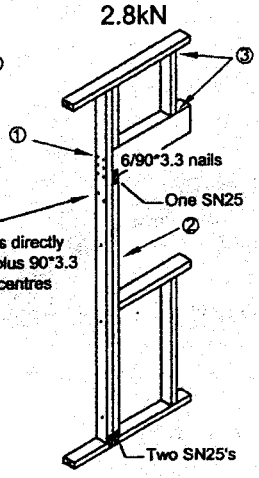
FIXING A

1.4kN



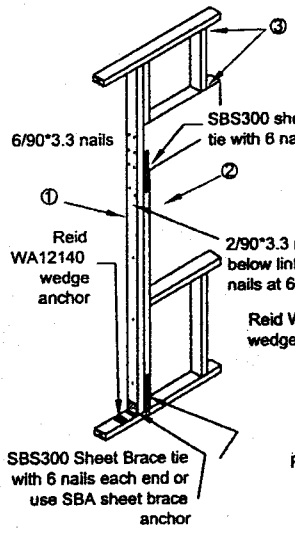
FIXING B

2.8kN



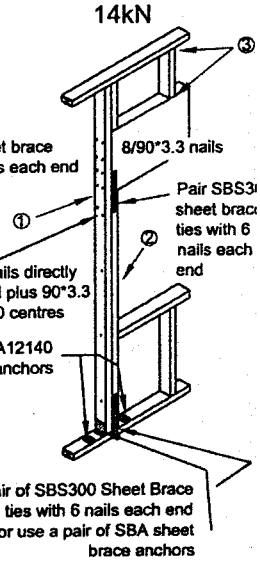
FIXING C

8.0kN



FIXING D

14kN



① For trimming stud thickness refer to Table 8.5 NZS3604:1999. Additional studs to that shown to have a minimum stud to stud fixing of 11/90*3.3diam. nails.

② Refer to Pryda Acceptable Solution ref: AS1 - Wall Plate/ Stud Joint - for suitable fixing.

③ Where a doubling stud which provides support for a lintel is shorter by 400mm or more than the full stud height, its thickness shall not be included as contributing to the thickness of trimming studs.

TRUSS SYSTEMS. TIMBER CONNECTORS. TIMBER JOINTING. SOFTWARE.

Manufactured & Marketed in New Zealand by Pryda NZ
Phone 0800 88 22 44

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PURLIN – RAFTER FIXINGS

SELECTION CHART
(minimum fixing requirements)

1. **HEAVY ROOFS**

   All purlins and/or battens use fixing Type A only on roof width (w) up to 12m.

2. **LIGHT ROOFS**

   A. **BATTENS** - Max. span 1200
   - Max crs. 400
   - Roof width (w) up to 12m.

   L & M wind loads use Type B fixing on all battens.

   H & VH wind loads use Type C on all battens.

   B. **PURLINS** - Max. span 1200, Max crs. 900 or
   - Max. span. 900, Max crs. 1200

   L & M wind loads use Type C fixing on purlin No.2 and Type B on all other purlins for all roof widths (w) up to 12m.

   H & VH wind loads
   1. On roof width (w) up to 8m;
      Use Type D fixing on purlin No. 2 and Type C on all other purlins.
   2. On roof width (w) up to 12m;
      Use Type D fixing on purlins No. 2 & 3 and Type C on all other purlins.

   C. **PURLINS AND BATTENS ON GABLE END**
   - Max. span 1200, Max crs. 900 or
   - Max. span. 900, Max crs. 1200

   L & M wind loads use Type B fixing on support line No. 1, Type C on support lines No. 2, 3, & 4 and all other support lines as per Section A or B above.

   H & VH wind loads use Type C fixing on support line No. 1, Type D on support lines No. 2, 3, & 4 and all other support lines as per Section A or B above.

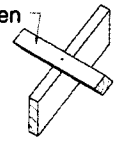
STANDARD FIXING OPTIONS

FIXING DEFINITIONS

NAIL = Either 90 x 3.15 Power driven
or 100 x 3.75 Hand driven
SCREW = 80 x 10 gauge **LUMBERLOK** Purlin screw (Blue Screw)
WIREDOG = Either left hand or right hand **LUMBERLOK** wiredog.

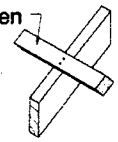
FIXING TYPE A
0.40kN

1 NAIL



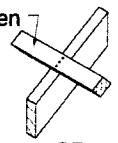
FIXING TYPE B
0.70kN

2 NAILS

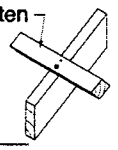


FIXING TYPE C
1.20kN

3 NAILS
OR
1 NAIL + 1 SCREW

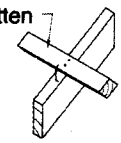


OR

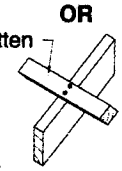


FIXING TYPE D
2.00kN

2 NAILS + 1 WIREDOG
OR
2 SCREWS

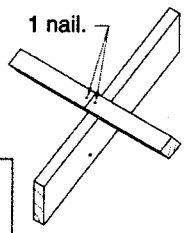


OR

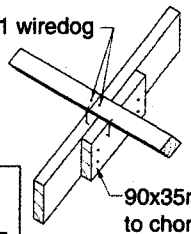


PURLIN / BATTEN SPLICE FIXING OPTIONS

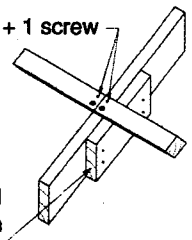
NOTE:
Skew nail when fixing to 35mm rafter or truss.



FIXING TYPE A & B OVER PURLIN SPLICE



OR



90x35mm block fixed to chord or rafter with 4/75mm nails.

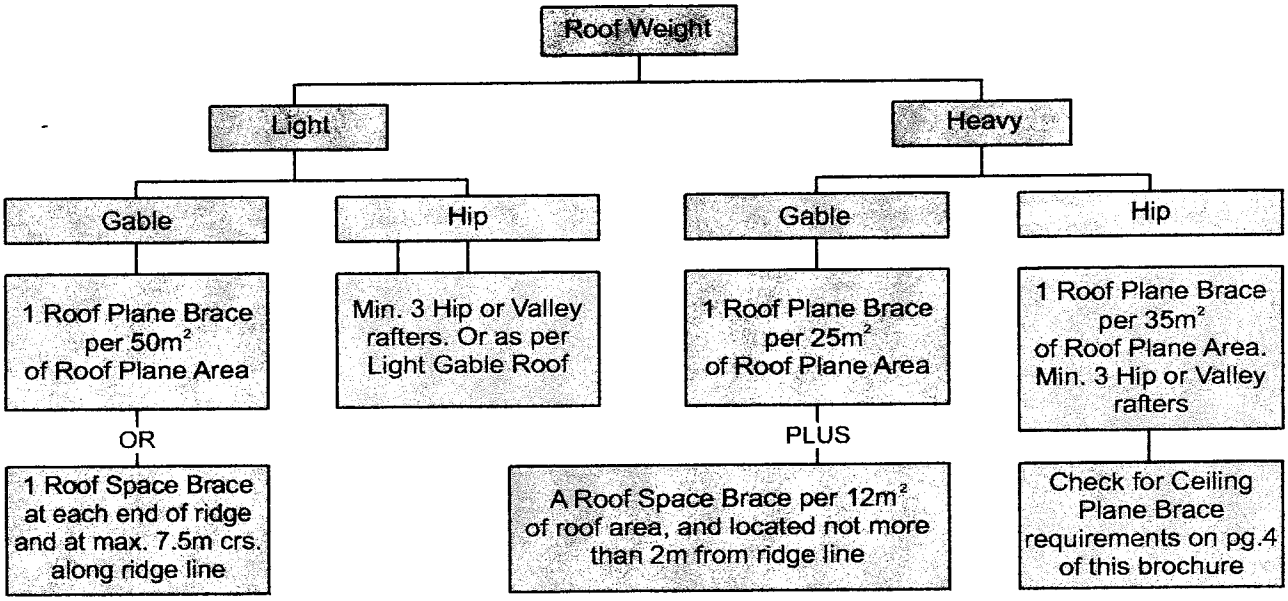
FIXING TYPE C & D OVER PURLIN SPLICE

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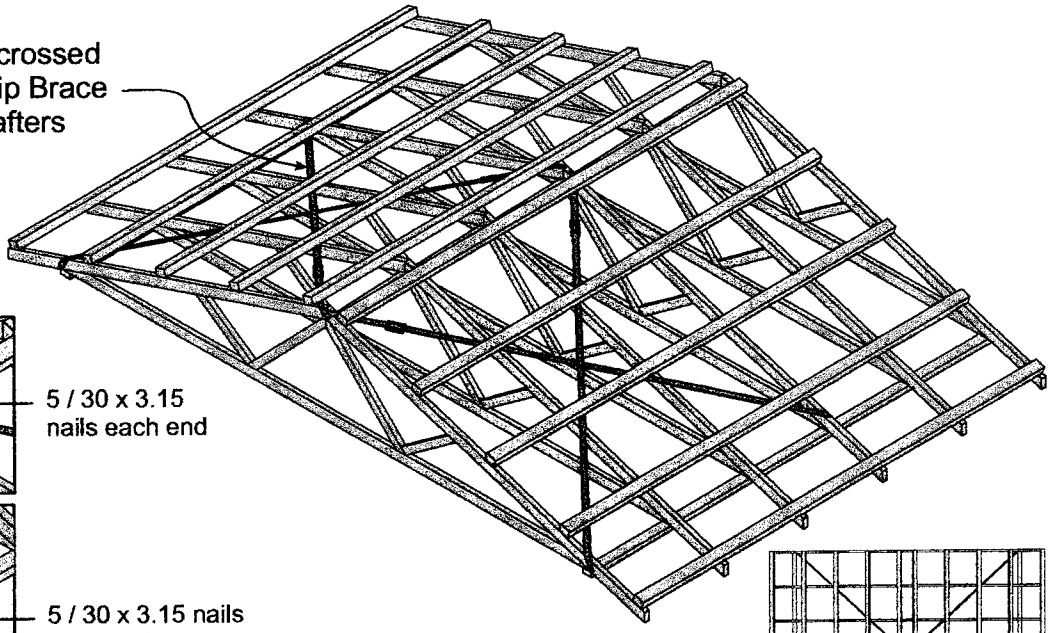
Roof Plane & Roof Space Brace Requirements Flow Chart

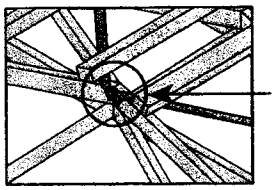
LUMBERLOK®



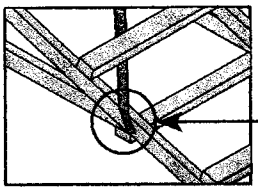
Roof Plane Brace & Installation

Single tensioned crossed LUMBERLOK Strip Brace over top chords/rafters

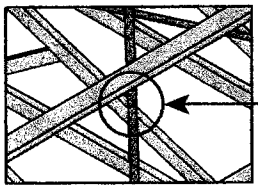




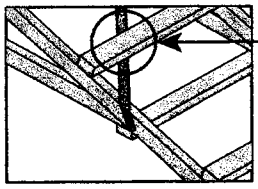
5 / 30 x 3.15 nails each end



5 / 30 x 3.15 nails each end

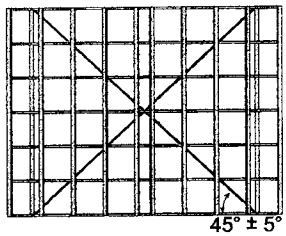


1 / 30 x 3.15 nail at crossing

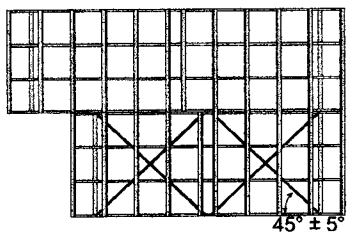


When purlin depth above truss chord is 50mm or less, Strip Brace can be installed over top of purlins

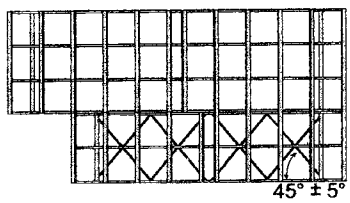
Alternative Layout Options



Single Cross @ 45°



Double Cross @ 45°



Quadruple Cross @ 45°

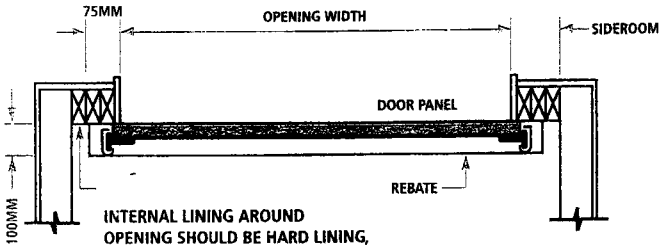
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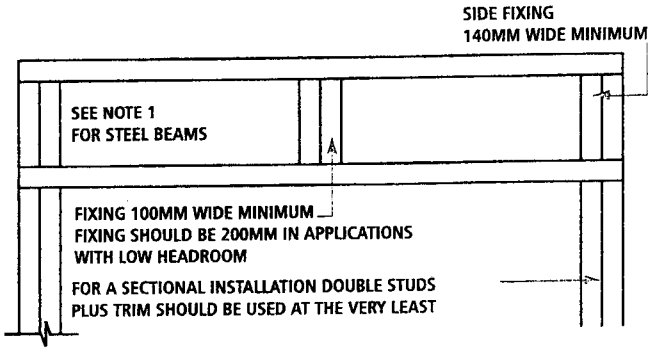
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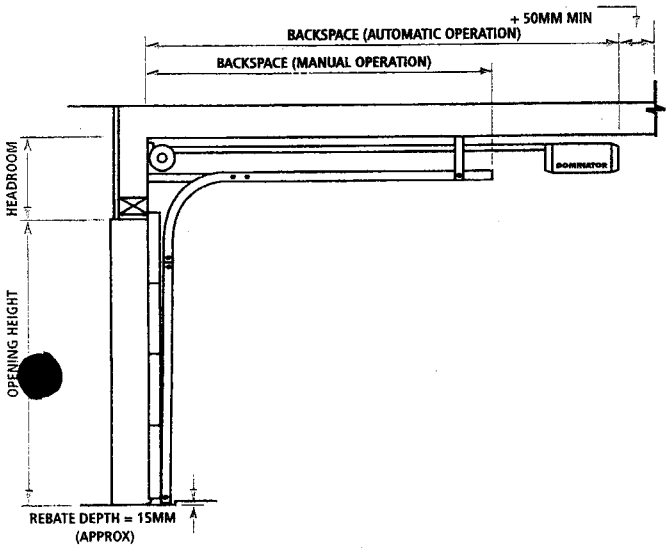
SECTIONAL GARAGE DOORS

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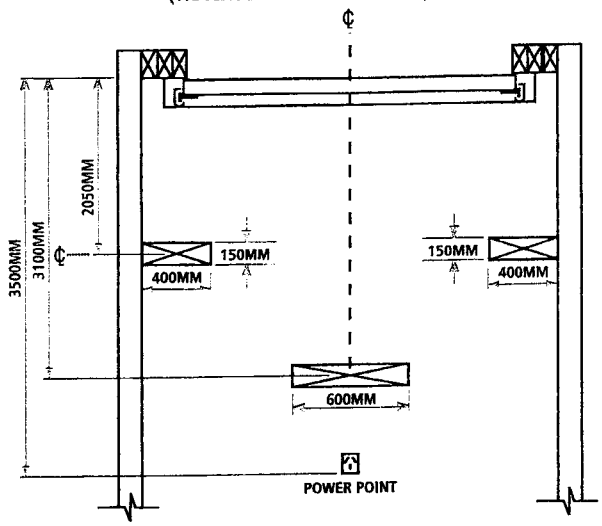


INTERNAL LINING AROUND OPENING SHOULD BE HARD LINING, E.G. CUSTOMWOOD OR PLY (GIB BOARD SHOULD ONLY BE USED IF FIXED ON SOLID FOUNDATIONS)





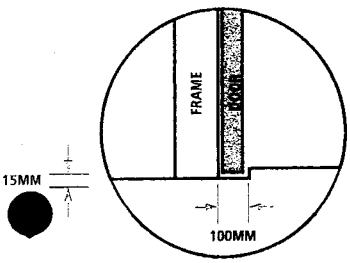
NOGGING DETAIL FOR SECTIONAL UP TO 2.3M HIGH (TRACK AND MOTOR FIXINGS)



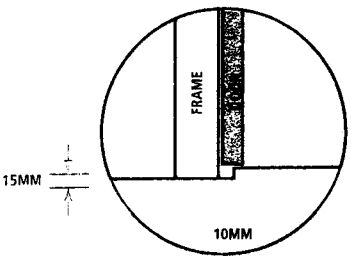
NOTE:
1. FOR AUTO OPERATION POWER POINT AND BELL WIRE TO BE FITTED 3.3M BACK FROM CENTRE OF OPENING. BELL WIRE TO BE RUN TO NEAR ACCESS DOOR.
2. INSIDE SURFACE OF OPENING TO BE FLUSH TO ENABLE DOOR FITTINGS TO BE FIXED CORRECTLY.

NOTE: THE DETAILS SHOWN ARE FOR 2.3M MAXIMUM HEIGHT SECTIONAL DOOR WITH STANDARD 350MM HEADROOM.

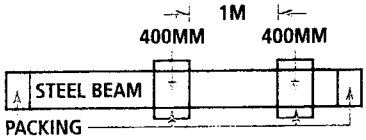
REBATE OPTION 1



REBATE OPTION 2



NOTE 1 (ILLUSTRATION)



PACKING FOR STEEL BEAMS ('I' OR 'U' SHAPE)

IMPORTANT DIMENSIONS	HEADROOM	SIDEROOM	BACKSPACE MANUAL OPERATION	* AUTO OPERATION
STD HEADROOM	MANUAL: 320MM AUTO: 350MM	140MM	DOOR HEIGHT + 200MM	DOOR HEIGHTS UP TO 2300MM IS 3500MM BACKSPACE THEN HEIGHT + 1000MM FOR DOORS HIGHER
LOW HEADROOM	AUTO: 200MM	140MM	DOOR HEIGHT + 500MM	

NOTE:
1. WHERE STEEL BEAMS EXIST ABOVE DOOR OPENING, PACK OUT FIXING 400MM WIDE IN CENTRE OF BEAM (ABOVE MIDDLE OF DOOR OPENING SO DOOR HARDWARE CAN BE SECURED). FOR DOOR OPENINGS OVER 3.0 WIDE PACK OUT ADDITIONAL FIXING 400MM WIDE 1 METRE OFF CENTRE (SEE NOTE 1 ILLUSTRATION)
2. ENSURE INSIDE SURFACE OF OPENING IS FLUSH SO DOOR HARDWARE CAN BE FIXED CORRECTLY
3. FOR CONCRETE GARAGES A TIMBER JAMB MUST BE USED FOR DOOR TO OPEN AND CLOSE AGAINST
4. POWER POINT AND BELL WIRE SHOULD BE FITTED APPROXIMATELY 3.5 METERS BACK FROM CENTRE OF OPENING, FOR AUTOMATIC OPERATION

* AN ADDITIONAL 50MM IS REQUIRED BEHIND THE OPERATOR FOR PROGRAMMING PURPOSES

NOTE: CORRECT FRAMING AND LINING MUST BE COMPLETED BEFORE A SECTIONAL DOOR IS INSTALLED
ALL AUTOMATIC OPERATION DIMENSIONS APPLY TO 'DOMINATOR' GARAGE DOOR OPENERS ONLY

Dominator® reserves the right to alter specifications at any time without notice in accordance with company policy of continuous product development.
Dominator® Garage Doors are sold, installed and serviced by your local authorised Dominator® distributor.

Illustrations are not accurate representations of product, and are for illustrative purposes only. All measurements should be made by your Dominator® distributor for clarification.

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CARPENTER

WET AREA TANKING:

GIB AQUALINE Details:

Typical Wet Area Details - Timber Frame

Figure H
Typical Plumbing Penetration
(Where impact noise from pipes is an issue, surface fix all pipes on resilient brackets.)

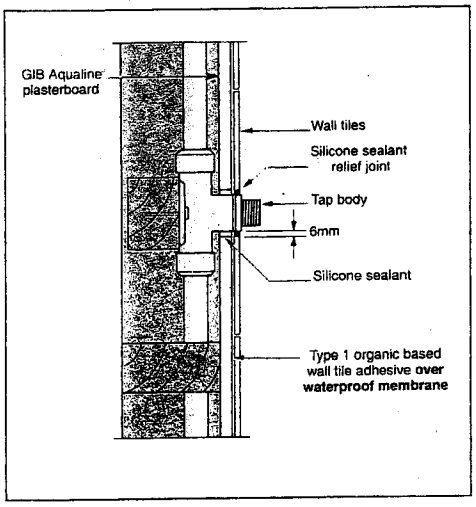


Figure I
Tiled Shower -
Internal Corner Detail

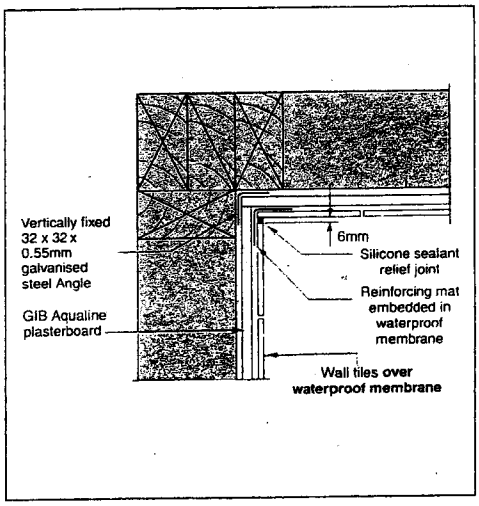
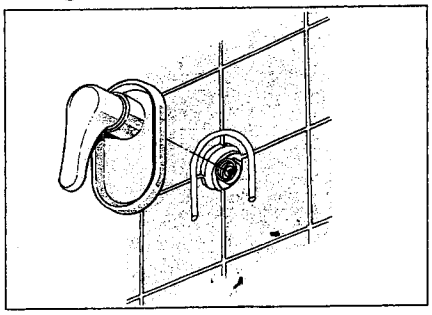
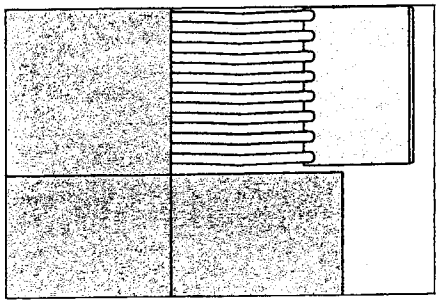


Figure J
Sealing Under Mixer Fascia



Run a bead of silicone sealant around the mixer unit on the tiles extending below the bottom of the pipe aperture.

Figure K
Applying Tile Adhesive



Tile adhesive must be combed horizontally to prevent water ponding at base of the wall. It is important that the adhesive is applied to the wall and not "buttered" on to the back of individual tiles

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6. STEEL WORKER

MATERIALS AND WORKMANSHIP:

All steelwork carried out in accordance with NZS 3404:9T sections 14 & 15.
All UB & PFC sections to be at least grade 300 steel.
All S.H.S. columns to be grade 350.
Steel flats & angles may be grade 250.
All welds to be 5mm fillet unless shown otherwise and to be carried out in accordance with AS/NZS 1554.1.
Bolts may be 4.6/s to AS/NZS 1110, 1111. All bolts to be galvanized. Holes for bolts to be 2mm larger than diameter than the bolt dia.
All interior/enclosed steel need not be protected, but recommend minimum all metal primer be applied to paint manufacturers recommendations.
All exposed steelwork, including in the brickwork cavity, (window lintels) to be hot dipped galvanized.

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7. ALUMINIUM JOINERY

GENERAL:

Supply to the Carpenter, ready to build in, all the Joinery Units required as shown on the drawings, complete with matching aluminium flashings. All aluminium sections shall be extruded from aluminium alloy complying with N.Z.S.4211. All glazing shall be in accordance with clause F.2, Hazardous Building Materials of the N.Z. Building Code and shall comply with N.Z.S. 4223.
All units to be double glazed.

FINISH:

Powder cote finish to match colorsteel gutter & roof.
Owner to confirm colour.

REVEALS:

All frames (windows & doors) shall be fitted with ex 28mm treated pine reveals and condensation channels. All reveals to line through as appropriate. All timber shall be protected from weather and site damage. Timber shall be sealed before leaving the factory or immediately they are delivered to the site.

SUPPORT BARS:

All frames (windows & doors) shall be fitted with WANZ Support Bars.

GLAZIER:

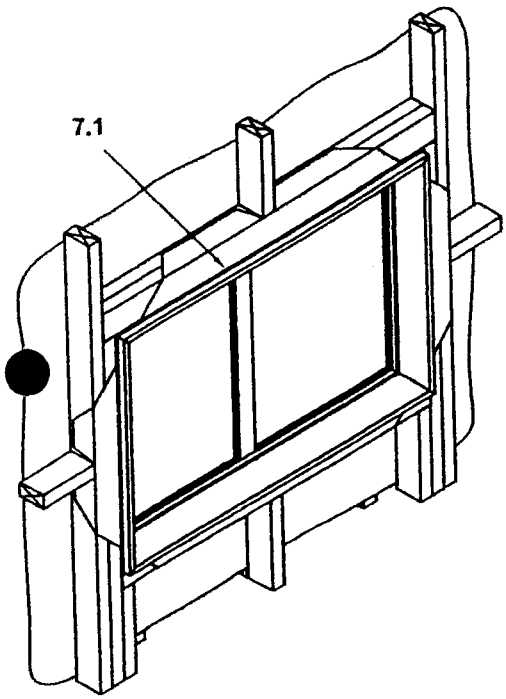
Supply dual seal double glazed units to all windows and doors except garage. Supply and glaze all doors in accordance with NZS 4223 including Part 3 and AS/NZS 2208 where glass could be subject to human impact.

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7. ALUMINIUM JOINERY

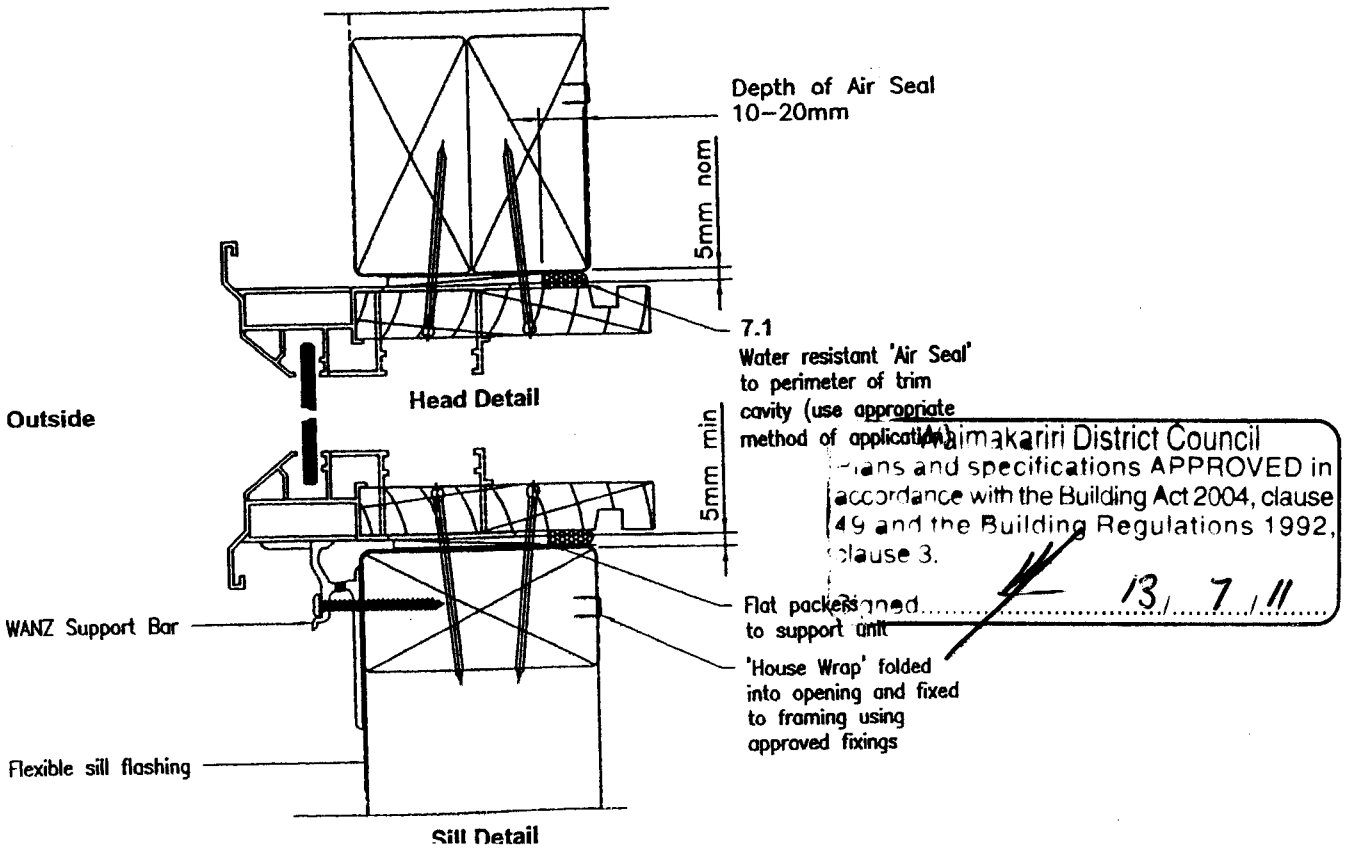
AIRSEAL:



7.1 Apply a continuous bead of an approved, water resistant 'Air Seal' to the perimeter of the trim cavity. Run the seal around the inside edge of the trim cavity, ensuring contact with both window reveal and 'House Wrap'

NOTE – Do Not fill the cavity.

AIR SEAL
Air Seal holds pressure in the trim cavity and enables pressure equalisation, typically an air seal is a low expansion polyurethane foam or sealant, PEF backing rod is optional.

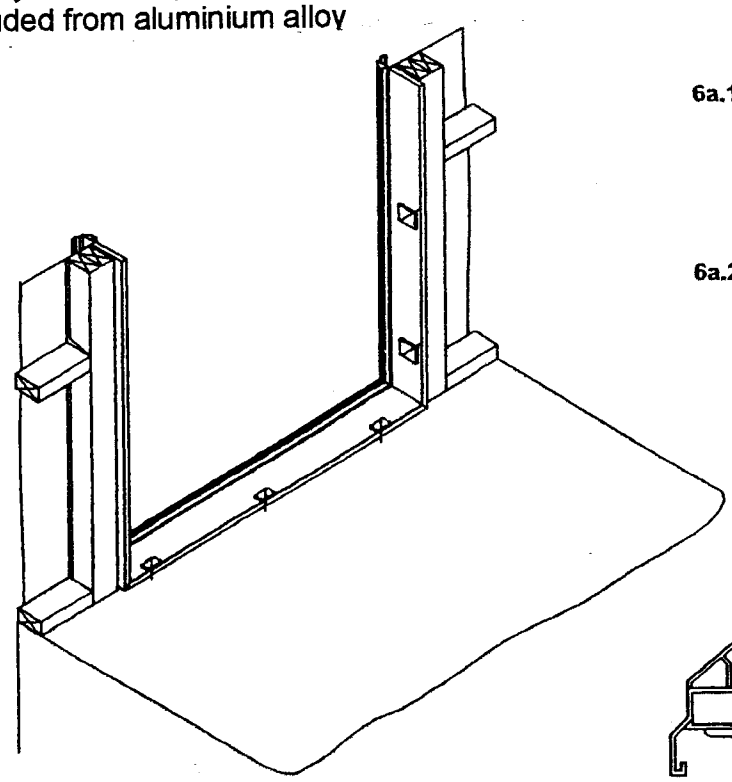


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7. ALUMINIUM JOINERY

SUPPORT BAR:

Supply to the Carpenter, for all the Joinery Units over 1500mm wide support bars extruded from aluminium alloy



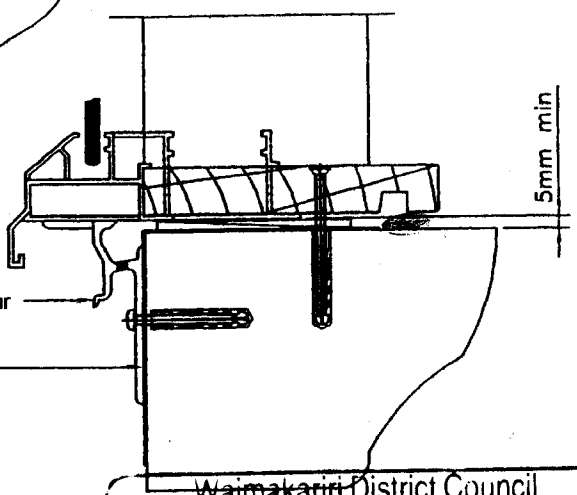
6a.1 Insert flat packers between wall framing and jambliner at head, sill and jambs. Do not use wedges.

NOTE – Unit sill must always rest on solid support

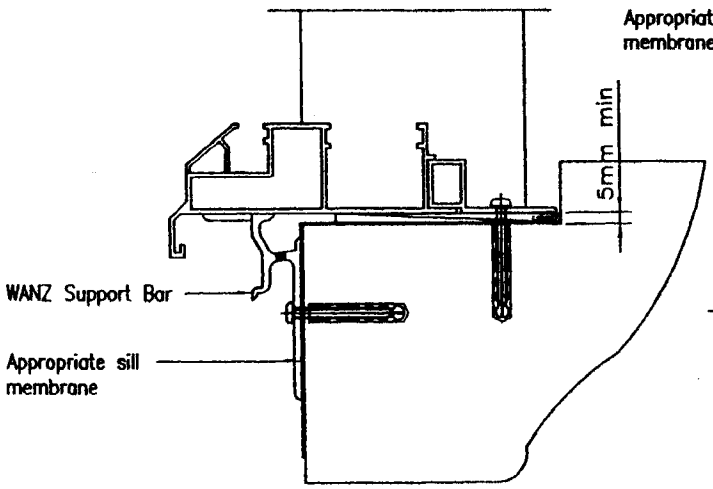
6a.2 Fix through jambliner and packers into wall framing with nails or use other approved fixing methods such as Jamb Tie.

NOTE: Mechanical fixings only 150mm from corners and at 450mm centres.

Expandable foam is NOT an approved fixing method.

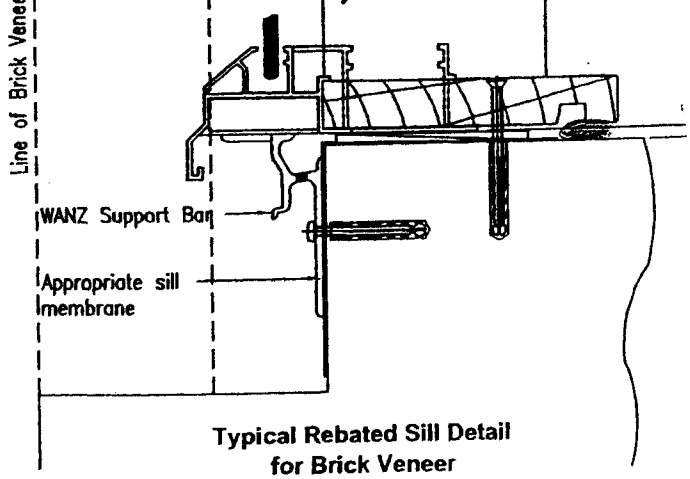


Flat Sill Detail



Rebated Sill Detail

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Typical Rebated Sill Detail for Brick Veneer

Follow manufacturer's specification when fixing into concrete floors

8. ROOFER

GENERAL:

Supply and fix all roofing materials as shown on the drawings. Include roofing underlay, guttering and all necessary cappings, valleys and flashings required to ensure a weather tight roofing.

MATERIALS AND WORKMANSHIP:

The roofing shall be in accordance with clauses E1, Surface Water, and E2, External Moisture, of the N.Z. Building Code and shall comply with the relevant New Zealand Standards. All work shall be carried out by skilled tradesmen in accordance with best trade practices.

ROOFING UNDERLAY:

Fix reinforced, self -supporting, breather type roofing underlay horizontally over the outer face of roof structure, with upper sheet lapped 150mm over lower sheet.

FIXING:

All roofing and spouting to be fixed in accordance with the manufacturer's instructions. Sheets on curved roof to be double lapped and a bead of generic approved silicon on both crests between laps.
Fix all valleys, spoutings, fascia and barges before roofing commences. Valleys shall be colorsteel to match roofing, at least 400mm wide with folded edges and with lower end finishing well into spouting. Solder spigots to spouting for 65mm dia. downpipes in positions shown on drawings.

METAL TILE ROOFING:

Gerard lightweight metal roofing tiles.
The tile profile to be Corona Shake: Colour to be chosen by Owner.
Compliance with NZS4217 Pressed Metal Tile Roofs

COMPLETION:

Clean down roof and leave free from any stains or defects.

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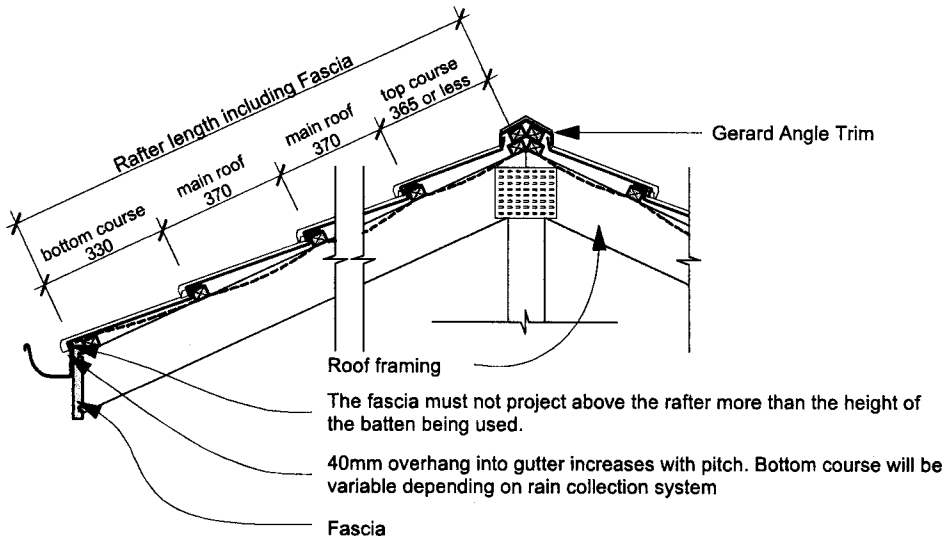


Figure 01
Batten spacing - Ridge or Hip with conventional rafter
Corona Shake profile. Angle Trim

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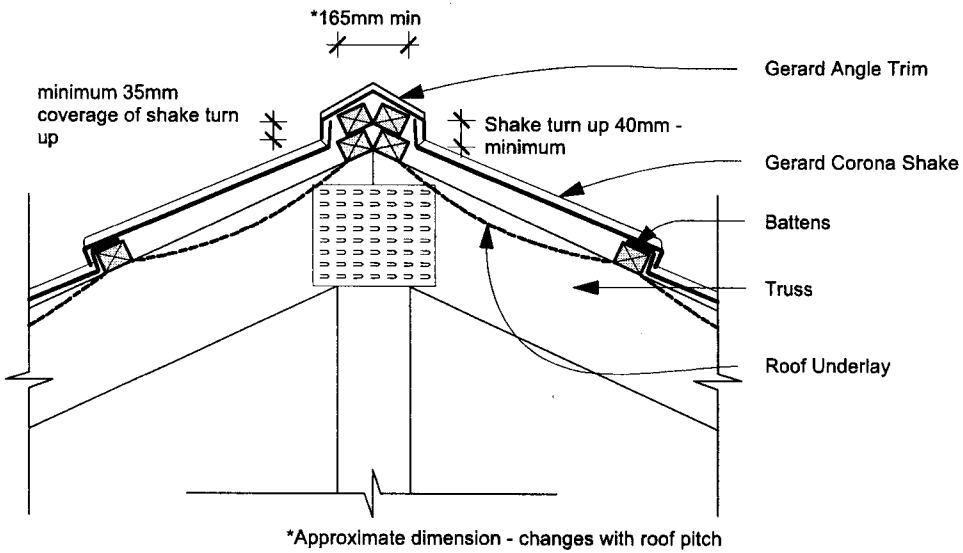


Figure 02
Ridge detail - Truss
Corona Shake profile. Angle Trim

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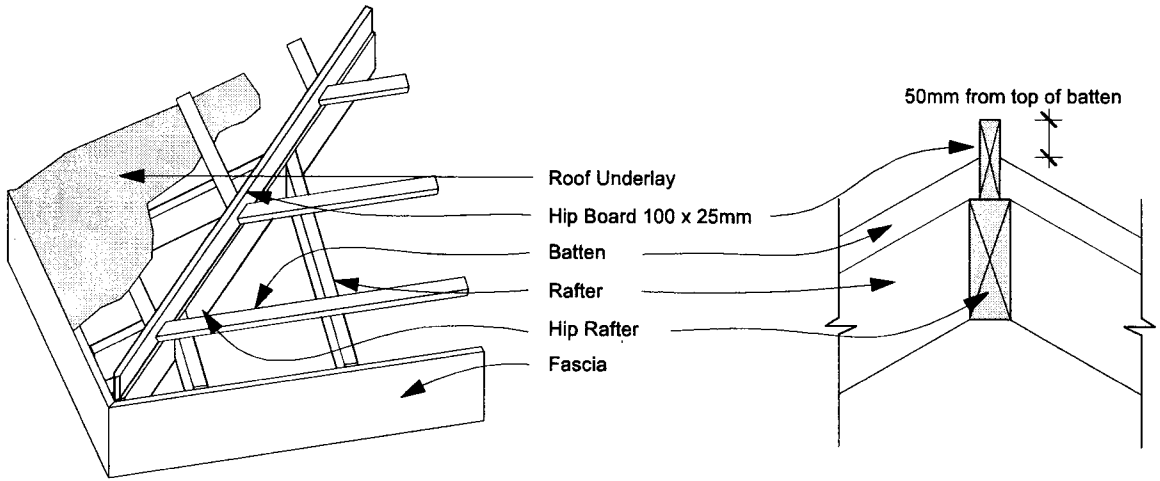


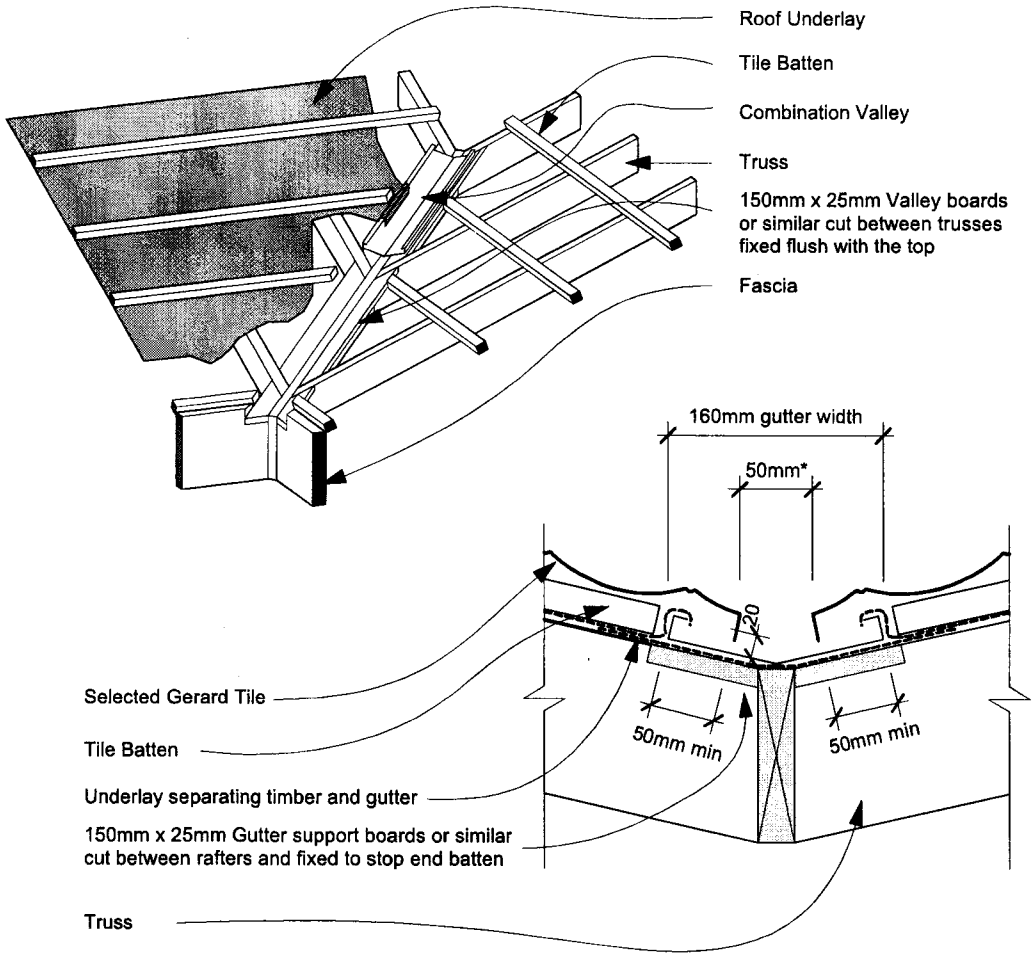
Figure 04
Hip board detail

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Consult Gerard technical staff regarding areas with snowfall

*Minimum clearance between tiles

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Figure 05
Valleys

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WAIMAKARIRI
DISTRICT COUNCIL

File Stripping Check Sheet

BC 110550

- ☑ All Correspondence
- ☑ Audit Check Sheets
- ☑ CCC – Signed
- ☑ Working File Cover
- ☑ Entire Contents inside the Working File Cover
- ☑ As Built Plans
- ☑ Drainage Plans (both onsite & scaled Drawings)
- ☑ Specifications if any changes (see Working File Cover)
- ☑ All White Inspection Notices (as they may have been written on, see below for process of white Inspection Notices)
- ☑ All site photos
- ☑ All Processing Check sheets & Correspondence
- ☑ All Amendments
- ☑ If in doubt – INCLUDE IT
- ☑ All relevant information has been included
- ☑ Completed file stripping check sheet attached

Signed _____

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