

THERMAL INSULATION

Pink® Batts® Ceiling



Application

Pink® Batts® ceiling insulation is a light weight flexible glass wool insulation product designed to:

- Thermally insulate ceilings in new homes, be retrofitted into existing homes with no insulation or over existing insulation for better performance
- Fit easily into standard ceiling constructions, or be easily cut to fit in non standard constructions
- Meet the requirements of the New Zealand Building Code (NZBC) for different designs and environments

Features and Benefits

- BRANZ appraised, a durable product for 50 years as required by the NZBC
- Energy saving – a well insulated home can save up to \$1800¹ on energy bills annually
- Non-combustible, will not burn for a safer environment
- R-values up to R5.0, to assist in keeping homes above 18°C, as per the World Health Organisations recommendation for a healthy and comfortable home
- Absorbs sound for a quieter more relaxing home

¹(Department of Building and Housing, Your guide to a smarter home, 2008, p. 28)

Environment

- Manufactured using up to 80% recycled glass, making sustainable use of waste
- Energy used during the manufacture of Pink® Batts® products, is offset by the energy saved by a home fully insulated with Pink® Batts® products within 3-15 months²
- Locally manufactured in Auckland and Christchurch, minimising shipping distances compared to imported products

Potential Green Star NZ Credits

Green Star NZ is a comprehensive environmental rating system for buildings. Pink® Batts® insulation may contribute the following points under Green Star Office Design V.1:

EMI-8	One point	Thermal insulation avoids the use of ozone depleting substances in both manufacture and composition.
MAT-11	One point	90% or more of the thermal insulation used is certified through a recognised a body (e.g., NZ Environmental Choice) as having lower environmental impact.

Certification and further information is available at www.nzgbc.org.nz

Environmental Choice

Higher R-value Pink® Batts® Ceiling insulation products have Environmental Choice New Zealand Accreditation (*refer to the product specifications*)

- Independently assessed for:

- Waste Minimisation: Recycled content, and recycling of process waste
- Energy Management: Effective energy management policies and procedures
- Manufacturing Process: Not manufactured using blowing agents with a global warming potential
- Product Characteristics: Durability and performance



Licence No 250407.
Thermal (resistive type)
building insulants.

While only the higher R-value products are eligible for Environmental Choice, all Pink® Batts® Thermal Insulation Products are manufactured in the same environmentally considerate way

²(Beca Carter Hollings & Ferner Ltd, Energy Economics of Fibreglass Insulation, 2005)

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DISTRICT COUNCIL



THERMAL INSULATION

Pink® Batts® Ceiling

Health

Product Safety

Pink® Batts® insulation is a non hazardous, safe product

- IARC (International Agency for Research on Cancer) classifies glass wool formulation used to manufacture Pink® Batts® products as Group 3: 'Not classifiable as to its carcinogenicity to humans'
- This the same classification as caffeine, tea, hair colouring, chlorinated drinking water, saccharin
- Pink® Batts® insulation is bio-soluble. In the unlikely event any fibres are inhaled into the lungs they will dissolve in the body fluids and be cleared from the body



General Health

- Pink® Batts® insulation will assist in meeting the World Health Organisation recommendation for houses to be maintained at a minimum temperature of 18°C to provide a healthy and comfortable home
- Pink® Batts® insulation has been accepted into the Asthma and Respiratory Foundation of New Zealand's Sensitive Choice programme. Insulating with Pink® Batts® is beneficial to those suffering from asthma
- A Wellington School of Medicine study found insulated houses resulted in families with fewer sick days and the economic benefit was double the initial cost of the insulation³



³(Howden-Chapman, P. et al. "Effect of insulating existing houses on health inequality: cluster randomised study in the community" British Medical Journal, 2007, p334-460)

Technical Data

Properties	Result		Test Method/Standard	Test Results
Combustibility	Non-Combustible	✓	NZS/AS 1530.1:1994	
Flammability	Non-Flammable	✓	NZS/AS 1530.3:1993 Ignitability (Range 0-20) Spread of Flame Index (Range 0-10) Heat Evolved Index (Range 0-10) Smoke Developed Index (Range 0-10)	= 0 = 0 = 0 = 0-1
R-value	Various*	✓	AS/NZS 4859.1:2002	
Corrosion	Non-Corrosive	N/A	AS/NZS 4859.1:2002-Glasswool exempt	
Moisture Absorption	Non-Hygroscopic	N/A	AS/NZS 4859.1:2002-Glasswool exempt	
Vermin Resistance	No Food Source	✓	AS/NZS 4859.1:2002-Glasswool exempt	

*Refer to product specifications

Acoustic Properties

Pink® Batts® insulation will assist with noise control, however penetrations in walls will transmit sound readily. Superior noise control can be achieved by using Pink® Batts® insulation products in conjunction with good acoustic design.

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Pink® Batts® Ceiling



New Zealand Building Code (NZBC) and Limitations

Pink® Batts® ceiling insulation when used, installed and maintained in accordance with the requirements outlined in this datasheet, will meet or contribute to meeting the following provisions of the NZBC:

NZBC Clause B2: Durability

Meets the requirement NZBC B2.3.1 a) 50 years and NZBC B2.3.1 b) 15 years

NZBC Clause E2: External Moisture

Contributes to meeting these requirements

NZBC Clause E3: Internal Moisture

Contributes to meeting these requirements

NZBC Clause F2: Hazardous Building Materials

Meets this requirement and will not present a health hazard to people

Limitations

To meet the provisions of the NZBC as outlined in this datasheet,

Pink® Batts® ceiling insulation *must* be:

- Installed and maintained in a dry protected environment
- Installed in a building where the provisions of NZBC E2 and E3 are met
- Installed to the requirements of NZS 4246:2006:Energy Efficiency-Installing Insulation in Residential Buildings

Pink® Batts® ceiling insulation should *not* be:

- Crushed or folded

Ceiling Installation Instructions

Correct installation with no compression, gaps or folds is critical to ensure Pink® Batts® ceiling insulation performance is not compromised

Tools :

- Knife and cutting board
- Lamp and extension cord (15m long)
- Install rod (25mm rod, 1m long) for tight spaces
- Protective loose fitting, long sleeved clothing
- Dust mask
- Gloves
- Safety goggles
- Planks (long enough to span across joists)

Safety

- Beware of loose boards and pipe work when working in the ceiling. Use planks laid across joists to walk on
- Ensure there is adequate lighting
- During daytime, avoid times of excessive heat, the ceiling cavity can get very hot
- Be careful not to cut or bare cables and wires
- Beware of other sharp objects, nails, splinters etc
- Beware of pests such as bees and wasps



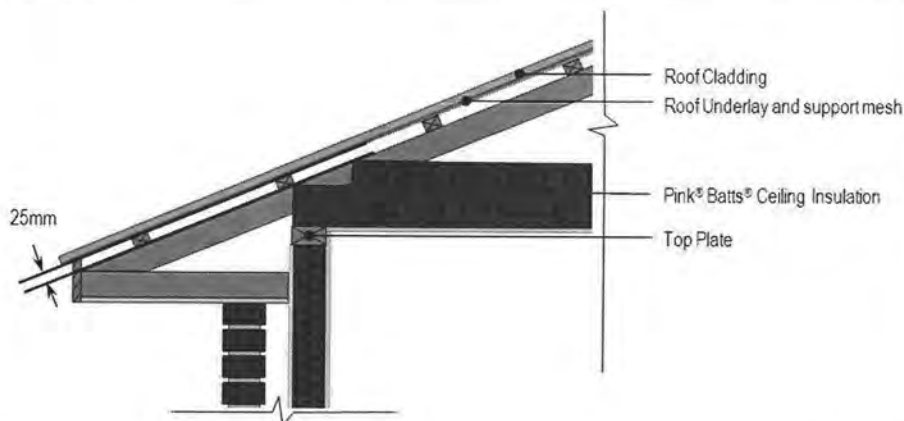
THERMAL INSULATION

Pink® Batts® Ceiling

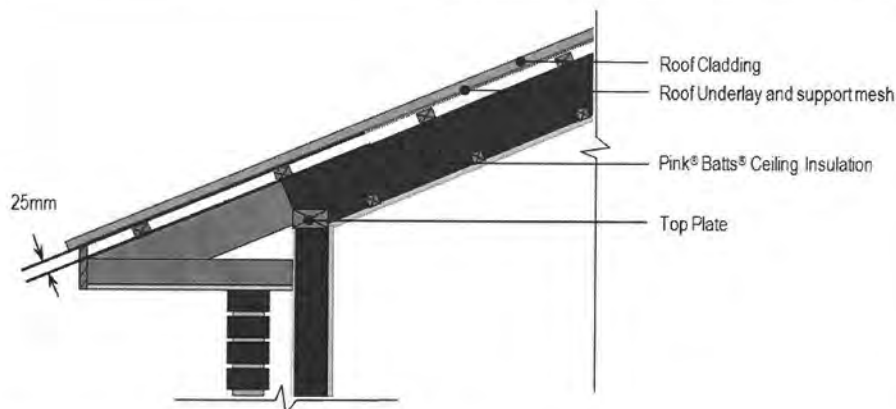
Ceiling Installation Instructions continued...

- Ensure the product is installed dry. If the product is wet, replace it before installing
- Use planks laid across joists to walk and work on
- Any existing insulation should be levelled, refitted if required, and any damp insulation removed
- Start installation at point furthest away from ceiling manhole
- If cutting is required, cut oversize by 5-10mm to ensure a friction fit
- Insulate around vents (not over them) to allow unhindered ventilation
- Insulate directly up to bricked chimneys leaving no gaps
- Fit Pink® Batts® insulation beneath electrical wiring and plumbing (see caution overleaf)
- Install to the outer edge of the top plate
- Maintain a 25mm gap clearance between the Pink® Batts® insulation and roof underlay, if required trim insulation to maintain 25mm clearance. *(Please consult your designer as to the best method for maintaining good insulation performance and the mandatory 25mm clearance for the particular design and construction of your house)*

Pitched Roof



Skillion Roof



PRODUCT DATA SHEET

THERMAL INSULATION

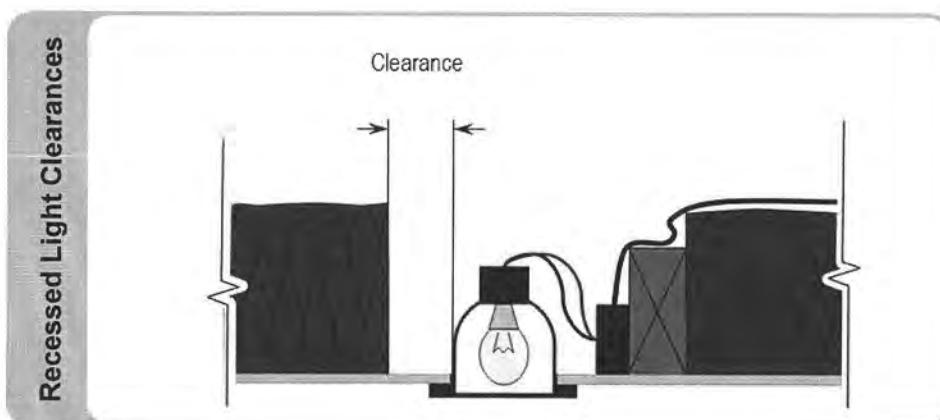
Pink® Batts® Ceiling



Ceiling Installation Instructions continued...

- Adhere to the clearances below for recessed light fittings, clearances are required for some fittings to prevent light fittings from overheating and failing

Light Fitting Type	Clearance
Unknown Light	200mm
Unclassified Incandescent	50mm
Unclassified Halogen	200mm
CA, RA and OA	No clearance required
CS, RS and OS	100mm
C*, R*, O*, FR and AR	As specified by manufacturer



Note: Pink® Batts® ceiling insulation can be installed from below when the ceiling is to be lined or replaced

Caution: Electrical cables and equipment partially or completely surrounded with bulk thermal insulation may overheat and fail. This applies to wiring installed prior to 1989

PinkFit® Installation Service

Installation is critical in ensuring this product performs well. A small gap around the insulation can significantly reduce the construction R-value

PinkFit® installers are:

- A network of licensed professionals across New Zealand
- Trained installers and guarantee installation to NZS 4246:2006
- The preferred Pink® Batts® installers, and provide a PinkFit® guarantee certificate



Call 0800 PINKFIT
0800 746 534



THERMAL INSULATION

Pink® Batts® Ceiling

Specification Notes

State the following:

Product Required: Pink® Batts® Ceiling insulation and required R-value

Installation Service: PinkFit® Installation Service and PinkFit® Guarantee Certificate

Product Specifications

Product	Product Code	Environmental Choice	BRANZ Appraised	R-value (m ² °C/W)	Nominal Thickness (mm)	Size (mm)	Pieces per Pack	Coverage per Pack (m ²)*	Area per Pack (m ²)
Pink®Batts® R1.8 Ceiling	7110118		●	1.8	95	1220 x 432	26	14.4	13.7
Pink®Batts® R2.2 Ceiling	7110122		●	2.2	115	1220 x 432	24	13.3	12.6
Pink®Batts® R2.6 Ceiling	7110126		●	2.6	140	1220 x 432	20	11.1	10.5
Pink®Batts® R3.2 Ceiling	7110132	✓	●	3.2	170	1220 x 432	16	8.8	8.4
Pink®Batts® R3.6 Ceiling	7110136	✓	●	3.6	180	1220 x 432	14	7.7	7.4
Pink®Batts® Ultra™ R 4.0 Ceiling	7110140	✓	●	4.0	190	1220 x 432	12	6.6	6.3
Pink®Batts® Ultra™ R4.6 Ceiling	7110146	✓	●	4.6	195	1220 x 432	10	5.5	5.3
Pink®Batts® Ultra™ R5.0 Ceiling	7110150	✓	●	5.0	200	1220 x 432	8	4.4	4.2
Pink®Batts® Handy Pack	7110522		●	2.2	94	610 x 432	24	7.0	6.3

* Coverage relates to standard structure and actual coverage may vary.

Storage

Pink® Batts® insulation must be protected from damage and weather. Store under cover in clean, dry conditions

Accreditations/Appraisals/Certifications



Tasman Insulation New Zealand Ltd
Certified QMS



Tasman Insulation New Zealand Limited
9-15 Holloway Place, Penrose,
Auckland,
New Zealand

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Please consider the environment before printing this document

For further information visit www.pinkbatts.co.nz or call 0800 PINK BATTs (746 522)

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THERMAL INSULATION

Pink® Batts® Wall



Application

Pink® Batts® wall insulation, is a light weight flexible glass wool insulation product designed to:

- Thermally insulate timber and steel framed walls
- Fit easily in standard wall constructions, or be easily cut to fit in non standard constructions
- Meet the requirements of the New Zealand Building Code (NZBC) for different designs and environments

Features and Benefits

- BRANZ appraised, a durable product for 50 years as required by the NZBC
- Energy saving –a well insulated home can save up to \$1800¹ on energy bills annually
- Non-combustible, will not burn for a safer environment
- R-values up to R2.8, to assist in keeping homes above 18°C, as per the World Health Organisations recommendation for a healthy and comfortable home
- Absorbs sound for a quieter more relaxing home

¹(Department of Building and Housing, Your guide to a smarter home, 2008, p. 28)

Environment

- Manufactured using up to 80% recycled glass, making sustainable use of waste
- Energy used during the manufacture of Pink® Batts® products, is offset by the energy saved by a home fully insulated with Pink® Batts® products within 3-15 months²
- Locally manufactured in Auckland and Christchurch, minimising shipping distances compared to imported products

Potential Green Star NZ Credits

Green Star NZ is a comprehensive environmental rating system for buildings. Pink® Batts® insulation may contribute the following points under Green Star Office Design V.1:

EMI-8	One point	Thermal insulation avoids the use of ozone depleting substances in both manufacture and composition.
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Certification and further information is available at www.nzgbc.org.nz

Environmental Choice

Higher R-value Pink® Batts® Wall insulation products have Environmental Choice New Zealand Accreditation (*refer to the product specifications*)

- Independently assessed for:

- Waste Minimisation: Recycled content, and recycling of process waste
- Energy Management: Effective energy management policies and procedures
- Manufacturing Process: Not manufactured using blowing agents with a global warming potential
- Product Characteristics: Durability and performance



Licence No 2504017.
Thermal (resistive type)
building insulants.

While only the higher R-value products are eligible for Environmental Choice, all Pink® Batts® Thermal Insulation Products are manufactured in the same environmentally considerate way

²(Beca Carter Hollings & Ferner Ltd, Energy Economics of Fibreglass Insulation, 2005)



THERMAL INSULATION

Pink® Batts® Wall

Health

Product Safety

Pink® Batts® insulation is a non hazardous, safe product

- IARC (International Agency for Research on Cancer) classifies glass wool formulation used to manufacture Pink® Batts® products as Group 3: 'Not classifiable as to its carcinogenicity to humans'
- This the same classification as caffeine, tea, hair colouring, chlorinated drinking water, saccharin
- Pink® Batts® insulation is bio-soluble. In the unlikely event any fibres are inhaled into the lungs they will dissolve in the body fluids and be cleared from the body



General Health

- Pink® Batts® insulation will assist in meeting the World Health Organisation recommendation for houses to be maintained at a minimum temperature of 18°C to provide a healthy and comfortable home
- Pink® Batts® has been accepted into the Asthma and Respiratory Foundation of New Zealand's Sensitive Choice programme. Insulating with Pink® Batts® is beneficial to those suffering from asthma
- A Wellington School of Medicine study found insulated houses resulted in families with fewer sick days and the economic benefit was double the initial cost of the insulation³



³(Howden-Chapman, P. et al. "Effect of insulating existing houses on health inequality: cluster randomised study in the community" British Medical Journal, 2007, p334:460)

Technical Data

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R-value	Various*	✓	AS/NZS 4859.1:2002	
Corrosion	Non-Corrosive	N/A	AS/NZS 4859.1:2002-Glasswool exempt	
Moisture Absorption	Non-Hygroscopic	N/A	AS/NZS 4859.1:2002-Glasswool exempt	
Vermin Resistance	No Food Source	✓	AS/NZS 4859.1:2002-Glasswool exempt	

*Refer to product specifications

Acoustic Properties

Pink® Batts® insulation will assist with noise control, however penetrations in walls will transmit sound readily. Superior noise control can be achieved by using Pink® Batts® insulation products in conjunction with good acoustic design.

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THERMAL INSULATION

Pink® Batts® Wall



New Zealand Building Code (NZBC) and Limitations

Pink® Batts® wall insulation when used, installed and maintained in accordance with the requirements outlined in this datasheet will meet or contribute to meeting the following provisions of the NZBC:

NZBC Clause B2: Durability

Meets the requirement NZBC B2.3.1 a) 50 years and NZBC B2.3.1 b) 15 years

NZBC Clause E2: External Moisture

Contributes to meeting these requirements

NZBC Clause E3: Internal Moisture

Contributes to meeting these requirements

NZBC Clause F2: Hazardous Building Materials

Meets this requirement and will not present a health hazard to people

Limitations

To meet the provisions of the NZBC as outlined in this datasheet,

Pink® Batts® wall insulation *must* be:

- Installed and maintained in a dry protected environment
- Installed in a building where the provisions of NZBC E2 and E3 are met
- Installed to the requirements of NZS 4246:2006: Energy Efficiency-Installing Insulation in Residential Buildings

Pink® Batts® wall insulation should *not* be:

- Crushed or folded

Wall Installation Instructions

Correct installation with no compression, gaps or folds is critical to ensure Pink® Batts® wall insulation performance is not compromised

Tools:

- Knife and cutting board
- Protective loose fitting, long sleeved clothing
- Dust mask
- Gloves
- Safety goggles

Safety

- Be careful not to cut or bare cables and wires
- Beware of other sharp objects, nails, splinters etc

Instructions:

- Ensure the product is installed dry. If the product is wet, replace it before installing
- If cutting is required, cut oversize by 5-10mm to ensure a friction fit
- Fill gaps around windows and doors with off-cuts
- Insulate around vents, not over them, to allow unhindered ventilation
- Fit Pink® Batts® insulation behind electrical wiring* and plumbing
- Ensure there are no gaps, folds or undesirable compression at edges

***Caution: Electrical cables and equipment partially or completely surrounded with bulk thermal insulation may overheat and fail. This applies to wiring installed prior to 1989**



THERMAL INSULATION

Pink® Batts® Wall

PinkFit® Installation Service

Installation is critical in ensuring this product performs well. A small gap around the insulation can significantly reduce the construction R-value

PinkFit® installers are:

- A network of licensed professionals across New Zealand
- Trained installers and guarantee installation to NZS 4246:2006
- The preferred Pink® Batts® installers, and provide a PinkFit® guarantee certificate



PREFERRED PINK® BATTS® INSTALLERS

Call 0800 PINKFIT
0800 746 534

Specification Notes

State the following:

Product Required:

Pink® Batts® wall insulation and required R-value

Installation Service:

PinkFit® Installation Service and PinkFit® Guarantee Certificate

Product Specifications

Product	Product Code	Environmental Choice	BRANZ Appraised	R-value (m²°C/W)	Nominal Thickness (mm)	Size (mm)	Pieces per Pack	Coverage per Pack (m²)	Area per Pack (m²)
Pink®Batts® R1.8 Wall	7120118		●	1.8	90	1140 x 580	26	19.6	17.2
Pink®Batts® R2.2 Wall	7120122		●	2.2	90	1140 x 580	21	15.8	13.9
Pink®Batts® R2.2 Narrow Wall	7120123		●	2.2	90	1140 x 380	22	10.0	9.5
Pink®Batts® R2.4 Wall	7120124		●	2.4	90	1140 x 580	16	12.1	10.6
Pink®Batts® Ultra™ R2.6 Wall	7120126	✓	●	2.6	90	1140 x 580	15	11.3	9.9
Pink®Batts® Ultra™ R2.8 Wall	7120128	✓	●	2.8	90	1140 x 580	10	7.5	6.6

* Coverage relates to standard structure and actual coverage may vary.

Storage: Pink® Batts® must be protected from damage and weather. Store under cover in clean, dry conditions

Accreditations/Appraisals/Certifications



Tasman Insulation New Zealand Ltd
Certified QMS



ISO 9001



Tasman Insulation New Zealand Limited
9-15 Holloway Place, Penrose,
Auckland,
New Zealand

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Specification Number	Length (m) minimum	Lining requirements
GS1	0.4	10 or 13mm GIB® Standard Plasterboard one side

WALL FRAMING

Wall framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS3604)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS3602)

Framing dimensions and height as determined by NZS3604 stud and top plate tables for load-bearing and non load-bearing walls. The use of kiln dried machine stress graded timber is recommended.

BOTTOM PLATE FIXING**Timber floor**

Pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres.

Concrete floor**Internal bracing lines**

In accordance with the requirements of NZS3604 for internal wall plate fixing or alternatively 75 x 3.8mm shot fired fasteners fitted with 16mm disks, spaced at 150mm and 300mm from the end studs and thereafter at 600mm centres.

External wall bracing lines

In accordance with the requirements of NZS 3604:1999 for external plate fixing.

WALL LINING

One layer of 10 or 13mm GIB® Standard Plasterboard. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full length sheets where possible.

PERMITTED SUBSTITUTION

The Bracing Unit ratings for system GS1(10) apply to 10mm GIB® Standard Plasterboard and any other GIB® Plasterboard. The ratings for GS1(13) apply to 13mm GIB® Standard Plasterboard and any other 13mm GIB® Plasterboard.

FASTENING THE LINING**Fasteners**

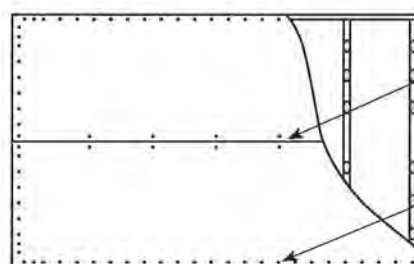
32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® nails.

Fastener Centres

50, 100 and 150mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at sheet joints in the tapered sheet edge. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs. Use daubs of GIBFix® Adhesive at 300mm centres to intermediate studs. Place fasteners 12mm from tapered paper bound sheet edges and 18mm from sheet end or cut sheet edges.

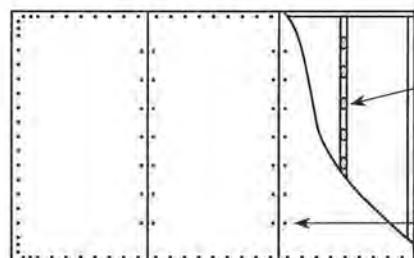
JOINTING

All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide".



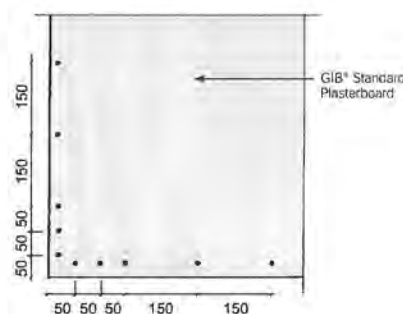
Single 32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails where sheets cross studs

32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 150mm centres to perimeter of bracing element

Horizontal Fixing

Daub of GIBFix® adhesive at 300mm centres to intermediate studs and noggs

Single 32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails at 300mm centres

Vertical Fixing

Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, 100, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to a sheet end or cut edge.

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, 2009 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2009).

- Protect the membrane until completion of the contract works.

3.29

LEAVE

Leave this work in a sound and waterproof condition and free of any defect

3.30

REMOVE

Remove debris, unused materials and elements from the site.

4.

SELECTIONS

4.1

DUROSET®

Location:

~

Supplier:

Waterproofing Systems Ltd

Brand:

duroSET®

DFT:

1.2 mm

4.2

DUROQIK®

Location:

~

Supplier:

Waterproofing Systems Ltd

Brand:

duroQIK®

DFT:

1.2 mm

DFT of 1.2 mm is recommended by Waterproofing Systems Ltd. Apply subsequent coats at different directions to the preceding coat. Apply with roller (medium/long nap), long bristle brush or spray.

3.18 PROTECTION

Do not leave membrane exposed for prolonged periods to UV light and the possibility of mechanical damage. Cover with protection sheeting if required. Apply tiling and/or surface toppings once the duroSET[®] membrane is fully cured according to Waterproofing Systems Ltd specifications.

3.19 TILING

duroFIX[®] ceramic tile adhesive to be used according to Waterproofing Systems Ltd specification.

Installation – duroQIK[®]

3.20 WEATHER CONDITIONS

Install duroQIK[®] liquid membrane only in fair weather with surface temperatures above 5°C and below 25°C.

3.21 INSTALL EF POLYURETHANE SEALANT

Install a 12 mm fillet of EF polyurethane sealant at junctions or substrate abutments before the application of RF fabric reinforcement.

3.22 REINFORCEMENT

Provide reinforcement to the duroQIK[®] membrane with RF or Elastofabric tapes to Waterproofing Systems Ltd specifications. Embed the tapes into a wet coat of the duroQIK[®] and ensure that the reinforcing is completely covered with subsequent coatings of the liquid membrane.

3.23 JUNCTIONS IN SUBSTRATE

Ensure that all junctions in substrate i.e. wall/floor and wall/wall and substrate abutments are reinforced to waterproofing Systems Ltd specifications. Reinforce over cracks up to 2 mm maximum. Reinforce to enhance seals around penetrations and pipes through the membrane.

3.24 INSTALL duroQIK[®]

Install the duroQIK[®] membrane to the substrate to Waterproofing Systems Ltd installation specifications. Ensure the duroMIX[®] curing additive is fully dispersed through the duroQIK[®] liquid before installation. A minimum of two coats to apply a total minimum of 1.5 litres/m² giving a DFT of 1.2 mm is recommended by Waterproofing Systems Ltd. Apply subsequent coats at different directions to the preceding coat. Apply with roller (medium/long nap), long bristle brush or spray.

3.25 PROTECTION

Do not leave membrane exposed for prolonged periods to UV light and the possibility of mechanical damage. Cover with protection sheeting if required. Apply tiling and/or surface toppings once the duroQIK[®] membrane is fully cured according to Waterproofing Systems Ltd specifications.

3.26 TILING

duroFIX[®] or duroBOND[™] ceramic tile adhesive to be used according to Waterproofing Systems Ltd specification.

Completion - generally

3.27 CLEAN UP

Clean up as the work proceeds.

3.28 ACCEPTANCE

- Arrange for an inspection of the completed work.
- Complete Waterproofing Systems Ltd Quality Control sheets and provide to them for the issuing of the Materials Warranty.

Ensure that the substrate construction is well braced against movement and deflection and structurally sound. Ensure that the substrate falls to the rainwater/water outlets and water must not pond. Ensure all surfaces are clean, dry and free from dust and dirt, oils or grease with no projections of sharp materials.

Acid etch and/or diamond grid concrete surfaces as required to achieve a suitable surface.

3.7 SUBSTRATE PREPARATION

Remove projections and all debris, leaving the surface dust-free, oil-free and clean, with nothing that could diminish the adhesion of primers. Grind off steps or sharp protrusions caused by formwork joints. Ensure there are no concrete additions or release agents could diminish adhesion of membrane.

3.8 PRIME SUBSTRATES

Prime substrates thoroughly with duroPRIME™ Primer or duroPRIME™ Sand/Cement Primer ensuring a good even coverage and penetration as recommended by Waterproofing Systems Ltd. Where an existing coating is present on the substrate confirm with Waterproofing Systems Ltd technical specification that duroPRIME™ Primer is the most appropriate primer to use for the specific substrate.

3.9 PRIME METAL SUBSTRATES

Prime metal substrates thoroughly with metal primer ensuring a good even coverage as recommended by Waterproofing Systems Ltd.

3.10 PRIME ASPHALT AND BITUMEN SUBSTRATES

Prime with a solution of 1 part Gripset 51 to 1 part water. Ensure a good adhesion and even coverage and penetration as recommended by Waterproofing Systems Ltd.

3.11 ALLOW PRIMER TO DRY

Allow the primer to fully dry as recommended by Waterproofing Systems Ltd. Prevent contamination of the primed surface prior to application of the membrane.

3.12 FILL VOIDS

Voids and gaps to be filled with mortar incorporating duroPRIME™ Sand/Cement Primer and duroMIX® or EF polyurethane sealant.

Installation – duroSET®

3.13 WEATHER CONDITIONS

Install duroSET® liquid membrane only in fair weather with surface temperature above 10°C and below 35°C

3.14 INSTALL EF POLYURETHANE SEALANT

Install a 12 mm fillet of EF polyurethane sealant at junctions or substrate abutments before the application of RF fabric reinforcement

3.15 REINFORCEMENT

Provide reinforcement to the duroSET® membrane with RF tapes, butylFLASH™ or Elastofabric tapes to Waterproofing Systems Ltd specifications. Embed the tapes into a wet coat of the duroSET® and ensure that the reinforcing is completely covered with subsequent coatings of the liquid membrane.

3.16 JUNCTIONS IN SUBSTRATE

Ensure that all junctions in substrate i.e. wall/floor and wall/wall and substrate abutments are reinforced to waterproofing Systems Ltd specifications. Reinforce over cracks up to 2 mm maximum. Reinforce to enhance seals around penetrations and pipes through the membrane.

3.17 INSTALL duroSET®

Install the duroSET® membrane to the substrate to Waterproofing Systems Ltd installation specifications. A minimum of two coats to apply a total minimum of 1.5 litres/m² giving a

- 2.4 **TILE ADHESIVE**
duroFIX[®] ceramic tile adhesive for tiling over duroSET[®] or duroQIK[®] membranes in bags marked with the manufacturer's mark.
- 2.5 **TILE ADHESIVE FOR CONTINUOUSLY IMMERSED APPLICATIONS**
duroBOND[™] ceramic tile adhesive for tiling over duroQIK[®] membranes in continuously immersed applications.
- 2.6 **PRIMER**
duroPRIME[™] general purpose primer or duroPRIME[™] Sand/Cement Primer additive in pails marked with the manufacturer's mark, and used in accordance with Waterproofing Systems Ltd technical literature.

Accessories

- 2.7 **REINFORCEMENT**
RF fabric tapes, butylFLASH[™] tapes or pre-formed Elastofabric tapes and preformed internal and external corners.
- 2.8 **SEALANT**
EF polyurethane sealant.
- 2.9 **SUBSTRATE FILLER**
duroPRIME[™] Sand/Cement Primer combined with duroMIX[®] to form a repair mortar.
- 2.10 **RAINWATER AND FLOOR WASTE FITTINGS**
Use only proprietary fittings.

3. EXECUTION

Conditions

- 3.1 **GENERALLY**
Comply with the requirements and instructions of Waterproofing Systems Ltd and the manufacturer's requirements.
- 3.2 **STORAGE**
Take delivery of pails of liquid membrane and accessories undamaged. Include for site handling facilities where required. Store, on a level surface, off concrete floors, out of direct sunlight or freezing conditions and with the required accessories under conditions that ensure no deterioration or damage.
- 3.3 **CHECK SUBSTRATE**
Check that the substrate will allow work of the required standard and will comply with the requirements of the NZBC. Complete any remedial work identified before commencing any work.
- 3.4 **CURING OF NEW CONCRETE**
Allow concrete to fully cure before applying membranes. Maximum moisture content of concrete 75% RH.
- 3.5 **FILM THICKNESS**
Ensure that the dry film thickness specified in the Waterproofing Systems Ltd installation documents is achieved. Film thickness is an important factor to the waterproofing performance of the membrane and its long term durability.

Application – Preparation - duroSET[®]/duroQIK[®]

- 3.6 **SUBSTRATE CONDITION**
Ensure that the substrate is in a suitable condition to allow work of the required standard and will comply with the requirements of the NZBC E2/AS1 for the relevant substrate and Waterproofing Systems Ltd requirements.

- 1.6 **PROJECT REGISTRATION**
Contact Waterproofing Systems Ltd to confirm that the project has been registered.
Web: www.waterproofing.co.nz/register
Telephone: 0-6-357 9184
If the project has not been registered, telephone and provide all required details.

Warranties

- 1.7 **WARRANTY - INSTALLERS**
Installer's warranty for the system under normal environmental and use conditions against failure.

Execution warranty: 3 years

Provide this warranty on the installer's standard form.

- 1.8 **WARRANTY - MANUFACTURERS**
Manufacturer's material warranty for the system under normal environmental and use conditions against failure.

Material Warranty: 15 years for duroSET® and duroQIK® in tiled applications

From: Date of completion of the application

Performance

- 1.9 **PERFORMANCE**
Accept responsibility for the weather-tight performance of the completed membrane system.

- 1.10 **PRE INSTALLATION MEETING**
Convene a meeting between the applicator, contractor, all associated consultants and Waterproofing Systems Ltd to ensure all parties know what is required for effective performance of the system.

- 1.11 **SPECIAL DETAILS**
Where a standard detail does not exist, or if a standard detail cannot be applied, an approved alternative must be obtained from Waterproofing Systems Ltd before proceeding with the installation.

- 1.12 **QUALITY ASSURANCE**
Maintain quality necessary to assure that work is performed in accordance with this specification and the qualifying requirements of Waterproofing Systems Ltd.

Ensure that Waterproofing Systems Ltd's Quality Control sheets are completed fully and faithfully for each installation area.

2. PRODUCTS

Materials

- 2.1 **WATERPROOFING MEMBRANE**
duroSET® single component light beige coloured liquid water based flexible rubber membrane in pails marked with the manufacturer's mark.
- 2.2 **QUICK CURING WATERPROOFING MEMBRANE**
duroQIK® two-part water based flexible waterproofing membrane comprising duroQIK® liquid component plus the duroMIX® curing compound in pails/bags marked with the manufacturer's mark.
- 2.3 **CURING ADDITIVE**
duroMIX® cementitious curing additive, (used with duroQIK® liquid), and supplied in bags marked with the manufacturer's mark.

4432WD WPS DURO™ DECK & WET AREA MEMBRANE

1. GENERAL

This section relates to the application of Waterproofing Systems Ltd products:

- duroSET® membrane
- duroQIK® liquid membrane

Documents

1.1 DOCUMENTS REFERRED TO

Documents referred to in this section are:

- NZBC E2/AS1 External moisture
- AS/NZS 2269 Plywood - structural

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.2 MANUFACTURER'S DOCUMENTS

Waterproofing Systems Ltd documents relating to work in this section are:

duro Product Manual (3rd Edition October 2007)

Standard detailed drawings

BRANZ Appraisal Certificate 469 (2005): duroSET® & duroQIK® external waterproofing membranes

BRANZ Appraisal Certificate 470 (2005): duroSET® & duroQIK® wet area membranes

For copies of the above documents, or for technical assistance, contact your local Waterproofing Systems Ltd representative:

Northland, Auckland	021- 517 517
Auckland	021- 917 773
Waikato, Bay of Plenty	021- 660 278
Hawkes Bay, Manawatu	021- 402 364
Wanganui, Taranaki	021- 457 953
Wairarapa, Wellington	021- 402 434
Marlborough, Nelson	021- 402 434
Queenstown	021- 917 773
South Island	021- 457 953

Web: www.waterproofing.co.nz
Telephone: 0-6-357 9148 (Head office)
Facsimile: 0-6-357 9410 (Head office)



1.3 ABBREVIATIONS

The following abbreviations are used throughout this part of the specification:

DFT Dry Film Thickness

Requirements

1.4 NO SUBSTITUTIONS

Substitutions are not permitted to any specified Waterproofing Systems Ltd system, or associated components and products.

1.5 QUALIFICATIONS

Waterproofing work to be carried out by Certified Partners™ or licensed applicators approved by Waterproofing Systems Ltd. Approved applicators may be found at:

Web: www.waterproofing.co.nz
Telephone: 0-6-357 9148

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



GIB® Wall Bracing Calculation Sheet A

single storey

V03/09

Job Details

Name Peach
Street and Number 51 Paul Faith Lane
Lot and DP Number Lot 18 DP 405220
City/Town/District Kapiti
Designer MG
Company Name Housing Documentation Professionals
Date 25/02/2010



Select GIB® Lining
Option

10 mm GIB® Plasterboard

Building Specification

Number of storeys single
Floor Loading 2kPa
Foundation Type slab

Single Floor

Cladding Weight light
Roof Weight light
Room in Roof Space yes
Roof Pitch (degrees) 30
Roof height above eaves (m) 3.9
Building height to apex (m) 6.4
Ground to lower floor level (m) 0.3

Complete Single Floor Column only

15
1.0

Stud Height (m) 2.4
Building Length (m) 33.6
Building Width (m) 22.8
Building Plan Area (m2) 364

3.0
2.4
10.0
10.0
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 2038
across slab 4013

Bracing Units required for Earthquake

Demand along / across E (BU)

Walls
single
slab 2370

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



GIB® Wall Bracing Calculation Sheet B Single or Upper Walls Along V03/09

Along		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	enter	1	1.2	25	2.4	BL1(10)	GIB®	144	116
	not enough	2	1.9	25	2.4	GS1(10)	GIB®	119	95
line totals		3	1.7	25		GS1(10)	GIB®	106	85
W	369	4							
EQ	295	5							
B	enter	1	1.8		2.4	GS1(10)	GIB®	124	99
	not enough	2	1.7	25	2.4	GS1(10)	GIB®	106	85
line totals		3							
W	231	4							
EQ	184	5							
C	enter	1	2.6		2.4	GS1(10)	GIB®	179	143
	not enough	2	2.2		2.4	GS1(10)	GIB®	152	121
line totals		3	2.2		2.4	GS1(10)	GIB®	152	121
W	827	4	1.9	25	2.4	GS1(10)	GIB®	119	95
EQ	659	5	3.6	25	2.4	GS1(10)	GIB®	225	179
D	enter	1	1.8	25	2.4	GS1(10)	GIB®	113	90
	not enough	2	5.1		2.4	GS1(10)	GIB®	352	281
line totals		3	3.2	25	2.4	GS1(10)	GIB®	200	160
W	665	4							
EQ	530	5							
E	enter	1	2.2		2.4	GS1(10)	GIB®	152	121
	not enough	2	1.9		2.4	GS1(10)	GIB®	131	105
line totals		3	0.9		2.4	BL1(10)	GIB®	116	99
W	504	4	0.9	25	2.4	BL1(10)	GIB®	105	89
EQ	414	5							
F	enter	1	2.4		2.4	GS1(10)	GIB®	166	132
	not enough	2	3.6		2.4	GS1(10)	GIB®	248	198
line totals		3							
W	414	4							
EQ	330	5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

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Wind Earthq.

Totals Achieved	Achieved/Demand	W	148%	EQ	102%	3009	2411
-----------------	-----------------	---	------	----	------	------	------

Concrete Slab

OK OK

Totals Required (from Demand)						2038	2370
-------------------------------	--	--	--	--	--	------	------

Wall Bracing Systems

For full construction details see technical literature

Single or Upper Walls Along

Supplier	System	Minimum Length (m)	BU's W/m	BU's EQ/m
	none		 BRANZ Appraised Appraisal No.294 [2009]	
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
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

<i>Distribution (NZS3604:1999 minimum values)</i>		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
<i>Recommended distribution check (75% x D/n)</i>		
No bracing line less than	296	BU

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



GIB® Wall Bracing Calculation Sheet B								Single or Upper Walls Across		V03/09
Across		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	enter	1	2.9	25	2.4	GS1(10)	GIB®	181	145	
	not enough	2	2.9	25	2.4	GS1(10)	GIB®	181	145	
line totals		3								
W	363	4								
EQ	289	5								
N	enter	1	3	25	2.4	BL1(10)	GIB®	378	272	
	not enough	2	2.4		2.4	GS1(10)	GIB®	166	132	
line totals		3	2.4		2.4	GS1(10)	GIB®	166	132	
W	709	4								
EQ	536	5								
O	enter	1	3.8	25	2.4	GS1(10)	GIB®	238	189	
	not enough	2								
line totals		3								
W	238	4								
EQ	189	5								
P	enter	1	3.6		2.4	BL1(10)	GIB®	500	360	
	not enough	2	1.9		2.4	BL1(10)	GIB®	264	190	
line totals		3	1.8		2.4	GS1(10)	GIB®	124	99	
W	889	4								
EQ	649	5								
Q	enter	1	3.6		2.4	GS1(10)	GIB®	248	198	
	not enough	2	3.6		2.4	GS1(10)	GIB®	248	198	
line totals		3								
W	497	4								
EQ	396	5								
R	enter	1	3.5		2.4	BL1(10)	GIB®	487	350	
	not enough	2	1.5	25	2.4	BL1(10)	GIB®	184	140	
line totals		3								
W	671	4								
EQ	490	5								
S	enter	1	3.4	25	2.4	BL1(10)	GIB®	428	308	
	not enough	2								
line totals		3								
W	428	4								
EQ	308	5								
T	enter	1	0.75	25	2.4	BL1(10)	GIB®	86	76	
	not enough	2	1	25	2.4	BL1(10)	GIB®	118	98	
line totals		3	1	25	2.4	BL1(10)	GIB®	118	98	
W	322	4								
EQ	272	5								
©Winstone Wallboards Limited, 1999-2009. All rights reserved.								Wind	Earthq.	
Totals Achieved	Achieved/Demand	W	103%	EQ	132%	4116	3130			
Concrete Slab								OK	OK	
Totals Required (from Demand)								4013	2370	

Wall Bracing Systems

For full construction details see technical literature

Single or Upper Walls Across

Supplier	System	Minimum Length (m)	BU's W/m	BU's EQ/m
	none		 BRANZ Appraised Appraisal No.294 [2009]	
GIB®	GS1(10)	0.4		
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
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

<i>Distribution (NZS3604:1999 minimum values)</i>		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
<i>Recommended distribution check (75% x D/n)</i>		
No bracing line less than	376	BU



Installation Manual

000

ooo Contents

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ooo Installer

Please take the time to read this manual thoroughly before installing the Steelfort Sunriver system - take special note of what parts are supplied on pages 7 to 10.

Please leave this manual with the purchaser after installation.

ooo Introduction

Solar energy from the sun arrives at the surface of the earth with an average intensity of about 1.3 kW/sq metre. This will be less near the poles, greatest at the equator and also varies with the seasons.

The Sunriver solar hot water system features an evacuated glass tube heat pipe array to collect this energy and to heat water.

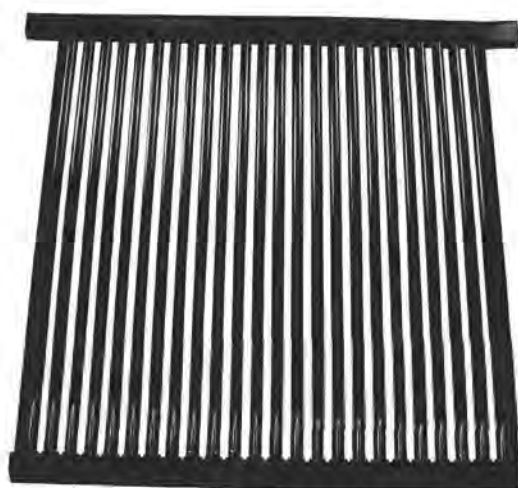
The standard Sunriver solar hot water system has a low power pump to circulate the water from the solar collector to the hot water cylinder where the energy is stored in the form of hot water.

The standard Sunriver solar hot water system also features a “smart” controller to manage the circulating pump and the electric heating element within the hot water storage cylinder.

ooo System Description

SOLAR COLLECTOR

The Sunriver solar hot water system solar collector consists of an insulated copper tube header at the top edge, with a series of evacuated glass tubes with heat pipes plugged into this header. The water passing through this header is heated as it passes over bulbs of the evacuated glass tube heat pipes.

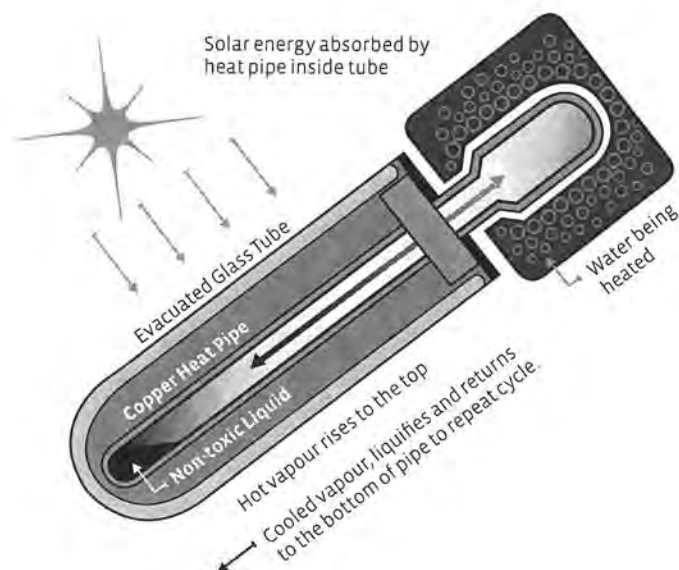


	Weight with water	Collector Area	Gross Area	
12 tube	44 kg	0.98 sq m	2.00 sq m	22.00 kg/sq m
24 tube	75 kg	1.96 sq m	3.96 sq m	18.94 kg/sq m
36 tube	120 kg	2.94 sq m	5.94 sq m	20.20 kg/sq m

The **evacuated glass tubes** are formed of two tubes, one inside the other, sealed off, with the gap evacuated to form a vacuum in this space. The vacuum is a very effective insulator. The surface of the inner glass tube has a specially developed coating to absorb the energy from the sun.

The Sunriver tubes are marked:

Steelfort (Supplier) – ZC58/1800A (model) – month & year of manufacture



Inside this evacuated tube there is a **heat pipe** to transfer the heat collected from the sun to the bulb at the top of the collector in the copper tube header. The fluid within the heat pipe boils and the hot vapour rises to the bulb at the top where it gives up its heat to the water in the header, condenses and travels to the bottom of the heat pipe to repeat the cycle.

CIRCULATING PUMP

The water that is heated in the solar collector is pumped from the hot water storage cylinder to the solar collector and return by a small **Wilo Star Z** pump.

This model Z 25/6 has three speed settings which can be used to vary the flow rate of the circulating water. The lowest speed will be satisfactory for most applications. The flow rate may be adjusted at the **Taconova** Adjustable Flow meter. The recommended setting is 2 litres/min.



CONTROLLER

The operation of the circulating pump and the switching of the electric heating element in the hot water storage cylinder is controlled by a New Zealand manufactured **SolaStat** electronic **solar hot water controller**, designed for New Zealand conditions.

The **SolaStat** controller monitors the solar collector and hot water storage cylinder temperatures and switches the pump on when solar energy is being collected.



Hot Water Storage

Solar water heating systems require a means of storing the solar energy collected during the hours of sunlight. It is a fact that the sun does not always shine and that the available hours of sunlight varies from day to day and with the seasons.

An insulated hot water cylinder is the component within the system where the solar energy can be stored. The hot water so stored can then be used when required.

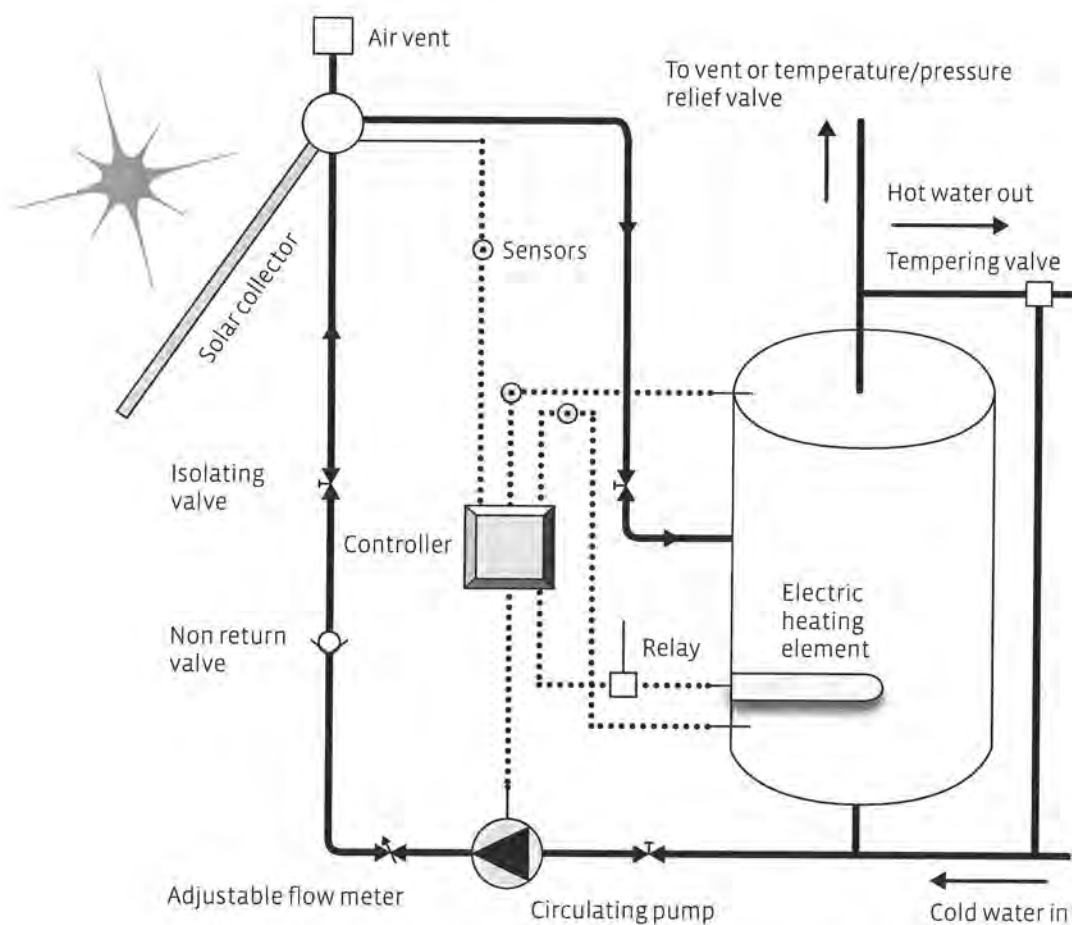
A conventional hot water cylinder may be used with some modification to the plumbing to allow water to be pumped to the solar collector and with the addition of temperature sensors to the top and bottom to allow the controller to manage the electric heating element and circulating pump.

Specialist hot water cylinders, often of larger capacities and sometimes with built in heat exchangers are also available.

ooo Open Circuit System

The water that is heated in the header of the solar collector is circulated directly from the hot water cylinder.

The controller senses the temperature in the header of the solar collector, the top and bottom of the hot water cylinder and controls the circulating pump and the electric heating element.



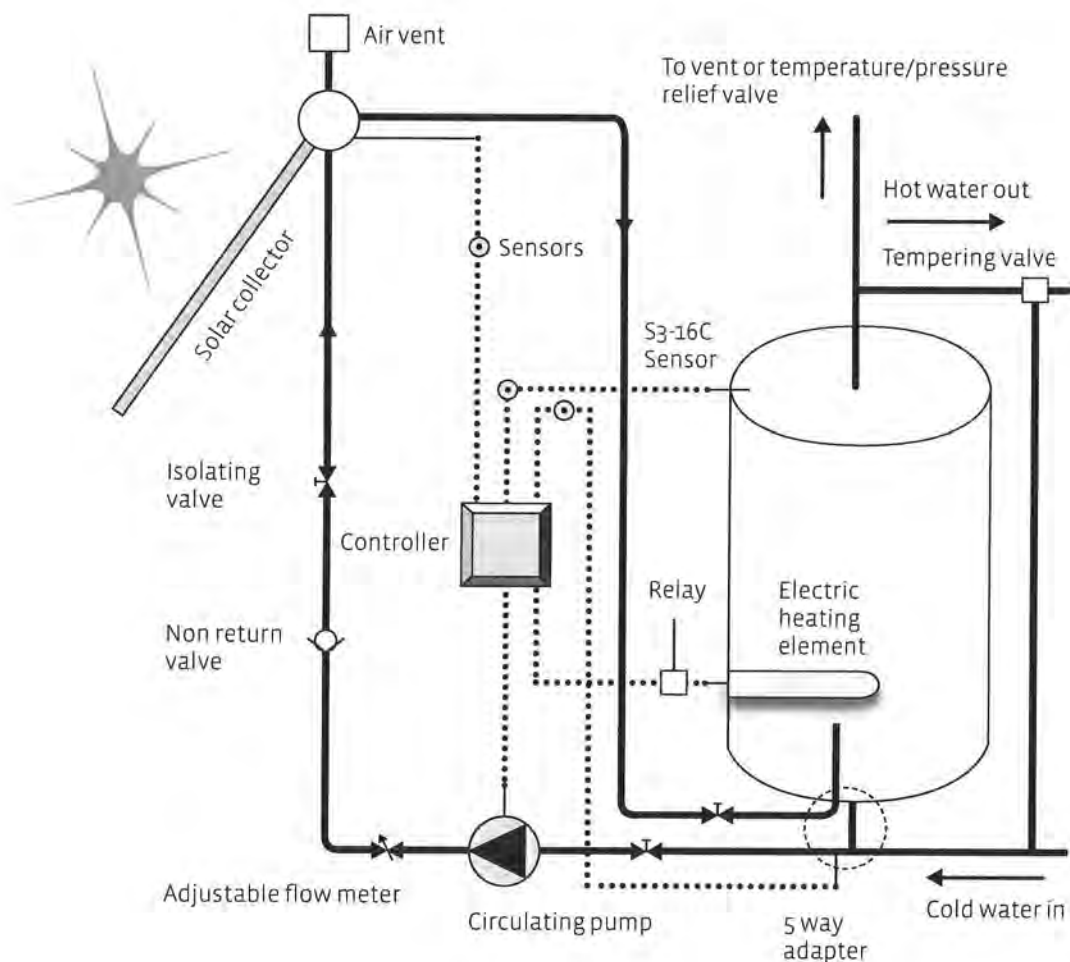
Supplied parts: SolarStat controller (Plus 2), relay, Wilo pump, adjustable flow meter and air vent valve.

Installer to supply: Heat transfer paste, non-return valve and isolating valves.

Open Circuit System

Open circuit system utilising a five way adapter

The five way connector is useful for adapting an existing hot water cylinder for a solar hot water circuit. The Solastat S3-16C surface mount sensor may be fitted to the upper wall surface of the hot water cylinder to sense the upper cylinder temperature. The five way connector has a pocket for the lower temperature sensor.



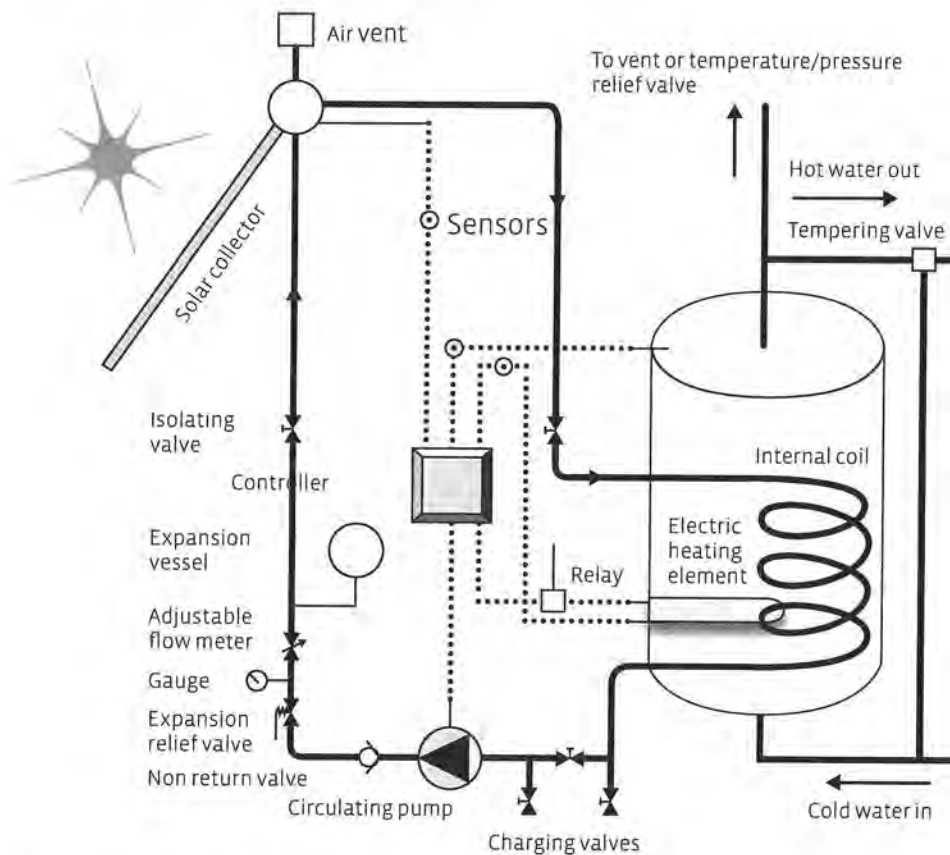
Supplied parts: SolarStat controller (Plus 2), relay, Wilo pump, adjustable flow meter, air vent valve, 5-way adapter and Senztec S3-16C sensor.

Installer to supply: Heat transfer paste, non-return valve and isolating valves.

ooo Closed Circuit System

Circuit pressure maintained with an expansion vessel

The water which is heated in the header of the solar collector is circulated through a coil inside the hot water cylinder to transfer heat to the water in the hot water cylinder. This is used when it is necessary to isolate the water in the solar circuit from the water in the hot water cylinder. If Glycol is added to the solar circuit for frost protection, or if poor water quality requires that treated water is run in the solar circuit. The controller senses the temperature in the header of the solar collector, the top and bottom of the hot water cylinder and controls the circulating pump and the electric heating element.

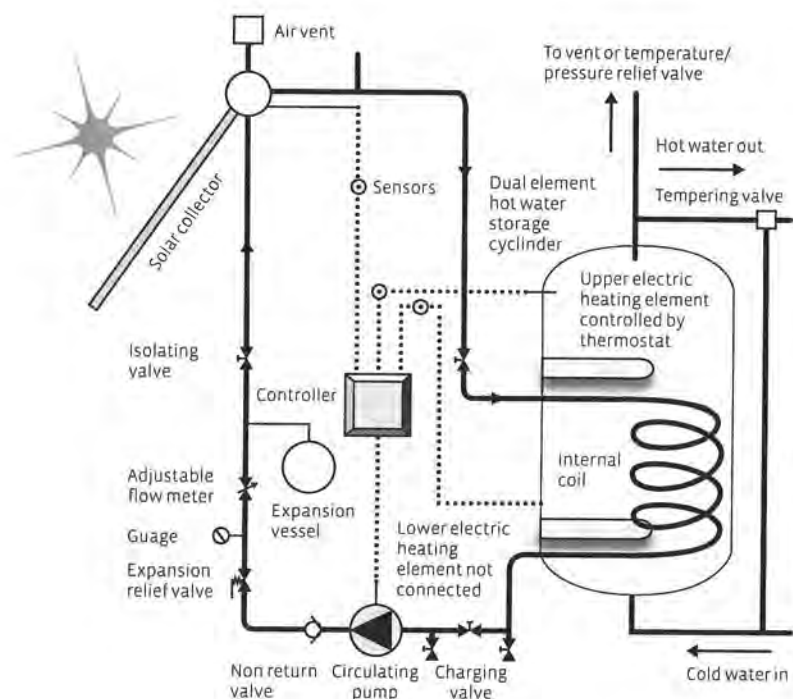


Supplied parts: SolarStat controller (Plus 2), Wilo pump, adjustable flow meter, air vent valve, expansion relief valve, pressure gauge and expansion vessel.

Installer to supply: Heat transfer paste, non-return valve, and isolating/charging valves.

ooo Dual Element Tanks

When a “solar ready” dual element hot water cylinder is used, to comply with the G12/AS2 protection from Legionella bacteria requirements, the upper electric heating element must be continuously energised and controlled with a thermostat. The lower element is not connected as the solar circuit will heat the lower portion of the tank. The controller will operate the pump and give frost protection to the collector. This arrangement can be used on both Open and Closed circuited tanks.



Open Circuit with Dual Element Tanks

Supplied parts: SolarStat controller (Plus 2), Wilo pump, adjustable flow meter and air vent valve.

Installer to supply: Heat transfer paste, non-return valve, and isolating valves.

Closed Circuit with Dual Element Tanks

Supplied parts: SolarStat controller (Plus 2), Wilo pump, adjustable flow meter, air vent valve, pressure gauge and expansion vessel.

Installer to supply: Heat transfer paste, non-return valve, and isolating/charging valves.

ooo Collector Location

It is usual to fit the solar collector on the roof to minimise shading and to keep the collector away from likely sources of damage. The 24 tube solar collector measures 2200 mm wide x 2000 mm high. Ensure there is sufficient space to fit the collector on the roof space.

Check the site for shading from adjacent structures and trees. Be aware the winter sun is much lower (about 20° less than the latitude of the location) and the winter shading must be considered.

ORIENTATION

Direction: For optimum performance the collector should face the equator (true or geographic north in NZ). Be aware that magnetic (compass) north is east of true north in NZ. This varies from about 18° in the far north to about 26° on the far south. The collector may be within 45° of true north but there will be some reduction in performance. More easterly facing gives best performance in the morning, more westerly gives better performance in the afternoon.

Pitch: The ideal angle of inclination is the latitude of the site. In NZ this varies from 35° in the far north to 45° in the far south. A deviation of $\pm 20^\circ$ from this angle is acceptable and if necessary a minimum elevation of 20° can be used without affecting the performance greatly. Steeper angles give better winter performance, and lower angles emphasise summer performance.

IMPORTANT: Please refer to the following page for recommended inclination and orientation levels.

Energy performance adjustment factors for different inclination and solar orientation

Direction		20°	40°	60°	80°	90°
West	270°	0.85	0.8	0.72	0.6	0.53
	300°	0.92	0.92	0.86	0.73	0.65
	330°	0.98	0.99	0.93	0.8	0.71
North	0°	0.97	1	0.94	0.8	0.7
	30°	0.94	0.95	0.88	0.74	0.65
	60°	0.88	0.86	0.77	0.65	0.57
East	90°	0.8	0.73	0.64	0.52	0.46



Good



Moderate



Poor

Collector Installation

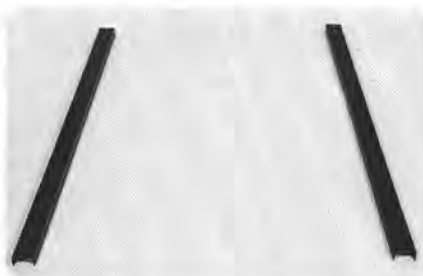
SOLAR COLLECTOR

The Sunriver solar collector is supplied as components that can be readily manhandled onto the roof, assembled in place and the plumbing tested before the evacuated glass tubes are fitted. It is recommended that the evacuated glass tubes are not fitted until the plumbing installation is complete and tested. This protects the evacuated glass tubes from damage and prevents any overheating of the system before the solar water circuit is complete.

It is intended that this installation can be carried out without the need to utilise cranes forklifts or other specialist means of erecting the collector. The collector does not contain a significant mass of water. A 24 tube array weighs about 75 kg and should not normally require any structural modifications to the roof.

*** The compliance document for NZ Building Code clause G 12/AS2 may be used as the means of achieving acceptable solutions for solar water heating installations**

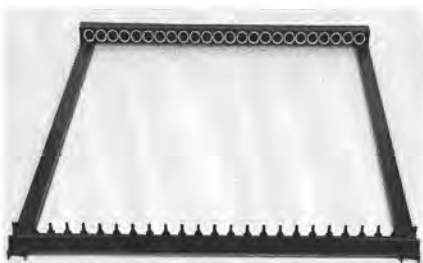
INSTALLING THE FRAMEWORK



- 1 Locate the two side frame members.



- 2 Place the top header casing across the top end of the side rails and bolt together.



- 3 Fit the footer across the bottom end of the side rails and bolt in place. Square up this framework and tighten the bolts.



- 4 Locate suitable anchor points in the roof structure and attach the feet in a position which suits these anchor points.

*Refer G12/AS2 Section 6 "Structural Support for Solar Water Heaters" for examples of suitable fixing and sealing solutions.

- 5 Locate and form the penetrations for the solar water circuit pipes. And the electrical conduit for the collector sensor.

*Refer G12/AS2 Section 5.2 "Weathertightness" for examples of suitable pipe penetration and electrical conduit flashing and sealing solutions.

The solar water circuit pipes must be insulated in accordance *G12/AS2 Section 5.4. The pipe insulation outside the building must be suitable to resist UV radiation as *Section 5.4.2.

The evacuated glass tubes should be plugged into the upper header using a liberal coating of heat transfer compound between the bulb and the header pocket. When all of these tubes are in place, the cover on the footer can be fitted into place around the rubber boots at the bottom of the tubes, avoiding glass to metal contact.

ooo Solar Plumbing Installation

AS/NZS 2712:2007 clause 2.9.1

INSTALLATION INSTRUCTIONS

- a. The collector does not have restricted water passages, therefore water normally acceptable in an electrically heated water heater is acceptable.

The collector has been tested to 1000 kPa.

- b. (i) The solar water heater shall be installed to the requirements of NZBC G12. The copper pipework materials shall conform to NZS 3501. The pipes shall be insulated and where the piping is exposed to the weather, the insulation shall be weather resistant.
- (ii) The hot water cylinder shall be provided with a means of drainage, expansion of heated water and relief of vacuum. Refer G12/AS1 Section 6 and Figs 6,7,8,9,10,11.
- (iii) A drained safe tray shall be provided under heaters or feed tanks Refer G12/AS1 clause 5.2.3.
- (iv) If a container of non metallic material is used, the method of fixing the fittings to the casing must not be interfered with. Excessive strain must not be applied to the fittings of these hot water cylinders.
- c. The collector has been tested to level 2 (severe frost conditions) Method B.
- d. No special glazing guards are required.

- e. The mounting system shall be adequate for the weights in this table:

	Weight with water	Gross Area
12 tube	44 kg	2.00 sq m
24 tube	75 kg	3.96 sq m
36 tube	120 kg	5.94 sq m

- f. The weights and gross area combinations of the collector are such that they should not compromise the structural integrity of the building as they comply with G12/AS2 clause 1.1.
- g. Fixing details shall conform to the principles of G12/AS2.
- h. The factory settings of the SolaStat controller will be satisfactory for most installations. These may be adjusted if required. Refer to the **SolaStat Installation Guide. Page 10-15.**
- i. The hot water thermostat for the electric element **MUST** be installed and **MUST** be set higher than the temperature of the HWC Biosafe and reheat adjustable values for the HWC control modes to operate correctly. Refer to the **SolaStat Installation Guide Page 10.**
- j. Open circuit systems with a correctly fitted air vent valve will be adequately filled when the hot water cylinder is filled with water.
- Closed circuit systems need to be filled separately from the hot water cylinder. A correctly fitted air vent valve will assist in purging air from the pipework. The closed circuit should be charged to a pressure of 2 barg.
- k. It is not uncommon for the water in solar systems to exceed scalding temperatures. A tempering valve rated to handle elevated temperatures must be used. It is recommended a solar rated tempering valve be used when retrofitting a solar circuit to an existing installation.

ooo Solar Plumbing Installation cont.

AS/NZS 2712:2007 2.9.2

- a. The SolaStat controller has a frost protection feature. Refer to the SolaStat Installation manual page 5. No householder intervention should be necessary as the collector has been tested to level 2 (severe frost conditions) Method B.
- b. The factory settings of the SolaStat controller will be satisfactory for most installations and no householder intervention should be necessary.
- c. It is recommended to inspect the evacuated glass tubes at least as often as you find it necessary to clean the windows of your home. Clean tubes will obviously enhance the performance of the system. Always practice recommended safety procedures regarding the use of ladders and working on sloping roofs.
- d. The evacuated glass tubes may be replaced after removing the lower footer cover. They can be readily unplugged from the upper header. Although the tubes are robust, they are glass and must be handled with care. Always practice recommended safety procedures regarding the use of ladders and working on sloping roofs.
- e. Open circuit solar hot water heating systems will be drained when the hot water cylinder is emptied through the drain valve fitted in accordance with G12/AS1 Section 6 and Figs 6,7,8,9,10,11.
- f. When testing, the easing levers of any active expansion relief valve should be lifted slowly to prevent the valve "blowing off". See valve manufacturers instructions for the particular model.
- g. If a hot water cylinder is fitted with a protective anode, follow the manufacturers recommendation for replacement.
- h. If the hot water cylinder is fitted with an anode, note the following warning.

WARNING

If the hot water system is not used for **TWO WEEKS or more**, a quantity of highly flammable Hydrogen gas may accumulate in the water heater. To dissipate this gas safely, it is recommended that a hot water tap be turned on for several minutes or until the discharge of gas ceases.

Use a sink, basin or bath outlet but not a dishwasher, clothes washer or similar appliance during this procedure. There must be no smoking, open flame or any electrical appliance operating nearby.

If hydrogen is discharged through the tap, it will probably make an unusual sound as with air escaping.

We recommend fitting isolating valves at the hot water storage cylinder and air at the pump set to allow servicing without the need to drain the whole system. The solar water circuit should be plumbed in copper pipe and insulated.

OVER PRESSURE PROTECTION

(AS/NZS 2712:2007 clause 2.6)

All installations shall have adequate pressure relief to prevent the pressure in the cylinder exceeding rated pressure and the operating temperature of an unvented water heater from exceeding 99°C.

The thermal discharge rating of any TPR, CWE, or PRV shall be greater than 5.75 kW.

PUMP

The pump should be fitted in the “cold water side” of the solar water circuit in a low portion of this pipework. The **Wilco Star Z** pump must be installed with the shaft horizontal and the electrical terminal box uppermost in accordance with the **Wilco Star Z installation manual**. The arrow on the pump housing indicates the flow direction.

ooo Solar Plumbing Installation cont.

NON RETURN VALVE

A non return valve should be fitted downstream from the pump.

Note: The expansion relief valve used on the closed circuit system has a built in non return valve.

ADJUSTABLE FLOW METER

The **Taconova AV 23 Setter** is used to adjust the flow of water in the solar water circuit. This valve may be fitted in any orientation, a recommended flow setting on the graduated scale is 2 litres/min. This valve should be fitted downstream of the pump.

AIR VENT

A suitable air vent must be fitted at the highest part of the water circuit to eliminate air from this fluid circuit.

EXPANSION VESSEL

If a **Zilmet expansion vessel** and an expansion relief valve is used on a closed circuit system, ensure the expansion vessel is fitted vertically. This vessel has a 24 litre capacity. This valve should be fitted downstream of the pump.

EXPANSION RELIEF VALVE

When the **RMC Cold Water Expansion Valve** is used on a closed circuit system, it is set at 4 bar and will relieve an overpressure/temperature situation. The expansion and sludge outlet must be routed to an appropriate discharge area. This valve should be fitted downstream of the pump.

FIVE WAY ADAPTER

A RMC SC701 5-way adapter is available for fitting a solar circuit to an existing hot water cylinder.

PIPEWORK

Solar hot water heating systems can reach high temperatures. All pipework shall be copper and installed to the requirements of AS/NZS 3500.4.

NOTE ON TEMPERING VALVES

It is not uncommon for the water in solar systems to exceed scalding temperatures. A tempering valve rated to handle elevated temperatures must be used. It is recommended a solar rated tempering valve be used when retrofitting a solar circuit to an existing installation.

PRODUCER STATEMENT

This is available online at www.sunriver.co.nz on the technical page.

Controller

The operation of the circulating pump and the switching of the electric heating element in the hot water cylinder is controlled by a New Zealand manufactured **SolaStat** electronic solar hot water controller, designed for New Zealand conditions.

This controller monitors the solar collector and hot water storage cylinder temperatures and switches the pump on when solar energy is being collected. The SolaStat controller allows intelligent control of the electric element and can prevent the electric element coming on for a programmed time interval when solar heat is being collected.

The controller will ensure you do not run out of hot water, all the while being vigilant that Biosafe water conditions are maintained.



ooo Controller cont.

OTHER FEATURES OF THIS CONTROLLER

TOPOUT When the maximum safe temperature in the hot water cylinder is reached, the controller will prevent the pump from moving any more water from the collector. The TOPOUT is factory set at 80°C. This may be adjusted with caution and should not exceed 90°C. Refer to the **SolaStat Installation Guide**.

FROST To protect the collector from freezing, a small amount of water will be circulated when the collector temperature falls near freezing.

PUMP TIMER For monitoring and control of pump cavitation.

MOUNTING THE CONTROLLER

Refer to the **SolaStat Installation Guide**.

The controller should be readily accessible so the user can inspect the display and operate the functions provided.

MOUNTING THE SENSORS

Refer to the **SolaStat Installation Guide**.

This is critical to the success of the installation

The sensors are the only way the SolaStat-Plus 2 can efficiently control and protect the system.

1 ROOF Sensor (labelled '**ROOF SENSOR**' - Solar Collector).

The '**ROOF**' sensor is best fitted into a metal immersion 'pocket', liberally using heat transfer compound, just inside the solar collector in the hot water outlet pipe.

2 TANK Sensor (labelled '**TANK SENSOR**' - HWC Upper).

The '**TANK**' sensor is best fitted into a metal immersion 'pocket' in the upper region of the HWC using thermal transfer compound between the tank and sensor.

3 INLET Sensor (labelled 'INLET SENSOR' - HWC Lower).

The 'INLET' sensor is mounted as per the 'TANK' sensor only this time it is mounted near the bottom of the hot water cylinder.

ELECTRICAL WIRING

All wiring should be carried out by a qualified electrician with reference to the **SolaStat Installation Guide**.

The controller and pump should not be connected to a 'ripple controlled' circuit. There may be times when the HWC heating element is turned off, either by owner, or remotely by the supply authority. When the controller has an independent electrical supply, the solar collector, pump and its frost protection features will continue to operate.

Note: An electrical supply is essential for effective operation of the system and for protection against freezing. **THE ELECTRICAL SUPPLY SHOULD NOT BE TURNED OFF.**

The **SolaStat** controller may be programmed to suit the operating conditions of individual installations.

Most functions may be adjusted from the factory preset values. Refer to the **SolaStat Installation Guide**.

HOT WATER CYLINDER THERMOSTAT

Refer to the **SolaStat Installation Guide**.

The hot water thermostat for the electric element **MUST** be installed and **MUST** be set higher than the temperature of the HWC Biosafe and reheat adjustable values for the HWC control modes to operate correctly.

ooo Warranty

The manufacturer, Steelfort Engineering Company Limited, warrants this Steelfort Sunriver solar hot water unit against manufacturing defects, faulty material and/or workmanship and leakage from corrosion.

YOUR SUNRIVER SYSTEM IS WARRANTED AS FOLLOWS:

- ▶ 10 year warranty on the manifold, footer assembly and frame rails and evacuated tubes
- ▶ 2 year warranty on the SolaStat Plus-2 controller and relay
- ▶ 2 year warranty on the Wilo Star-Z pump

ooo Find out more

For more information, please call us on 06 350 1350
or visit www.sunriver.co.nz.



Manufactured by



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BRANZ Appraised

Appraisal No.470 [2005]

BRANZ Appraisals

Technical Assessments of products
for building and construction

BRANZ APPRAISAL CERTIFICATE No. 470 (2005)

DUROSET® AND DUROQIK® WET AREA MEMBRANES

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Product

1.1 DuroSET® and DuroQIK® Wet Area Membranes are liquid-applied waterproofing membranes for use under vinyl, ceramic or stone tile finishes in internal wet areas.



Scope

2.1 DuroSET® and DuroQIK® Wet Area Membranes have been appraised for use as waterproofing membranes for internal wet areas of buildings, within the following scope:

- on floor substrates of concrete, flooring grade particleboard, plywood, compressed fibre cement sheet and fibre cement sheet tile underlay, and on wall substrates of concrete, concrete masonry, wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
- when protected from physical damage by vinyl, ceramic or stone tile finishes; and,
- where floors are designed and constructed such that deflections do not exceed 1/360th of the span.

2.2 The use of DuroSET® and DuroQIK® Wet Area Membranes on concrete slabs where hydrostatic or vapour pressure is present from below is outside the scope of this Certificate.

2.3 Movement and control joints in the substrate must be carried through to the tile finish. The design and construction of the substrate and movement and control joints is specific to each building, and therefore the responsibility of the building designer and building contractor and is outside the scope of this Certificate.

2.4 The vinyl, ceramic or stone tile finishes are outside the scope of this Certificate.

2.5 The membranes must be installed by trained applicators, approved by Waterproofing Systems Ltd.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, DuroSET® and DuroQIK® Wet Area Membranes if designed, used, installed and maintained in accordance with the statements and conditions of this Certificate, will meet or contribute to meeting the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years. DuroSET® and DuroQIK® Wet Area Membranes meet this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating DuroSET® and DuroQIK® Wet Area Membranes will meet this requirement. See Paragraphs 11.1 - 11.7.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. DuroSET® and DuroQIK® Wet Area Membranes meet this requirement and will not present a health hazard to people.

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

Technical Specification

4.1 Materials supplied by Waterproofing Systems Ltd are as follows:

DuroSET®

- DuroSET® is a styrene-butadiene copolymer-based, one-part, ready-to-use, liquid-applied membrane supplied as a beige thixotropic paste in 20 litre pails.

DuroQIK®

- DuroQIK® is a quick drying, latex based, two-part, flexible, cementitious-based, liquid-applied membrane. It is supplied as DuroQIK® liquid in 15 litre pails and DuroMIX® powder in 18.75 kg bags. When dry, the membrane is light grey in colour.

duroPRIME™

- duroPRIME™ is a multi-purpose, two-in-one primer and waterproof bonding agent. It is used to prime substrates prior to the application of the membranes. It is supplied as a white coloured liquid in 20 litre pails.

Reinforcing Fabric (RF)

- The reinforcing fabric is a 100% non-woven polypropylene used as reinforcement flashing fabric in DuroSET® and DuroQIK® membranes. The fabric has a weight of 40 g/m² and is available in rolls 100 m long x 100 mm and 200 mm wide.

Elastofabric Tapes and Corners

- Elastomeric bond-breaker tapes are used at movement and expansion joints, and elastomeric formed corner sections for use at internal and external corner wall/floor junctions as set out in Technical Literature. The tapes are available in rolls 10 m long x 120 mm wide. The corner sections are approximately 150 mm long and are available for internal corner/floor junctions (90°) and external corner/floor junctions (270°).

EF Polyurethane Sealant

- EF Polyurethane Sealant is an elastomeric, single component, moisture curing polyurethane, multi-purpose construction sealant used for forming the bond breaker joints at junctions under the membrane. The sealant can be used in conjunction with backing rods where required. It is available in 600 ml sausages for use in a caulking gun.

DuroFIX®

- DuroFIX® is a polymer-modified, flexible, quick-drying tile adhesive used to adhere tiles to the membranes. It is available in 20 kg bags and must be mixed with clean water.

Handling and Storage

5.1 All materials must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions. The materials in the original unopened packaging

have a shelf life of 12 months from date of manufacture. Once opened, the materials must be used within 3 months.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for reference to the current Technical Literature for the DuroSET® and DuroQIK® Wet Area Membranes. 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

General

7.1 DuroSET® and DuroQIK® Wet Area Membranes are for use in buildings where an impervious waterproof membrane is required to floors and walls to prevent damage to building elements and adjoining areas.

7.2 DuroQIK® is designed to be used where a quicker curing time is required, such as in cool or humid conditions.

7.3 The membranes must be protected from physical damage by the application of vinyl, ceramic or stone tile finishes.

7.4 Movement and control joints may be required depending on the shape and size of the building or room, and the tile finish specified. Design guidelines can be found in the BRANZ Tiling Good Practice Guide.

7.5 Timber framing must comply with NZS 3604, or where specific engineering design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604, or comply with the serviceability criteria of NZS 4203. In all cases framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported. Timber framing supporting the substrates must be constructed such that deflections do not exceed 1/360th of the span. Where NZS 3604 is used, the allowable joist spans given in Table 7.1 shall be reduced by 20%.

Substrates

Plywood

8.1 Plywood must be a minimum of 17 mm thick complying with AS/NZS 2269, CD Grade Structural with sanded C face upwards and treated to H3 (CCA treated). LOSP treated plywood must not be used. The plywood must be supported with dwangs or framing with a maximum span of 400 mm in each direction and fixed with 10 g x 50 mm stainless steel countersunk head screws at 150 mm centres on the edges and 200 mm through the body of the sheets.

Fibre Cement Compressed Sheet/ Fibre Cement Sheet Tile Underlay

8.2 Fibre cement compressed sheet must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use as a wet area substrate. Fibre cement sheet tile underlay must be suitable for use in internal wet areas. Installation must be in accordance with the instructions of the manufacturer.

Particleboard

8.3 Particleboard must be specified for the end use in accordance with NZS 3602.

Concrete and Concrete Masonry

8.4 Concrete and concrete masonry substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101, concrete slab-on-ground to NZS 3604, and concrete masonry to NZS 4229 and NZS 4230.

Wet Area Wall Linings

8.5 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588 and be suitable for use in internal wet areas.

8.6 Fibre cement sheet must be suitable for use in wet areas.

Durability

Serviceable Life

9.1 The DuroSET® and DuroQIK® Wet Area Membranes, when subjected to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15-25 years.

Maintenance

10.1 No maintenance of the membranes will be required provided significant substrate movement does not occur and the vinyl or tile finish remains intact. Regular checks must be made of vinyl and tiled areas to ensure they are sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the vinyl or tiles, grouts and sealants.

10.2 In the event of damage to the membranes, the vinyl or tiling must be removed and the membrane repaired by removing the damaged portion and applying a patch as for new work.

10.3 Drainage outlets must be maintained to operate effectively, and vinyl, ceramic or stone tile finishes must be kept clean.

Internal Moisture

11.1 DuroSET® and DuroQIK® Wet Area Membranes are impervious to water and when appropriately designed and installed will avoid the likelihood of water penetrating behind linings or entering concealed spaces.

11.2 DuroSET® and DuroQIK® Wet Areas Membranes are suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of code compliance for overflow is given in NZBC Acceptable Solution E3/AS1 Paragraph 2.

11.3 Surfaces must be finished with vinyl, ceramic or stone tile finishes. A means of code compliance to NZBC Clause E3.3.3 is given in NZBC Acceptable Solution E3/AS1 Paragraph 3.1.1 (b) and 3.1.2 (b).

11.4 Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1500 mm out from the shower rose. Floor wastes must be provided and the floor must fall to the outlet.

11.5 The waterproofing membrane must completely cover shower bases, and for unenclosed showers it must extend a minimum of 1500 mm out from the shower rose. Further design guidance on waterproofing wet areas, including waterproofing walls and junctions can be obtained from AS 3740, the BRANZ Good Practice Guide – Tiling, and flooring and wallboard manufacturers.

11.6 Where water resistant wall finishes such as prefinished sheet materials are used, they must flash over the membrane a minimum of 30 mm.

11.7 BRANZ recommends the entire floor be covered by a waterproof membrane for bath, shower and spa rooms where timber, plywood or particleboard floors are used. This is also a requirement of particleboard manufacturers.

Installation

Installation Skill Level Requirement

12.1 Installation of the membranes must be completed by trained applicators, approved by Waterproofing Systems Ltd.

12.2 Installation of substrates must be completed by tradespersons with an understanding of internal wet area construction, in accordance with instructions given within the Waterproofing Systems Ltd Technical Literature and this Certificate.

Preparation of Substrates

13.1 Substrates must be dry, clean and stable before installation commences, with surfaces that are even and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents.

13.2 The relative humidity of concrete substrates must be 75% or less before membrane application. The concrete can be checked for dryness by using a hygrometer as set out in BRANZ Bulletin No. 424.

13.3 All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface. Junctions of substrate abutments, such as at wall/floor and wall/wall junctions must have a Elastofabric bond breaker joint system or RF underflashing installed as set out in the Technical Literature.

13.4 Substrates must be primed with duroPRIME™ and allowed to dry fully before the membrane is installed.

Membrane Installation

14.1 Installation must not be undertaken where the substrate surface temperature is below 5°C or above 35°C.

14.2 DuroQIK® liquid and DuroMIX® powder must be mixed and left to stand for 5 minutes before re-mixing, then applying. DuroSET® must be thoroughly stirred before application.

14.3 The membrane must be applied in a minimum of two coats at the rates set out in the Technical Literature to give a total minimum finished thickness of 1.2 mm. Subsequent coats must be applied in an opposite direction to the previous coat.

14.4 Application can be made by roller (medium/long nap), brush (long bristle), or a non-edge serated flat steel trowel.

14.5 Elastofabric tapes and corners must be used at junctions as set out in the Technical Literature.

14.6 Clean up may be undertaken with water.

Tiling

15.1 The membranes must be fully cured before tiling. The cured membranes must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.

15.2 Tiling must be undertaken in accordance with AS 3958.1 and the BRANZ Good Tiling Practice Guide. The compatibility of the tile adhesive must be confirmed with the adhesive manufacturer or Waterproofing Systems Ltd, if using other than DuroFIX® tile adhesive.

Inspections

16.1 The Technical Literature must be referred to during the inspection of membrane installations by Building Consent Authorities and Territorial Authorities.

16.2 Critical areas of inspection are:

- Construction of substrates, including crack control and installation of under flashings and movement control joints.
- Moisture content of the substrate prior to the application of the membrane.
- Acceptance of the substrate by the membrane installer prior to application of the membrane.
- Installation of the membrane to the manufacturer's instructions, particularly installation to the correct thickness and use of reinforcement.
- Membrane curing and integrity prior to the installation of tiles including protection from mechanical damage during curing and prior to tile installation.

Health and Safety

17.1 Safe use and handling procedures for the membranes are provided in the Technical Literature. The materials must be used in conjunction with the relevant Material Safety Data Sheet.

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

Tests

18.1 The following testing of DuroSET® has been undertaken by the following organisations:

- Amdel Limited, Australia – water absorption; tensile strength and elongation; shore A hardness; water vapour transmission; accelerated weathering and low temperature flexibility.
- CSIRO, Australia – mass per unit area and gravimetric thickness; tensile strength and elongation at break; tensile strength and elongation at break after UV exposure, including immersion in water, bleach and detergent; loss on heating; moving joint test and cyclic strain.

Test methods and results have been reviewed by BRANZ and found to be satisfactory.

18.2 The following testing of DuroQIK® has been undertaken by Amdel Limited, Australia – wet area durability testing in accordance with AS/NZS 4858 covering immersion in water, bleach, detergent, and heat ageing; UV ageing; water absorption; low temperature flexibility and water vapour transmission. Test methods and results have been reviewed by BRANZ and found to be satisfactory.

18.3 The following testing of Elastofabric has been undertaken by Amdel Limited, Australia – wet area durability testing in accordance with AS/NZS 4858 covering immersion in water, bleach, detergent, and heat ageing; cyclic movement; low temperature flexibility; water absorption and water vapour transmission.

Test methods and results have been reviewed by BRANZ and found to be satisfactory.

18.4 Although not required by the standard AS/NZS 4858 as water vapour transmission testing had already shown compliance, additional testing of DuroSET® and DuroQIK® was also undertaken by Amdel Limited for suitability over particleboard in accordance with AS/NZS 4858, Appendix C, and found to be satisfactory.

18.5 Testing of DuroFIX® has been undertaken by Amdel Limited, Australia for tile adhesion shear strength to both

membranes in accordance with ATM D2919-01 before and after heat ageing and water immersion. Test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

19.1 An assessment was made of the durability of the DuroSET® and DuroQIK® Wet Area Membranes by BRANZ technical experts.

19.2 Site visits have been carried out by BRANZ to assess the practicability of installation and to examine completed installations.

19.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

20.1 The manufacture of the membranes has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

20.2 The quality management system of the membrane's manufacturer has been assessed and found to be satisfactory.

20.3 The quality of supply of the membrane system to the market is the responsibility of Waterproofing Systems Ltd.

20.4 Quality on site is the responsibility of the trained applicators, approved by Waterproofing Systems Ltd.

20.5 Designers are responsible for the substrate design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of the substrate manufacturer, Waterproofing Systems Ltd and this Certificate.

20.6 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of Waterproofing Systems Ltd.

Sources of Information

- AS 2908.2 – 2000 Cellulose-cement products - flat sheet.
- AS 3740 – 2004 Waterproofing of wet areas within residential buildings.
- AS 3958.1 – 1991 Guide to the installation of ceramic tiles.
- ASTM D2919-01 Standard test method for determining durability of adhesive joints stressed in shear by tension loading.
- AS/NZS 4858: 2004 Wet area membranes.
- AS/NZS 2269:1994 Plywood – Structural.
- NZS 3101: 1995 The design of concrete structures.
- NZS 3602: 2003 Timber and wood-based products for use in buildings.
- NZS 3604: 1999 Timber framed buildings.
- NZS 4229:1999 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230:1990 Code of practice for the design of masonry structures.
- BRANZ Good Practice Guide – Membrane Roofing, reprint October 2003.
- BRANZ Good Practice Guide – Tiling, reprint March 2004.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 Amendment.



In the opinion of BRANZ, DuroSET® and DuroQIK® Wet Area Membranes are fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided they are used, designed, installed and maintained as set out in this Certificate.

The Appraisal Certificate is issued only to the Certificate Holder, Waterproofing Systems Ltd, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. The Certificate Holder:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ

P Robertson
Chief Executive

Date of issue: 9 August 2005

CARTERS Manufacturing

Producer Statement : Page 1

Job: FP2961

Client: Signature Homes
Phone:

Site: Peach
51 Paul Faith Lane
Te Horo
Kapiti

Description:
Building Consent No.:
MITek 20/20 Engineering 4.5.147

MITek New Zealand Ltd.

Phone:
Printed: 09:38:04 05 Mar 2010

PRODUCER STATEMENT for MITek 20/20™ TRUSS DESIGN

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

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

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

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

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

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

On behalf of MITek New Zealand Ltd,

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

MITek 20/20™ TRUSS DESIGN DATA

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

Job Details

Roof Truss

Timber Group: MSG45STD
Material: Metal Tiles
Dead Load: 0.210 kPa
Restraints: 400 mm centres
Live Load: Q_{ur} = 0.250 kPa
Q_c = 1.100 kN

Importance Level : 2

Pitch: 30.000 deg
Ceiling
Material: Standard
Dead Load: 0.200 kPa
Restraints: 400 mm centres
Live Load: Q_c = 1.400 kN

Design Working Life : 50 years

Std Overhang: 750 mm
Wind
Area: High (44.0 m/s)
Pressure Coeff: C_{pe} = varies; C_{pi} = -0.30, 0.20

Occupancy Live Load
Distributed: Q_{uf} = 1.500 kPa
Concentrated: Q_{cf} = 1.800 kN

Attic Floor

Material: 20mm Particle Board
Dead Load: 0.200 kPa
Restraints: Continuous

Attic Room Ceiling

Material: Gib Board 12mm
Dead Load: 0.200 kPa
Restraints: 600 mm centres

Attic Wall

Material: Gib Board
Dead Load: 0.300 kPa
Restraints: Continuous

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

Truss List

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

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
CJ01	3	5090	30.000900		T13	7	6710	30.000900		T02	1	7290	30.000900	
CT04	4	7600	30.000900		CJ02	1	5181	29.521900		T08	2	3800	30.000900	
CT05	1	7600	30.000900		CT01	1	5078	30.000900		T09	1	2904	30.000900	
CT05A	1	7600	30.000900		CT02	1	6091	30.000900		T12	2	4525	30.000900	
EN01	1	10225	30.000900	LB	CT03	1	5718	30.000900		T14	1	3464	30.000900	
J02	1	4920	30.000900		J01	1	3957	29.521900		T15	4	1755	30.000900	
J03	1	4741	30.000900		J04	1	2084	30.000900		T16	7	2565	30.000900	
J05	1	5195	29.521900		J06	1	4591	30.000900		T17	2	3330	30.000900	
T03	10	9000	30.000900		J07	1	4770	30.000900		V01	1	2146	28.075900	
T04	1	5121	30.000900		J08	1	4949	30.000900		V02	1	2615	30.000900	
T05	1	10225	30.000900		J09	1	4268	30.000900		V03	1	1715	30.000900	
T06	1	3509	6.427	900 LB	J10	1	840	30.000900		*ET01	1	6561	30.000900	
T07	1	4094	28.075900		J11	1	2394	30.000900		*ET02	1	4200	30.000900	
T10	3	10225	30.000900		J12	1	4200	30.000900		*ET03	1	9000	30.000900	
T11	2	7275	30.000900		T01	8	7290	30.000900		*ET04	1	7889	30.000900	

Total quantity : 87



CARTERS Manufacturing

Producer Statement : Page 1

Job: FP2961

Client: Signature Homes
Phone:

Site: Peach
51 Paul Faith Lane
Te Horo
Kapiti

Description:
Building Consent No.:
MITek 20/20 Engineering 4.5.147

MITek New Zealand Ltd.

Phone:

Printed: 09:38:04 05 Mar 2010

The computer design input has been carried out by:

Name of Computer Operator: Phil Edwards

Qualifications and Title: Truss Detailer

Signed:

CARTERS

A Division of Carter Holt Harvey

Dated: Friday, 5 March 2010

BUILDING CONSENT LAYOUT

CARTERS

MANUFACTURING

National Support Office

Auckland

Ph (09) 2727 383

JOB No FP2961

Client: Signature Homes

Job Name: Peach

Address: 51 Paul Faith Lane

Te Horo

Kapiti

Pitch: 30

Roof Material: Metal Tile

Soffit Overhang: 750mm

Wind Area: High

Snow Load: 0.5 kPa

Trusses And Rrafters At 900 Centres Unless Stated Otherwise.

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

DRAWN BY Phil Edwards

DATE 5/3/2010 **PAGE** 1 of 2

BUILDING CONSENT INFORMATION

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

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

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

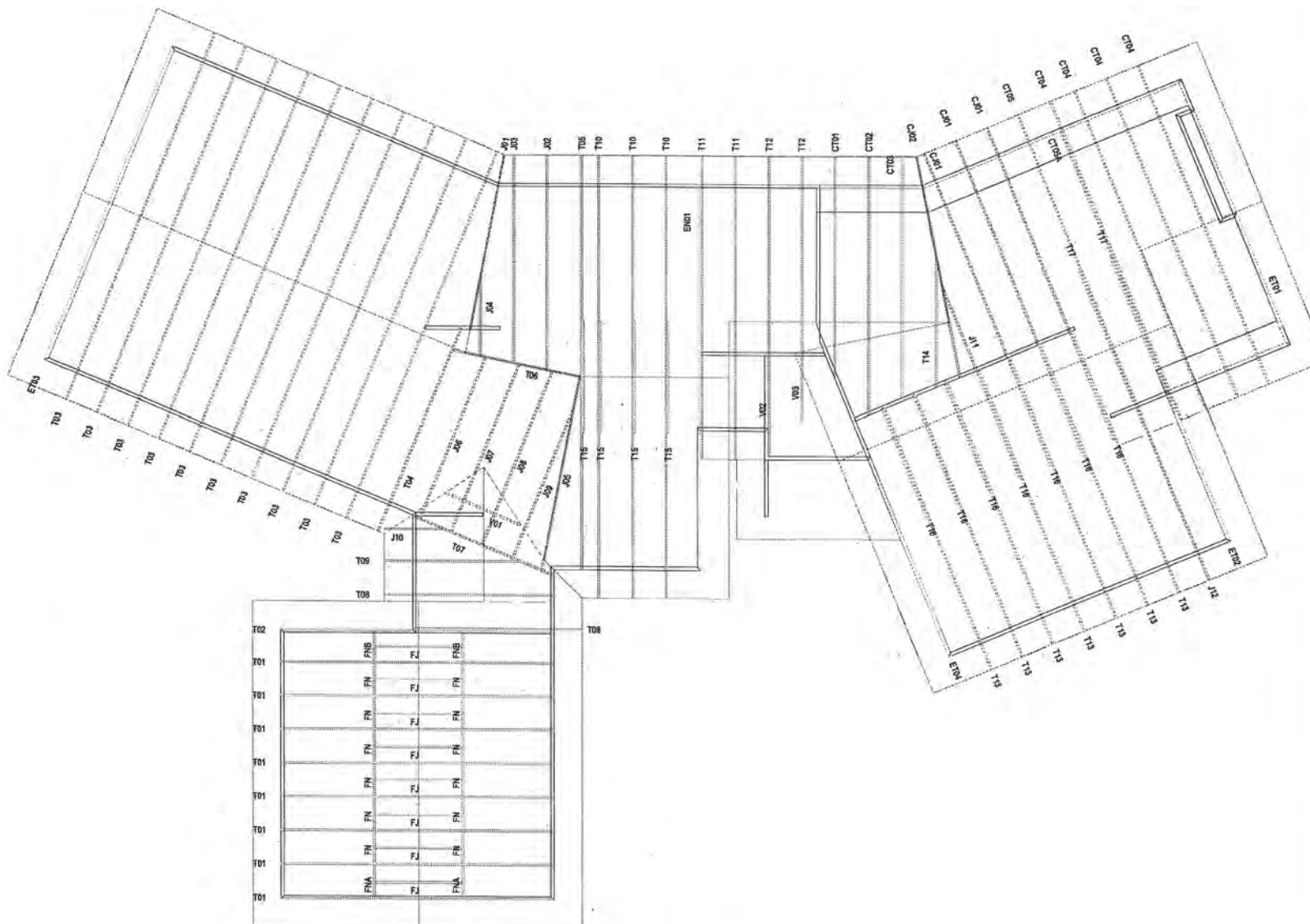
These layouts and associated design statements are valid only if the job is manufactured by CARTERS.

TRUSS FIXINGS

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



See Page 2 for Dimensions and Point Load notification



NCM • NEW COMPOSITE MEMBRANE



Thermakraft Cover-Up

THE NEW REVOLUTION IN BREATHER TYPE BUILDING MEMBRANES

Thermakraft Cover-Up is a coated polyolefin (polyethylene) woven into a sheet form with micro-sized pores that allow the membrane to breathe. It is specifically designed for use in domestic and commercial type buildings and is manufactured with extremely high tensile strength in both directions and increased burst resistance **784 kN/m²**.

Thermakraft Cover-Up meets very high wind zone requirements under NZS 3604:1999. Burst not less than **500 kN/m²**.

Thermakraft Cover-Up is tough and should be fastened as directed (refer opposite page). Normally extra support is not required except for very high wind zones where the addition of 19mm **Thermakraft Stud Strap 201** must be used.

NOTE: NZBC ACCEPTABLE SOLUTION E2/AS1 PARAGRAPH 9.1.8.5 WHERE STUD SPACINGS ARE GREATER THAN 450mm CENTRES, AN INTERMEDIATE MEANS OF RESTRAINING THE BUILDING WRAP AND INSULATION FROM BULGING INTO THE DRAINED CAVITY SHALL BE INSTALLED. ACCEPTABLE MEANS OF ACHIEVING THIS IS **Thermakraft Stud Strap 201** FIXED HORIZONTALLY AT 300mm CENTRES.

Thermakraft Cover-Up increases productivity allowing work within the structure to proceed by providing temporary weather protection from wind and rain, yet allowing light through. Being translucent it is easy to see nail lines for nogs and studs, and provides the ultimate barrier against the elements (refer Fig 8 & 9).

Thermakraft Cover-Up is one of the strongest breather type membranes on the market. This factor greatly reduces the danger of damage through site damage and installation problems, or because of storm damage, saving dollars on repairs and reinstallation costs.

WARNING: **Thermakraft Cover-Up** MUST NOT BE USED AS A ROOFING UNDERLAY, OR AS A SARKING OR BARRIER ON WALLS IN DIRECT CONTACT WITH VINYL, METAL OR PVC CLADDING. REFER TO (Fig. 3, 4 & 7) FOR DETAILS OF CAVITY SYSTEM.

Thermakraft Cover-Up has an extremely high puncture resistance, is unaffected by mildew and most chemicals, and is rot resistant.

For more information regarding compatability with chemicals, contact **Thermakraft Industries (NZ) Ltd** on **0800 806 595**.

NOTE: **Thermakraft Cover-Up** is unaffected by LOSP.

Thermakraft Cover-Up comes with an additional bonus - Flame Resistance tested to AS1530 - Part 2 - 1993. **Thermakraft Cover-Up** achieved a Flammability Index of 1 and meets the requirements of NZBC C3/AS1 - Part 6 - Table 6.2.

Thermakraft Cover-Up assists in maintaining the "R" Value in

CSR Bradford Gold Thermal and Acoustic Glasswool Insulation

improving energy efficiency for the life of your home by reducing air movement, and is most effective in high wind areas where **Thermakraft Cover-Up** reduces cold air currents seeping into the wall cavity.

Thermakraft Cover-Up warrants that the product is free from defects and other possible manufacturing problems, and will replace the product if affected by ultra-violet, within the period of 60 days exposure.

E. & O. E.



FIG 1
Builders installing **Thermakraft Cover-Up**. The membrane is kept level by assistance of star lines for stud placements.
NOTE: LAP BELOW BOTTOM PLATE.



FIG 2
Stud lines are visible for staples, and assists the installer for the placement of staples.



FIG 3
Thermakraft Cover-Up fixed directly to wall framing prior to a 20mm cavity batten is installed.

INSTALLATION PROCEDURES

TOOLS REQUIRED: SHARP KNIFE (complimentary knife in each roll of 100m² Cover-Up), STAPLE GUN, HAMMER.

NOTE: STORE Thermakraft Cover-Up IN CLEAN DRY CONDITIONS AND NOT IN AREAS WITH DIRECT SUNLIGHT.

1. **Thermakraft Cover-Up** is applied to all exterior walls from below bearers to the top plate (Fig 3). Fix securely to the frame with fasteners such as galvanised Little Grippers, or 6mm-8mm staples, or 20mm large head galvanised clouts at 300mm centres horizontally and vertically (Fig 2). Additional fasteners should be used around each opening to be cut out.

2. **Thermakraft Cover-Up** - when using either 2740mm or 1370mm wide rolls horizontally or vertically, a minimum of 150mm lap is required at joints. If it is necessary to tape the laps, use **Thermakraft White PVC 48mm wide Pressure Sensitive Tape**.

NOTE: ALL VERTICAL LAPS MUST BE MADE OVER STUDS. MAKE GOOD REPAIRS ON ANY FORCED TEARS WITH TAPE.

3. **Thermakraft Cover-Up** is wide enough to come from below the bottom plate to the top plate, covering all windows and door openings. Use extra fastenings around each opening to be cut out.

NOTE: Thermakraft Cover-Up WILL PROVIDE TEMPORARY WEATHER PROTECTION DURING CONSTRUCTION. TRANSLUCENCY OF THE MEMBRANE WILL ENABLE WORK TO PROCEED DURING INCLEMENT WEATHER. ON ARRIVAL OF DOORS AND WINDOWS AT EACH OPENING (Fig 5 & 6), CUT THE Thermakraft Cover-Up AT 45° AWAY FROM EACH CORNER. PULL THE Thermakraft Cover-Up FLAPS INSIDE AND FASTEN TO FRAME (Fig 5).

4. **Thermakraft ALUBAND Window Sealing System** (BEAL Appraisal) IS APPLIED PRIOR TO FITTING WINDOWS (Fig 5 & 6 and as drawings below. Free installation pamphlets available - Phone **0800 805 595**). **NOTE:** BRANZ Appraisal 356 relates to Thermakraft Cover-Up only, **NOT** to the Thermakraft ALUBAND Window Sealing System.



FIG 4 Timber batten cavity over Thermakraft Cover-Up.

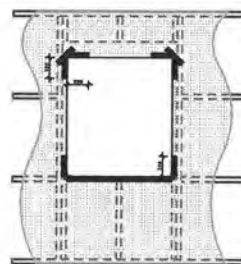
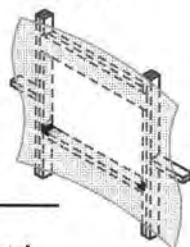


FIG 5 "X" cut Thermakraft Cover-Up and fold back with stapling, preparing for ALUBAND WINDOW SEALING SYSTEM. Simple and efficient.

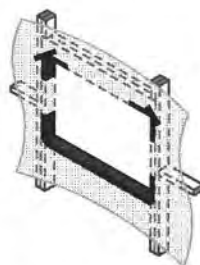


FIG 6 Window opening completed with the Aluband System in place. NOTE: THE ORANGE CORNER MOULDED PIECE AS PART OF THE THERMAKRAFT ALUBAND SEALING SYSTEM.

THE SYSTEM THAT MATTERS



GUARANTEED FOR 50 YEARS



Thermakraft Industries (NZ) Ltd

5. **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 75mm galvanised mesh, or plastic tape or wire at 150mm centres run across the cavity battens to limit deflection to a maximum of 5mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1 Paragraph 9.3.5.2.

6. **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).

7. **Thermakraft Cover-Up** can be used as an air barrier (complying with NZBC Acceptable Solution E2/AS1 Table 23) where walls are not lined, such as attic space at gable ends.

GENERAL: Thermakraft Cover-Up IS APPRAISED BY BRANZ LTD, AND IS SUITABLE FOR THE APPRAISED USE. CERTIFICATE No. 356 AVAILABLE ON REQUEST.

Thermakraft Cover-Up MEETS THE PERFORMANCE REQUIREMENTS OF NZBC CLAUSES B2, DURABILITY, E2 EXTERNAL MOISTURE, F2 HAZARDOUS BUILDING MATERIALS.

DURABILITY NZBC B2.3.1A 50 YEARS & B2.3.1B 15 YEARS.

8. **Thermakraft Cover-Up** can be used as a wall wrap on timber framed buildings within the scope:

- 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 18mm drained cavity, and
- With masonry veneer in accordance with NZS 3604: 1999 Timber Framed Buildings, and
- Situated in NZS 3604: 1999 Timber Framed Buildings, Building wind zones up to and including "VERY HIGH".

Thermakraft Cover-Up can also be used 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.

Refer also to BRANZ Report ST0649.



FIG 7 Timber batten cavity with window installed and ALUBAND WINDOW SEALING SYSTEM shown under battens.



FIG 8 Thermakraft Cover-Up showing the translucent quality and the easy see through, and is resistant to tear in high wind zone till sheathed.



FIG 9 Enquire about our Corporate Print Service. Available to merchants and their builder clients. Special conditions apply.

ROLL DIMENSIONS

WIDTH (mm)	LENGTH (m)	m ²
2740	36.5	100
2740	27.5	75
2740	18.5	50

WIDTH (mm)	LENGTH (m)	m ²
1370	73	100
1370	36.5	50
1370	18.5	25

Thermakraft Industries (NZ) Ltd warrants that the product is free from defects and other possible manufacturing problems. **Thermakraft Cover-Up** must be replaced if exposed to ultra-violet light for a period of greater than 60 days.

MEMBRANES FOR INDUSTRY



Thermakraft Industries (NZ) Ltd

11 Turin Place, East Tamaki, Auckland, New Zealand

P.O. Box 58-112, Greenmount, Auckland, NZ

Freephone: 0800-806 595 Phone: 09-273 3727 Fax: 09-273 3726

Email: sales@thermakraft.co.nz Website: www.thermakraft.co.nz



BRANZ Appraised

Appraisal No.446 [2005]

BRANZ Appraisals

Technical Assessments of products
for building and construction

BRANZ APPRAISAL CERTIFICATE No. 446 (2005)

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

Amended 6 March 2007.

LINEA® WEATHERBOARD

James Hardie New Zealand Ltd

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Penrose

Auckland

Tel: 0800 808 868

Fax: 0800 808 988



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Product

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

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



Scope

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

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

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

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

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

Building Regulations

New Zealand Building Code (NZBC)

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

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

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

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

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

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

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

Technical Specification

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

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

Accessories

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

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

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

- Building wrap - paper or wrap complying with NZBC Acceptable Solution E2/AS1, Table 23, or breather-type membranes covered by a valid BRANZ Appraisal Certificate for use as wall wraps.
- Flexible sill, head and jamb flashing tape - flexible flashing tapes complying with NZBC Acceptable Solution E2/AS1, Paragraph 4.3.11, or flexible flashing tapes covered by a valid BRANZ Appraisal Certificate for use around window and door joinery openings.
- Joinery sill and head flashings - folded from aluminium or galvanised steel to suit the window or door trim opening. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1, Table 20 for durability requirements.

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

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

Paint System Specification

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

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

Handling and Storage

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

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

Technical Literature

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

Framing

Timber Treatment

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

Timber Framing

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

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

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

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

General

8.1 At ground level the bottom edge of Linea® Weatherboards must be kept clear of paved surfaces, such as footpaths, by a minimum of 100 mm and unpaved surfaces by 175 mm in accordance with NZBC Acceptable Solution E2/AS1, Table 18. The ground clearances to finished floor levels as set out in NZS 3604 must be adhered to.

8.2 At deck or low pitch roof/wall junctions, the bottom edge of Linea® Weatherboards must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35 mm in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.6.

8.3 All buildings must have barriers to airflow in the form of interior linings with all joints stopped, or alternatively, unlined gables and walls must incorporate a rigid sheathing or an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. Where rigid sheathings are used, the fixing length must be increased by a minimum of the thickness of the sheathing.

8.4 Where Linea® Weatherboards abut other cladding systems, designers must detail the junction to meet their own requirements and the performance requirements of the NZBC. Details not included within the Technical Literature have not been assessed and are outside the scope of this Certificate.

Structure

Mass

9.1 The mass of the 135 mm wide Linea® Weatherboard when installed on the wall is 24.9 kg/m² at equilibrium moisture content (EMC). The mass of the 150 mm wide board is 25.7 kg/m² at EMC and the mass of the 180 mm wide board is 23.9 kg/m² at EMC. Linea® Weatherboard is therefore considered a light wall cladding in terms of NZS 3604.

Impact Resistance

9.2 Linea® Weatherboards will resist human impacts likely to be encountered in normal residential use. The likelihood of impact damage to the cladding when used in light commercial situations should be considered at

the design stage, and appropriate protection such as the installation of bollards and barriers provided for vulnerable areas.

Wind Zones

9.3 Linea® Weatherboard is suitable for use on buildings situated in all Building Wind Zones of NZS 3604, up to, and including Very High. *(For the scope limitations of buildings covered by this Certificate, refer to Paragraph 2.1.)*

Durability

Serviceable Life

10.1 Linea® Weatherboard installations are expected to have a serviceable life of at least 50 years provided the paint coating system is maintained in accordance with this Certificate to ensure the Linea® Weatherboards and fixings remain dry in service. Linea® Weatherboards must be painted within 3 months of fixing.

10.2 Areas of geothermal activity and coastal locations can be very corrosive to fasteners, especially coastal locations within distances of up to 500 metres of the sea including harbours, or 100 metres from tidal estuaries and sheltered inlets in some instances. These coastal locations are defined in NZS 3604 as Sea Spray Zone and Zone 1. To achieve a 50 year serviceable life in Sea Spray Zones and areas of geothermal activity, Linea® Weatherboard must be fixed with stainless steel fasteners. To achieve a 50 year serviceable life in Zone 1, Linea® Weatherboard must be fixed with stainless steel or protected hot-dip galvanised steel fasteners. Fasteners outside the Sea Spray Zone, Zone 1 and areas of geothermal activity may be hot-dip galvanised steel.

Maintenance

11.1 Regular maintenance is essential for the Linea® Weatherboards to continue to meet the NZBC durability performance provision and to maximise their serviceable life.

11.2 Annual inspections must be made to ensure that all aspects of the cladding system, including the paint coating system, flashings and any sealed joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Sealant and paint coatings must be repaired in accordance with the sealant or paint coating manufacturer's instructions.

11.3 Regular cleaning (at least annually) of the paint coating surface is recommended to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Paint systems must be recoated at approximately 5-10 yearly intervals in accordance with the paint manufacturer's instructions.

11.4 Minimum ground clearances as set out in this Certificate must be maintained at all times during the life of the cladding. *(Failure to adhere to the minimum ground clearances given in this Certificate and the Technical Literature will adversely affect the long term durability of Linea® Weatherboards.)*

Control of External Fire Spread

12.1 Linea® Weatherboard is suitable for use where a non-combustible material is specified. When Linea® Weatherboard is finished with a paint coating of not more than 1.0 mm in thickness, it is suitable for use as an external wall cladding in all building Purpose Groups in accordance

with NZBC Acceptable Solution C/AS1 Part 7, Paragraph 7.11.2(a).

Outbreak of Fire

13.1 When Linea® Weatherboards are finished with a paint coating of not more than 1.0 mm in thickness, clearance separations from chimneys and flues are not required. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated from chimneys and flues in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

External Moisture

14.1 Linea® Weatherboards, when installed in accordance with this Certificate and the Technical Literature will prevent the penetration of moisture that could cause undue dampness or damage to building elements.

14.2 Linea® Weatherboards allow excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet code compliance with Clause E2.3.6.

14.3 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for all joints, penetrations and junctions. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature. Weathertightness details that are developed by the designer are outside the scope of this Certificate and are the responsibility of the designer for compliance with the NZBC.

Internal Moisture

15.1 NZBC Acceptable Solution E3/AS1 Paragraph 1.1.1(a) requires a minimum wall R-value of 1.5 for framed cavity wall construction and therefore the wall frame cavity must be insulated.

Water Vapour

15.2 Linea® Weatherboard is not a barrier to the passage of water vapour, and when installed in accordance with this Certificate will not create or increase the risk of moisture damage resulting from condensation.

Installation Skill Level Requirements

Installation Skill Level Requirements

16.1 Installation of Linea® Weatherboard and accessories supplied by James Hardie New Zealand Ltd and the building contractor must be completed by tradespersons with an understanding of bevel-back weatherboard installation, in accordance with instructions given within the Linea® Weatherboard Technical Literature and this Certificate.

System Installation

Building Wrap and Flexible Sill and Jamb Tape Installation

17.1 The selected building wrap and flexible sill and jamb tape system must be installed by the building contractor in accordance with the wrap and tape manufacturer's instructions prior to the installation of the Linea® Weatherboards. Particular attention must be paid to the installation of the building wrap and sill and jamb flashing tapes around window and door openings to ensure a continuous seal is achieved and all exposed timber in the opening is protected.

Linea® Weatherboard Installation

17.2 Linea® Weatherboards may be cut on site by power saw. Holes and cut-outs may be formed by drilling a number of holes around the perimeter of the opening required and tapping out the centre with a hammer, or by using a hole saw.

17.3 Weatherboards must be dry prior to installation. Before the weatherboards are installed, cut ends and the back face of the bottom course must be sealed with an acrylic sealer to reduce the absorbency of the fibre cement.

17.4 Linea® Weatherboards must be installed starting at the bottom of the wall. A cant strip (H3.1 treated timber or fibre cement) must be fixed behind the bottom course of weatherboards to ensure the weatherboards are set at the correct angle. The cant strip must be continuous around the perimeter of the building. The bottom course of weatherboards must overhang the bottom plate by a minimum of 50 mm.

17.5 Before the weatherboards are installed, the corner detail must be prepared to suit the selected option, e.g. external box corner, corner soaker. The necessary flashings must be installed before commencing weatherboard fixing.

17.6 The first course of weatherboards must be full length, i.e. 4200 mm and commence from an external corner. Jointing of Linea® Weatherboards is made off the stud using the pre-cut tongue and groove joint. Tongue and groove joints may be located centrally between the studs, but must be no closer than 100 mm to the edge of a stud. A bead of sealant must be applied to the front side of the tongue before the corresponding board is inserted. Subsequent courses of weatherboards must be installed so that the tongue and groove joints are staggered by 600 mm minimum from joints in the previous course.

17.7 Linea® Weatherboards must have a minimum lap of 30 mm, and should be set out so as near to a full board as possible will finish under and over windows and doors and at the top of the wall. A storey rod can be used to accurately position weatherboard courses.

17.8 Linea® Weatherboards must be fixed to each stud using concealed fixings behind the lap of the boards or face nailing, except that face nailing must be provided at all corners and vertical edges of openings.

17.9 Concealed fixing must be carried out using 40 x 2.8 mm hot-dip galvanised or stainless steel Hardiflex nails depending on the location - see Paragraph 10.2. Nails must be fixed 25 mm from the top edge of the board and must be driven flush with the board surface.

17.10 Face nailing must be carried out using 60 x 3.15 mm hot-dip galvanised or stainless steel jolt-head nails depending on the location - see Paragraph 10.2. Nails must be fixed 15 mm up from the bottom of the board and punched a maximum of 2 mm below the surface of

the board. When stainless steel nails are used, the top board at each lap must be pre-drilled.

17.11 Linea® Weatherboards can be hand or gun nailed. Nails must not be closer than 25 mm to the end of the board when hand nailing, or closer than 50 mm when gun nailing.

(Note: Gun nailing must only be used for concealed nailing.)

Aluminium Joinery Installation

17.12 Aluminium joinery and associated head and sill flashings must be installed by the building contractor in accordance with the Technical Literature. A 7.5 mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and air seal can be installed after the joinery has been secured in place.

17.13 After installing the window and door joinery; Linea® Trim, planted sills and scribes may be installed in accordance with the Technical Literature to provide additional weatherproofing for the joinery/weatherboard junction.

Inspections

17.14 The Technical Literature must be referred to during the inspection of Linea® Weatherboard installations by building consent authorities and territorial authorities.

Finishing

17.15 The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. Linea® Weatherboards and trim must be clean and dry before commencing painting.

Health and Safety

18.1 Cutting of Linea® Weatherboard must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.

18.2 When power tools are used for cutting, grinding or forming holes, health and safety measures as set out in the Technical Literature must be observed because of the amount of dust generated.

18.3 Safe use and handling procedures for Linea® Weatherboard and the components that make up the cladding system are provided in the relevant manufacturer's Technical Literature.

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

Tests

19.1 The following testing has been completed by BRANZ:

- BRANZ expert opinion on NZBC E2 code compliance for Linea® Weatherboard was based on testing and evaluation of all details within the scope and as stated within this Certificate. Linea® Weatherboard was tested to AS/NZS 4284 with a BRANZ-designed extension. The testing was completed in three stages; the first being the standard AS/NZS 4284 test, the second being the modified AS/NZS 4284 test with defects introduced in the test panel, and the third being the modified AS/NZS 4284 test with the internal linings and building wrap removed. The testing assessed the performance of the foundation detail, window head,

jamb and sill details, internal and external corners. In addition to the weathertightness test, the details contained within the Technical Literature have been reviewed, and an opinion has been given by BRANZ technical experts that the system will meet the performance levels of NZBC Acceptable Solution E2/AS1 for direct fixed weatherboard claddings.

- Uniform wind face load tests to simulate wind pressures on 12 mm thick Linea® Weatherboards were carried out by BRANZ, and the results were used in assessing 16 mm thick Linea® Weatherboard.
- Cone Calorimeter testing to determine the peak rate of heat release and total heat release of Linea® Weatherboard was completed by BRANZ. The testing was carried out in accordance with AS/NZS 3837.

19.2 Linea® Weatherboards have been tested by a James Hardie NATA accredited laboratory in accordance with AS/NZS 2908.2. The testing covered: soak-dry, bending strength, warm water soaking, heat/rain, freeze/thaw and apparent density. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

19.3 Testing has been carried out by James Hardie Building Products to determine the modulus of rupture and inter-laminar bond strength of carbonated and non-carbonated Linea® Weatherboard. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

20.1 Weathertightness, structural, fire and durability opinions have been provided by BRANZ technical experts.

20.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

20.3 The manufacturer's Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

21.1 The manufacture of Linea® Weatherboard has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

21.2 The quality of materials, components and accessories supplied by James Hardie New Zealand Ltd is the responsibility of James Hardie New Zealand Ltd. The quality control system of James Hardie New Zealand Ltd has been assessed and registered as meeting the requirements of ISO 9001: 2000 by Telarc Limited, Registration Number 409.

21.3 Quality on site is the responsibility of the installer.

21.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of Linea® Weatherboard and accessories in accordance with the instructions of James Hardie New Zealand Ltd.

21.5 Building owners are responsible for the maintenance of Linea® Weatherboard in accordance with the instructions of James Hardie New Zealand Ltd.

Sources of Information

- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 2908.2: 2000 Cellulose-cement products - Flat sheet.
- AS/NZS 3837: 1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter.
- AS/NZS 4284: 1995 Testing of building facades.
- AS/NZS 4534: 1998 Zinc and zinc/aluminium-alloy coatings on steel wire.
- AS/NZS 4680: 1999 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles.
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber Structures Standard
- NZS 3604: 1999 Timber framed buildings.
- NZS 4203: 1992 General structural design and design loadings for buildings.
- NZS 4211: 1985 Specification for performance of windows.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 amendment

Amendment No. 1, dated 6 March 2007.

The Appraisal Certificate has been amended to update the Certificate holders name; to remove reference to E2/AS1 Third Edition June 2004; to update the Technical Literature reference, and to amend Paragraphs 8.3, 8.4 and 14.1.



In the opinion of BRANZ, Linea® Weatherboard is fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided it is used, designed, installed and maintained as set out in this Certificate. The Appraisal Certificate is issued only to the Certificate Holder, James Hardie New Zealand Ltd, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. The Certificate Holder:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ

J B Warden

M E Reed

Date of issue: 4 February 2005



Specification Number	Length (m) minimum	Lining requirements	Other requirements
BL1	0.4	10 or 13mm GIB Braceline® one side	Hold-downs

WALL FRAMING

Wall framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS3604)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS3602)

Framing dimensions and height as determined by NZS3604 stud and top plate tables for load-bearing and non load-bearing walls. The use of kiln dried machine stress graded timber is recommended.

BOTTOM PLATE FIXING**Timber floor**

Use panel hold-down connections at each end of the bracing element. The GIB Handibrac® is recommended. Details are specified separately. In addition use pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres along the length of the bracing element.

Concrete floor

Use panel hold-down connections at each end of the bracing element. The GIB Handibrac® is recommended. Details are specified separately. Within the length of the bracing element bottom plates are fixed in accordance with the requirements of NZS 3604:1999.

WALL LINING

One layer of 10 or 13mm GIB Braceline®. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full length sheets where possible.

PERMITTED SUBSTITUTION

The Bracing Unit ratings for system BL1 apply to 10mm GIB Braceline® (fixed with GIB Braceline® Screws or GIB Braceline® Nails) or 13mm GIB Braceline® (fixed with GIB Braceline® Screws only). For other permitted GIB® Plasterboard substitutions refer to page 23 in GIB® EzyBrace™ Systems, 2009.

FASTENING THE LINING**Fasteners**

32mm x 7g GIB Braceline® Screws or
35mm GIB Braceline® Nails (BL1(10) systems only).

Fastener Centres

50, 100 and 150mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at sheet joints in the tapered sheet edge. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs. Use daubs of GIBFix® Adhesive at 300mm centres to intermediate studs. Place fasteners 12mm from tapered paper bound sheet edges and 18mm from sheet end or cut sheet edges.

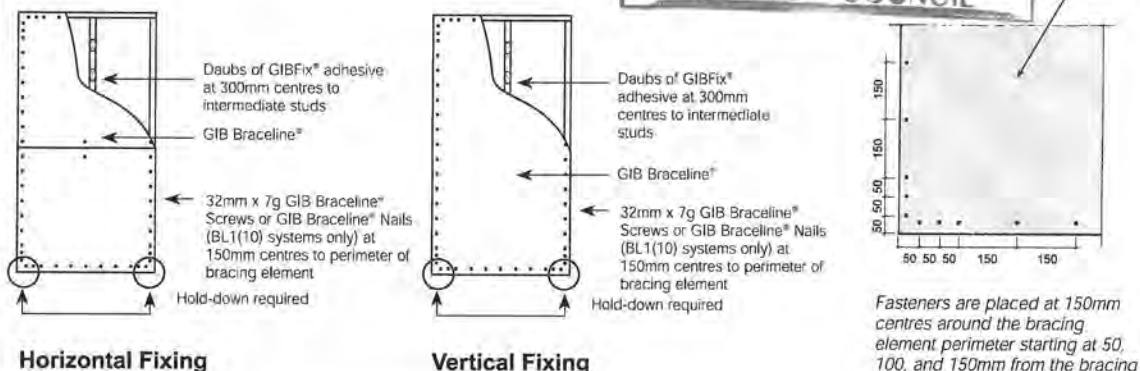
JOINTING

All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide".

RECEIVED

31 MAR 2018

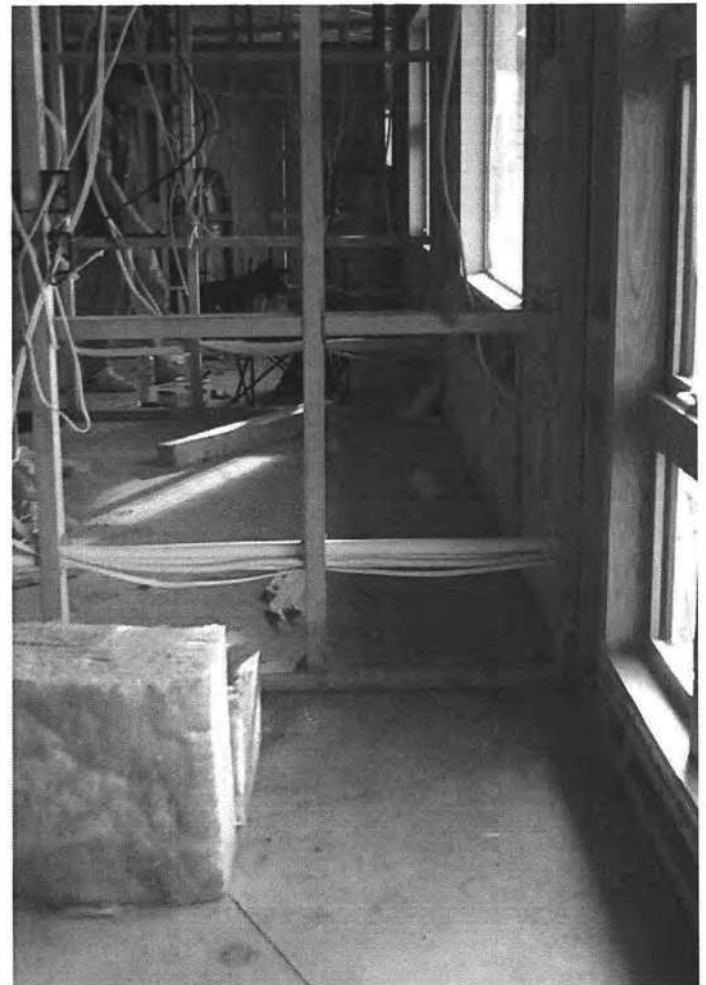
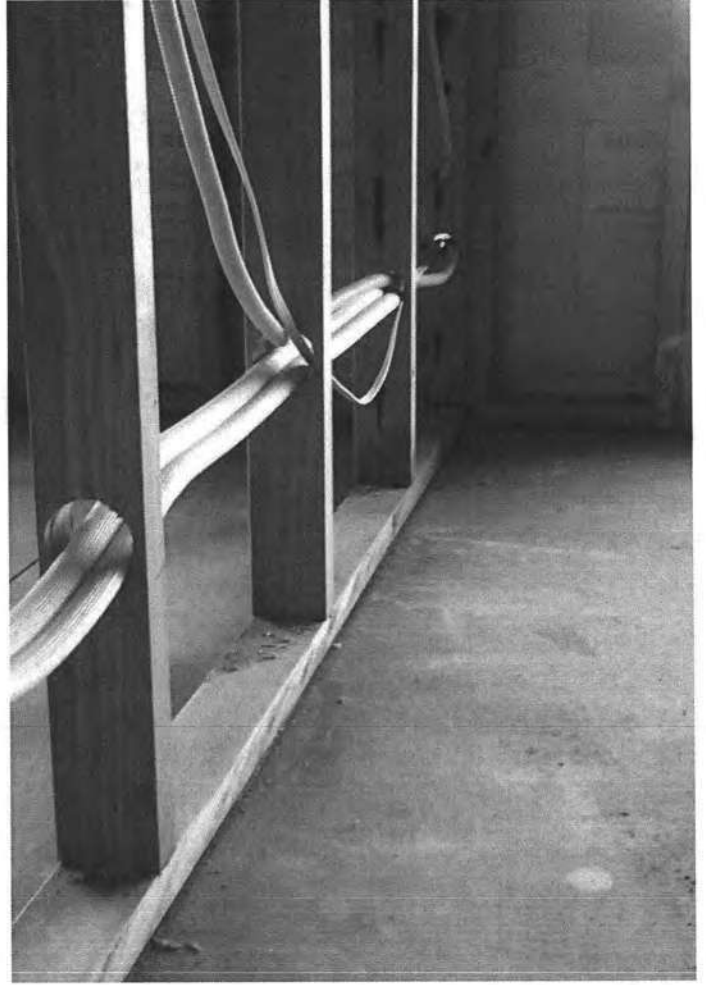
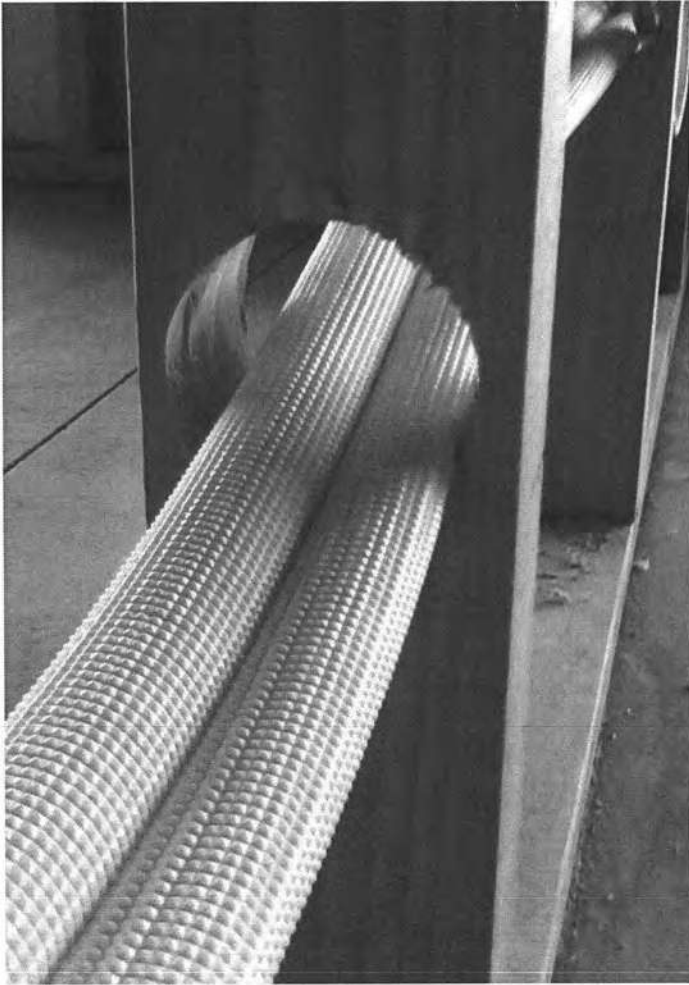
KAPITI COAST
DISTRICT COUNCIL

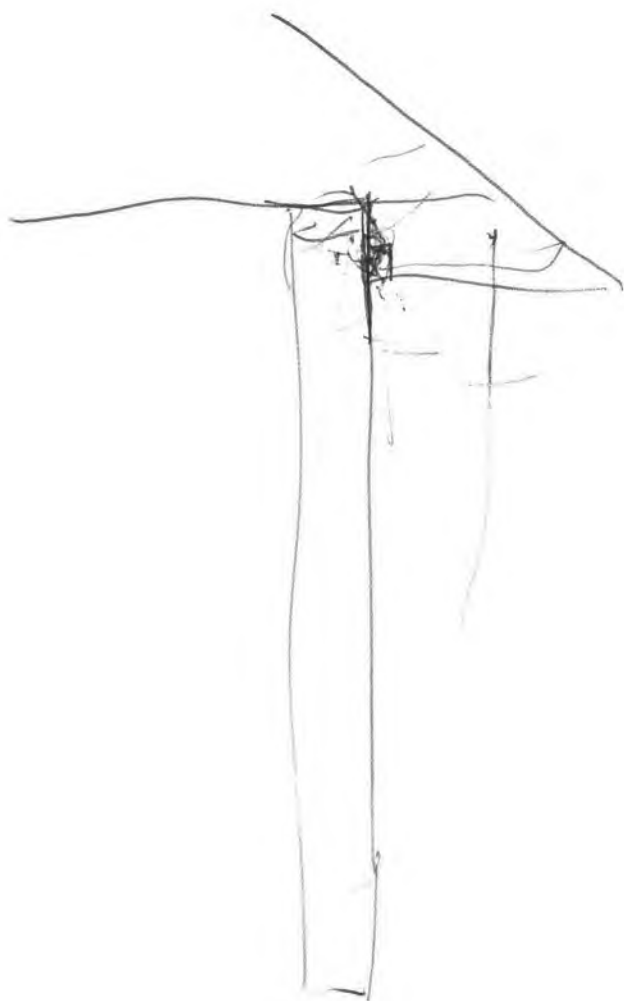


For hold-down fixings refer to pages 20 and 21 in GIB® EzyBrace™ Systems, 2009.

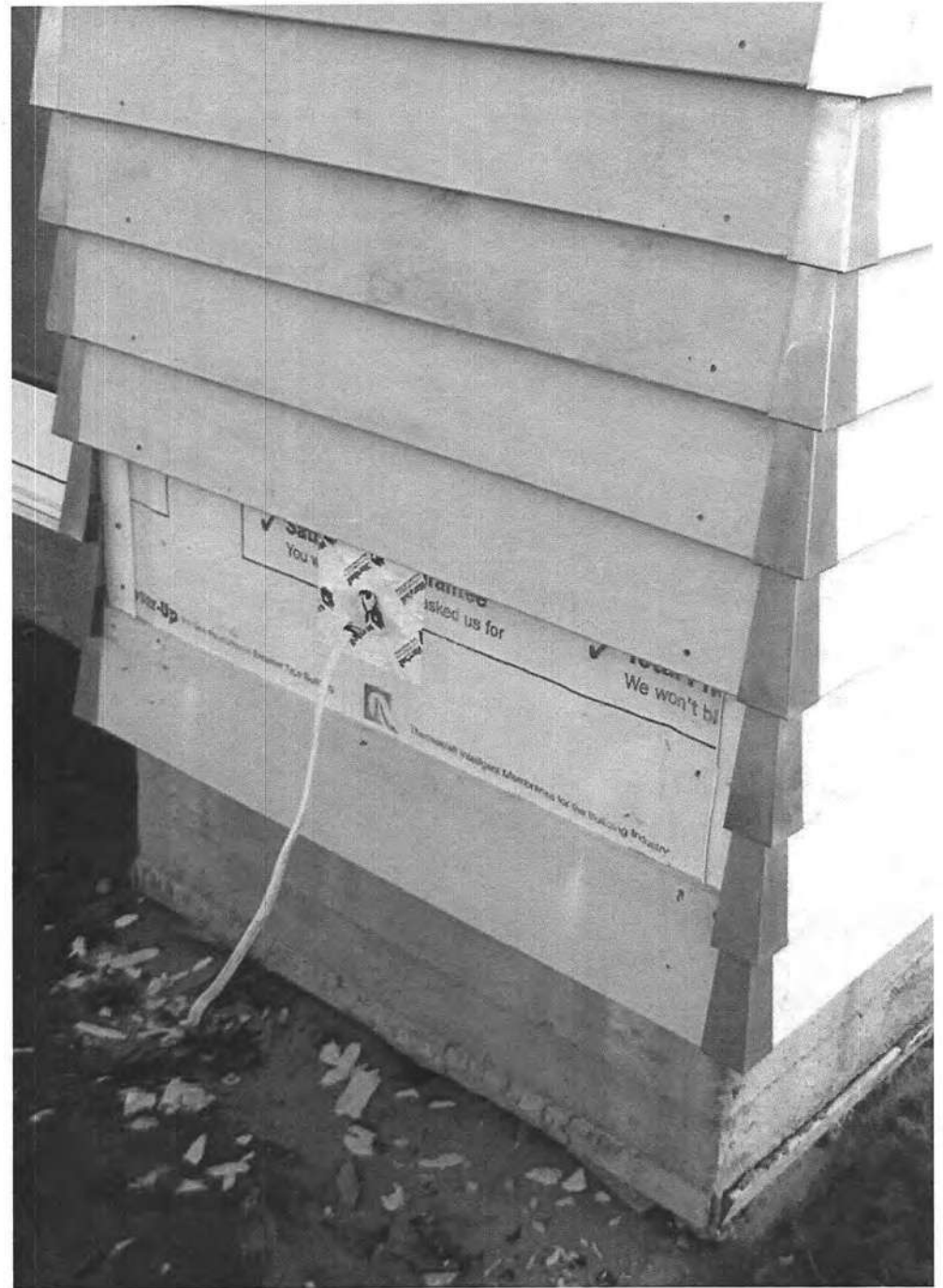
In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This Specification sheet is issued in conjunction with the publication GIB® EzyBrace™ Systems, 2009 and has been appraised in accordance with the BRANZ Appraisal No. 294 (2009).

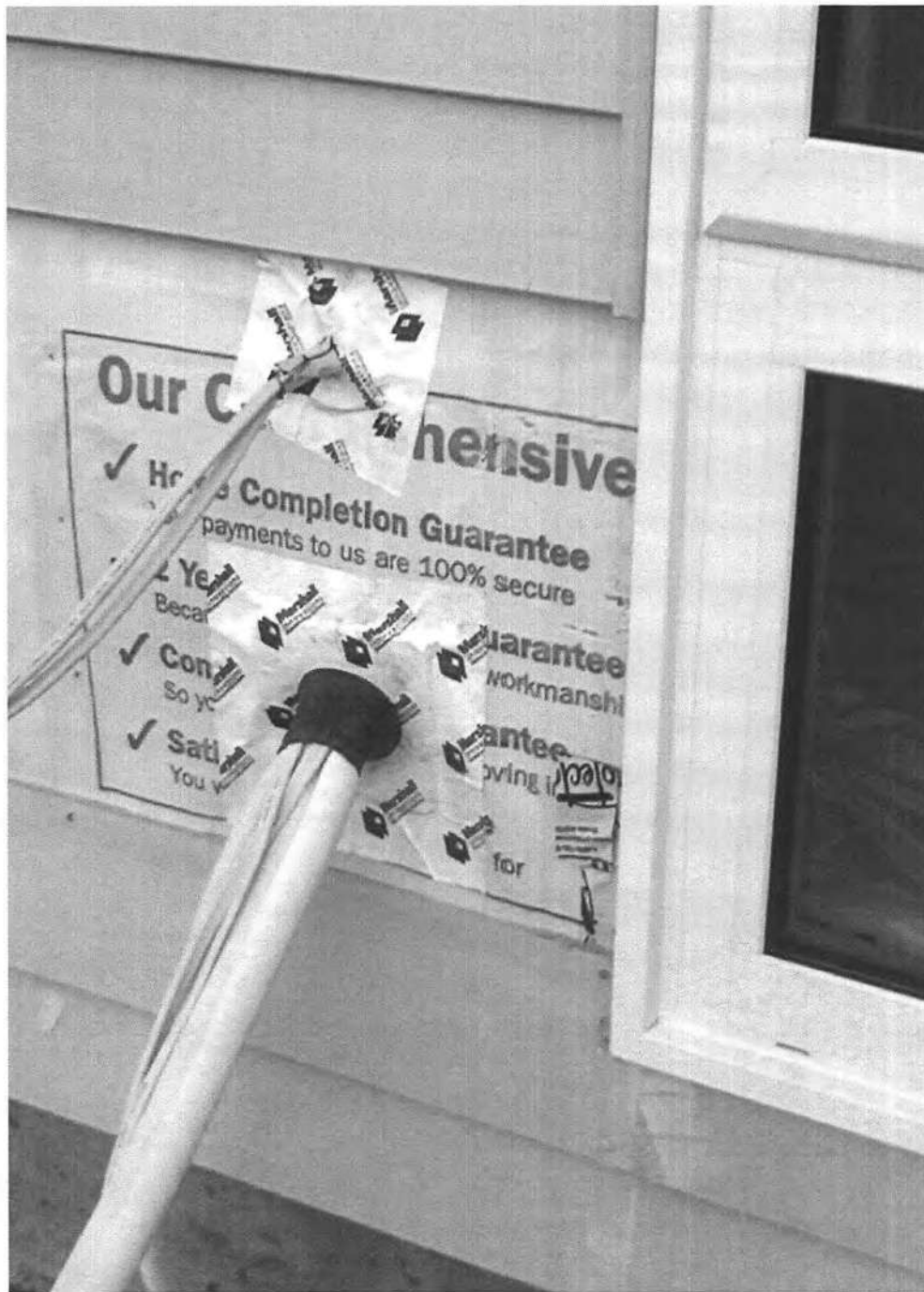
Builder Kirk 021 621 391 overseas Brian 027 4423668.

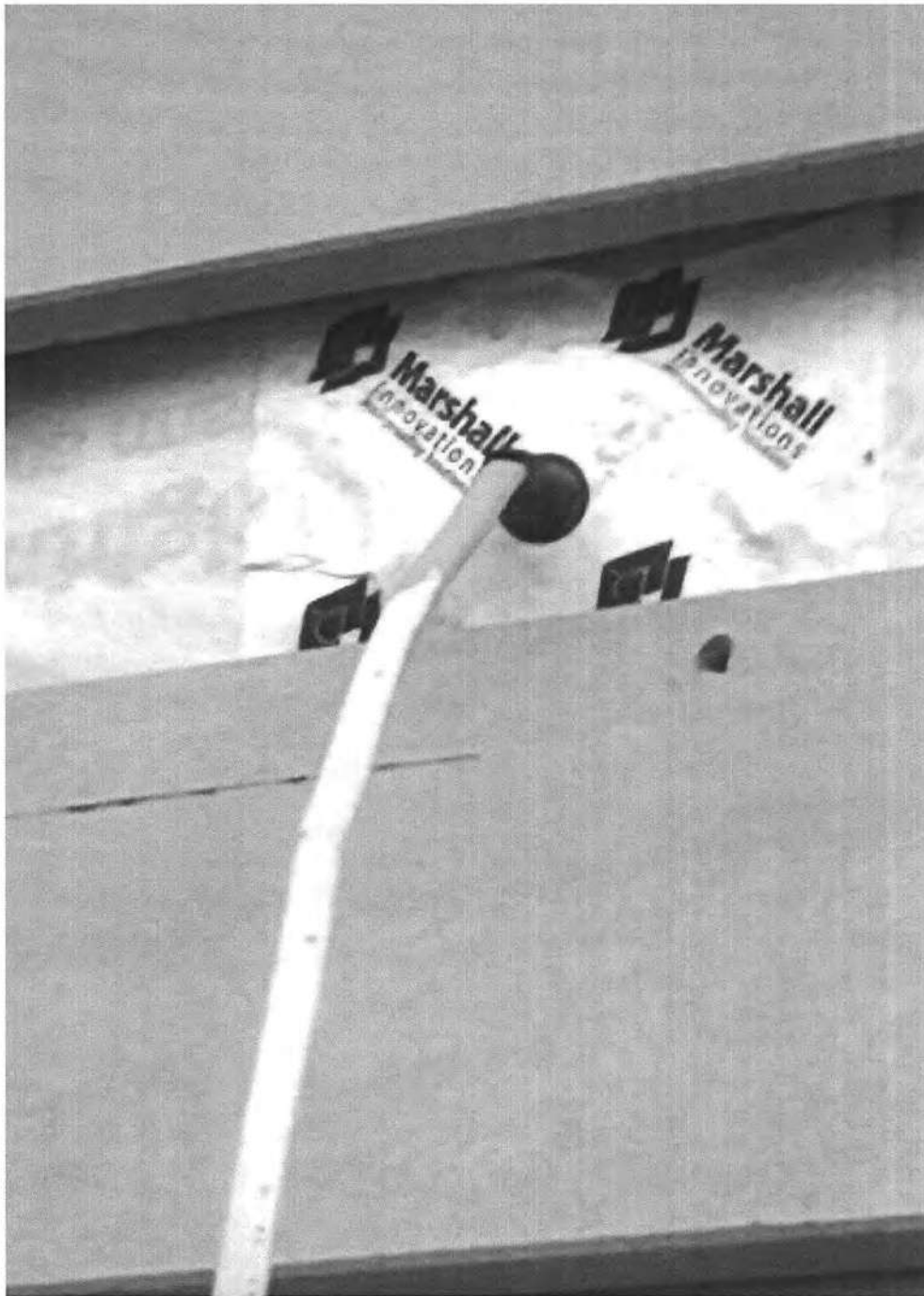




A black and white photograph of a house exterior. The house has horizontal siding and several windows. Along the base of the siding, a series of white cables or conduits are run horizontally. Several signs are attached to the siding. One sign is titled "Comprehensive Guarantee Program" and lists various services and warranties. Another sign is titled "Our Comprehensive" and lists "Home Completion Guarantee" and "3 Year Maintenance". The ground in front of the house is dark and appears to be dirt or gravel.







19-7-2011 4:45 P.M.

Inspection covers tape
to penetrations as requested
at inspection #10, Nobody
on site.

28th October 2011

Consents Officer
Kapiti Coast District Council
P.B 60601
Paraparaumu 5242

Dear Sir,

Re: BC 100272 - Producer Statement for Roof fixing and performance, 51 Paul Faith Lane, Te Horo

Metalcraft Roofing, principally due to not being paid for work done for Karacrombie Enterprises (the Builder now in receivership) is unwilling to provide a producer certificate for the installation and performance of the roof structure at 51 Paul Faith Lane, Te Horo.

Signature Homes Guarantees Limited, having inspected the roof structure and replaced certain portions of visually degraded roof is willing to guarantee the performance of the roof to a standard of performance as required by the Building Act 2004.

Yours Sincerely



D G Ogle
Contracts and Project Manager
Signature Homes Guarantees Limited

Leon Smith

From: Steve Crombie [scrombie@signature.co.nz]
Sent: Friday, 7 May 2010 2:15 p.m.
To: Leon Smith
Cc: gpeach@xtra.co.nz
Subject: FW: Flood Hazard at 51 Paul Faith Lane, Te Horo
Attachments: img-507085953.pdf

Hi Leon

Below is the reply from the Wellington Regional council regarding your question over the flood height requirements for the Peach residence in Te Horo

Please let me know if you require anything further.

Regards

Steve

From: James Flanagan [mailto:James.Flanagan@gw.govt.nz]
Sent: Friday, 7 May 2010 9:24 a.m.
To: 'scrombie@signature.co.nz'
Subject: Re: Flood Hazard at 51 Paul Faith Lane, Te Horo

Hello Steve,

I am please to respond to your email of 6 May 2010 to Greater Wellington Regional Council (GWRC) regarding the flood hazard at 51 Paul Faith Lane (Lot 18 DP 405220).

I have included a plan showing the property (boundary highlighted) you will notice a drain shown as an overflow path (yellow) running from the southeast corner to the northern boundary, This eventually feeds into the Mangaone Stream. There are no specific flood level requirements in relation to the flood hazard from the Mangaone Stream. The only requirement is for a set back for buildings from the area shown as overflow of 10m.

Greater Wellington Flood Protection recommend:

- That you set back all construction at least 10m from the area shown as overflow path.
- That you locate any building on high ground above the surrounding ground so as to avoid any problems with local stormwater.

If you have any further questions please don't hesitate to contact me.

Regards

James Flanagan
Senior Engineer, Flood Protection
Greater Wellington Regional Council
PO Box 11 646
Wellington

DDI: (04) 801 1082
Ph: (04) 384 5708
Fax (04) 385 6960

www.gw.govt.nz

7/05/2010

SCANNED

Stuart Nepia

From: Steve Crombie [scrombie@signature.co.nz]
Sent: Monday, 31 May 2010 12:58 p.m.
To: Stuart Nepia
Subject: RE: Request for further information 51 Paul Faith Lane, Te Horo BC100272
Attachments: Bracing Plan with diaphragm ceiling noted.pdf; Gib diaphragm info.pdf; ISP PS1 and Engineering Calcs.pdf; Linea Sill Flashing Detail.pdf; Alexander Stone Technical Specs.pdf

Hi Stuart

Please find attached the info you require to complete the 51 Paul Faith Lane consent

Let me know if you have any further queries

Regards

Steve

From: Stuart Nepia [mailto:stuartn@kapiticoast.govt.nz]
Sent: Monday, 17 May 2010 4:59 p.m.
To: scrombie@signature.co.nz
Subject: Request for further information 51 Paul Faith Lane, Te Horo BC100272

17 May 2010

Karacrombie Enterprises Ltd T/A Signature Homes
187 Broadway Ave
PALMERSTON NORTH 4410

Building Consent: 100272

Dear Sir/Madam

Request for further information

Description: *Single level dwelling as per plan.*

Location: 51 Paul Faith Lane, Te Horo

Legal Description: LOT 18 DP 405220 C/T 418182

Unfortunately, we are unable to process your *Building Consent* until we receive the information detailed below.

Information Needed:

1. PS1 and calculations from the designing engineer.
2. Alexandra Stone technical specs.
3. Fall to Linea sill flashing.
4. Diaphragm to Family room/ Entertaining ceiling.

We have suspended your application and will not proceed any further until the above information is received.

Please contact me if you would like to discuss this matter.

Yours sincerely

1/06/2010

Stuart Nepia
CONSENTS

Kapiti Coast District Council does not guarantee the accuracy or completeness of any information contained in this e-mail or attached files. Internet communications are not secure; therefore the Council does not accept legal responsibility for the contents of this message or attached files. The content of this email may express the view of the author and not the official position of the Council. Kapiti Coast District Council may monitor and store all outgoing and incoming email traffic. This e-mail is subject to copyright. Except in reply to the author, no part of it should be reproduced, adapted or communicated without the written consent of the copywriter owner. If you have received this e-mail in error, please advise the sender immediately by return e-mail, or telephone the author and delete all copies.

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#####

This email has been scrubbed for your protection by SMX. For more information visit smxemail.com

Russell Brook

From: Leigh Sage
Sent: Monday, 26 July 2010 7:39 a.m.
To: Russell Brook
Subject: FW: Peach Residence
Attachments: Floor Plan, updated with future bar 23-7-10.pdf

From: Barbara Brown **On Behalf Of** Kapiti Council
Sent: Friday, 23 July 2010 1:08 p.m.
To: A&S-Duty Officer Building
Subject: FW: Peach Residence

This email has been forwarded from the Council Email Box, please reply to the original sender not the Council Email Box

From: Steve Crombie [mailto:scrombie@signature.co.nz]
Sent: Friday, 23 July 2010 11:53 a.m.
To: Kapiti Council
Subject: Peach Residence

Hi Barbara

Can you please pass this on to the plumbing inspector concerned with this job?

Attached is a revised floor plan for the Peach residence at 51 Paul Faith Lane in Te Horo (consent number 100272)

The owners have decided to make provision for a future bar in the family / entertainment room, hence the additional waste pipe in the area, now shown on this plan.

Please let me know if you have any queries or concerns with this as we have booked to pour the concrete this coming Monday, the 26th July.

Regards

Steve

Steve Crombie
Quantity Surveyor/
Project Manager
t 06 359 3939
f 06 359 3949
m 027 443 3738


Signature
HOMES Est. 1982
YOUR HOME. YOUR WAY.

26/07/2010

Form 436

New Dwelling
51 Paul Faith Lane
TE HORO

BC 100272

LIST

No = Plans, specifications & documentation not complying with the Building Code &/or Bld. Act (The reason specified alongside each prompt)
Yes = Plans, specifications & documentation complying with the Building Code &/or Bld. Act (The reason specified alongside each prompt)
N/A = Not Applicable to this application. (The deletion of whole sections as N/A is permitted)
For alternatives comment below each section.
Note - The further information requests are identified by hand written numbers and corresponding on FIR letters / e-mails sent

Category.....

Site Plan (NZS 3604 Sec 3.4, 4.5 Code of BI, B2, E1, E2 E1 & E2 Sect. 72, 75 BA04)

N/A NO YES

Comments

- ☒ ☐ ☐ Wind zone High V High Specific..... GJS
- ☐ ☐ ☐ Flooding / ponding hazards GJS
- ☐ ☐ ☐ Slippage / fault line hazards GJS
- ☐ ☐ ☐ Erosion, river & coastal hazards GJS
- ☐ ☐ ☐ Subsidence / soft soil hazards Site inspection notes
- ☐ ☐ ☒ Corrosion zone Sea spray or Zone 1 GJS
- ☐ ☐ ☐ Soil contamination GJS
- ☐ ☐ ☒ Distances to boundaries / siting District plan
- ☐ ☐ ☐ Floor levels / contours E2/AS1 & NZS 3604 E1
- ☐ ☐ ☐ Two or More Allotments Sec 75 - 83 Bld Act
- ☐ ☐ ☐ Noise / sound insulation (airport & highway).....

Application form not completed (Proposed inspections)

Thats ok I'll tell him what we want !! SN.

Specific Design (Verified Online PS2 B1 B2 VMI)

Comments

- ☐ ☐ ☐ PS1 Design Certificate B1 B2 VMI
- ☐ ☐ ☐ PS2 Peer Review B1 B2 VMI
- ☐ ☐ ☐ Calculations VMI
- ☐ ☐ ☐ GPeng Verified Online

PS1 eng LSP
+ Calcs

Concrete / Foundation Plan (NZS 3604 NZS 4210 & 4229 E2/AS1)

Comments

Layout

- ☐ ☐ ☒ Layout dimensions NZS 3604
- ☐ ☐ ☒ Control joints NZS 3604
- ☐ ☐ ☒ Slab thickening NZS 3604 cl 7.5
- ☐ ☐ ☐ Alternative specify reason

Section

- ☐ ☐ ☒ Depth & width NZS 3604
- ☐ ☐ ☒ Reinforcement NZS 3604:B2
- ☐ ☐ ☒ Plate fixings NZS 3604:B2 cl 7.5
- ☐ ☐ ☒ DPM NZS 3604:B2
- ☐ ☐ ☒ Engineer design and Calcs B1:B2
- ☐ ☐ ☒ Concrete strength B1:B2 cl 4.8.2
- ☐ ☐ ☐ Alternative specify reason

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31 MAR 2010

KAPITI COAST
DISTRICT COUNCIL

Timber / Subfloor Plan (NZS3604 NZS 3602 & 3640, B1, B2)
Layout

Comments

N/A NO YES

- ☐ ☐ ☐ Layout dimensions.....
☐ ☐ ☐ Bearers details.....B1 : B2.....
☐ ☐ ☐ Joist details.....B1:B2.....
☐ ☐ ☐ Alternative.....specify reason.....

Section

- ☐ ☐ ☐ Foundation type/size..... NZS 3604;B2.....
☐ ☐ ☐ Piles post sizes & treatment NZS 3604;3602;3640;B2.....
☐ ☐ ☐ Pile o/c..... NZS 3604.....
☐ ☐ ☐ Fixing..... NZS 3604;B2.....
☐ ☐ ☐ Coatings(durability)..... NZS3604 ;B2.....
☐ ☐ ☐ Ventilation& Access to sub floor spaces NZS 3604.....
☐ ☐ ☐ Alternative.....specify reason

If the addition is an upper storey show details on upgrading existing foundations, joints, piles, etc (may require Engineer design)

Floor plans / layout (B1, B2, C1-4, D1, E3, F7, G1, G2, G12 G3, G9, G11, G13)

Comments

General

N/A NO YES

- ☐ ☐ ☒ Room dimensions.....
☐ ☐ ☒ Sectional lines.....
☐ ☐ ☒ Location of partitions.....
☐ ☐ ☒ All designated spaces.....
☐ ☐ ☒ Lintels..... NZS 3604;B2..... *provided*
☐ ☐ ☒ Beams..... NZS 3604, B2 by engineer.....
☐ ☐ ☒ Point loads by engineer or preheader.....B1 B2.....
☐ ☐ ☒ Smoke detectors.....F7.....
☐ ☐ ☒ Wet areas / WGs D1, Table 2; B2..... *box*
☐ ☐ ☒ Kitchen.....G3, G9,G11.....
☐ ☐ ☐ Alternative.....specify reason

*Changes to existing work requires both an existing floor plan & a proposed floor plans
 Facility provided for washing utensils / food G3, Section 1.1 & Figure 1:
 Preparation Area and Access to Facility Paragraphs 1.1.2 and 1.5*

Wall / Framing B1, B2, E3

Comment

General

- ☐ ☐ ☒ Identify engineering / Structural items/ portals.B1 B2.....
☐ ☐ ☒ By preheader or to NZS 3604..... B1 B2.....
☐ ☐ ☒ Fixing types NZS 3604..... B1 B2.....
☐ ☐ ☒ Stud o/c as per wind zone.... NZS 3604.....B1 B2..... *calculated*
☐ ☐ ☒ Building wrap..... NZS 3604.....
☐ ☐ ☒ Stud heights of rooms..... NZS 3604.....B1 B2.....
☐ ☐ ☐ Alternative.....specify reason

Roof.....NZS 3604, 3602 & 3640 B1 B2 E2/ASI

Comments

Trussed / by purlin or Framed roof NZS 3604

N/A NO YES

- ☒ ☐ ☐ Fixing layout & details.....B1 B2
- ☒ ☐ ☐ Correct layout.....B1
- ☒ ☐ ☐ Max span (12m or Engineer).....B1
- ☒ ☐ ☐ Purlin or batten n/c.....B1 B2
- ☒ ☐ ☐ Rafter/ Beams.....B1 B2
- ☒ ☐ ☐ Alternative.....specify reason

Roof cladding - Metal; Profiled Metal; Masonry; Membranes Code E2, E2/ASI B2

- ☒ ☐ ☐ Pitch / profile.....E2
- ☒ ☐ ☐ Underlay.....E2
- ☒ ☐ ☐ Flashings.....E3; E2.....B1 B2
- ☒ ☐ ☐ Parapets.....B1 E2 B2
- ☒ ☐ ☐ Membrane Roofs and substrate Code E2/ASI B2
- ☒ ☐ ☐ Gutters, Barges & Fascias detail Refer E2, section 8.3, cl 8.3.9
- ☒ ☐ ☐ Alternative.....specify reason

Installation of profiled metal roof cladding shall be by trained installers, approved by the tile manufacturer or NZ agent. In some cases experienced Builders undertake installation, refer E2, section 8.4, cl 8.4.2 'General'.

Gladdings Code B1 & B2 E2/ASI, Brnz good practice Guides & Weather tightness Vol 12&3

Comments

- ☒ ☐ ☐ Risk matrix Gavity or direct.....E2
- ☒ ☐ ☐ Brick Veneer.....E2 "The brick book" Brnz Masonry Guide; B2
- ☒ ☐ ☐ Timber Weatherboard.....E2 Brnz Timber Guide Vol 1&2; B2
- ☒ ☐ ☐ Stucco.....B1 NZS 3604 Brnz good practice guide; B2
- ☒ ☐ ☐ Profiled Metal.....E2 Metal Roofing Practice; B2
- ☒ ☐ ☐ Plywood.....E2; B2
- ☒ ☐ ☐ Fiber Cement W/b.....E2; B2
- ☒ ☐ ☐ Board & Batten.....Brnz good practice guide; B2
- ☒ ☐ ☐ Fiber Cement Sheet.....E2; B2
- ☒ ☐ ☐ Weather tightness details.....E2; B2
- ☒ ☐ ☐ Alternative.....specify reason

3 -> Alexandria Stone Schlus! Tech specs
4 -> Fall to sill flashing detail.

Bracing NZS 3604 B1, B2, B3

Comments

N/A NO YES

- ☒ ☐ ☐ Subfloor bracing.....B1 & NZS 3604
- ☒ ☐ ☐ Wall bracing.....B1 & NZS 3604
- ☒ ☐ ☐ Roof bracing.....B1 & NZS 3604
- ☒ ☐ ☐ Bracing calculations.....B1 & NZS 3604
- ☒ ☐ ☐ Provide bracing plan layout.....B1 & NZS 3604
- ☒ ☐ ☐ Double top plate (if > 5m).....B1 & NZS 3604
- ☒ ☐ ☐ Indicate dragon tie (if > 6m).....B1 & NZS 3604
- ☒ ☐ ☐ Diaphragm ceilings (if > 7.5m).....B1 & NZS 3604
- ☒ ☐ ☐ Check for distribution.....B1 & NZS 3604
- ☒ ☐ ☐ Alternative.....specify reason

5 -> Diaphragm to Family Room Entering ceiling

Light & Ventilation B1 G4, Clause 1.2; G4, clause 1.3 G7, G9 F2

General

Comments

N/A NO YES

- ☐ ☐ ☒ Vent 5%.....G4
- ☐ ☐ ☒ Light 10%.....G7
- ☐ ☐ ☒ Electrical.....G9
- ☐ ☐ ☒ Mechanical ventilation.....G4
- ☐ ☐ ☒ Exterior space for awareness.....G7

Glazing

- ☐ ☐ ☒ Safety glass.....F2
- ☐ ☐ ☒ Wind zone.....B1. NZS 8604
- ☒ ☐ ☐ Alternative.....specify reason

Insulation BRANZ Home Insulation Guide, NZS 4218, AS/NZS 2918

Comments

- ☐ ☐ ☒ FloorH1
- ☐ ☐ ☒ Wall.....H1
- ☐ ☐ ☒ Roof.....H1
- ☐ ☐ ☒ Windows / glazing.....H1
- ☒ ☐ ☐ Alternative.....specify reason

Stairs / Landings / Handrails D1, sec 4

Comments

- ☐ ☐ ☐ Stair tread & risers.....D1
- ☐ ☐ ☐ Landing size.....D1
- ☐ ☐ ☐ Handrail.....D1
- ☐ ☐ ☐ Riser opening (min) where children.....D1
- ☐ ☐ ☐ Residential Accessibility.....D1
- ☐ ☐ ☐ Alternative.....specify reason

Stair type

Minor Private: Max rise 220mm/Min tread 220mm,

Secondary Private: Max rise 300mm/Min tread 250mm,

Main Private: Max rise 190mm/Min tread 280mm. (Main private includes exterior stairs)

Decks / Balconies / Barriers D1, B4 & NZS 5604, Sections 6 & 7,

Comments

- ☐ ☐ ☐ Barrier & deck fixing durability.....D1 B1 B2
- ☐ ☐ ☐ Top rails, balusters, bottom rails, palings.....D1 B1
- ☐ ☐ ☐ If Engineer then calculations required.....B1 B2
- ☐ ☐ ☐ Max 3m height or Engineer.....B1 B2
- ☐ ☐ ☐ Deck joist sizes, grade, treatment, span & spacing.....D1 B1 B2
- ☐ ☐ ☐ Piles & bearers the correct grade, treatment, size, spacing & span.....D1 B1 B2
- ☐ ☐ ☐ Slip resistanceD1
- ☐ ☐ ☐ Appropriate waterproofing membrane.....B1 B2
- ☐ ☐ ☐ Stringer size & connectionsD1 B1 B2
- ☐ ☐ ☐ Thresholds.....D1 E2
- ☐ ☐ ☐ Alternative.....specify reason

Fire (Residential) NZBC F7; C doc

Comments

N/A NO YES

- ☒ ☐ ☐ Travel distances max 24m.....G8.15.....
- ☒ ☐ ☐ Smoke detectors.....F7.....
- ☒ ☐ ☐ Wood burners.....F7.....
- ☒ ☐ ☐ Garage fire wall details.....G7 (G7.10 G7.8).....
- ☒ ☐ ☐ Alternative.....specify reason.....

Swimming Pool & Fencing *Fencing of Swimming Pools Act 1987*

Comments

- ☒ ☐ ☐ Refer to Compliance for sign off.....
- ☒ ☐ ☐ Specific Engineering Design.....
- ☒ ☐ ☐ Proprietary system/design.....
- ☒ ☐ ☐ Section/construction.....
- ☒ ☐ ☐ Pool backwash discharging the sewer.....
- ☒ ☐ ☐ Fence height.....
- ☒ ☐ ☐ Gate(s) / door(s) open outward.....

Ambiguity / Contradictions

Comments

- ☒ ☐ ☐ Manufacturers Specs.....
- ☒ ☐ ☐ Engineer compared with Designer/Architect.....
- ☒ ☐ ☐ Any Other contradictions.....

Alternative Solutions

Record assessment, decision and reasons for decisions below. * Has the designer substantiated why they believe the proposal complies with the building code? Is there a determination on a similar proposal? Has corroborative evidence been provided (peer review, appraisal or determination)? Include reference to comparison with acceptable solutions, other documents / standards / best practice guides / publications, expert opinion, determinations, in-service history, product certification, professional judgment, building code objectives. Refer BRANZ Bulletin # 456 (Dec 2004). List any conditions / communications / actions:

This sheet relevant to plumbing & drainage only

Comments

General

N/A NO YES

- ☒ ☐ ☐ Kitchen area.....G3/AS1
- ☐ ☐ ☒ Laundry.....
- ☐ ☐ ☒ Bathrooms.....
- ☐ ☐ ☒ Location of sanitary fixtures.....
- ☐ ☐ ☒ Plumbing layout.....

Plumber's Reg no.....

Drainlayers Reg no.....

Effluent Disposal Systems

Comments

- ☐ ☐ ☐ Engineering Site Investigation
- ☐ ☐ ☐ Design Specification & Producer Statement

(The design criteria should include: Capacity based on bedroom numbers, Loading calculation, site evaluation, soil profile, site characteristics.)

no design provided → Please Contact BC 080625

Existing system in place

Water Supplies

Comments

- ☐ ☐ ☒ G12
- ☐ ☒ ☐ Town supply.....
- ☐ ☐ ☒ Private scheme.....
- ☐ ☐ ☒ Type & location.....
- ☐ ☐ ☐ Alternative.....specify reason.....

Hot water cylinder location? shown on P+D Plan

20mm T.P.R. drain required off H.W.C.

Sanitary Drainage

Comments

- ☐ ☐ ☒ G13.....
- ☐ ☐ ☒ Layout
- ☐ ☒ ☐ Council availability or
- ☐ ☒ ☐ Septic tank design & calcs.....
- ☒ ☐ ☐ Alternative.....specify reason

* Branch drains longer than 12.0m require a T.V

Stormwater Drainage

Comments

- ☐ ☐ ☒ E1
- ☐ ☐ ☒ Layout
- ☐ ☒ ☐ Council availability
- ☒ ☐ ☐ Alternative.....specify reason

* Details of water tank 2x2000L in photo from previous connection

Sanitary Plumbing

Comments

- ☐ ☐ ☒ G13
- ☐ ☐ ☒ Layout
- ☒ ☐ ☐ Alternative.....specify reason

Accessibility D1; NZS 4121

Comments

N/A NO YES

- ☐ ☐ ☐ Car parks
- ☐ ☐ ☐ Projections
- ☐ ☐ ☐ Kerb Ramps
- ☐ ☐ ☐ Footpaths/Ramps / Landings
- ☐ ☐ ☐ Entrances
- ☐ ☐ ☐ Public Facilities
- ☐ ☐ ☐ Lifts
- ☐ ☐ ☐ Stairs
- ☐ ☐ ☐ Stair / handrails
- ☐ ☐ ☐ Doorways/Doors/Corridors/Lobbies
- ☐ ☐ ☐ Controls
- ☐ ☐ ☐ Places of assembly/entertainment/Recreation
- ☐ ☐ ☐ Warning Systems
- ☐ ☐ ☐ Toilet Facilities / Laundering
- ☐ ☐ ☐ Food preparation / accommodation
- ☐ ☐ ☐ Signs

Fire report G1, G2, G3, G4

Comments

- ☐ ☐ ☐ Purpose group FHC
- ☐ ☐ ☐ Fire cell separation /use of building
- ☐ ☐ ☐ F-rating
- ☐ ☐ ☐ S-rating
- ☐ ☐ ☐ Occupancy numbers
- ☐ ☐ ☐ Means of escape
- ☐ ☐ ☐ Travel distances
- ☐ ☐ ☐ External walls/unprotected areas
- ☐ ☐ ☐ Fire resistance to supporting elements/floors/ walls.
- ☐ ☐ ☐ Risks to/below escape routes
- ☐ ☐ ☐ Fire safety precautions
- ☐ ☐ ☐ SFI's / SDI's
- ☐ ☐ ☐ Alternatives
- ☐ ☐ ☐ Referral to DRU
- ☐ ☐ ☐ Alternative.....specify reason

Solid waste G15

Comments

- ☐ ☐ ☐ Waste bin area
- ☐ ☐ ☐ Environmental health referral
- ☐ ☐ ☐ Alternative.....specify reason

Hazardous Agents, Materials & substances F1 - F3

Comments

- ☐ ☐ ☐ Waste bin
- ☐ ☐ ☐ Environmental health referral

Work Sheet

General stamp prompts

Wind Zone
Corrosion
Cladding
Electrical
Bracing Highlighted
Boundary setting out
Engineers design

Set Status
Complete checklist
Addenda
Section 72 / pending
Set inspections

[illegible]

/ Email / letter / counter / fax

Date /time	State the content of discussion III	Remarks

Initials

52

7

11

Change Of Use – Sec 114: (record decisions and basis for decisions – confirm whether sec 115 applies)	
Date		
Alteration to Existing Building – Sec 112: (record decisions and basis for decisions – confirm whether sec 118 applies and if so, has it been complied with?). List conditions / communications / actions:	
Date		
Hazards – Sec 71-74: (record decisions and basis for decisions – see under “site plan above already done”)	
Date:		
Compliance Schedule – Sec 100 - 107: (record if new / amended compliance schedule required, and attach copy of replica compliance schedule. Ensure that note is recorded on building consent that new / amended compliance schedule will be issued).		
Date		

Note :- Refer to the associate code clause along side each prompt above for compliance or reason of decision
Plan checked yet Unsatisfactory
 (request for further information- see attached copy)

Signature, name & date
 Bldg..... *Shun Nip 17/05/10*
 Plumbing.....
 Fire.....

I am satisfied on reasonable grounds that the provisions of the Building Code are met and the Building consent may be granted (refer Bld Act Sec 49(1))
 All previous Further Information Requests now satisfactory.

Signature, name & date
 Bldg..... *Shun Nip 01/06/2010*
 (for all pages except those listed below)
 Plumbing..... *Simon 14/4/2010*
 (For pages 8 of 11 unless otherwise listed)
 Fire.....
 (As listed on page 7 of 11)

Addenda to Form 436

Allocation of work to approvals officer outside current competency

Building Category	Circle appropriate category	0	1	2	3

1) Authorized by Team leader or delegate	Level of supervision reqd	Reason for decision
Name, Signature & date	Coaching Mentoring Peer review on completion	In training Vetting one level above competency Other
2) Approval Officer undertaking training	Record of Learning	Decision
Name, Signature & date		I am satisfied on reasonable grounds that the provisions of the Building Code are met and the building consent may be granted (refer Bld Act 49(1))
Current competency level Category 0, 1 or 2		
3) Coach/Mentor/Peer reviewer	Training needs identified	Comments
Name, Signature & date		I am satisfied on reasonable grounds that the provisions of the Building Code are met and the building consent may be granted (refer Bld Act 49(1))
Current competency level Category 1, 2 or 3		

Allocation notes

- Categories of building are determined on receipt of application.
- All applications are re assessed for the category and allocated to each appropriate Officer at the earliest opportunity and then placed in processing shelves accordingly
- Approvals staff are aware of their own competency level and check the allocation of work.
- Approvals staff may select, for training purpose, a consent 1 (one) category higher than their current competency for the purpose of increasing their skill level provided they gain approval from the Team Leader Building Consent Approvals. Once approval is given the Team Leader Building Consent Approvals will arrange for the appropriate supervision and final peer review.

Planning Processing Check Sheet

New Dwelling
51 Paul Faith Lane
TE HORO

Building Consent Number: BC 100272.

Property Information				
Property Address	51, Paul Faith Lane, Te Horo.			
Legal Description	Lot 18 DP 405220.			
Planning Zone	Rural			
Building Project	New Dwelling			
	Yes	No	Action reqd	Actioned
Certificate of Title	✓			
Easements	✓		Drainage Rights ~ refer to C/A.	
Section 221	✓		Include copy J. Lee	
District Plan Items to Check				
	Yes	No	Action Reqd	Actioned
Designations	✓		Coastal Dune Policy Area.	
Heritage Register		✓		
Flood Hazards	✓		Stream Corridor	
Min Floor Level	✓		Subdivision filled (front bdy only)	
Other Hazards		✓	Refer to GWRC	
EQ Faults		✓		
Services		✓		
Eco-site/Native Veg		✓		
	Complies?		Action Reqd	Actioned
Yards (+water bodies)	✓		Neighbours Approval??	
HIRB	✓			
Max Height	✓			
Site Coverage	✓			

BC Number: BC 100272

Permeable Surface	<input checked="" type="checkbox"/>		
Earthworks	<input checked="" type="checkbox"/>		
Fences/Retaining Wall	<input checked="" type="checkbox"/>		
Parking	<input checked="" type="checkbox"/>		
Water Tank / Siting	<input checked="" type="checkbox"/>		
Airport Noise 45dbI	<input checked="" type="checkbox"/>		
N/A			
Other Provisions			
	Yes	No	Action reqd
Does the building straddle a Title/cross-lease boundary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Existing Resource Consent?	<input checked="" type="checkbox"/>		040393
Resource Consent Required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Apply Section 37 and advise Plan Vetting Team.
DIF Required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Calculate Fees:
Section 72 or 77 Required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Advise Plan Vetting Team and send letters out.
Section 221 Consent Notice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Advise Plan Vetting Team

Additional Comments

- * All work shall be carried out in accordance with RM: 040393 & Sect. 221 Consent Notice*
- * Refer to attachment GWRC (7.5.10)

Decision: (delete item that does not apply)

- Application complies with District Plan requirements
- ~~Application does not comply with District Plan - BC to be issued subject to s37~~

Officer's Name & Signature: _____

Date: 15.4.2010

Kapiti Coast District Council
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Paraparaumu 5254

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**CONSENT NOTICE
PURSUANT TO SECTION 221 OF
THE RESOURCE MANAGEMENT ACT 1991**

**IN THE MATTER OF A PLAN LODGED FOR
DEPOSIT UNDER NUMBER 405220
AND RESOURCE CONSENT NO. RM040393**

**(BEING THE SUBDIVISION OF LOT 29 DP 394017),
AT DERHAM ROAD, TE HORO
FOR PRITCHARD GROUP LTD**

The Regional Regulatory Titles Officer at Wellington

PURSUANT to Section 221 of the Resource Management Act 1991 the Kapiti Coast District Council hereby gives notice that it has consented to the subdivision and in respect to Lots 13 to 22 and Lot 24 the following conditions are to be complied with on a continuing basis:

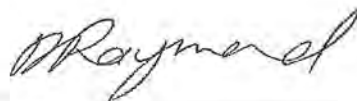
1. With respect to Lots 13 to 22 and Lot 24: The following works shall take into account the findings and recommendations within the Report prepared by Hamish Wells in relation to Faith Country Estate, Lots 13-24, submitted to Council in relation to application Number RM040393:
 - (a) Foundation design and construction for any new building or additions and alterations to a building;
 - (b) The installation and ongoing maintenance of any on-site wastewater treatment and disposal system, which shall be managed in a manner that ensures that any adverse effects on the environment are minor;
 - (c) The provision, maintenance and monitoring of any water supply system that provides a minimum storage capacity of 30,000 litres. It is the ongoing responsibility of the owner to maintain and monitor the water supply so that any adverse effects on the environment are minor.

A copy of the report is available in Council's Office at any time the office is open to the public.

2. With respect to Lots 13 to 22 and Lot 24: Any habitable buildings constructed on this lot shall have their floor level no lower than the flood level arising from the 1 in 100 year flood event current at the time of building, as advised by Greater Wellington Regional Council.
3. With respect to Lots 13, 14 15 and 24: No part of any building or structure shall be located, or earthworks undertaken (except that work necessary to establish and maintain vegetation), within the following areas of the dominant dune landform identified on DP 405220:
 - (a) That part of Lot 15 shown as area "H" (above 27.5 metres above mean sea level);
 - (b) Those parts of Lot 14 shown as areas "I" and "J" (above 32.5 metres above mean sea level);

- (c) That part of Lot 13 shown as area "K" (above 32.5 metres above mean sea level).
- (d) That part of Lot 24 shown as area "M" (above 32.5 metres above mean sea level).
4. With respect to Lot 24 and in particular that part of Lot 24 shown as area "L" on DP 405220:
- (a) It shall be the ongoing responsibility of the owners of Lot 24 to maintain a 7 wire post and batten fence to a standard to prevent stock from entering the wetland area shown as "L" on DP 404220 at all times;
 - (b) It shall be the ongoing responsibility of the owners of Lot 24 to control environmental weeds which are referred to in the Regional Pest Management Strategy within the wetland area;
 - (c) Within the area shown as "L" on DP 405220 (the wetland area) the following activities shall be prohibited:
 - all buildings and structures;
 - all stock;
 - vehicles;
 - fire or any device or activity which could result in a fire;
 - earthworks (except for earthworks necessary to construct and maintain the fence referred to in Condition 4(a) above;
 - the damage, removal, destruction, felling of any indigenous vegetation unless the species involved are identified by the Department of Conservation, the QEII National Trust, or Greater Wellington Regional Council as being an ecological threat to the site, and its removal is recommended by one of these authorities as a necessary part of the successful ongoing management of the site.
5. With respect to Lots 16, 17, 20 and 22: It shall be the ongoing responsibility of the owners of these lots to maintain the planting in accordance with the approved planting plan labelled 'Mission Estate Landscape Plan to meet the requirements of Condition 52' submitted to Council in relation to application Number RM040393. A copy of the report is available in Council's Office at any time the office is open to the public.

Issued in respect of application No. RM040393 on this 18th day of June 2008.



Dean Philip Raymond
AUTHORISED OFFICER



David Wayne Gair
AUTHORISED OFFICER

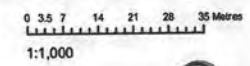
DISCLAIMER:
 The flood hazard information shown on this plan is based on the best available data at the time of preparation. Specific interpretation of flood risk in any areas shown to be affected by flooding should be obtained by written request from the Greater Wellington Regional Council. The GWRC and other agencies involved in the preparation of this plan assume no responsibility for any interpretation or action taken by any agency or individual in relation to information provided on the plan.



- ZONE**
- River Corridor
 - Overflow Path
 - Ponding
 - Residual Overflow
 - Residual Ponding

Mangaone Stream - Flood Hazard Map

51 Paul Faith Lane, Te horo



FOR COUNCIL USE:

DEPARTMENT	TICK FOR REFERRAL	COMMENTS	APPROVING OFFICER/ DATE
Planning			
Plumbing and Drainage			
Building	✓	Shumman	30 Sept 11
Fire Design			
Compliance Schedule			
Structural			
Hazardous Substances			
Environmental Health			
NOTES:			



Amended BC Application

Building Consent No.....100272A

Building Project.....Revised Bracing

- 51 Paul Faith Lane, Te horo

CONSENT DATA INPUT REQUIREMENTS

REQUIRED INSPECTIONS		32		Lapse and cancellation after 12mths of consent	23		Installation of solid fuel appliance (wood burner) comply and secured
	Foundation/Piles						
	Block	2		Engineer design specific components	23A		Second hand wood burner certified
	Pre-Slab (Plumbing)	3		Foundations to solid bearing of 200mm	25		Contractor to leave site clean and clear
	Pre-Slab (Building)	4		NZS3604 as acceptable solution in terms of NZ Building Code	30		To comply with Food Hygiene Regulations 1974
	Sub-Floor						
	Drainage	6		Not approved as Habitable Room	31		As in CCZ, all fixings need to be stainless steel
	Pre-Wrap	9	✓	Note and comply with all endorsements on approved plans	33		Approval only given for relocation purposes
	Pre-Clad	10		Names and Registration of plumber and drain-layer required	34		If cladding to have pre-finished colour coating, to be appropriate for coastal conditions
	Weathertightness						
	Pre-lining (Building)	11		Concealed soil and TV pipes and gas flues only allowed in ducts or minimum framed	38		Window sashes on upper levels less than 760mm above floor to have stays fixed
	Pre-lining (Plumbing)						
	Wet areas - membrane	12		Hot & Cold water pipes tested to 1500kPa	39		Construction of playground to comply with NZS5828
	Post Lining						
	Brick Veneer	13		Roof stormwater to be connected to existing	40		Fencing, gates, doors directly leading to swimming pool to comply with Pool Act 1987
	Retaining Wall						
	Final (Dwelling)	14		Copper water pipes not permitted	43		Textured systems should be applied by licensed, trained applicators – supply warranty
	Final (Commercial &Multi-resd)						
		15		Owner/builder to ensure prop foundation height will allow satisfactory connection	44		Exterior cladding system to be completed and inspected prior to internal lining
		21		Minimum FFL to comply with NZS3604			

STANDARD CONSENT CONDITIONS		
	37	
	72	
	80	

NON-STANDARD ADDENDA

KCDC Building Consent Authority
Building Consent AMENDMENTS Documentation Filed

Peach 14 Trust

BC No.	100272A
Street Address.	51 Paul Faith Lane, Te Koro Revised Bracing

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7 SEP 2011
KARAITI CHURCH
DISTRICT

Tick indicates document(s) included in this Building Consent

Amendment Consent Application,	✓
Costing schedule,	✓
Amended Plans and specifications,	✓
Invoice and receipt,	✓
Processing records/checksheets,	✓
Inspection page printouts	✓
1-9	
Amended Building consent and memorandum,	
Producer statements and supporting documentation,	
Peer review documents,	
Fire design documents,	
Requests for further information and other correspondence,	
Supplementary information,	

This form comprises part of the Building Consent documentation and indicates the contents of the Building Consent File. Refer KCDC Policy 029.

Minor change to bracing elements,
no reduction in bracing units
OK to approve.
S. Napier

Endorsements made on any single page apply equally to the entire project.

7 SEP 2011

REVISÉD NOIL
INFORMATION

REV C
KARAKELINING REVISION
FROM GIR (GSI) TO STRAND-
BOARD (SBI) LININGS &
BACKING

Signature
HOMES Est. 1903

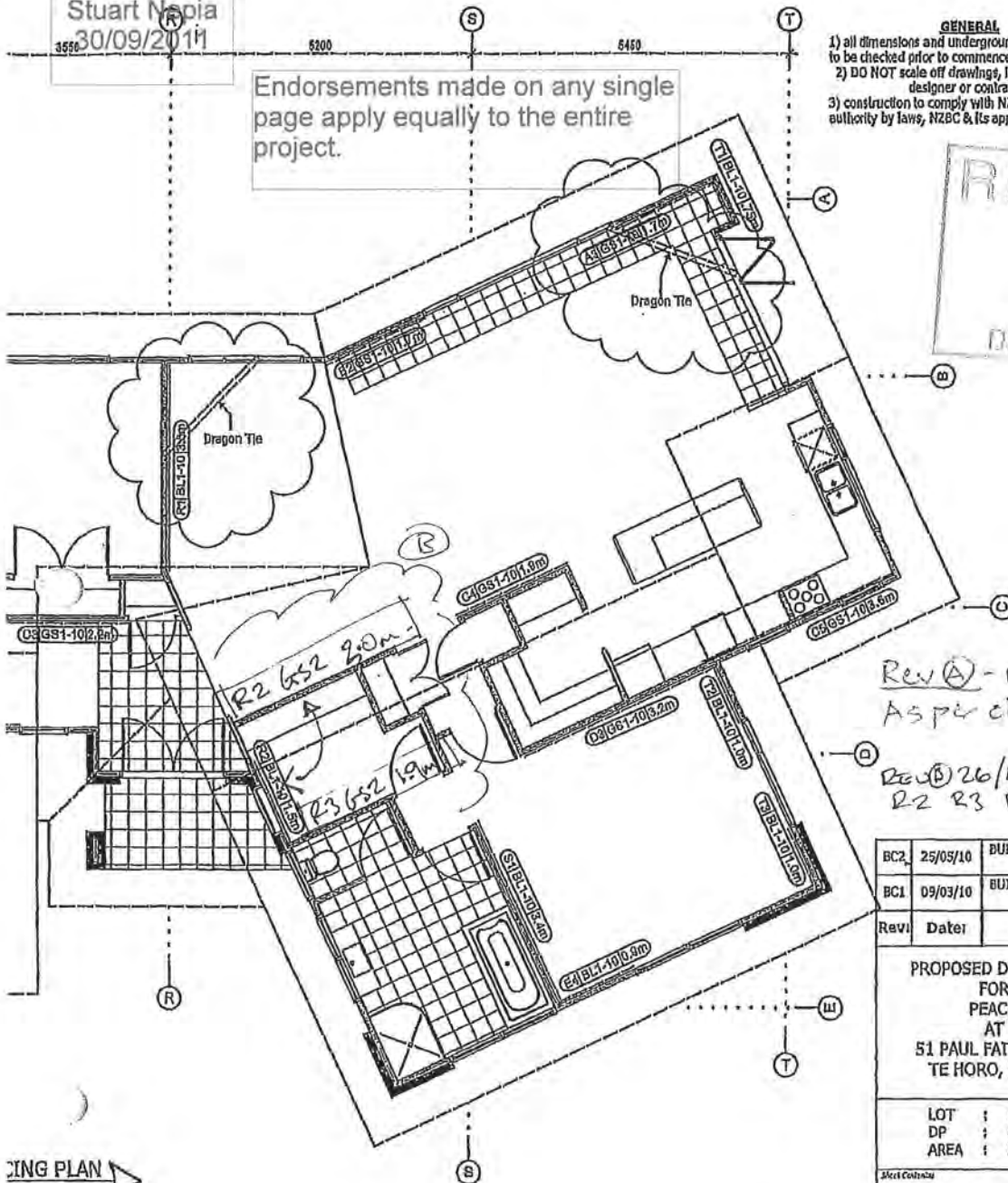
YOUR HOME. YOUR WAY.

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Stuart Napia
30/09/2011

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page apply equally to the entire
project.

GENERAL

- 1) all dimensions and underground service locations to be checked prior to commencement of any work.
- 2) DO NOT scale off drawings, if in doubt ask the designer or contractor
- 3) construction to comply with NZS3604:1999, local authority by laws, NZBC & its approved documents.



Rev A - 15/12/10 -
As per client confirmation
Rev B 26/4/2011
R2 R3 BRACE REUSE D

ING PLAN
At 1:100 @ A3

Note:
Do not scale these drawings.
Verify all dimensions on site.

GIB BRACING SYSTEM
Gib Bracing Systems are not generic. Where specified, GIB branded components must be used when specifying and installing GIB Bracing Systems. Substitution is not in accordance with the instructions contained in GIB Bracing Systems book which is BRANZ appraised.

NOTES
Where linings are specified on both faces, each face must be fastened as a bracing element.

For information on GIB Ceiling Diaphragms refer to the GIB Bracing Systems booklet.

BC2	25/05/10	BUILDING CONSENT ISSUE
BC1	09/03/10	BUILDING CONSENT ISSUE
Rev	Date	Details
PROPOSED DWELLING FOR PEACH AT 51 PAUL FAITH LANE TE HORO, KAPITI		
LOT	18	
DP	405220	
AREA	24 ha approx.	
Bracing Plan		
Drawn by:	H.D.P.	Scale: 1 : 100
Date:	25/05/10	Sheet Number: 13 of 15
Revised:	BC2	Job Number: HDP2493
All construction shall be in accordance with n.z.b.c. hand book and approved documents, nzs 3604:1999 and local territorial authority requirements.		
027 2868 145		
h.d.p@windowslive.com		

(B)




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Wall Bracing Systems

For full construction details see technical literature

Single or Upper Walls Across

Supplier	System	Maximum Length (m)	BU's W/m	BU's 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		
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
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	376	BU

© Rev. 1/3/2011
BRACING TO GARAGE CHANGED TO STRAND BOARD LINING 'SBI'.

© Rev 1/8/2011
BRACING TO GARAGE
Revised to allow for
STRAND BOARD LINING

© Rev. 26/4/2011
BRACING LINE (R)
AMENDED BRAC LINE
TO 2x G52

©

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Peach

MG

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



GIB® Wall Bracing Calculation Sheet B									
Single or Upper Walls Across									
V03/09									
Across		Bracing Elements provided						Wind	Earthq.
1	2	3	4	5	6	7	8	9W	10EQ
Line Label	Minimum EUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	EUs Achieved	EUs Achieved
M	enter	1	2.9	25	2.4	GS1(10)	GIB®	181	145
	not enough	2	2.9	25	2.4	GS1(10)	GIB®	181	145
line totals		3							
W	383	4							
EQ	289	5							
N	enter	1	3	25	2.4	BL1(10)	GIB®	378	272
	not enough	2	2.4		2.4	GS1(10) 581	GIB®	252 188	182 276
line totals		3	2.4		2.4	GS1(10) 581	GIB®	252 188	182 276
W	709	4							
EQ	536	5							
O	enter	1	3.8	25	2.4	GS1(10)	GIB®	238	189
	not enough	2							
line totals		3							
W	238	4							
EQ	189	5							
P	enter	1	3.6		2.4	BL1(10)	GIB®	500	360
	not enough	2	1.9		2.4	BL1(10)	GIB®	264	190
line totals		3	1.8		2.4	GS1(10) 581	GIB®	189 124	89 207
W	889	4							
EQ	649	5							
Q	enter	1	3.6		2.4	GS1(10)	GIB®	248	198
	not enough	2	3.6		2.4	GS1(10)	GIB®	248	198
line totals		3							
W	497	4							
EQ	395	5							
R	enter	1	3.5		2.4	BL1(10)	GIB®	487	350
	not enough	2	1.5	25	2.4	BL1(10)	GIB®	184	140
line totals		3	3.0	65	2.4	GS2	GIB®	114	101
W	571	4	1.9	65	2.4	GS2	GIB®	72	64
EQ	490	5							
S	enter	1	3.4	25	2.4	BL1(10)	GIB®	428	308
	not enough	2							
line totals		3							
W	428	4							
EQ	308	5							
T	enter	1	0.75	25	2.4	BL1(10)	GIB®	86	76
	not enough	2	1	25	2.4	BL1(10)	GIB®	118	98
line totals		3	1	25	2.4	BL1(10)	GIB®	118	98
W	322	4							
EQ	272	5							
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Totals Achieved	Achieved/Demand	W	103%	EQ	132%	4116	3130	Wind	Earthq.
Concrete Slab						OK	OK		
Totals Required (from Demand)						4013	2370		

(+172) (+298) (C)

(+65) (+109) (C)

Rev B 26/4/2011

Revised Replac by 2x GS2. Added bearing values

3155 (B)

©200 totals 4375/3551

(B)

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Peach

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

GIB

GIB® Wall Bracing Calculation Sheet B Single or Upper Walls Along V03/09

Along		Bracing Elements provided						Wind	Earthq.
1	2	3	4	5	6	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	enter	1	1.2	25	2.4	BL1(10)	GIB®	144	116
	not enough	2	1.9	25	2.4	GS1(10)	GIB®	119	95
line totals		3	1.7	25		GS1(10)	GIB®	106	85
W	309	4							
EQ	285	5							
B	enter	1	1.8		2.4	GS1(10)	GIB®	124	99
	not enough	2	1.7	25	2.4	GS1(10)	GIB®	106	85
line totals		3							
W	231	4							
EQ	184	5							
C	enter	1	2.6		2.4	GS1(10)	GIB®	179	143
	not enough	2	2.2		2.4	GS1(10)	GIB®	152	121
line totals		3	2.2		2.4	GS1(10)	GIB®	152	121
W	827	4	1.9	25	2.4	GS1(10)	GIB®	119	95
EQ	859	5	3.6	25	2.4	GS1(10)	GIB®	225	179
D	enter	1	1.8	25	2.4	GS1(10)	GIB®	113	90
	not enough	2	5.1		2.4	GS1(10)	GIB®	352	281
line totals		3	3.2	25	2.4	GS1(10)	GIB®	200	160
W	685	4							
EQ	530	5							
E	enter	1	2.2		2.4	GS1(10)	GIB®	231	182
	not enough	2	1.9		2.4	GS1(10)	GIB®	149	131
line totals		3	0.9		2.4	BL1(10)	GIB®	116	99
W	504	4	0.9	25	2.4	BL1(10)	GIB®	105	89
EQ	414	5							
F	enter	1	2.4		2.4	GS1(10)	GIB®	231	182
	not enough	2	3.6		2.4	GS1(10)	GIB®	103	248
line totals		3							
W	414	4							
EQ	330	5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

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						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	148%	EQ	102%	3009	2411
Concrete Slab						OK	OK
Totals Required (from Demand)						2038	2370

REVISIO
TOTALS

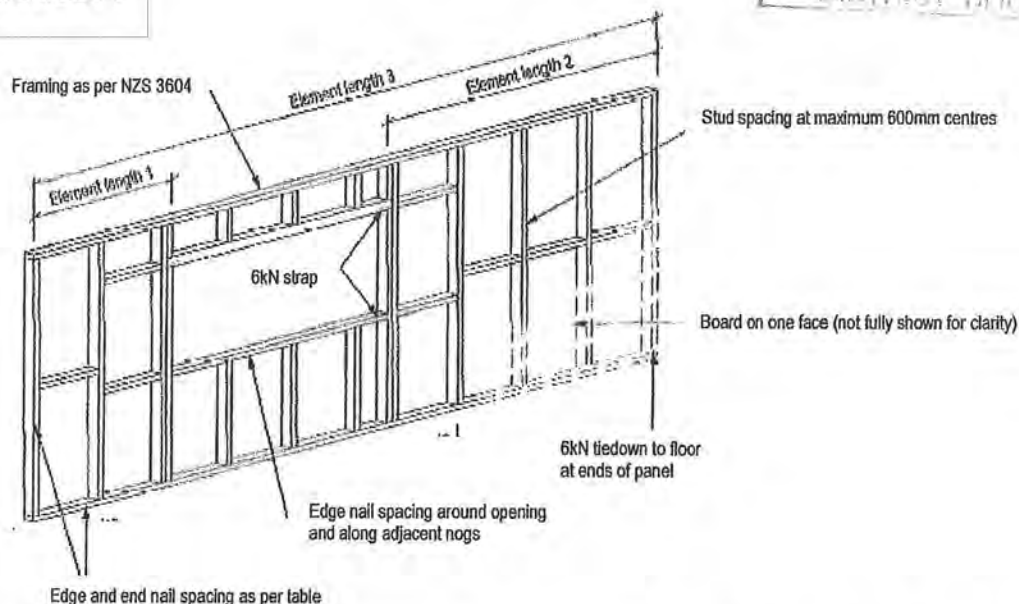
3210 3016

REVC

B

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SBI.

Type of board	Minimum wall length (mm)	Nail spacing (mm)	Tiedowns (kN)	BU/m wind	BU/m e'quake
9mm Strandboard	600	150	6	105	115
9mm Triboard	600	150	6	110	125
12mm Strandboard	600	150	6	110	125
15mm Triboard	600	150	6	120	130
15mm Triboard	1200	75	12	155	160

✓

Notes

- 12kN tie down only to be used into concrete floor.
- Nails for fixing board to wall framing to be 40 x 2.8mm diameter galvanised flat head nails.
- Intermediate nogs are not necessary for 15mm Triboard.
- The bracing units shown are for board fixed to only one side of the framing.
- The bracing units shown are for a 2.4m high wall. For walls more than 2.4m high, the bracing units need be reduced on a pro rata basis as per NZS 3604, e.g. for a 3m high wall, the bracing units (wind) for 9mm Strandboard are $\frac{2.4}{3} \times 105 = 84$.

The above information has been developed from tests carried out in the Timber Laboratory of SCION, Rotorua over the period 31 October 2008 to 26 November 2008. The testing was carried out in accordance with the P21 test method and the results were evaluated as per the BRANZ Technical Recommendation No.10, Dec 1991.

JUKEN NEW ZEALAND LTD - TRIBOARD MILL
Kaitia, New Zealand
Telephone: +64 9 408 0300
Facsimile: +64 9 408 9113
www.triboard.com
An ISO 14001 and 9001 Certified Company.

Date of issue 1 December 2008

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



GIB® Wall Bracing Calculation Sheet A

single storey

V03/09

Job Details

Name Peach
Street and Number 51 Paul Faith Lane
Lot and DP Number Lot 18 DP 405220
City/Town/District Kapiti
Designer MG
Company Name Housing Documentation Professionals
Date 25/02/2010



Select GIB® Lining
Option

10 mm GIB® Plasterboard

Building Specification

Number of storeys single
Floor Loading 2kPa
Foundation Type slab

Single Floor

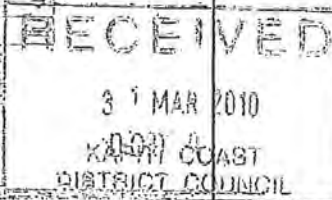
Cladding Weight light
Roof Weight light
Room In Roof Space yes
Roof Pitch (degrees) 30
Roof height above eaves (m) 3.9
Building height to apex (m) 6.4
Ground to lower floor level (m) 0.3

Complete Single Floor Column only

15
1.0

3.0
2.4
10.0
10.0
200

Stud Height (m) 2.4
Building Length (m) 33.6
Building Width (m) 22.8
Building Plan Area (m2) 364



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

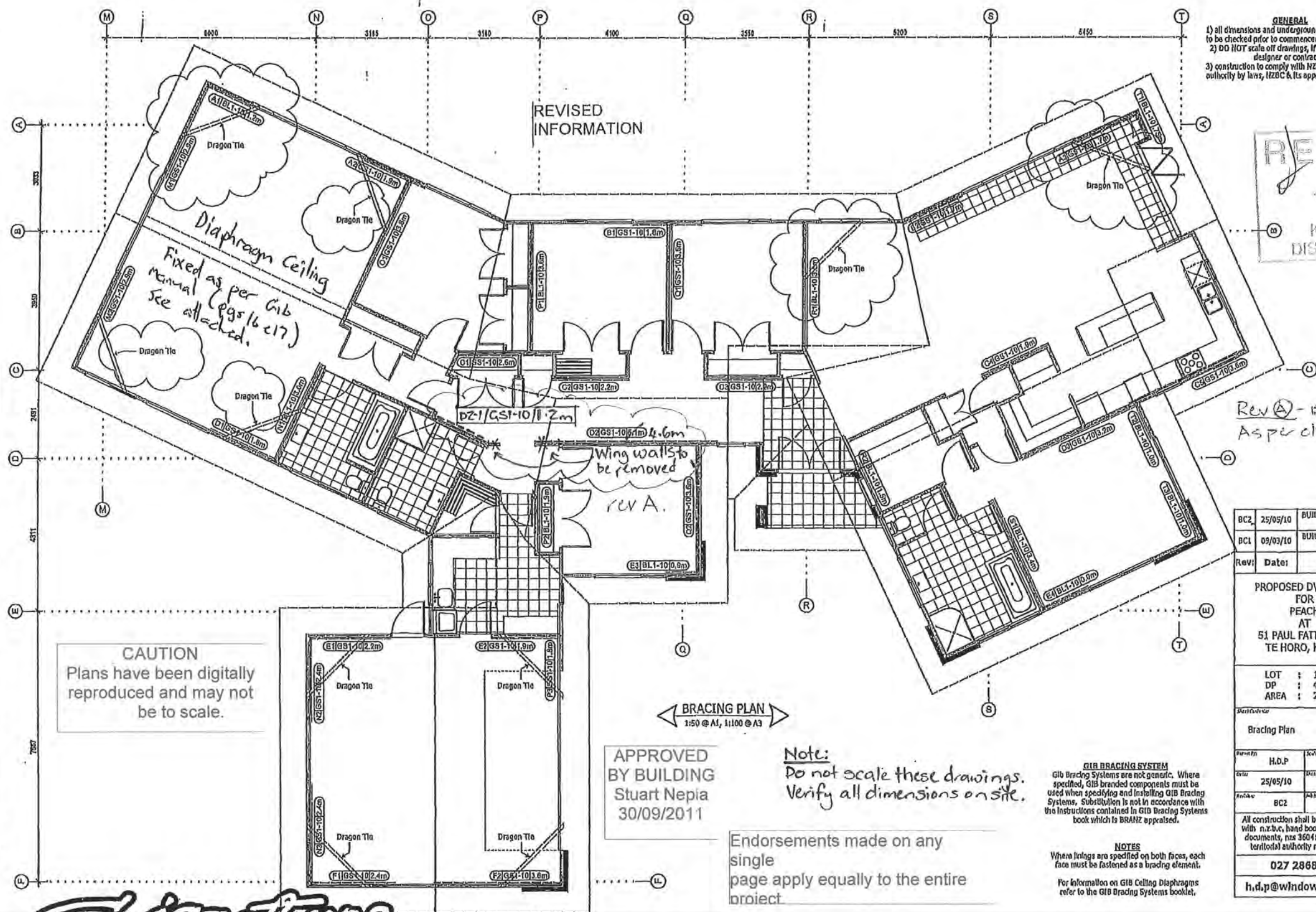
Demand W (BU)
Walls single
along slab 2038
across slab 4013

Bracing Units required for Earthquake

Demand along / across E (BU)
Walls
single
slab 2370

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HOUSING DOCUMENTATION PROFESSIONALS



CAUTION
Plans have been digitally
reproduced and may not
be to scale.

REVISED
INFORMATION

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BRACING PLAN
1:50 @ A1, 1:100 @ A3

Note:
Do not scale these drawings.
Verify all dimensions on site.

Endorsements made on any
single
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project

GENERAL
1) all dimensions and underground service locations
to be checked prior to commencement of any work.
2) DO NOT scale off drawings, if in doubt ask the
designer or contractor
3) construction to comply with NZS3604:1999, local
authority by laws, HZBC & its approved documents,

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DISTRICT COUNCIL

Rev A - 15/12/10 -
As per client confirmation

BC2	25/05/10	BUILDING CONSENT ISSUE
BC1	09/03/10	BUILDING CONSENT ISSUE
Rev:	Date:	Details:
PROPOSED DWELLING FOR PEACH AT 51 PAUL FAITH LANE TE HORO, KAPITI		
LOT : 18 DP : 405220 AREA : 24 ha approx		
Bracing Plan		
Version	H.D.P	1:100
Date	25/05/10	13 of 15
Project	BC2	HDP2493
All construction shall be in accordance with n.z.b.c. hand book and approved documents, nzs 3604:1999 and local territorial authority requirements.		
027 2868 145		
h.d.p@windowslive.com		

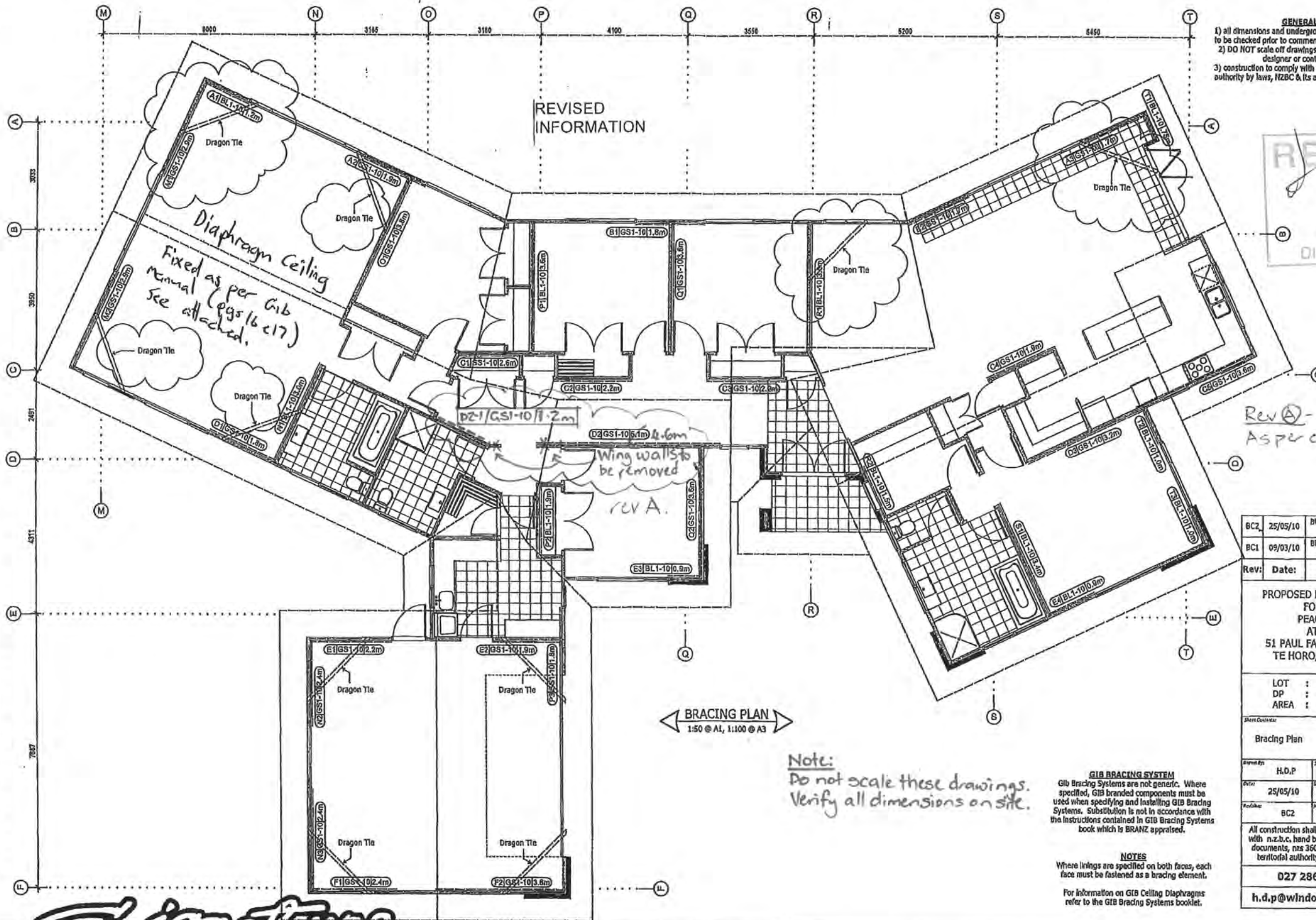
GIB BRACING SYSTEM
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the instructions contained in GIB Bracing Systems
book which is BRANZ appraised.

NOTES
Where fixings are specified on both faces, each
face must be fastened as a bracing element.
For information on GIB Ceiling Diaphragms
refer to the GIB Bracing Systems booklet.

Signature
HOMES Est. 1903

YOUR HOME. YOUR WAY.

(A)



Signature
HOMES Est. 1983

YOUR HOME. YOUR WAY.

AIR TECH™ 9000 AERATED WASTE WATER TREATMENT SYSTEM

SERVICE MAINTENANCE REPORT

Nº 3333

OWNER	Mr & Mrs Peck	HOME	YES	NO	DATE	22/4/10
ADDRESS	Paul Smith 1/1000 1st Ave	CALL FIRST	YES	NO	TEL	
COUNCIL		TANK ID NUMBER				

ELECTRICAL

COMMENTS

ALARMS TESTED	WATER	YES	NO	AIR	YES	NO	
ELEC BLOWER BOX CHECKED AND CLEANED				YES	NO		
LID SECURED				YES	NO		

AIR BLOWER

ROTARY VANES	VANE KIT REPLACEMENT	YES	NO	
TEMPERATURE		OKAY	HIGH	
NOISE LEVEL		OKAY	HIGH	
FILTERS CLEANED - 1X EXTERNAL, 2 X INTERNAL		YES	NO	

SEPTIC CHAMBER

BIO TUBE FITLER CLEANED					YES	NO			
ACCUMULATION - SLUDGE	LOW	MED	HIGH	CRUST	LOW	MED	HIGH		
INLET AND JUNCTION CLEAR					YES	NO			

AIR & SLUDGE RETURN SYSTEMS

ODOUR	YES	NO	
AERATION	GOOD	POOR	
AIR DIFFUSER CHECKED	YES	NOT REQ	
CLARIFICATION CHAMBER	GOOD	POOR	
SLUDGE RETURN TO PRIMARY CLEAR	YES	NO	
SLUDGE ACCUMULATION	HIGH	LOW	

IRRIGATION CHAMBER

CLEAN IRRIGATION CHAMBER	YES	NO	
TURBIDITY	MG/LITRE		
IRRIGATION PUMP OPERATION PRESSURE	GOOD	FAIR	POOR

IRRIGATION DISPOSAL SYSTEM

CONDITION	OK	INACCESSIBLE	REPLACE/REPAIR	
IRRIGATION LATERALS	OK	CLEANED	REPLACE/REPAIR	
ARKAL FILTER	OK	REPLACED	CLEANED	WATER METRE READING
LID COVERS SECURED			YES	NO
FIELD CONDITION	TIDY	PONDING/RUN OFF	PLANTED	BARK/MULCH COVER
PRIMARY CHAMBER NEEDS DESLUDGING			YES	NO

Comments: All looks good, system clean

Technician (PRINT) R. G. Hardy

SIGNED [Signature] C:\WPWIN60\WPDOCS\SEPTIC\SEPMATB.WPD



AIR TECH™ 9000 AERATED WASTE WATER TREATMENT SYSTEM

SERVICE MAINTENANCE REPORT

Nº 3933

OWNER	<i>Pouch</i>	HOME	<input checked="" type="radio"/> YES	<input type="radio"/> NO	DATE <i>29/12</i>
ADDRESS <i>51</i>	<i>Paul Faith Lane</i>	CALL FIRST	<input checked="" type="radio"/> YES	<input type="radio"/> NO	TEL
COUNCIL	<i>Telholo</i>	TANK ID NUMBER			

ELECTRICAL

COMMENTS

ALARMS TESTED	WATER	<input checked="" type="radio"/> YES	<input type="radio"/> NO	AIR	<input checked="" type="radio"/> YES	<input type="radio"/> NO	<input checked="" type="checkbox"/>
ELEC BLOWER BOX CHECKED AND CLEANED				<input checked="" type="radio"/> YES	<input type="radio"/> NO		<input checked="" type="checkbox"/>
LID SECURED				<input checked="" type="radio"/> YES	<input type="radio"/> NO		<input checked="" type="checkbox"/>

AIR BLOWER

ROTARY VANES	VANE KIT REPLACEMENT	YES	<input checked="" type="radio"/> NO	<input checked="" type="checkbox"/>
TEMPERATURE		<input checked="" type="radio"/> OKAY	<input type="radio"/> HIGH	<input checked="" type="checkbox"/>
NOISE LEVEL		<input checked="" type="radio"/> OKAY	<input type="radio"/> HIGH	<input checked="" type="checkbox"/>
FILTERS CLEANED - 1X EXTERNAL, 2 X INTERNAL		<input checked="" type="radio"/> YES	<input type="radio"/> NO	<input checked="" type="checkbox"/>

SEPTIC CHAMBER

BIO TUBE FITLER CLEANED					<input checked="" type="radio"/> YES	<input type="radio"/> NO	<input checked="" type="checkbox"/>	
ACCUMULATION - SLUDGE	LOW	<input checked="" type="radio"/> MED	HIGH	CRUST	<input checked="" type="radio"/> LOW	<input type="radio"/> MED	<input type="radio"/> HIGH	<i>bit noisy</i>
INLET AND JUNCTION CLEAR					<input checked="" type="radio"/> YES	<input type="radio"/> NO	<input checked="" type="checkbox"/>	

AIR & SLUDGE RETURN SYSTEMS

ODOUR	<input type="radio"/> YES	<input checked="" type="radio"/> NO	<input checked="" type="checkbox"/>
AERATION	<input checked="" type="radio"/> GOOD	<input type="radio"/> POOR	<i>✓ bubbles</i>
AIR DIFFUSER CHECKED	<input checked="" type="radio"/> YES	<input type="radio"/> NOT REQ	<input checked="" type="checkbox"/>
CLARIFICATION CHAMBER	<input checked="" type="radio"/> GOOD	<input type="radio"/> POOR	<input checked="" type="checkbox"/>
SLUDGE RETURN TO PRIMARY CLEAR	<input checked="" type="radio"/> YES	<input type="radio"/> NO	<input checked="" type="checkbox"/>
SLUDGE ACCUMULATION	<input type="radio"/> HIGH	<input checked="" type="radio"/> LOW	<input checked="" type="checkbox"/>

IRRIGATION CHAMBER

CLEAN IRRIGATION CHAMBER	<input checked="" type="radio"/> YES	<input type="radio"/> NO	<input checked="" type="checkbox"/>
TURBIDITY	MG/LITRE		<input checked="" type="checkbox"/>
IRRIGATION PUMP OPERATION PRESSURE	<input checked="" type="radio"/> GOOD	<input type="radio"/> FAIR	<input type="radio"/> POOR

IRRIGATION DISPOSAL SYSTEM

CONDITION	<input checked="" type="radio"/> OK	<input type="radio"/> INACCESSIBLE	REPLACE/REPAIR	<input checked="" type="checkbox"/>
IRRIGATION LATERALS	<input checked="" type="radio"/> OK	<input type="radio"/> CLEANED	REPLACE/REPAIR	<input checked="" type="checkbox"/>
ARKAL FILTER	<input checked="" type="radio"/> OK	<input type="radio"/> REPLACED	<input checked="" type="radio"/> CLEANED	WATER METRE READING
LID COVERS SECURED	<input checked="" type="radio"/> YES		<input type="radio"/> NO	<input checked="" type="checkbox"/>
FIELD CONDITION	<input checked="" type="radio"/> TIDY	<input type="radio"/> PONDING/RUN OFF	<input checked="" type="radio"/> PLANTED	BARK/MULCH COVER
PRIMARY CHAMBER NEEDS DESLUDGING			<input type="radio"/> YES	<input checked="" type="radio"/> NO

Comments *Still bit noisy, bubbles in aeration chamber, fine cloth, upper in lining*

Technician (PRINT) *KSC*

SIGNED *KSC* CAWPWIN60/WPDOCS/SEPTIC/SERMATB.WPD



Kapiti Coast District Council
Private Bag 601
Paraparaumu 5254

Tel. (04) 296 4700
Fax (04) 296 4830

E: kapiti.council@kapiticoast.govt.nz
W: www.kapiticoast.govt.nz



Building consent 080625

Section 51, Building Act 2004

The building

Street address of building: 132 Derham Road, Te Horo

Legal description of land where building is located: Lot 18 Te Horo Country Estate

Valuation number:

Building name:

Location of building within site/block number:

Level/unit number:



The owner

Name of owner: Stephanie & Glen Peach / Peach Trust

Contact person:

Mailing address: PO Box 7072, Wellington South, Wellington 6242

Street address/registered office:

Phone number: Landline: 04 801 2362

Mobile: 0274 171 171

Daytime:

After hours: 04 389 6422

Facsimile number:

Email address:

Website:

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

Full Name: Total Span Wellington/Horowhenua

Mailing Address: PO Box 376, Lindale Tourist Complex, Paraparaumu 5032

Phones: 027 252 6232; 04 297 0033

Fax: 04 297 0031

Building work

The following building work is authorised by this building consent:

Shed

Rural Shed

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

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

The building must be altered, removed, or demolished on or before the end of 50 years from the date of issue of this consent (being the specified intended life of the building); and

Compliance schedule

A compliance schedule is not required for the building.

Attachments

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



Signature



Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 28/07/08

2 September 2008

Stephanie & Glen Peach / Peach Trust
PO Box 7072
Wellington South
Wellington 6242

Dear Sir/Madam

Approval of Building Consent: 080625

Description: Shed
Location: 132 Derham Road, Te Horo
Legal Description: Lot 18 Te Horo Country Estate

I am pleased to inform you that the above building consent application has been approved. The building consent documents have been issued and are enclosed.

Before starting any work please read ALL the building consent documents carefully and in full so that you as the owner understand the conditions under which the consent has been issued.

As the owner you are also responsible for the following:

- ensuring that building work starts within 12 months of the approval of the building consent and that work progresses at a reasonable pace.
- ensuring that all required inspections are completed and that a Code Compliance Certificate is obtained once the work has been completed – please be aware that before a Code Compliance Certificate is issued, the building work must comply with the Building Act 2004 and the Building Code as at the date of final inspection.
- that no work with noisy equipment is to be carried out before 7.30 a.m. or after 6 p.m. Monday to Saturday. During the week there may be workers on site from 6.30 a.m. quietly preparing for work. Work with noisy equipment is not permitted on Sundays and public holidays.
- ensuring that no damage occurs to public property, for example footpaths or retaining structures. Should damage occur you will be required to pay for any repairs.
- ensuring that if you wish to make any changes to the approved building consent, then an amendment to the building consent will need to be lodged with us.

If you have any questions regarding your building consent or your responsibilities, please contact Kapiti Coast District Council on (04) 9045 617.



CODE COMPLIANCE CERTIFICATE

SECTION 95, BUILDING ACT 2004

THE OWNER

Stephanie & Glen Peach / Peach Trust
PO Box 7072
Wellington South
Wellington 6242

No. 080625
Issue date 4/06/09
Application date 22/07/08

THE BUILDING

Street Address	132 Derham Road, Te Horo
Valuation No.	
Legal Description	Lot 18 Te Horo Country Estate
Intended Use	Rural Shed
Intended Life	Specified as 50 years
Current Use	Rural
Proposal	Shed
Estimated Value	\$65,000

Code Compliance

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

- The building work complies with the building consent; and
- The property owner must follow and carry out the manufacturers prescribed maintenance procedures.

Signed for and on behalf of the Kapiti Coast District Council:

Signature:

Date: 04 JUN 2009



Kapiti Coast District Council [KCDC] does not warrant the accuracy of information in this publication and any person using or relying upon such information does so on the basis that KCDC shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

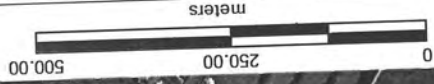
Map Projection:
New Zealand Transverse Mercator
(NZGD2000)

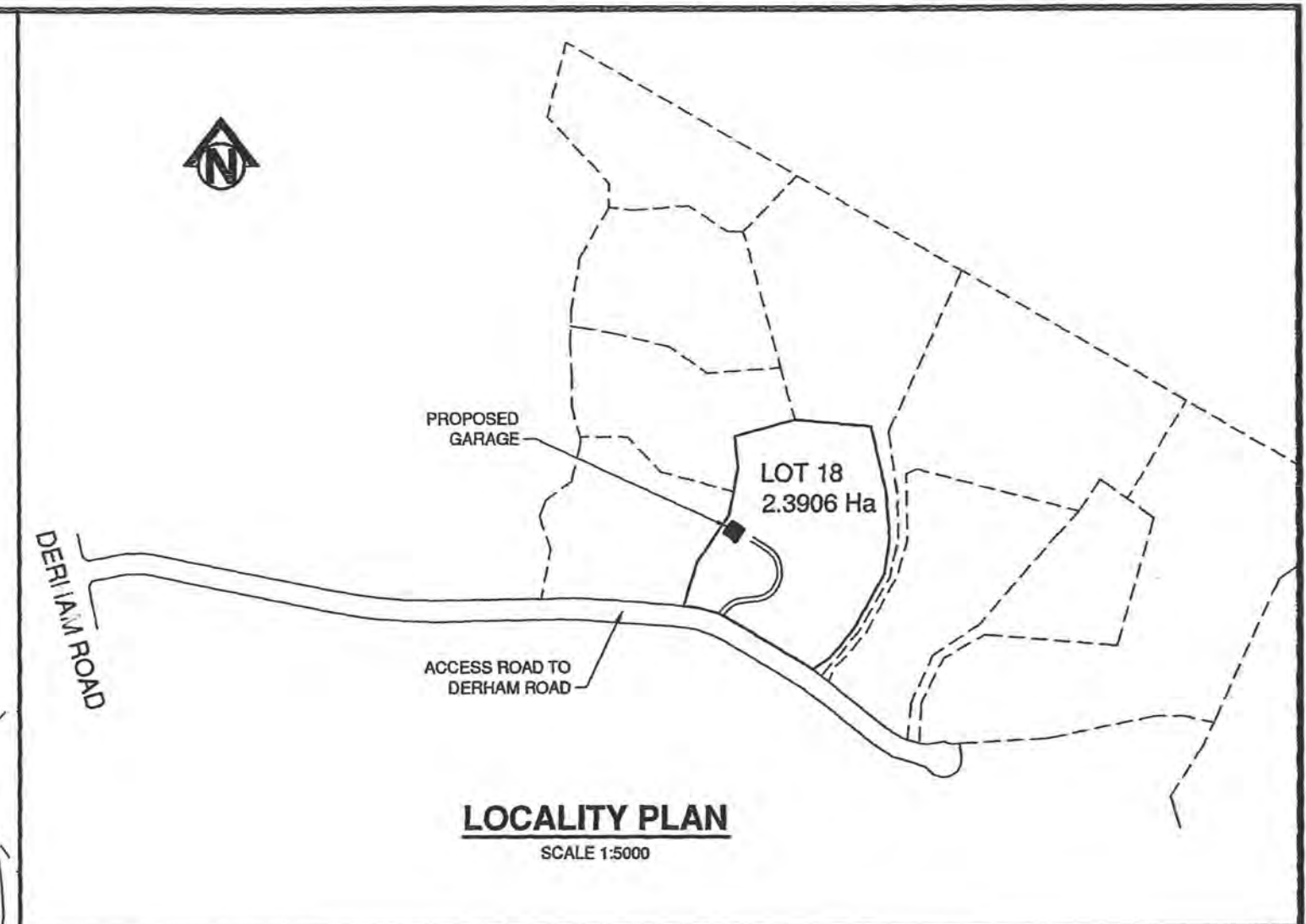
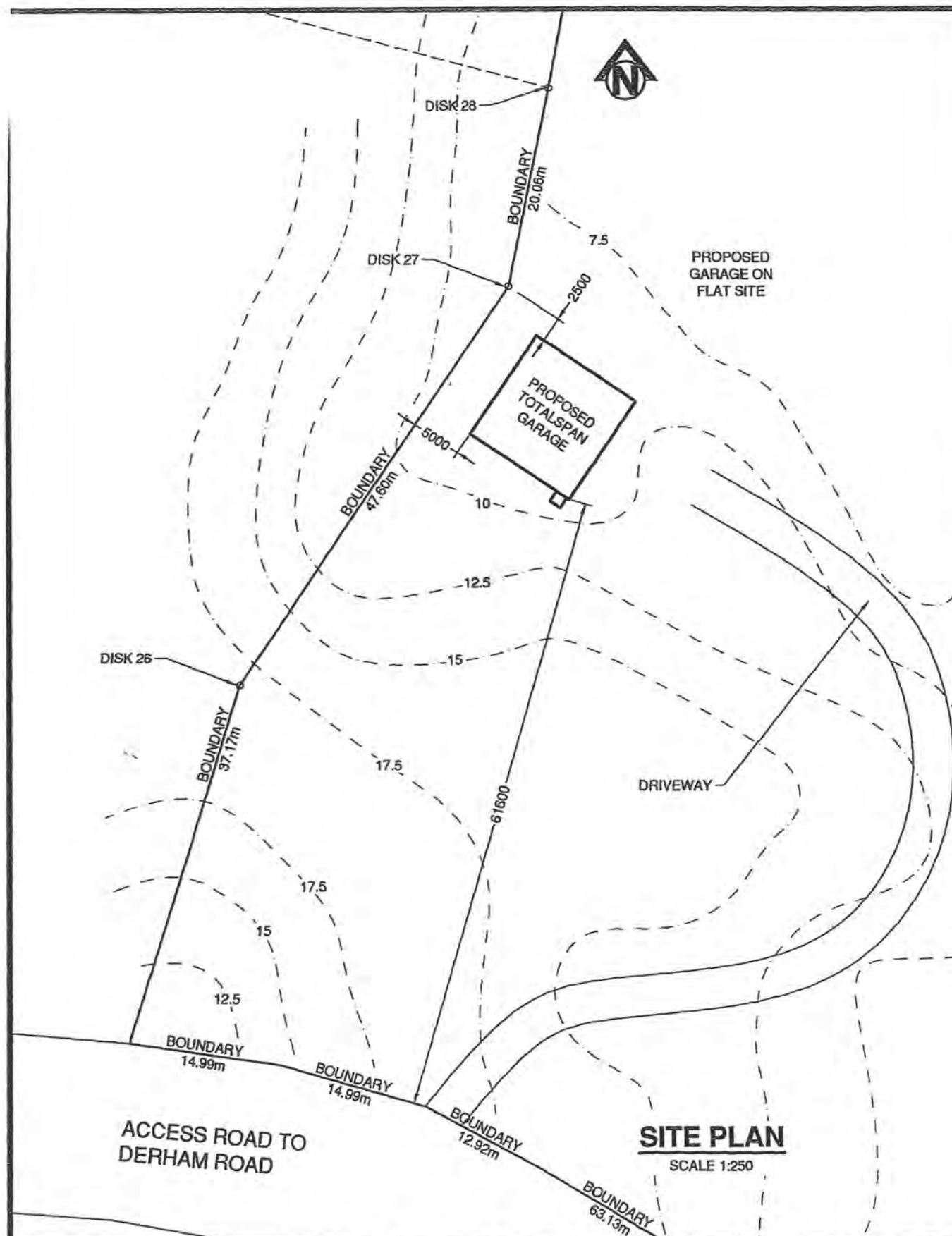
NORTH

Scale A4 1:9614

Map Printed Date: 22/07/2008 by Sam

ENTER TITLE HERE





The Owner/Builder is responsible for clearly defining the site boundary lines and pegs. This may require a survey. NOTE: established fences are not necessarily on the site boundary.

SITE COVERAGE

TOTAL SITE AREA:	23906m ²	
EXISTING BUILDINGS:	0m ²	0%
PROPOSED NEW BUILDINGS:	138m ²	0.58%
TOTAL COVERAGE:	138m²	0.58%

SITE DETAILS

LOT:	18 OF LOT 29
DP:	394017
CT:	418182
VALUATION #:	
AREA:	23906m ²
ZONING:	RURAL
WIND ZONE:	VERY HIGH

APPROVED
BY PLANNING
Janice Lee
Officer

24/7/2008

APPROVED
BY P & D
Simon Copp
Officer

25/7/2008

TOTALSPAN
STEEL SHEDS & BUILDINGS

Drawings Prepared By:

TOTALSPAN WELLINGTON

LINDALE TOURIST COMPLEX Ph: (04) 297 0033
PO BOX 376 Fax: (04) 297 0031
PARAPARAUMU Mobile: (027) 443 0649
e-mail: wellington@totalspan.co.nz

Proposed Building For:

PEACH 14 TRUST
P.O. BOX 7072
WELLINGTON SOUTH

Site Address:

LOT 18
TE HORO
COUNTRY ESTATE

SITE PLAN

Date Drawn:

09-Jul-08

Order #:

806362

Revision 0



Note: Subject to drainage rights created by T.71097.

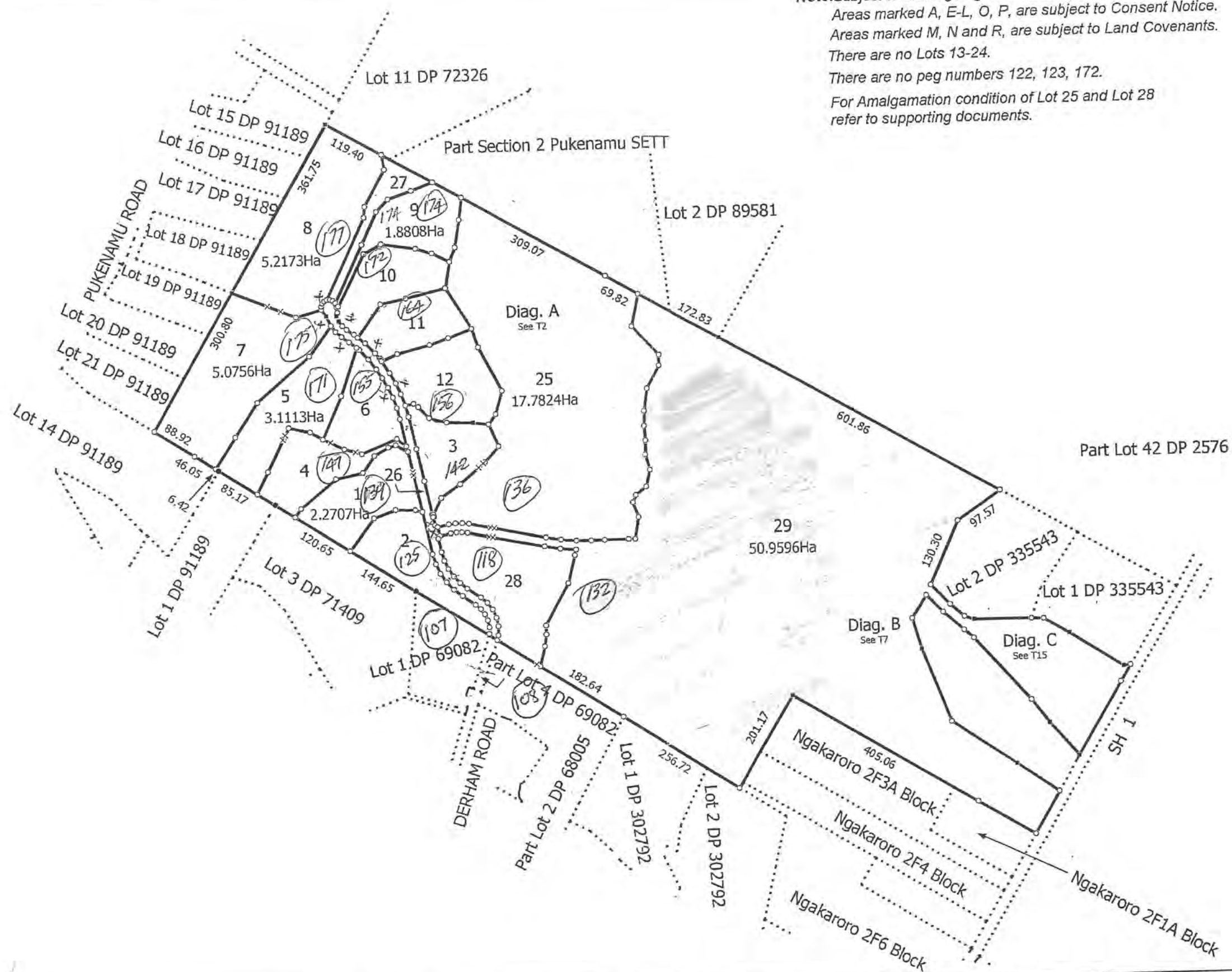
Areas marked A, E-L, O, P, are subject to Consent Notice.

Areas marked M, N and R, are subject to Land Covenants.

There are no Lots 13-24.

There are no peg numbers 122, 123, 172.

For Amalgamation condition of Lot 25 and Lot 28 refer to supporting documents.



Land District Wellington

Lots 1-12, 25-29, being Subdivision of Lot 4 DP 335543.

Surveyor: Robert Graham Longley
Firm: Pritchard Group Limited (Otaki)

Digital Title Plan
LT 365855

Digitally Generated Plan
Generated on: 17/03/2006 2:31 pm Page 4 of 18

Kapiti Coast District
Derham Road

Producer Statement

Stormwater Drains

Construction Review

Issued by GP LUNOY Registration Number 7921

To Kapiti Coast District Council

In respect to the following

Stormwater Drains installed in accordance with E1 AS1 as shown on the approved plans or as per the attached amended plan

Installed at LOT 18 TE HORO COUNTRY ESTATE
PAUL FAITH LANE

Building Consent No BC 080625

As a registered drainlayer, currently holding an annual practicing license, certify that I, or personnel under my control, have carried out the installation of the above system and I believe on reasonable grounds that the installation complies with the New Zealand Building Code.

Name [Signature] Signed GP LUNOY Date 22/4/09

Note: Fully dimensioned as built drain plan to be supplied. (scale 1:100)

KCDC Office use only

Producer Statement author authenticated and current registration verified

Verification & Registration checked: <https://www2.pgdb.co.nz/PGDB/PublicRegister>

Date 3/6/09

Name GARETH MC

Signature [Signature]

NOT UPDATED ON PUBLIC REGISTER
YET OK TO VERIFY

[Signature]

Producer Statement

Private Sewer Drains

Construction Review

Issued by... GP Cuny Registration Number... 7921

To Kapiti Coast District Council

In respect to the following

Private Sewer Drains installed in accordance with G13 AS2 or AS/NZS 3500 .2.2 as shown on the approved plans or as per the attached amended plan

Installed at... LOT 18 TE HORO COUNTRY ESTATE
PAUL FAITH LANE

Building Consent No. BC 080625

As a registered drainlayer, currently holding an annual practicing license, certify that I, or personnel under my control, have carried out the installation of the above system and I believe on reasonable grounds that the installation complies with the New Zealand Building Code.

Name... GP Cuny Signature... [Signature] Date... 22/4/09

Note: Fully dimensioned as built drain plan to be supplied. (scale 1:100)

Drains may be laid and backfilled without inspection provided that the drain is left under test with a min of 1.0 m head and the inspection at the lateral left exposed.

KCDC Office use only

Producer Statement author authenticated and current registration verified

Verification & Registration checked: <https://www2.pgdb.co.nz/PGDB/PublicRegister>

Date... 3/6/09

Name... SALEM M'C

Signature... [Signature]

Producer Statement

Piped Services & Sanitary Plumbing Stacks

Construction Review

Issued by SP Cunneen..... Registration Number 7921.....

To Kapiti Coast District Council

In respect to the following

Piped Services installed in accordance with G12/AS1 as shown on the approved plans or as per the attached amended plan and Sanitary Plumbing Stacks installed in accordance with G13/AS1 or AS/NZS 3500.2.2

Installed at LOT 18 TB HOMO COUNTRY ESTATE.....
VALE FAITH LANE.

Building Consent No. BC080625.....

As a Craftsman plumber, currently holding an annual practicing license, certify that I, or personnel under my control, have carried out the installation of the above system and I believe on reasonable grounds that the installation complies with the New Zealand Building Code. Both hot and cold systems have been pressure tested for a period of 15 minutes at a pressure of 1500 kPa.

Name SP Cunneen..... Signed SP Cunneen..... Date 22/4/09.....

KCDC Office use only

Producer Statement author authenticated and current registration verified

Verification & Registration checked: <https://www2.pgdb.co.nz/PGDB/PublicRegister>

Date 3/6/09.....

Name GARY MCC.....

Signature [Signature].....

SCOPE OF INSPECTION SHEET

Date 3/6/09 SR or BCA 080625 Inspection No. 6
Time 10.40 Documents on site YES / NO YES
Owner Name PLACH Project Description NEW SHED - WITH BATHROOM
Site Address 132 WILKINSON RD - TE HORO

☒ Building ☐ Plumbing

Circle appropriate Type & Inspection Other

Site Found Piles PreSlab Subfloor Drainage PreWrap PreClad Weathertight PreLine PostLine Block Brick Ret.Wall ☒ Final

Engineer Supervision Yes No ☒ n/a Name

Notes From Previous FINAL INSPECTION

Diagram (if necessary)

FLOOR in LAUNDRY - BATHROOM now
SEALS
ALSO PSL4 FROM ENGINEER RECENTLY on SITE

OK TO ISSUE C.C.C.

Photo's Taken - Nos. saved / scanned? Y / N

Site instruction issued

Result: ☒ Pass ☐ Part pass ☐ Fail

Confirmation of inspection by person on site

Person on site: Builder ☐ Owner ☒ Other ☐ No One on site ☐

Your next inspection will be
(Guidance notes for inspection on the rear of this sheet)

Agreed, Stephanie Plach Sign [Signature] Date 3/6/09
(Print Name)

Officer Name GARETH HILL Sign [Signature] Date 3/6/09

Additional Insp. Sheet No.

Information entered into data base ☐ Initial Date 3/6/09

FINAL INSPECTION

Date: 2/6/09 SR or BCA: 080625 Inspection No.: 6
 Time: 10.40 Documents on site YES / NO YES
 Owner Name: PEACH Project Description: New SHED - with BATHROOM
 Site Address: 132 PEARSON RD - TE HONGA

All inspections are carried out with strict reference to the building consent granted.

P = Pass F = Fail NA = Non-Applicable

Inspection decisions are based on the extent of work inspected at the time of inspection.

Please refer to the related scope sheet for definition of the inspections extent.

Applicable to all inspections

Sighted previous inspection notes	<u>Y</u>	N	NA	Conforms with approved drawings	<u>Y</u>	N	NA	Confirm Additional information/amended plan	<u>Y</u>	N	NA
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FINAL - Exterior

Sub-floor ventilation	P	F	NA	Roof fixings	P	F	NA	Spouting + Down-pipes	P	F	NA
Deck Structure	P	F	NA	Flashings - Roof	P	F	NA	Penetrations - Flashings	P	F	NA
Barriers	P	F	NA	Gully Dishes	P	F	NA	Storm-water + site drainage	P	F	NA
Handrails	P	F	NA	Wastes to gully	P	F	NA	Fixings - Durability	P	F	NA
Steps/Stairs	P	F	NA	Terminal vents/AAV's	P	F	NA	Cladding painted/sealed	P	F	NA
Flashings - Windows/Doors	P	F	NA	Cladding Ground Clearance	P	F	NA		P	F	NA

FINAL - Interior

Service areas - floors/walls	P	F	NA	Food storage/preparation	P	F	NA	Hot water temp	P	F	NA
Stair design	P	F	NA	Ventilation	P	F	NA	Solid fuel heater	P	F	NA
Handrails	P	F	NA	Insulation + clearance	P	F	NA	Water supply tank	P	F	NA
Balustrades	P	F	NA	HWC flues	P	F	NA	Trap seals + AAV's	P	F	NA
Lightings	P	F	NA	HWC valves	P	F	NA	Cistern flushing	P	F	NA
Laundering	P	F	NA	HWC restraint	P	F	NA	WC pan connection	P	F	NA
Cooking facilities	P	F	NA	Tempering valve	P	F	NA	Septic tank	P	F	NA
Smoke detectors	P	F	NA	Glazing - Human Impact	P	F	NA	Window labels	P	F	NA

FINAL - Intertency/Commercial

Fire/Life systems sighted	P	F	<u>NA</u>	Guarantees/Warranties/Certificates/Expert Opinion	<u>P</u>	F	NA	Intertency STC	P	F	<u>NA</u>
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All Inspections

Road Crossing Complete	P	F	<u>NA</u>	Energy Certificates supplied	P	F	<u>NA</u>	Final Check Complete	<u>Y</u>	<u>N</u>	
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Name: _____ Officer Sign: _____ Date: 2/6/09

SCOPE OF INSPECTION SHEET

Date 14/5/2009 SR or BCA 080625 Inspection No.
 Time 1.45pm Documents on site ☒ YES ☐ NO
 Owner Name Peach Project Description SHED
 Site Address 132 Deeham Road, Te Hapo

☒ Building ☐ Plumbing

Circle appropriate Type & Inspection Other

Site Found Piles PreSlab Subfloor Drainage PreWrap PreClad Weathertight PreLine PostLine Block Brick Ret.Wall ☒ Final

Engineer Supervision Yes No n/a - Name

Notes All work HAS BEEN Complete
Ground Height OK.
Cladding Colour STEEL, Roof Fixings
AND Flashings in Place.
HOT WATER TRAP AT. S4. LAUNDRY
TUBE RESTRAINED, Lighting Working.
Gully x2 in PLACE, Storm WATER Connected
to TANKS

Diagram (if necessary)

Photo's Taken - Nos. saved / scanned? Y / N

Site instruction issued P.S4 FROM ENGINEER IS REQUIRED
SEAL BATHROOM FLOOR.

Result: **Pass** **Part pass** **Fail**

Confirmation of inspection by person on site

Person on site: Builder ☐ Owner ☒ Other ☐ No One on site ☐

Your next inspection will be
 (Guidance notes for inspection on the rear of this sheet)

Agreed, Stephanie Peach Sign [Signature] Date 14/5/09
 (Print Name)
 Officer Name Tony King Sign [Signature] Date 14/5/09
 Additional Insp. Sheet No.

Information entered into data base ☐ Initial Date 1/1/1

FINAL INSPECTION

Date 14/5/2009 SR or BCA 080625 Inspection No.

Time 1.45pm Documents on site YES / NO

Owner Name TEACH Project Description SHED

Site Address 132 Decham Road Te Hono

All inspections are carried out with strict reference to the building consent granted.

P = Pass F = Fail NA = Non-Applicable

Inspection decisions are based on the extent of work inspected at the time of inspection.

Please refer to the related scope sheet for definition of the inspections extent.

Applicable to all inspections

Sighted previous inspection notes	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA	Conforms with approved drawings	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA	Confirm Additional information/amended plan	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA
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FINAL – Exterior

Sub-floor ventilation	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Roof fixings	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Spouting + Down-pipes	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Deck Structure	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Flashings – Roof	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Penetrations – Flashings	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Barriers	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Gully Dishes	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Storm-water + site drainage	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Handrails	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Wastes to gully	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Fixings – Durability	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Steps/Stairs	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Terminal vents/AAV's	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Cladding painted/sealed	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Flashings – Windows/Doors	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Cladding Ground Clearance	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA		<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA

FINAL – Interior

Service areas – floors/walls	<input type="radio"/> P	<input checked="" type="radio"/> F	<input type="radio"/> NA	Food storage/preparation	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Hot water temp <u>54</u>	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Stair design	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Ventilation	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Solid fuel heater	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA
Handrails	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Insulation + clearance	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Water supply tank	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Balustrades	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	HWC flues	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Trap seals + AAV's	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Lightings	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	HWC valves	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Cistern flushing	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Laundrying	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	HWC restraint	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	WC pan connection	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Cooking facilities	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Tempering valve	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Septic tank	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Smoke detectors	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Glazing – Human Impact	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Window labels	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA

FINAL – Intertenancy/Commercial

Fire/Life systems sighted	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Guarantees/Warranties/Certificates/Expert Opinion	<input type="radio"/> P	<input checked="" type="radio"/> F	<input type="radio"/> NA	Intertenancy STC	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
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All Inspections

Road Crossing Complete	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Energy Certificates supplied	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Final Check Complete	<input checked="" type="radio"/> Y	<input type="radio"/> N	
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Name: Tomy King Officer Sign: [Signature] Date: 14/5/09

SCOPE OF INSPECTION SHEET

Date 26/1/09 SR or BCA 080625 Inspection No. 4

Time 11:15 Documents on site YES / NO

Owner Name PEACH Project Description NEW SPEED

Site Address 132 DERHAM RD TEHORO

Building Plumbing

Circle appropriate Type & Inspection Other

Site Found Piles PreSlab Subfloor Drainage PreWrap PreClad Weathertight PreLine PostLine Block Brick Ret.Wall Final

Engineer Supervision Yes No n/a - Name SEPTIC TANK DETAILS REQUIRED

Diagram (if necessary)

Notes

100mm PVC SEWER PIPE
IN PLACE AS PER PLAN &
REQUIREMENTS AS 3500
TESTED
OK TO BACKFILL

Photo's Taken - Nos. saved / scanned? Y / N

Site instruction issued

Result: Pass Part pass Fail

Confirmation of inspection by person on site

Person on site: Builder ☐ Owner ☐ Other ☒ PLUMBER No One on site ☐

Your next inspection will be FINAL FOR CCC
(Guidance notes for inspection on the rear of this sheet)

Agreed, KEVIN CUNDY Sign KG Date 26/1/09
(Print Name)

Officer Name BORRER M Sign BT Date 26/1/09

Additional Insp. Sheet No.

Information entered into data base ☐ Initial Date 1/1/09

SITE / FOUNDATIONS / PILES / PRE SLAB / SUBFLOOR / DRAINAGE

Date 26/1/09 SR or BCA 080625 Inspection No. 4
 Time 11:15 Documents on site YES / NO
 Owner Name PEACH Project Description NEW SPED
 Site Address 132 DERHAM RD TOLLAND

All inspections are carried out with strict reference to the building consent granted.

P = Pass F = Fail NA = Non-Applicable

Inspection decisions are based on the extent of work inspected at the time of inspection.

Please refer to the related scope sheet for definition of the inspections extent.

SITE

Conforms with approved drawings	Y	N	NA	Checked driveway	Y	N	NA	Engineer supervision required	Y	N	NA
Scope of Resource consent granted?	Y	N	NA	Checked position off relevant boundaries and datum height	Y	N	NA		Y	N	NA
Expert Opinion (Producer statement) required	Y	N	NA	Name of Surveyor				Name of Engineer			
				Company				Company			

FOUNDATIONS

PILES

SUBFLOOR

Footings Depth	P	F	NA	Pile size	P	F	NA	Pile/Bearer/Joist Fixings	P	F	NA
Good bearing (NZS 3604)	P	F	NA	Pile layout is to plan	P	F	NA	Notching, Holes, etc	P	F	NA
Reinforcing	P	F	NA	Special piles - point load	P	F	NA	Solid Blocking	P	F	NA
Siting	P	F	NA	Timber Treatment	P	F	NA	Joists	P	F	NA
Sub-floor vents	P	F	NA	Hole depth	P	F	NA	Beams/Bearers	P	F	NA

PRE SLAB

Rebate for brick veneer	P	F	NA	Sand blinding	P	F	NA	Steel reinforcing	P	F	NA
Ground clearance	P	F	NA	Slab thickenings	P	F	NA	Bar chairs	P	F	NA
Concrete Cover	P	F	NA	Vapour barrier (DPC)	P	F	NA	DPC penetrations taped	P	F	NA
Driveway s/w control	P	F	NA	Bottom plate fixings	P	F	NA	Minimum Floor Level	P	F	NA
Secondary flow path	P	F	NA	TPR line	P	F	NA	Wastes and drains - size / fall	P	F	NA
Pipe material	P	F	NA	Plumbing layout	P	F	NA	Test - Water / Air	P	F	NA
Pipe protection	P	F	NA	Pipes supported	P	F	NA	Visual leak check	P	F	NA

DRAINAGE ONLY (SEWER)

Pipe diameter	(P)	F	NA	Connections/Angles	(P)	F	NA	Holding water	(P)	F	NA
Bedding material	(P)	F	NA	Branch length	(P)	F	NA	Terminal vent	(P)	F	NA
Gully trap(s)	(P)	F	NA	Direction/Fall	(P)	F	NA	LBP/Registration No:	29813		

Officer Name: BARBARA M Sign: [Signature] Date: 26/1/109

SCOPE OF INSPECTION SHEET

Date 8/12/08 SR or BCA 080625 Inspection No. 3

Time 10:40am Documents on site YES / NO

Owner Name PGACIT Project Description NEW GARAGE

Site Address LOT 18 PAUL FAITH LANE OFF DORHAM RD

Building Plumbing

Circle appropriate Type & Inspection Other

Site Found Piles PreSlab Subfloor Drainage PreWrap PreClad Weathertight PreLine PostLine Block Brick Ret.Wall Final

Engineer Supervision Yes No n/a Name

Notes 20mm + 15mm POLYETHYLENE CRIMPED
PIPE + FITTINGS IN PLACE WATER TEST
FROM 2 x 30' COOLING TANKS WITH PUMP
+ SHUT OFF VALVES IN PLACE
PIPES TESTED TO 1500 KPA HOLDING
OK TO CONTINUE

Diagram (if necessary)

Photo's Taken - Nos. saved / scanned? Y / N

Site instruction issued STILL REQUIRES APPROVED PLAN FOR PLUMBING.
PRODUCES STATEMENT TO FOLLOW.

Result: Pass Part pass Fail

Confirmation of inspection by person on site

Person on site: Builder ☐ Owner ☐ Other ☒ Plumber 07921 No One on site ☐

Your next inspection will be
(Guidance notes for inspection on the rear of this sheet)

Agreed, Sign [Signature] Date 8/12/08

Officer Name CALVIN Sign [Signature] Date 8/12/08

Additional Insp. Sheet No.

WEATHERTIGHTNESS / PRELINE / POSTLINE

Date: 8/12/08 SR or BCA: 080625 Inspection No.: 3

Time: 10:40am Documents on site: YES / NO

Owner Name: PRACH Project Description: NEW GARAGE

Site Address: LOT 18 PAUL FAITH LANE OFF DORHAM RD

All inspections are carried out with strict reference to the building consent granted.

P = Pass F = Fail NA = Non-Applicable

Inspection decisions are based on the extent of work inspected at the time of inspection.

Please refer to the related scope sheet for definition of the inspections extent.

Applies to all inspections

Sighted previous inspection notes	Y	N	NA	Conforms with approved drawings	Y	N	NA	Confirm Additional information/amended plan	Y	N	NA
-----------------------------------	---	---	----	---------------------------------	---	---	----	---	---	---	----

WEATHERTIGHTNESS

Cladding selection complies with BC?	P	F	NA	Roof material complies with BC?	P	F	NA	Sheets fixed to manufacturers	P	F	NA
Roof fixing complies	P	F	NA	Fixings appropriate for durability?	P	F	NA	Sheet layout	P	F	NA
Ridge/hip flashings in place	P	F	NA	Roof/wall junctions flashed	P	F	NA	Control joints where appropriate	P	F	NA
Penetrations correctly flashed	P	F	NA	Fixings appropriate for bracing elements	P	F	NA	Flashings in place	P	F	NA
Clearance provided for fascia & spouting	P	F	NA	Ground clearances achieved	P	F	NA	Clearance off deck surface	P	F	NA
Flashings/wraps in place, parapets/barriers	P	F	NA	Glazing - human impact	P	F	NA	Truss/Rafter fixings	P	F	NA

PRELINE

Max moisture Content %	P	F	NA	Insulation R Value	P	F	NA	Bracing connections	P	F	NA
Ventilation to rooms	P	F	NA	Top plate connection	P	F	NA	Air seals	P	F	NA
Timber treatment	P	F	NA	Ceiling batten spacing	P	F	NA	Bottom plate fixings	P	F	NA
Lintel/beam size & fixing	P	F	NA	Stud spacing	P	F	NA		P	F	NA
Plumber Name <u>CONDY</u>				TPR line	P	F	NA	Waste pipe size & test	P	F	NA
Soil pipe size and test	P	F	NA	Inbuilt S/W pipes tested	P	F	NA	Floor wastes	P	F	NA
Pipes fixed/supported	P	F	NA	Vents terminated	P	F	NA	Shut off valves	P	F	NA
System: AS3500, G13, Other	P	F	NA	Pressure Test <u>1500 kPa</u>	P	F	NA	Fire wraps and collars	P	F	NA

POSTLINE

Sheet bracing	P	F	NA	Wet area substrate system	P	F	NA	Sheet fixings	P	F	NA
Penetrations sleeved	P	F	NA		P	F	NA	Fire/Acoustic separation	P	F	NA

Officer Name: _____ Officer Sign: [Signature] Date: 8/12/08

SCOPE OF INSPECTION SHEET

Date 7/10/08 SR or BCA 080625 Inspection No. 2
Time 10:30 Documents on site YES ☒ NO
Owner Name PEACH Project Description GARAGE
Site Address LOT 18 PAUL FAITH LANE OFF AGRICULTURAL RD

Building Plumbing

Circle appropriate Type & Inspection Other

Site Found Piles ☒ PreSlab ☐ Subfloor ☐ Drainage ☐ PreWrap ☐ PreClad ☐ Weathertight ☐ PreLine ☐ PostLine ☐ Block ☐ Brick ☐ Ret.Wall ☐ Final

Engineer Supervision Yes ☐ No ☒ n/a - Name

Diagram (if necessary)

Notes ON INSPECTION 100mm + 40mm
PVC WASTE + SOIL IN PLACE
PIPE SERVICES ~~NOT~~ DON'T HAVE CONSENT NOT
ON STAMPS PLANS. -> TOILET - SHOWER - HAND BASIN - LAUNDRY.

PIPE'S GOING TO SEPTIC TANK.
PIPES HAVE GOOD FALL + BEDDING SAND.

OK TO POUR ONCE RC PLAN
SUBMITTED TO COUNCIL

Photo's Taken - Nos. saved / scanned? Y / N

Site instruction issued SUPPLY NEW FLOOR PLAN WITH SERVICES.

PLUMBER PRODUCE STATEMENT

Result: **Pass**

Part pass

☒ Fail

Confirmation of inspection by person on site

Person on site: Builder ☐ Owner ☐ Other ☒ Plumber No One on site ☐

Your next inspection will be
(Guidance notes for inspection on the rear of this sheet)

Agreed, ERIN CUNDY Sign [Signature] Date 7/10/08

Officer Name GARETH MC Sign [Signature] Date 7/10/08

Additional Insp. Sheet No.

Information entered into data base ☐

Initial

Date 1/1/

SITE / FOUNDATIONS / PILES / PRE SLAB / SUBFLOOR / DRAINAGE

Date 7/10/08 SR or BCA 080625 Inspection No. 2

Time 10:30 Documents on site YES / **NO**

Owner Name Pratt Project Description Garage

Site Address Lot 18 Paul Smith Lane off Awharua Rd

All inspections are carried out with strict reference to the building consent granted.

P = Pass F = Fail NA = Non-Applicable

Inspection decisions are based on the extent of work inspected at the time of inspection.

Please refer to the related scope sheet for definition of the inspections extent.

SITE

Conforms with approved drawings	Y	N	NA	Checked driveway	Y	N	NA	Engineer supervision required	Y	N	NA
Scope of Resource consent granted?	Y	N	NA	Checked position of relevant boundaries and datum height	Y	N	NA		Y	N	NA
Expert Opinion (Producer statement) required	Y	N	NA	Name of Surveyor				Name of Engineer			
				Company				Company			

FOUNDATIONS

PILES

SUBFLOOR

Footing Depth	P	F	NA	Pile size	P	F	NA	Pile/Bearer/Joist Fixings	P	F	NA
Good bearing (NZS 3604)	P	F	NA	Pile layout is to plan	P	F	NA	Notching, Holes, etc	P	F	NA
Reinforcing	P	F	NA	Special piles - point load	P	F	NA	Solid Blocking	P	F	NA
Siting	P	F	NA	Timber Treatment	P	F	NA	Joists	P	F	NA
Sub-floor vents	P	F	NA	Hole depth	P	F	NA	Beams/Bearers	P	F	NA

PRE SLAB

Rebate for brick veneer	P	F	NA	Sand blinding	P	F	NA	Steel reinforcing	P	F	NA
Ground clearance	P	F	NA	Slab thickenings	P	F	NA	Bar chairs	P	F	NA
Concrete Cover	P	F	NA	Vapour barrier (DPC)	P	F	NA	DPC penetrations taped	P	F	NA
Driveway s/w control	P	F	NA	Bottom plate fixings	P	F	NA	Minimum Floor Level	P	F	NA
Secondary flow path	P	F	NA	TPR line	P	F	NA	Wastes and drains - size / fall	P	F	NA
Pipe material	P	F	NA	Plumbing layout	P	F	NA	Test - Water / Air	P	F	NA
Pipe protection	P	F	NA	Pipes supported	P	F	NA	Visual leak check	P	F	NA

DRAINAGE

Pipe diameter	P	F	NA	Connections/Angles	P	F	NA	Holding water	P	F	NA
Bedding material	P	F	NA	Branch length	P	F	NA	Terminal vent	P	F	NA
Gully trap(s)	P	F	NA	Direction/Fall	P	F	NA	LBP/Registration No:			

Officer Name: _____ Sign: [Signature] Date: 7/10/08

SCOPE OF INSPECTION SHEET

Date 6/10/08 SR or BCA 080625 Inspection No. 1

Time 1420 Documents on site YES / NO

Owner Name S & G Beach (Beach Trust) Project Description TOTAL SPIN SHEET

Site Address

Building Plumbing

Circle appropriate Type & Inspection Other

Site Found Piles PreSlab Subfloor Drainage PreWrap PreClad Weathertight PreLine PostLine Block Brick Ret.Wall Final

Engineer Supervision Yes No n/a - Name

Notes All in OAG Plan Diagram (if necessary)

Plumbing in slab work completed

MESH IN PLACE
REINFORCING IN PLACE
DRIVEN PILE DESIGN
LAY OUT CORRECT
VAPOR BARRIER IN PLACE
SITE LOCATION CORRECT
BOUNDARY MARKERS SET

all good
Proceed

Photo's Taken - Nos. saved / scanned? Y / N

Site instruction issued
Tie mesh as discussed
Supply Plumbers Pipe Sewer / Stormwater &
As Bids for Final. Scheduled to comply with Local
ENGINEER BSK REQUIRED AT FINAL
ELECTRICAL CERT REQUIRED AT FINAL

Result: Pass Part pass Fail

Confirmation of inspection by person on site

Person on site: Builder ☒ Owner ☐ Other ☐ No One on site ☐

Your next inspection will be FINAL
(Guidance notes for inspection on the rear of this sheet)

Agreed, [Signature] Sign [Signature] Date 6/10/08

Officer Name JM [Signature] Sign [Signature] Date 6/10/08

Additional Insp. Sheet No.

Information entered into data base ☐ Initial [Signature] Date 1/1/08

SCOPE OF INSPECTION

Inspections are made in conjunction with, and with the cooperation of, the owner/owner's agent to ensure that the building work complies with the provisions of the Building Act and NZ Building Code. The inspection is general in nature and involves an audit of the following aspects:

Engineer – Civil/Structural/Fire/Geotechnical: An engineer has been engaged to carry out inspections on behalf of the owner. Please ensure those inspections are carried out. A Certificate of Expert Opinion is required to be supplied to Council.

Site: A surveyor's report, or visible boundary markers provided, so that the set out of the project can be clearly identified.

Foundation: When all formwork has been completed, footings have been excavated and reinforcement is in place.

Piles: When all holes are excavated prior to installation.

Pre-slab plumbing (concrete slab): When all plumbing and drainage pipes have been installed, prior to backfilling.

Pre-slab building (concrete slab): When DPM has been placed with all laps and penetrations sealed, reinforcing in place and in position with chairs as appropriate.

Sub-floor (timber suspended floor): When all sub-floor connections, joists and required blocking, and any suspended plumbing pipe work have been completed, but before any flooring or base boards have been fitted. Relocated dwellings require a sub-floor inspection prior to the base boards being fitted.

Drainage: When all drainage works is completed and is under test, before backfilling occurs. As laid drainage plan is required at time of inspection.

Pre-wrap: When all roof and wall framing is complete, including any exterior sheet bracing, but before building wrap has been installed.

Pre-clad: When building wrap and window and door flexible flashing tape has been installed, cavity battens (cavity systems), cavity closers and all flashing systems are in place, but before joinery has been installed.

Weathertightness: When exterior cladding has been installed, flashings in place, air seals fitted to openings, but before any coating system have been applied.

Pre-line (plumbing): When all internal plumbing is complete and plumbing pipe work is under test pressure.

Pre-line (building): When the exterior of the building is weather tight, all structural components (including bracing) have been completed and wall insulation is in place.

Wet area membranes, decks, roofs and shower area: Pre application of wet area membrane, when all outlets and flashings have been installed, ready for membrane installation.
Post application of wet area membrane.

Post-line: When all interior linings have been installed, but before skirting, Scotia or plastering stopping. Installation details of screws check of wall bracing element.

Block: When all masonry block work including block foundations for slab floors, is completed, reinforcing in place and washout openings in place.

Brick Veneer: When veneer is at half height and all flashings are in place.

Retaining wall: Pre application of waterproof membrane system.
Post application of waterproof membrane system.

Protection installed for membrane system and installation of perforated drainage system before back filling.

Final: Final inspections are carried out at the completion of the project and may include entire project, plumbing, drainage and storm water. The Code Compliance Certificate is issued if the building work complies with the approved building consent.

Free Standing Fireplace: Final inspection required only.

In Built Fireplace: Inspection required before installation and after installation.

PRIVACY STATEMENT

1. The information contained on the Building Inspection Report Sheet is held by the Kapiti Coast District Council, whose address is Private Bag 601, Paraparaumu.
2. The information is available for public inspection as part of the Building Record of the property concerned.
3. You have the right under the Privacy Act 1993 to obtain access to, and to request correction of any personal information held by Council concerning you.

Council has a Privacy Officer. If you have any concerns regarding privacy issues please telephone (04) 296 4700

SITE / FOUNDATIONS / PILES / PRE SLAB / SUBFLOOR / DRAINAGE

Date: 6/10/08 SR or BCA: 080625 Inspection No.

Time: 1420 Documents on site YES / NO

Owner Name: S.G. BACH (BACH TRUST) Project Description: TOTAL SPAN SHED

Site Address:

All inspections are carried out with strict reference to the building consent granted.
P = Pass F = Fail NA = Non-Applicable

Inspection decisions are based on the extent of work inspected at the time of inspection.
 Please refer to the related scope sheet for definition of the inspections extent.

SITE

Conforms with approved drawings	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA	Checked driveway	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA	Engineer supervision required	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA
Scope of Resource consent granted?	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA	Checked position off relevant boundaries and datum height	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA		<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA
Expert Opinion (Producer statement) required	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> NA	Name of Surveyor				Name of Engineer	<u>John O'Hagan</u>		
				Company				Company			

FOUNDATIONS

PILES

SUBFLOOR

Footing Depth	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Pile size	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Pile/Bearer/Joist Fixings	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Good bearing (NZS 3604)	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Pile layout is to plan	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Notching, Holes, etc	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Reinforcing	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Special piles - point load	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Solid Blocking	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Siting	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Timber Treatment	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Joists	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Sub-floor vents	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Hole depth	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Beams/Bearers	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA

PRE SLAB

Rebate for brick veneer	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA	Sand blinding	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Steel reinforcing	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Ground clearance	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Slab thickenings	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Bar chairs	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Concrete Cover	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Vapour barrier (DPC)	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	DPC penetrations taped	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Driveway s/w control	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Bottom plate fixings	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Minimum Floor Level	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Secondary flow path	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	TPR line	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Wastes and drains - size / fall	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Pipe material	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Plumbing layout	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Test - Water / Air	<input type="radio"/> P	<input type="radio"/> F	<input checked="" type="radio"/> NA
Pipe protection	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Pipes supported	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Visual leak check	<input checked="" type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA

DRAINAGE

Pipe diameter	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Connections/Angles	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Holding water	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Bedding material	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Branch length	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Terminal vent	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA
Gully trap(s)	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	Direction/Fall	<input type="radio"/> P	<input type="radio"/> F	<input type="radio"/> NA	LBP/Registration No:			

Officer Name: Sign: Date: 6/10/08

BC Application number: 080625 Lot 18 DP


Site Address: 132 DELHAM RD TC HURO

Building Project: GARAGE

Check NCS status is currently "To Site Inspection"

Item to be checked	Decision	Record any relevant information	Action required
Contours match application?	Yes/ No		
Datum point identified?	Yes/ No		
Boundaries identified?	Yes/ No	RURAL SITE PGCS -	
Check ground conditions OK?	Yes/ No	LEVEL SITE FOR GARAGE SOFT LOAM ON TOP FIRM AT APPROX 400mm	
Check f/path, kerb & channel, grass berm, note existence/damage.	Yes/ No	GOOD CONDITION	
Vehicle entrance crossing installed (describe condition)	Yes/ No	HARD FILL ONLY.	
Photos taken? (Save & link to NCS)	Yes/ No		
Dogs on property?	Yes/ No		
Is there a requirement for further foundation investigation e.g Engineers design	Yes/ No		Referred to Approvals T/L Yes / No
Record all decisions in accordance with KCDC Policy 007. Circle Yes or No in each case.			

Note: if there is a requirement for further information or some areas which do not appear to comply refer file to Team Leader Consent Approvals for action.

Inspecting Officer: Name: GARIBETH MAC Signature: 

Date Inspected: 24.7.08

Unless further foundation information required, change NCS status to "To Plumbing & Drainage" and place file in P&D shelf area for Approvals. If further information is required, then Status change to "To Senior Building Inspector" and hand to Team Leader Consent Approvals for action.

KCDC Building Consent Authority
Building Consent Documentation Filed



BC No.	080625
Street Address.	Lot 18 - Te Hono Country Estate. Te Hono

Tick indicates document(s) included in this Building Consent

Building Consent Application,	✓
Application checksheet,	✓
Costing schedule,	✓
Plans and specifications,	✓
Invoice and receipt,	
Processing records/checksheets,	
Inspection page printouts	
Building consent and memorandum,	✓
Inspection reports,	✓
Application for CCC,	✓
Code of Compliance Certificate.	✓
Producer statements and supporting documentation,	✓
Peer review documents,	N/A
Fire design documents,	N/A
Requests for further information and other correspondence,	N/A
Amendments,	✓
Supplementary information,	N/A
Energy work certificates,	✓
Notices to Fix.	N/A

This form comprises part of the Building Consent documentation and indicates the contents of the Building Consent File. Refer KCDC Policy 029.

KCDC CODE COMPLIANCE REVIEW CHECK SHEET

If specified supporting documentation has not been provided, what alternative information or verification method has been provided to compensate. (describe):

Compliance Schedule

Is a new or amended compliance schedule required?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
If "Y" Has it been issued? (Refer note below)	<input type="checkbox"/> Y	<input type="checkbox"/> N
If the new/ revised compliance schedule has not been issued, what action has been taken to ensure it will be issued? Outline:		

Note: If the draft/ revised compliance schedule has not been issued, the Code Compliance Certificate cannot be issued. Suspend issuing CCC until this matter is addressed.

Building consent requirements.

Are there any item specified in the building consent or PIM that have not been completed.

Outline: _____

Are there any development impact fees to be paid outstanding? Yes / ☒ No (if yes, CCC cannot be issued)

Approve to issue Code Compliance Certificate if all other outstanding fees are paid. ☒ YES / ☐ NO

Building officer:

Signature: _____

Date: 5/6/09

Name: GARGITHYK

Co-reviewer:

Signature: _____

Date: 4/6/09

Name: Russen Brook

KCDC CODE COMPLIANCE REVIEW CHECK SHEET

Criteria: All building work except for minor works or major projects. Refer BI-WI-024

Address: LOT 18 TE HONO ESTATE. DEHAM RD - TE HONO.	Date: 2/6/09.
	BC No: 080625

application for code compliance certificate (Form 278) completed	<input checked="" type="radio"/> Y	<input type="radio"/> N
--	------------------------------------	-------------------------

Confirm all required inspections have been completed and passed:	Answer: <input checked="" type="radio"/> Yes or No
--	--

If inspections have been missed, what supporting info and method of verification has been provided to compensate for missed inspection. (Describe):

Work in accordance with approved consent and approved amendments	<input checked="" type="radio"/> Yes	<input type="radio"/> No
If no, has NTF been issued:	<input checked="" type="radio"/> N/A	<input type="radio"/> Yes
Have items of non compliance been resolved and NTF uplifted.	<input checked="" type="radio"/> N/A	<input type="radio"/> Yes

Note: If work is not in accordance with consent, (and approved amendments) or NTF matters have not been resolved, suspend application for Code Compliance Certificate

Supporting documentation required in building consent addenda (Accept in accordance with KCDC Policy 002) Form completed during BC Approval process

Tick (✓) indicates yes, N/A indicates considered - but not applicable	Req'd	Supplied	Accept
copy of electrical certificate	✓	✓	✓
copy of gas certificate	✓	✓	✓
an "as-built" drainage plan	✓	✓	✓
plumbing (Form 125) for pressure test and installation piped services	✓	✓	✓
drainage (Form 126) for stormwater installation	✓	✓	✓
drainage (Form 127) for private sewer installation	✓	✓	✓
a Construction Review (PS4) statement for Structural engineering	✓	✓	✓
a Construction Review (PS4) statement for Fire engineering	n/a		
a Construction Review (PS4) statement for Geo-technical engineering	n/a		
Roof cladding warranty TOTAL SLAN	✓	✓	✓
Solar water heating technical specifications	n/a		
wall cladding/texture coating installation applicator warranty	n/a		
a copy of the lift certificate	n/a		
a certificate from the fire alarm installer	n/a		
a certificate from the sprinkler installer	n/a		
a copy of wet-area membrane installers warranty	n/a		
A copy of deck membrane manufacturer's installers warranty/guarantee	n/a		
FPIS (verifier) Fire Systems Certification	n/a		

FOR COUNCIL USE:

DEPARTMENT	TICK FOR REFERRAL	COMMENTS	APPROVING OFFICER/ DATE
Resource Consents (refer PIM Sheet)	✓		
Plumbing and Drainage	✓		25/7/08
Building	✓		28/7/08
Fire Design	?		
Compliance Schedule			
Environmental Health			
Site- Foopath & Entrance Conditions		Ground	
NOTES:			
SEE SITE NOTES			



132 Detham Road
Te Horo.

Building Consent No.	080625
Building Project	Non-Habitable Garage.
Location (Site Address)	Lot 18 - Tetoro County Estate - Te Horo.
Building Category	Circle appropriate category 0 1 2 3

Application workflow checklist		
	Name & Signature	Date
	Note # A signature confirms that the application contains sufficient information to enable compliance with the building code to be assessed	
# Note: Checked, date stamped and initialled by TO/BCO. Select and circle appropriate category above & identify allocation to appropriate technical groups and if required to go to "site inspection" AP-WI-001	Aldrin Abad.	22 JUL 2008 KAPITI COAST DISTRICT COUNCIL
Payment taken and receipted (details entered inside this cover sheet) by CSO CS-WI-008	Adrian.	22-07-08
Data entered and invoiced by CSO CS-WI-008	Yinjun	22-07-08
Pages numbered by CSO CS-WI-008		
BC Application and documentation scanned, checked & status update by CSO CS-WI-009	Mei	23/7/08
BC Application signed over to BC CS-WI-009	Mei	23/7/08
Application reviewed by Technical Officers who sign off at back of this form AP-WI-026 & AP-WI-009	Simon Copp	25/7/08
Once Technical review complete, passed to CS for Plan Production and Invoicing AP-WI-009		28/7/08
CSO checks data entry input, including required inspections CS-WI-012		
BC, plans and other appropriate paperwork produced by CSO CS-WI-012	Mei	2/9/08
BC, Approved plans and appropriate paperwork sent to applicant or agent with receipt by CSO CS-WI-012		
Inspection envelope prepared by CSO with endorsed plans and other appropriate paperwork and filed to cabinet. CS-WI-012		

CONSENT DATA INPUT REQUIREMENTS

REQUIRED INSPECTIONS	32	✓	Lapse and cancellation after 12mths of consent	23		Installation of solid fuel appliance (wood burner) comply and secured
Foundation/Piles						
Block	2	✓	Engineer design specific components	23A		Second hand wood burner certified
Pre-Slab (Plumbing)	3		Foundations to solid bearing of 200mm	25	✓	Contractor to leave site clean and clear
Pre-Slab (Building)	4		NZS3604 as acceptable solution in terms of NZ Building Code	30		To comply with Food Hygiene Regulations 1974
Sub-Floor	6	✓	Not approved as Habitable Room	31		As in CCZ, all fixings need to be stainless steel
Drainage	9	✓	Note and comply with all endorsements on approved plans	33		Approval only given for relocation purposes
Pre-Wrap	10		Names and Registration of plumber and drain-layer required	34		If cladding to have pre-finished colour coating, to be appropriate for coastal conditions
Pre-lining (Building)	11		Concealed soil and TV pipes and gas flues only allowed in ducts or minimum framed	38		Window sashes on upper levels less than 760mm above floor to have stays fixed
Pre-lining (Plumbing)	12		Hot & Cold water pipes tested to 1500kPa	39		Construction of playground to comply with NZS5828
Wet areas - membrane	13		Roof stormwater to be connected to existing	40		Fencing, gates, doors directly leading to swimming pool to comply with Pool Act 1987
Post Lining	14		Copper water pipes not permitted	43		Textured systems should be applied by licensed, trained applicators – supply warranty
Brick Veneer	15		Owner/builder to ensure prop foundation height will allow satisfactory connection	44		Exterior cladding system to be completed and inspected prior to internal lining
Retaining Wall	21		Minimum FFL to comply with NZS3604			
Final (Dwelling)						
Final (Commercial & Multi-resd)						

STANDARD CONSENT CONDITIONS		
37		
72		
80		

NON-STANDARD ADDENDA

FOR OFFICE USE ONLY

FEES		APPLICATION FEE \$.....
Building Fee	\$1,155.00	\$1,409.05
Sewer Connection	\$.....	RECEIPT NO DATE.....
Water Connection	\$.....	(1,384.05) 264717 22-07-08
Vehicle Crossing	\$.....	INVOICE NO DATE.....
Damage Deposit	\$.....	66014 22-07-08
Code Compliance Administration	\$.....	RECEIPT NO DATE.....
Building Research Levy	\$65.00	
Development Levy	\$.....	FEES PAID BY:
DBH Levy	\$128.05	
Compliance Schedule	\$.....	
Digital Storage Fee	\$36.00	BUILDING CONSENT , DATE ISSUED
Certificate of Title Charge	\$25.00	NUMBER
Photocopying	\$.....	BC 080625
SUBTOTAL	\$1,409.05	AUTHORISATION FOR REFUND OF DEPOSIT
Less Fee Paid	\$1,384.05	Deposit held = \$.....
TOTAL	\$25.00	Cost to Repair Damage Caused During Construction = \$.....
GST INCLUDED	\$.....	Total Balance to be Refunded
		Authority Number:
		Authorised: DATE:

GST 51-860-608

Received with thanks by 9/01
KAPII COAST DISTRICT COUNCIL

22-07-08 13:37 Receipt no. 264717

COPY *COPY* *COPY*

DR BC080625

TOTAL SPAN WELLINGTO

1,384.05-

Total Span Wellington/Horowhenua::PO Bo

CQ B

For Peach 14 Trust

1,384.05



Building consent 080625

Section 51, Building Act 2004

The building

Street address of building: 132 Derham Road, Te Horo

Legal description of land where building is located: Lot 18 Te Horo Country Estate

Valuation number:

Building name:

Location of building within site/block number:

Level/unit number:

The owner

Name of owner: Stephanie & Glen Peach / Peach Trust

Contact person:

Mailing address: PO Box 7072, Wellington South, Wellington 6242

Street address/registered office:

Phone number: Landline: 04 801 2362

Mobile: 0274 171 171

Daytime:

After hours: 04 389 6422

Facsimile number:

Email address:

Website:

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

Full Name: Total Span Wellington/Horowhenua

Mailing Address: PO Box 376, Lindale Tourist Complex, Paraparaumu 5032

Phones: 027 252 6232; 04 297 0033

Fax: 04 297 0031

Building work

The following building work is authorised by this building consent:

Shed

Rural Shed

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

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

The building must be altered, removed, or demolished on or before the end of 50 years from the date of issue of this consent (being the specified intended life of the building); and

Compliance schedule

A compliance schedule is not required for the building.

Attachments

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

A handwritten signature in dark ink, appearing to be 'K. G.', written over a horizontal line.

Signature

The words 'Customer Service' written in a large, cursive, handwritten style in dark ink, positioned above a horizontal line.

Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 28/07/08

2 September 2008

Stephanie & Glen Peach / Peach Trust
PO Box 7072
Wellington South
Wellington 6242

Dear Sir/Madam

Approval of Building Consent: 080625

Description: Shed
Location: 132 Derham Road, Te Horo
Legal Description: Lot 18 Te Horo Country Estate

I am pleased to inform you that the above building consent application has been approved. The building consent documents have been issued and are enclosed.

Before starting any work please read ALL the building consent documents carefully and in full so that you as the owner understand the conditions under which the consent has been issued.

As the owner you are also responsible for the following:

- ensuring that building work starts within 12 months of the approval of the building consent and that work progresses at a reasonable pace.
- ensuring that all required inspections are completed and that a Code Compliance Certificate is obtained once the work has been completed – please be aware that before a Code Compliance Certificate is issued, the building work must comply with the Building Act 2004 and the Building Code as at the date of final inspection.
- that no work with noisy equipment is to be carried out before 7.30 a.m. or after 6 p.m. Monday to Saturday. During the week there may be workers on site from 6.30 a.m. quietly preparing for work. Work with noisy equipment is not permitted on Sundays and public holidays.
- ensuring that no damage occurs to public property, for example footpaths or retaining structures. Should damage occur you will be required to pay for any repairs.
- ensuring that if you wish to make any changes to the approved building consent, then an amendment to the building consent will need to be lodged with us.

If you have any questions regarding your building consent or your responsibilities, please contact Kapiti Coast District Council on (04) 9045 617.

Addenda to Application

Application

Total Span Wellington/Horowhenua PO Box 376 Lindale Tourist Complex Paraparaumu 5032	No.	080625
---	-----	--------

Project

Description	Other outbuildings eg shed, workshop, sleepout Being Stage 1 of an intended 1 Stages Shed
Intended Life	Specified as 50 years
Intended Use	Rural Shed
Estimated Value	\$65,000
Location	132 Derham Road, Te Horo
Legal Description	Lot 18 Te Horo Country Estate
Valuation No.	

Builder: As Designer

Designer: Totalspan Wellington/Horowhenua PO Box 376 Paraparaumu :
294 0033 / 0274 430 649 Fax 04 297 0031

Contractor: (Struc Eng) Fredrick R Smith PO Box 11350 Sockburn,
Christchurch : 03 348 1521 / 021 997 139 Fax 03 348 15

General Requirements

- a) The District Inspector is to be given 24 hours' notice before carrying out the following inspections:
 1. Foundations
 2. Pre-slab
 3. Final Inspection
- b) To arrange for any of the above required inspections by Building Control Team, please contact the Call Centre on (04) 296 4700 between the hours of 7.30am and 5.30pm.

1. LAPSE AND CANCELLATION OF BUILDING CONSENT. A building consent shall lapse and be of no effect if the building work concerned has not been commenced within 12 calendar months after the date of issue. Or within such further period as the territorial authority allows.
2. The inspection of all specific design components of the building is the responsibility of the Design Engineer who is also required to supply a written report to Council.
3. Not approved as a habitable room.
4. Note and comply with endorsements on approved plans.
5. Contractor to leave site clear of all demolition materials and in a tidy state.

I have read the foregoing addenda to application, and the Owner/Builder/Authorised Person hereby agrees to comply with them.

OWNER/BUILDER/
AUTHORISED PERSON

Date: _____

Inspection Advice



1. **Engineer - Civil/Structural/Fire/Geotechnical:** When projects contains elements specific design by an engineer then the owner/builder is required to ensure that all engineering containing specifically designed work to be inspected and to provide KCDC with written evidence of the inspections including a construction statement (PS4) those inspections are carried out. A construction statement (PS4) is required to be supplied to Council.
2. **Site:** The owner/builder is responsible for clearly defining the site boundary lines and pegs. This may require a survey. Note: established fences are not necessarily on the site boundary.
3. **Foundation:** When all formwork has been completed, footings have been excavated and reinforcement is in place. Piles - When all holes are excavated prior to installation.
4. **Block:** When all masonry block work including block foundations for slab floors is completed, reinforcing in place and washout openings in place.
5. **Pre-slab plumbing (concrete slab):** When all plumbing and drainage pipes have been installed prior to backfilling.
6. **Pre-slab building (concrete slab):** When DPM has been placed with all laps and penetrations sealed, reinforcing in place and in position with chairs as appropriate.
7. **Sub-floor (timber suspended):** When all sub-floor connections, joists and required blocking, and any suspended plumbing pipe work have been completed, but before any flooring or base boards have been fitted. Relocated dwellings require a sub-floor inspection prior to the base boards being fitted.
8. **Drainage:** When all drainage works is completed and is under test, before backfilling occurs. As laid drainage plan is required at time of inspection.
9. **Pre-wrap:** When all roof and wall framing is complete, including any exterior sheet bracing, but before building wrap has been installed.
10. **Pre-clad:** When building wrap and window and door flexible flashing tape has been installed, cavity battens (cavity systems), cavity closers and all flashing systems are in place, but before joinery has been installed. Pre-stucco - when all reinforcing and flashings are being installed.
11. **Weathertightness:** When exterior cladding has been installed, flashings in place, air-seals fitted to openings, but before any coating system has been applied.
12. **Pre-line (building):** When the exterior of the building is weather tight, all structural components (including bracing) have been completed and wall insulation is in place.
13. **Pre-line (plumbing):** When all internal plumbing is complete and plumbing pipe work is under test pressure.
14. **Wet area membranes, decks, roof, and shower area:** Pre application of wet area membrane, when all outlets and flashings have been installed, ready for membrane installation. Post application of wet area membrane.
15. **Post-line:** When all interior linings have been installed, but before skirting, Scotia or plastering stopping. Installation details of screws check of wall bracing element.
16. **Brick veneer:** When veneer is at half-height and all flashings are in place.
17. **Retaining wall:** Pre application of waterproof membrane system. Post application of waterproof membrane system. Protection installed for membrane system and installation of perforated drainage system before back filling.
18. **Final:** Final inspections are carried out at completion of project and may include entire project, plumbing, drainage, stormwater. The Code Compliance Certificate is issued if the building work complies with the approved building consent.
19. **Final (multi-unit & commercial):** As in 17, but all fire protection, fire systems, alarms and emergency lighting, if applicable, must be completed, operational and certified as necessary.

Building Consent Number : 080625

Applicant Name :

Project :

Location :

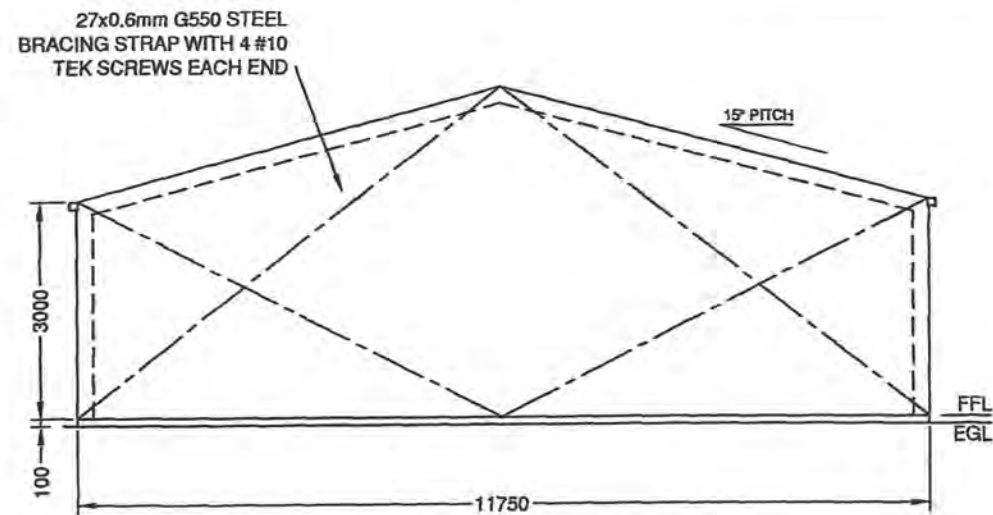
Legal Description :

Please note the list below, which identifies the inspections required for this project.

To ensure that a Code Compliance Certificate can be obtained at completion of your building project, these inspections must be carried out.

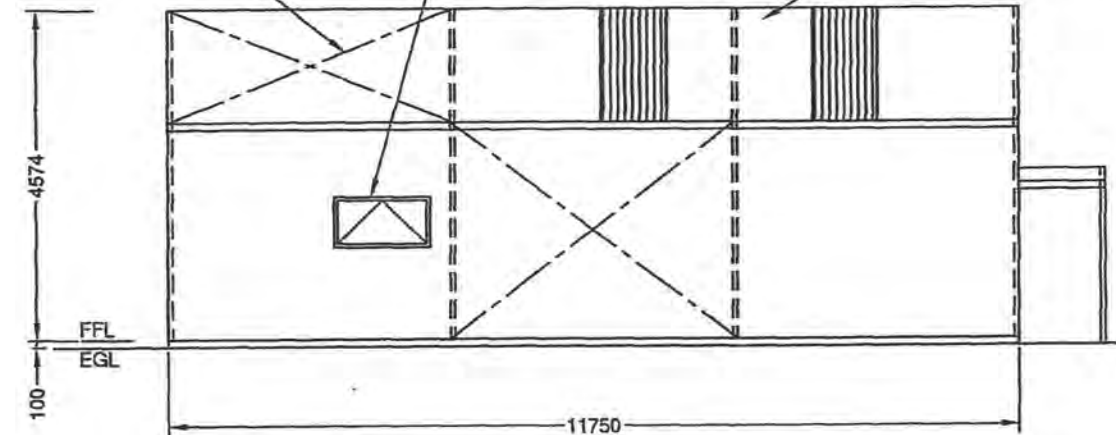
It is your responsibility to advise Council, giving 24 hours notice, when your project has reached the stage identified on the adjacent page to enable the inspection to be scheduled. This can be arranged by contacting Council on 04-2964-700 between the hours of 7.30am and 5.30pm Monday- Friday inclusive. Close off for booking inspections is 4.30pm on the day prior to the requested inspection.

Inspection	Required	Inspecting Officer	Date Inspected
Engineer	No		
Site/Pre Commencement	No		
Foundation/Piles	Yes		
Block	No		
Pre-slab (plumbing)	No		
Pre-slab (building)	Yes		
Sub-floor	No		
Drainage	No		
Pre-wrap	No		
Pre-clad	No		
Weathertightness	No		
Pre-lining (building)	No		
Pre-lining (plumbing)	No		
Wet areas	No		
Post-lining	No		
Brick veneer	No		
Retaining wall	No		
Final	Yes		
Final (Commercial)	No		

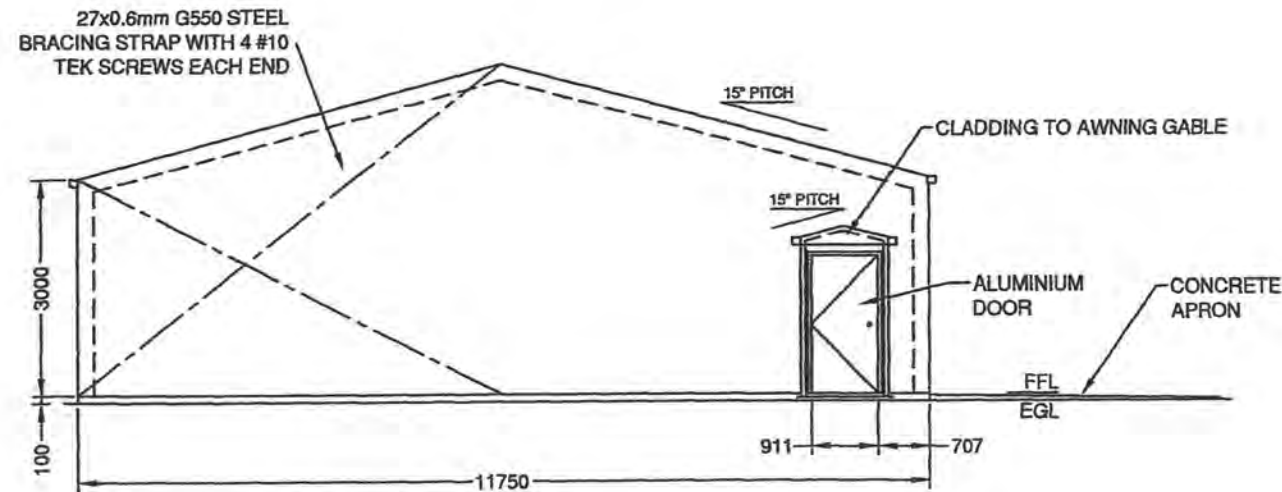


NORTHEAST ELEVATION
SCALE: 1:100

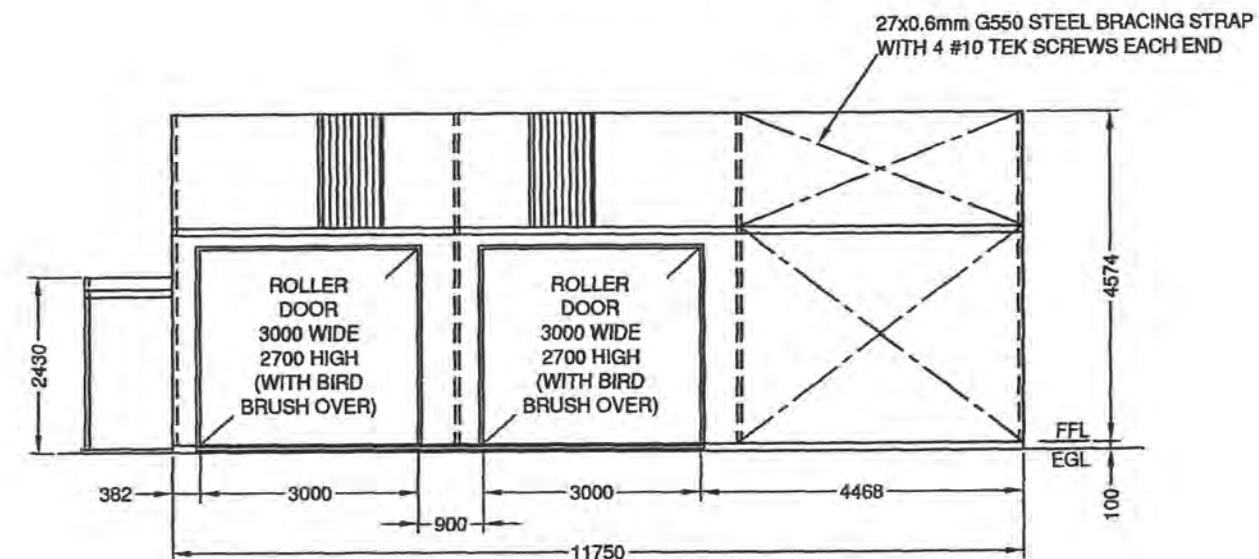
27x0.6mm G550 STEEL BRACING STRAP
WITH 4 #10 TEK SCREWS EACH END



NORTHWEST ELEVATION



SOUTHWEST ELEVATION
SCALE: 1:100



SOUTHEAST ELEVATION
SCALE: 1:100

NOTES:

Construction to comply with NZS4203:1992,
AS/NZS4600:1996, NZS3101:1995 and the New Zealand Building Cods.

This specification is to be read in conjunction with the attached TOTALSPAN
Specifications and drawings for TS500-NZL Series and Producer Statement by
Frederick R. Smith, Registered Consulting Engineer.

The design has been checked in accordance with B1/VM1, B1/VM4 of the approved
documents issued by the Building Industry Authority, and NZS3101 and
AS/NZS 4600. The work is described on the drawings prepared by Frederick R. Smith.
Durability requirements for wall cladding are detailed in Producer Statement - Durability.

These drawings must not be reproduced without the express
permission of Versatile Buildings Limited.

BUILDING 5m MIN FROM
BOUNDARIES - HEIGHT
CONTROL PLANES NOT
APPLICABLE

BUILDING DATA

LENGTH	11.750	m	SPAN	11.750	m	AREA	138.06	m ²				
PORTAL HEIGHT	2.4m	<input type="checkbox"/>	2.7m	<input type="checkbox"/>	3.0m	<input checked="" type="checkbox"/>	3.6m	<input type="checkbox"/>	4.2m	<input type="checkbox"/>	4.8m	<input type="checkbox"/>
BAY SPACING	3m	<input type="checkbox"/>	3.5m	<input type="checkbox"/>	4m	<input checked="" type="checkbox"/>						
CLADDING	Zincalume	<input type="checkbox"/>	Colorsteel	<input checked="" type="checkbox"/>	Other							
WIND ZONE	Med.	<input type="checkbox"/>	High	<input type="checkbox"/>	V.High	<input checked="" type="checkbox"/>						
FOUNDATION	Slab	<input checked="" type="checkbox"/>	Pile	<input type="checkbox"/>								

Drawings Prepared By:

TOTALSPAN WELLINGTON

LINDALE TOURIST COMPLEX Ph: (04) 297 0033
PO BOX 376 Fax: (04) 297 0031
PARAPARAUMU Mobile: (027) 443 0649
e-mail: wellington@totalspan.co.nz

Proposed Building For:

PEACH 14 TRUST
P.O. BOX 7072
WELLINGTON SOUTH

Site Address:

LOT 18
TE HORO
COUNTRY ESTATE

11.750m SPAN
S50 (VERY HIGH)
BASIC WIND SPEED
V = 50m/s T.C.2

Date Drawn:

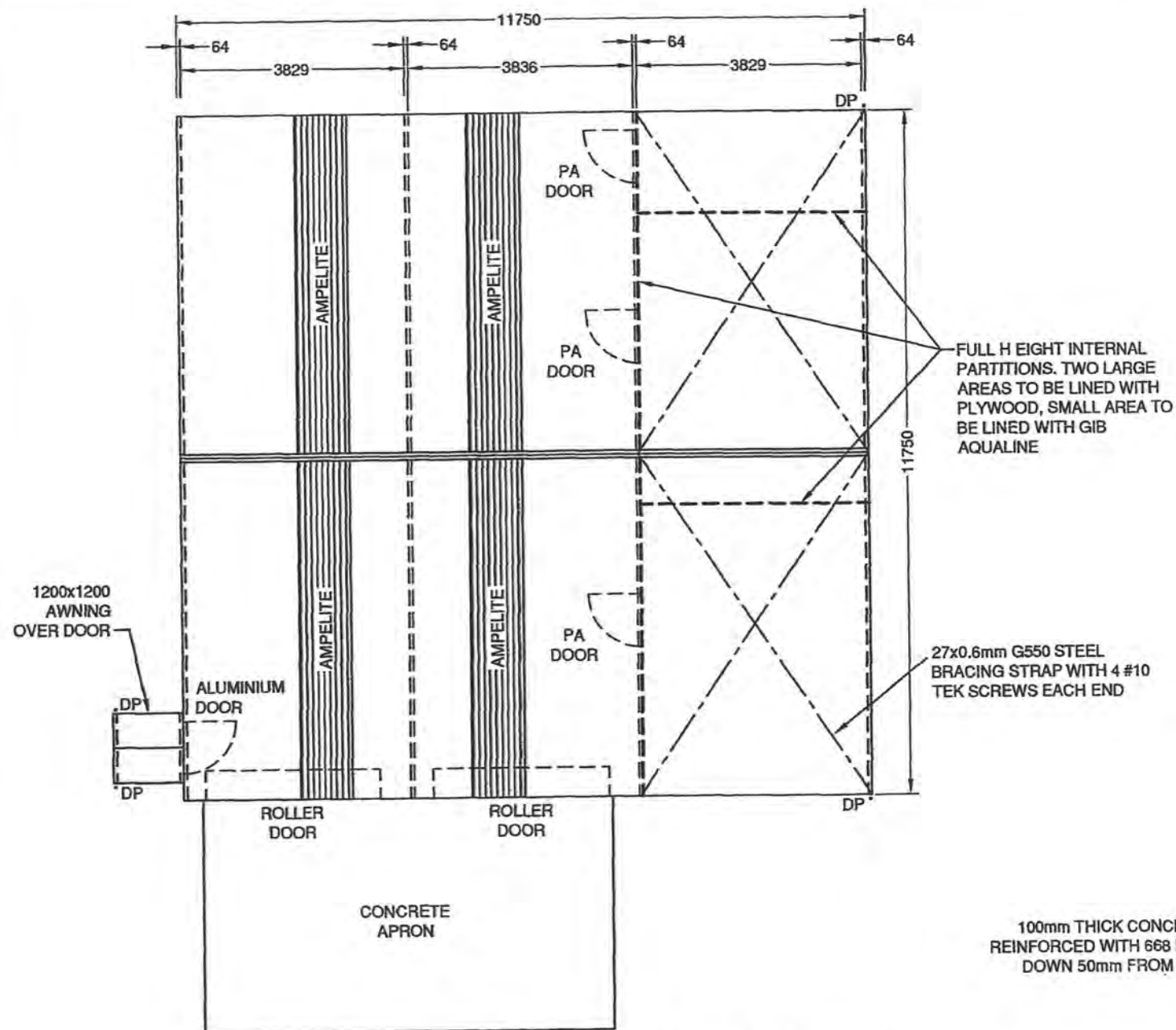
25-Jun-08

Order #:

806362

Revision 0

TOTALSPAN
STEEL SHEDS & BUILDINGS



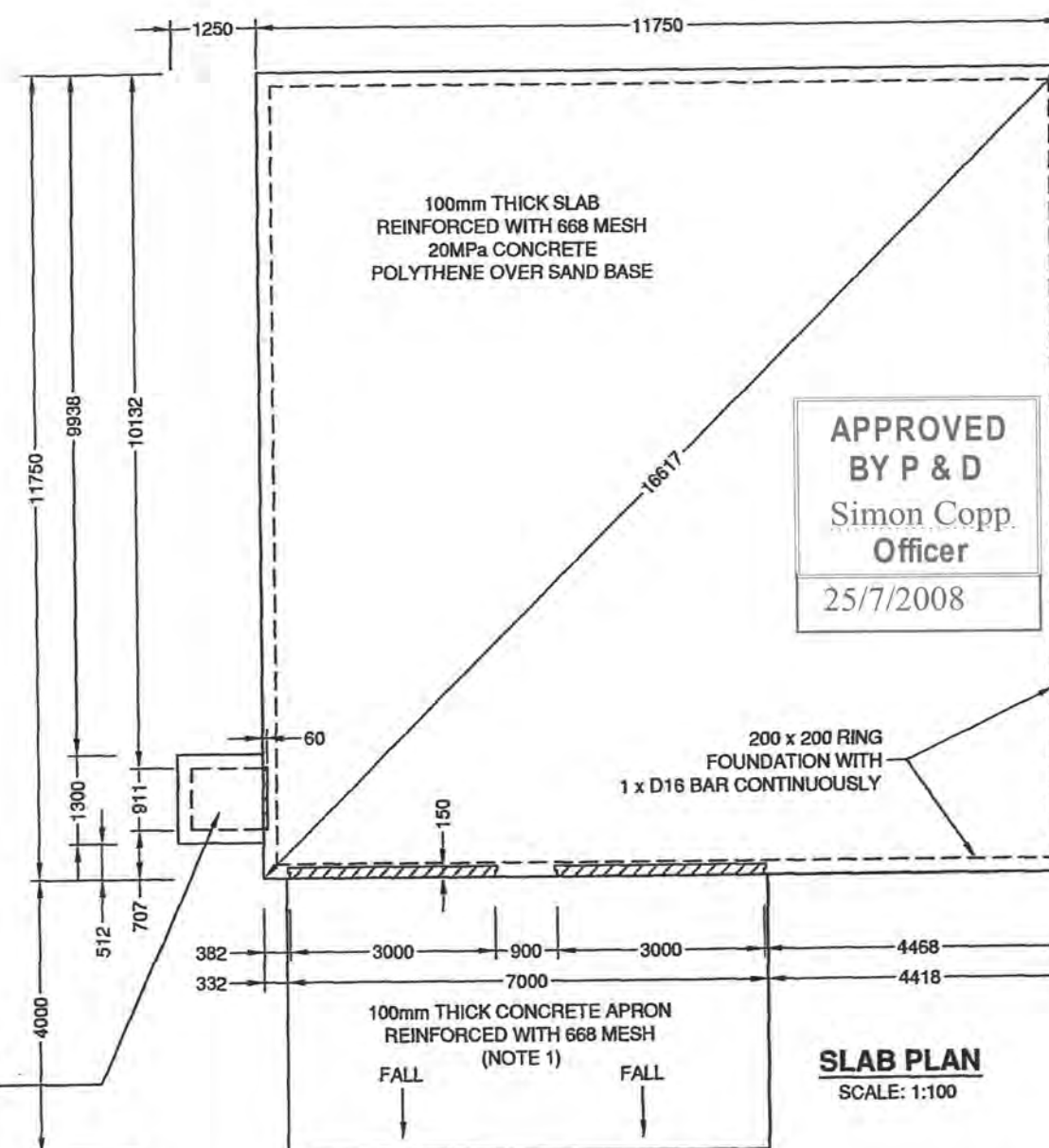
ROOF PLAN & PORTAL LAYOUT
SCALE: 1:100

PORTAL FRAME LOCATIONS

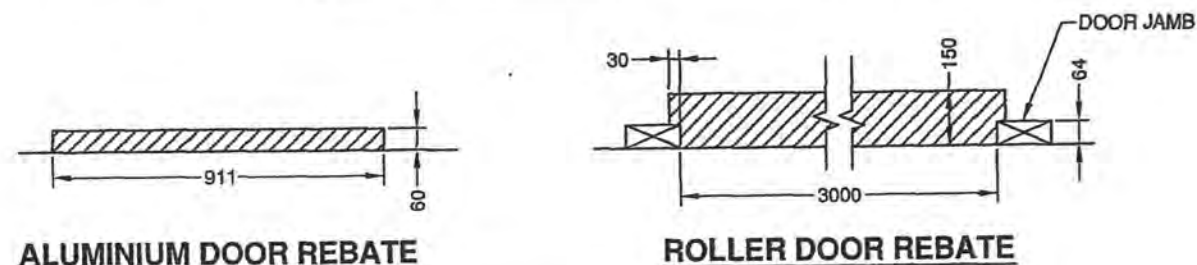
Portal No	Portal Leg mm	Space mm	Running Total	
			Near Side mm	Far Side mm
1	64	0	0	64
2	64	3829	3893	3957
3	64	3836	7793	7857
4	64	3829	11686	11750

NOTES:

1. CONCRETE APRON TO BE SET DOWN 25mm FROM MAIN SLAB, WITH 50mm FALL IN DIRECTION INDICATED.



APPROVED
BY P & D
Simon Copp
Officer
25/7/2008



ALUMINIUM DOOR REBATE

ROLLER DOOR REBATE

ALL DOOR REBATES 15-20mm DEEP

SLAB REBATE DETAILS
SCALE: 1:20

TOTALSPAN
STEEL SHEDS & BUILDINGS

Drawings Prepared By:

TOTALSPAN WELLINGTON
LINDALE TOURIST COMPLEX Ph: (04) 297 0033
PO BOX 376 Fax: (04) 297 0031
PARAPARAUMU Mobile: (027) 443 0649
e-mail: wellington@totalspan.co.nz

Proposed Building For:

PEACH 14 TRUST
P.O. BOX 7072
WELLINGTON SOUTH

Site Address:

LOT 18
TE HORO
COUNTRY ESTATE

11.750m SPAN
S50 (VERY HIGH)
BASIC WIND SPEED
V = 50m/s T.C.2

Date Drawn:

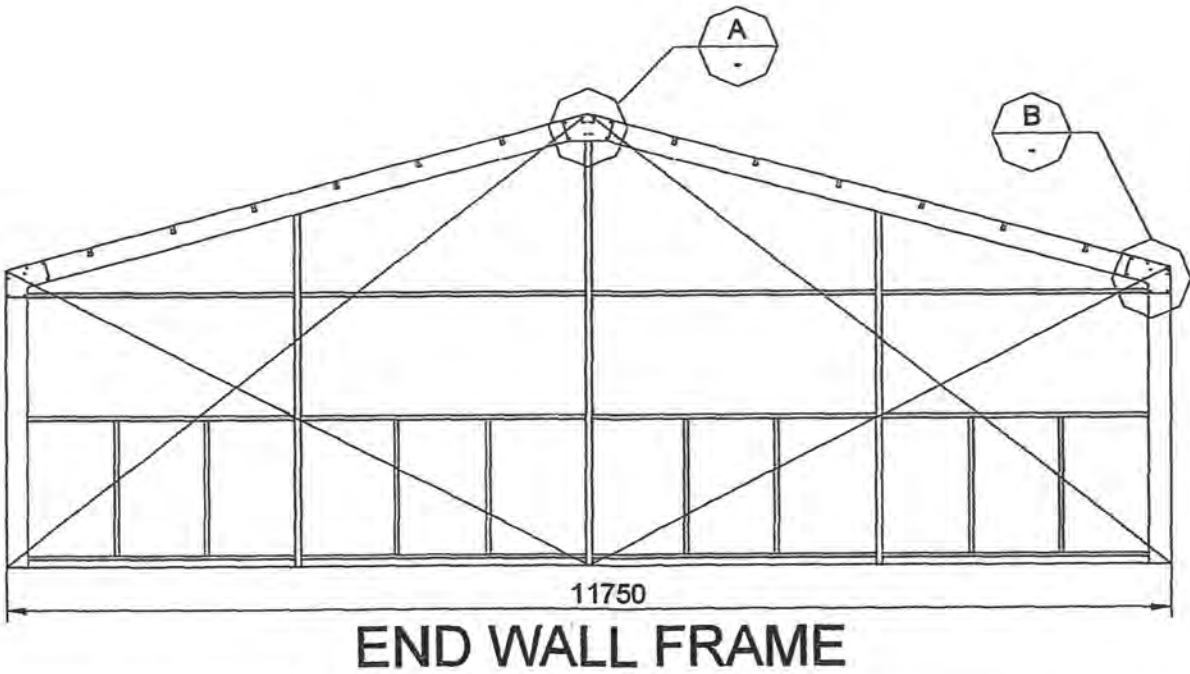
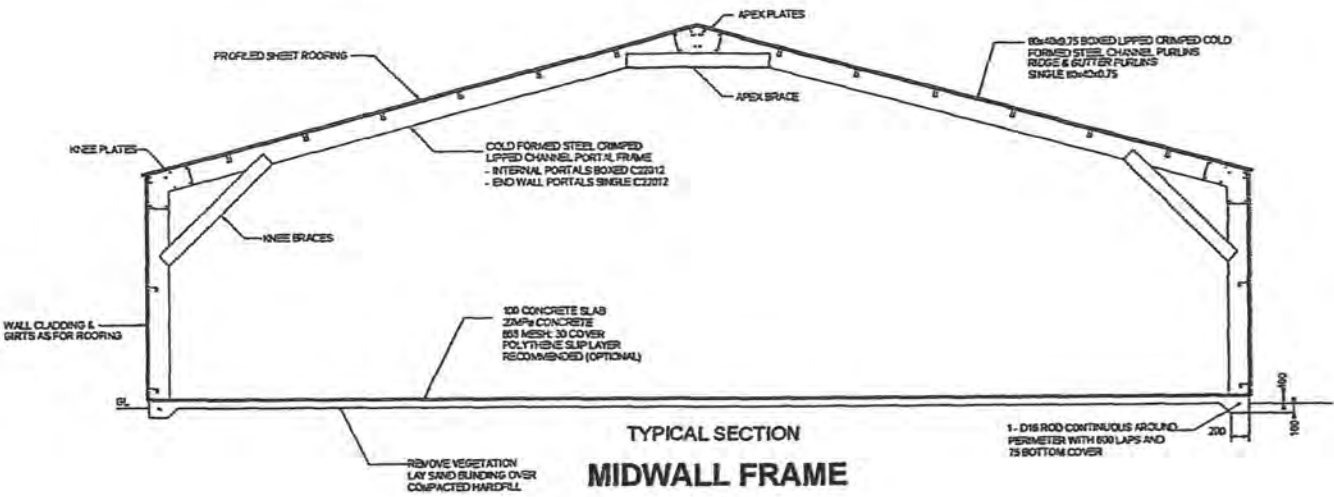
25-Jun-08

Order #:

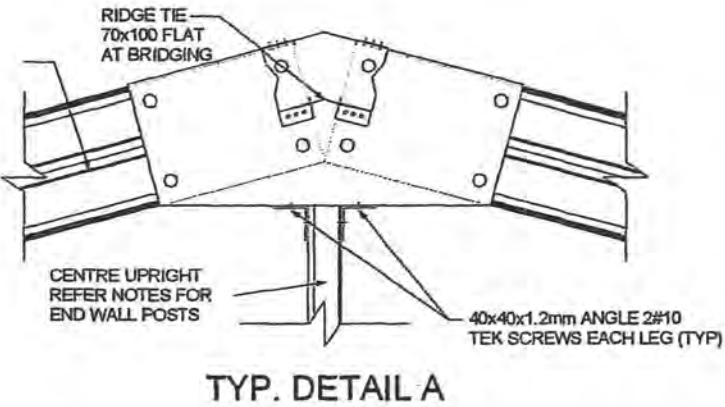
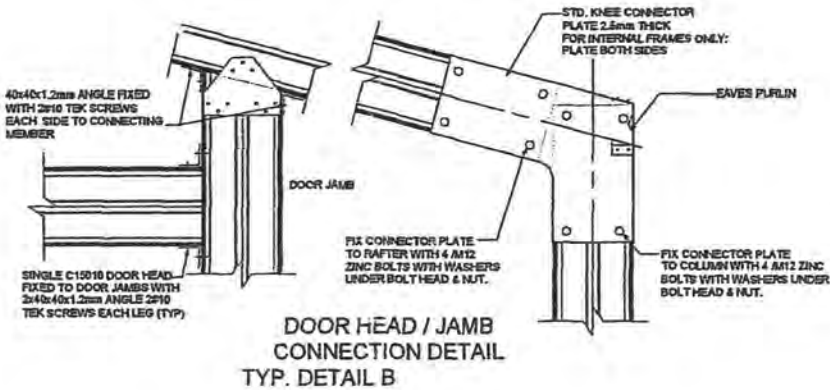
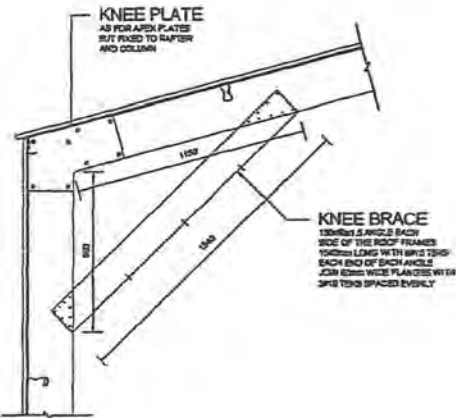
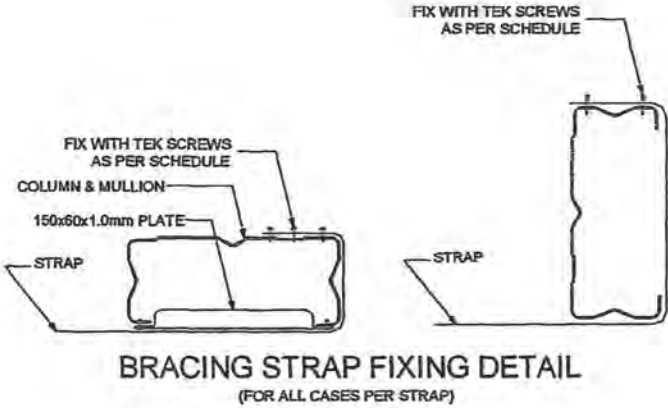
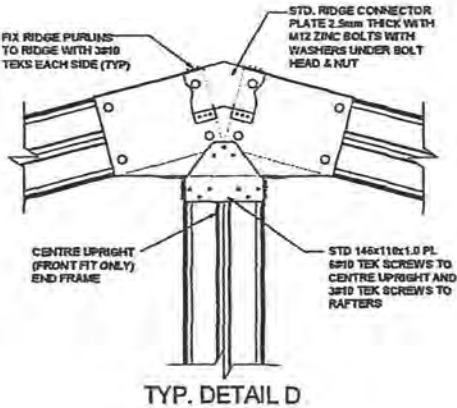
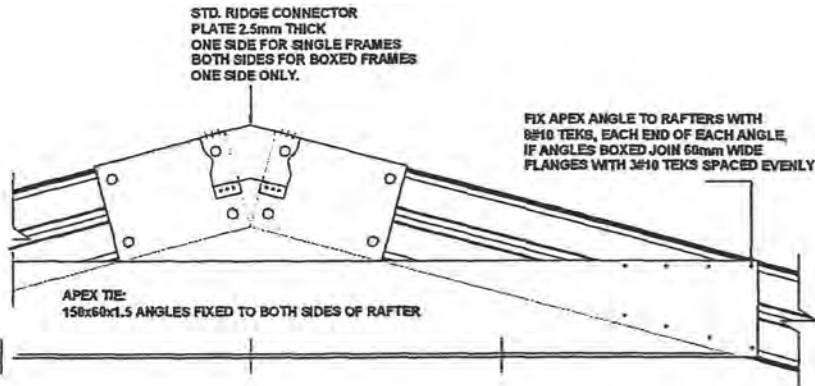
806362

Apex Height (mm): 4575
Wall Height (mm): 3000

Girts Centre Lines mm (above floor level):					
Girts Rows:	1	2	3	4	5
	15				-



FREDERICK R. SMITH chartered consulting engineer	buildings erected in accordance with these drawings will comply with the New Zealand Building Code.	TOTALSPAN. A Division of VERSATILE BUILDINGS LTD I. HORNBY	Drawing Title: SECTION - END WALL	For: Stephanie & Glenn Peach Lot 18 Te Horo Country Estate
	F R Smith BE (civil) MIPENZ MACENZ MIEAust CPEng RPEQ (8225)			



FREDERICK R. SMITH
chartered consulting engineer

any buildings erected in accordance with these
drawings will comply with the New Zealand Building Code.

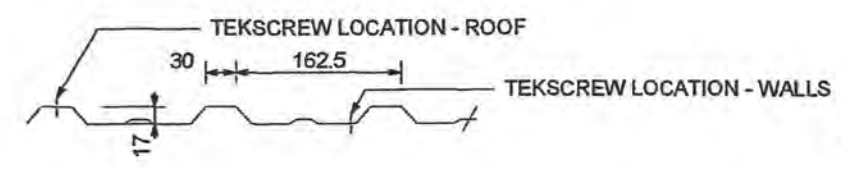
F R Smith
BE (civil) MIPENZ MACENZ MIEAust
CPEng RPEQ (6226)

TOTALSPAN

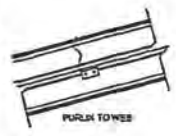
A Division of VERSATILE BUILDINGS LTD
1, HORNBY

Drawing Title:
BUILDING DETAILS

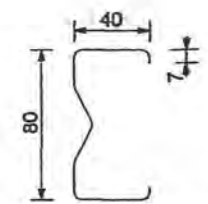
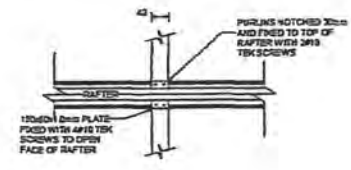
For: Stephanie & Glenn Peach
Lot 18
Te Horo
Country Estate



SHEETING PROFILE 0.35 T.C.T.

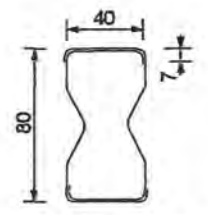


TYPICAL PURLIN TO RAFTER DETAILS



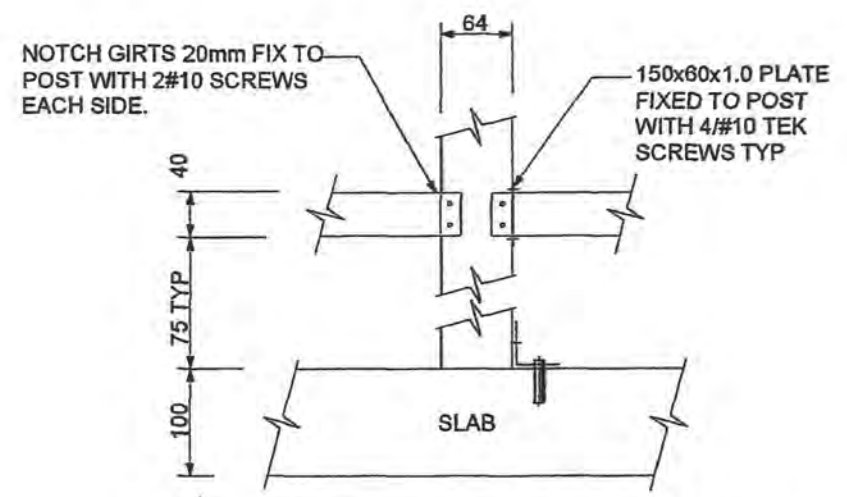
TYPICAL CRIMPED LIPPED CHANNEL SECTION (EX 0.75 BMT)

ALL PURLINS AND GIRTS SINGLE UNLESS NOTED TO BE BOXED.



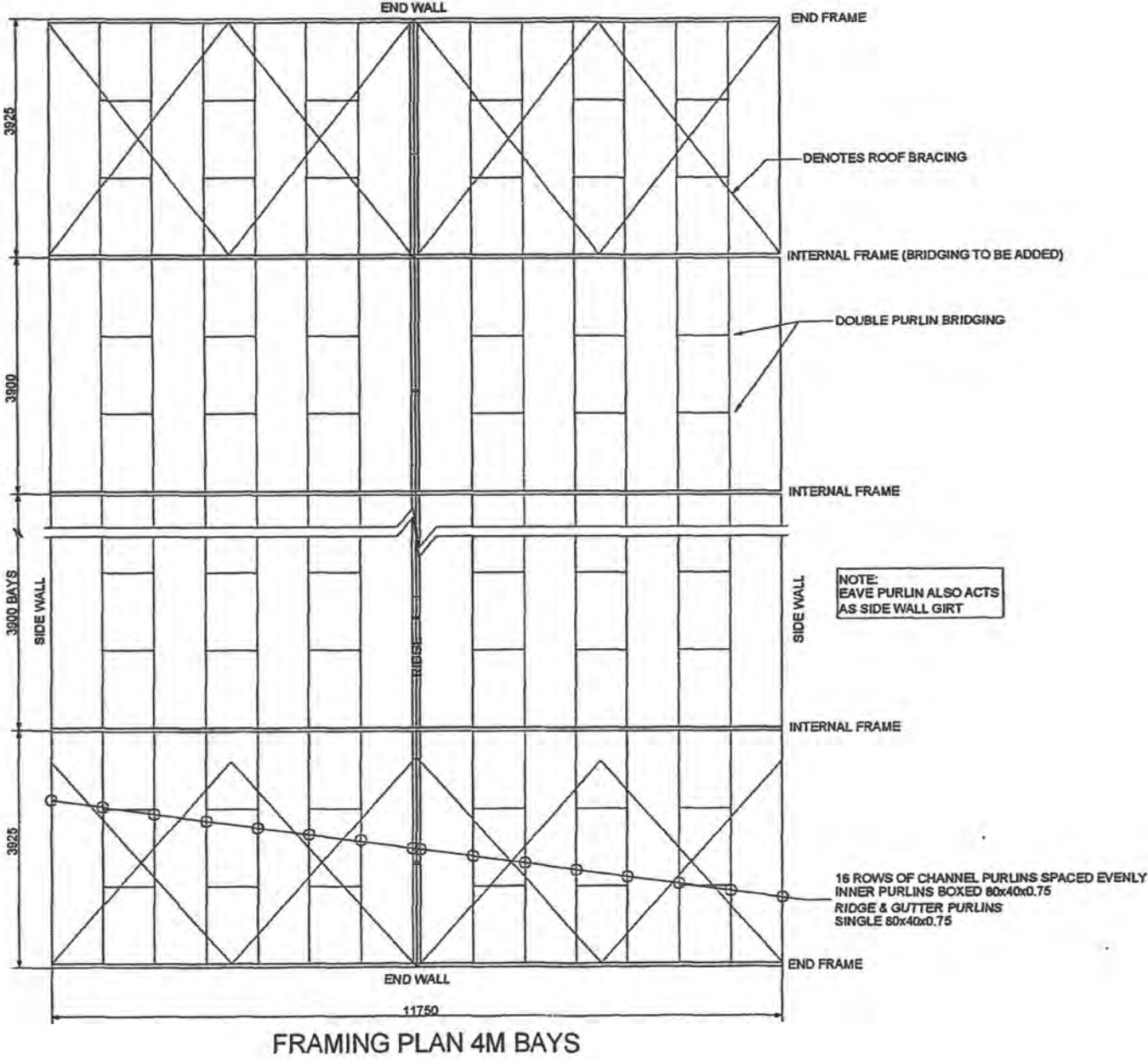
TYPICAL BOXED CRIMPED LIPPED CHANNEL SECTION (EX 0.75 BMT)

ALL PURLINS AND GIRTS SINGLE UNLESS NOTED TO BE BOXED.

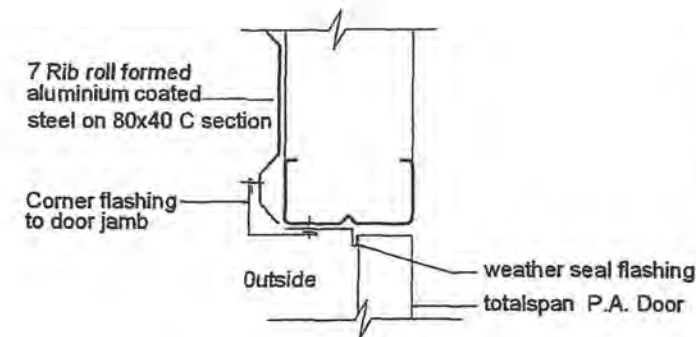


TYP. GIRT TO POST DETAIL

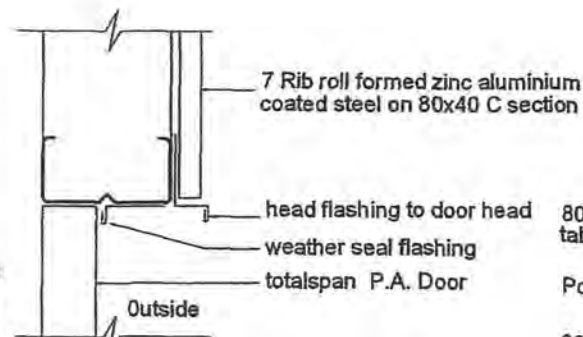
<p>FREDERICK R SMITH</p> <p>chartered consulting engineer</p>	<p>Design of buildings erected in accordance with these drawings will comply with the New Zealand Building Code.</p> <p><i>[Signature]</i></p> <p>F R Smith BE (civil) MIPENZ MACENZ MIEAust CPEng RPEQ (6225)</p>	<p>TOTALSPAN</p> <p>A Division of VERSATILE BUILDINGS LTD</p> <p>1, HORNBY</p>	<p>Drawing Title:</p> <p>BUILDING DETAILS</p>	<p>For: Stephanie & Glenn Peach</p> <p>Lot 18</p> <p>Te Horo</p> <p>Country Estate</p>
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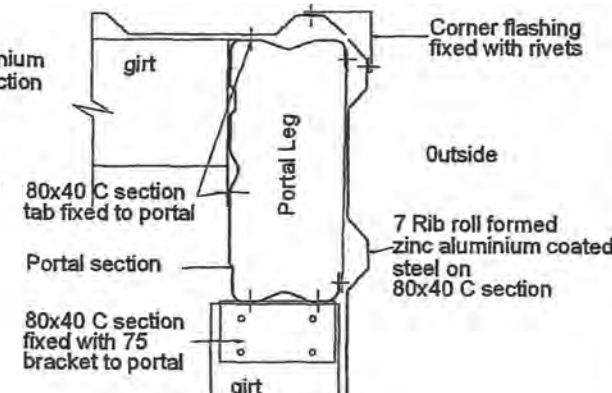
<p>FREDERICK R SMITH chartered consulting engineer</p>	<p>Designing buildings erected in accordance with these drawings will comply with the New Zealand Building Code.</p> <p><i>[Signature]</i></p> <p>F R Smith BE (civl) MIPENZ MACENZ MIEAust CPEng RPEQ (8225)</p>	<p>TOTALSPAN A Division of VERSATILE BUILDINGS LTD 1, HORNBY</p>	<p>Drawing Title: ROOF PLANS</p>	<p>For: Stephanie & Glenn Peach Lot 18 Te Horo Country Estate</p>
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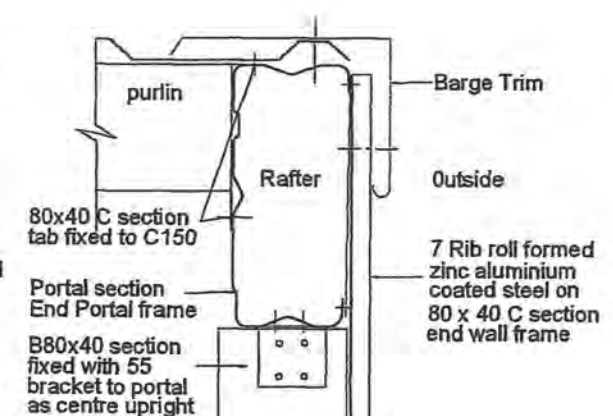
P.A. Door Jamb Detail



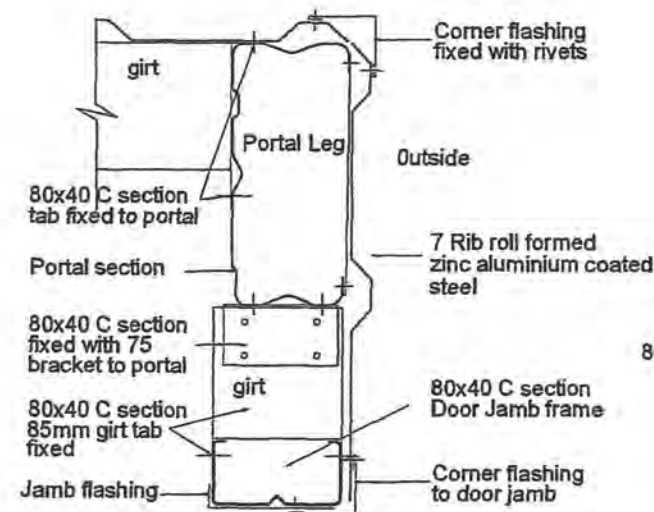
P.A. Door head Detail



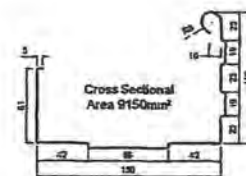
External corner



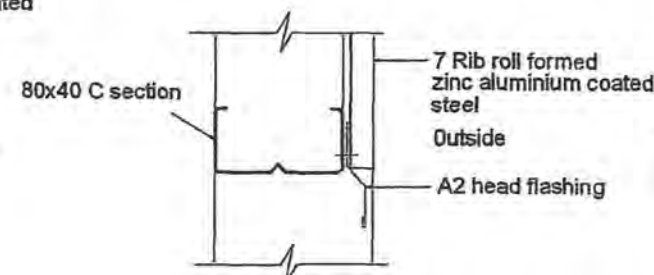
Barge Detail



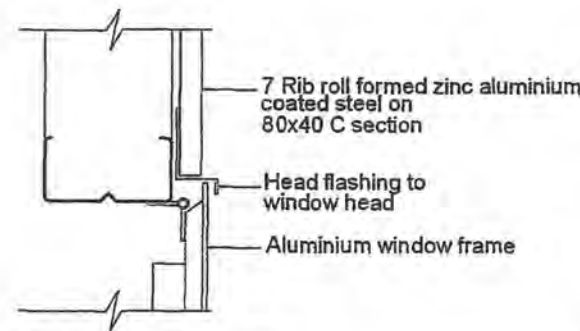
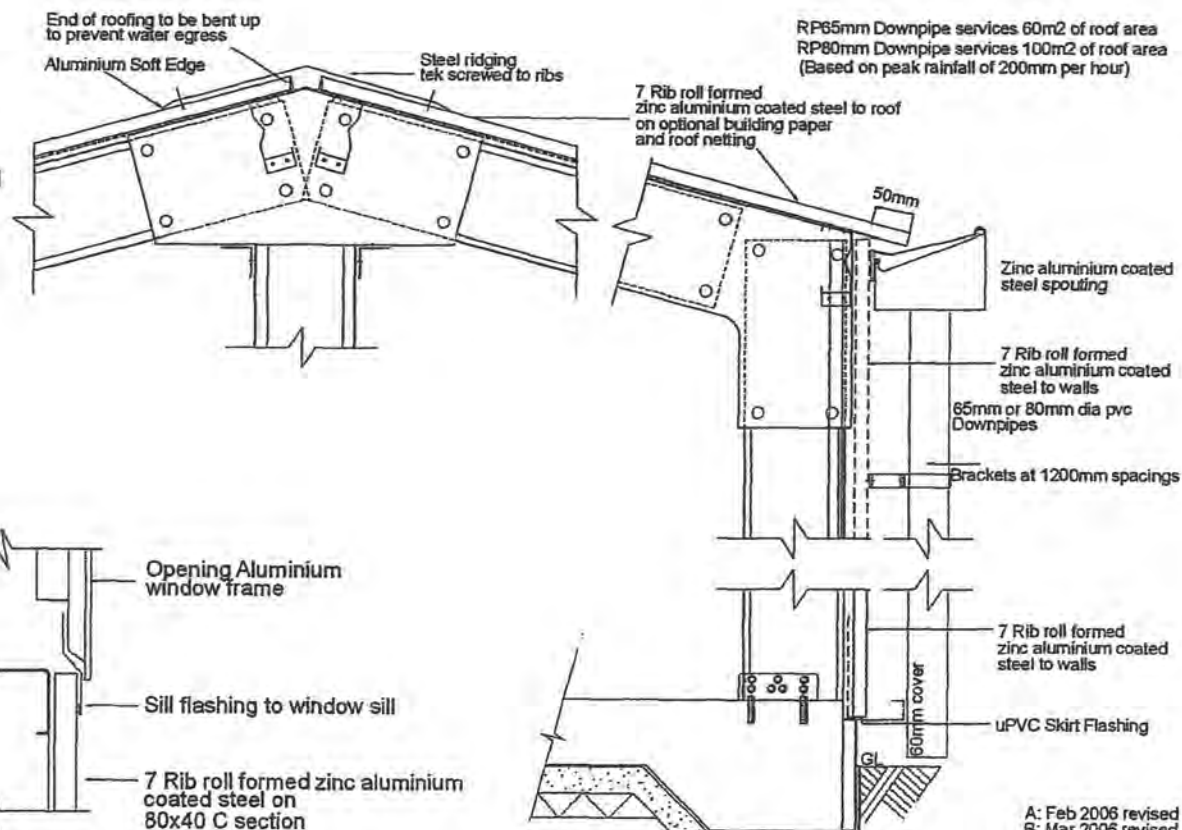
Roller Door Jamb Detail



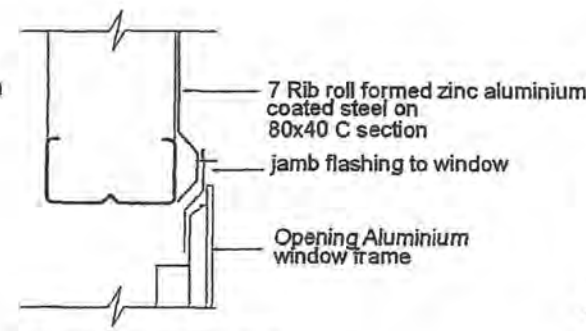
Gutter Profile



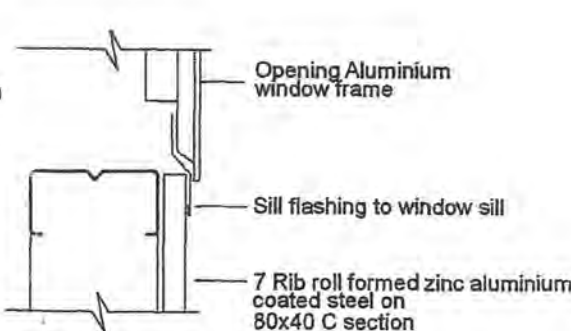
Roller Door head Detail



Window head Detail



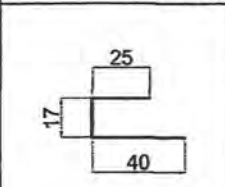
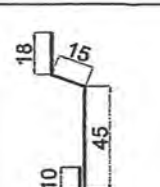
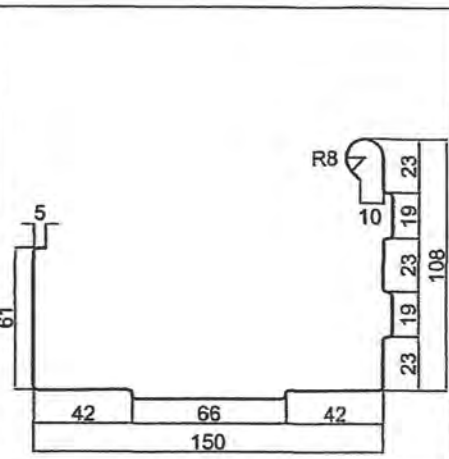
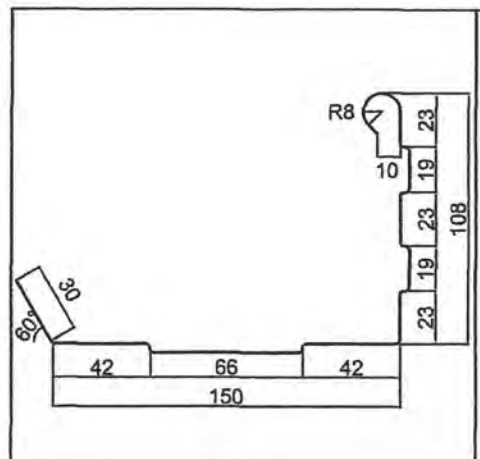
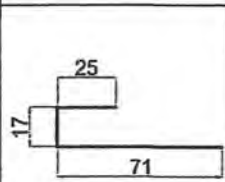
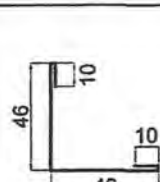
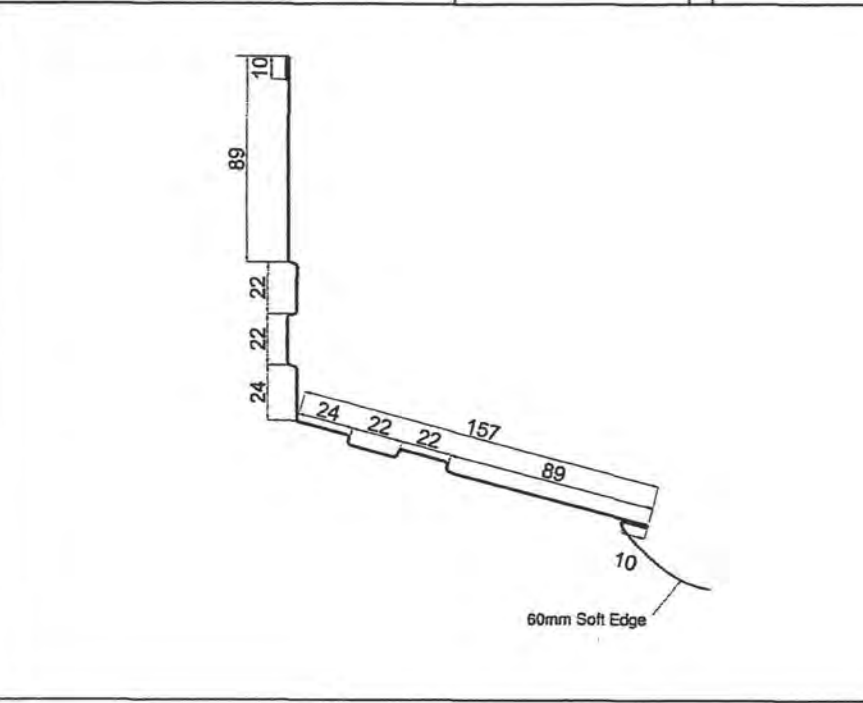
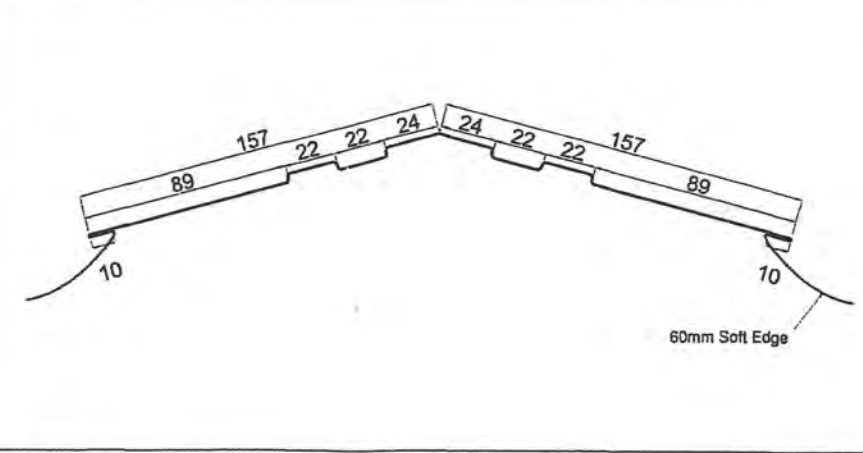
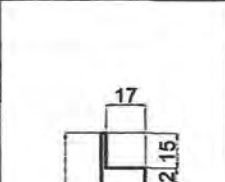
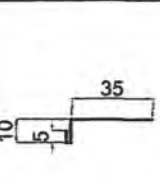

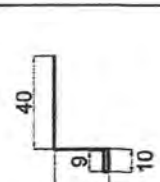
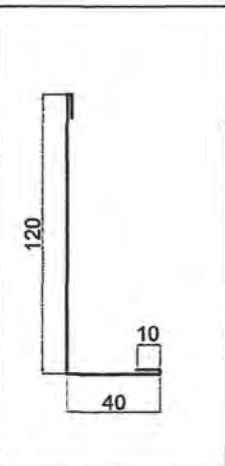
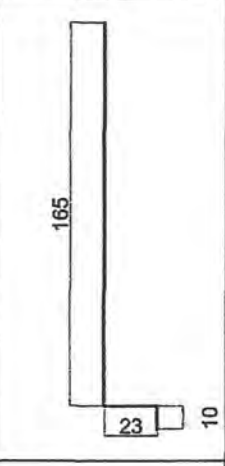
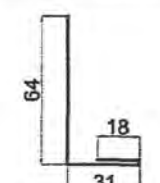

Window Jamb Detail



Window Sill Detail

A: Feb 2006 revised
B: Mar 2006 revised
C: Apr 2006 revised
D: Aug 2006 revised

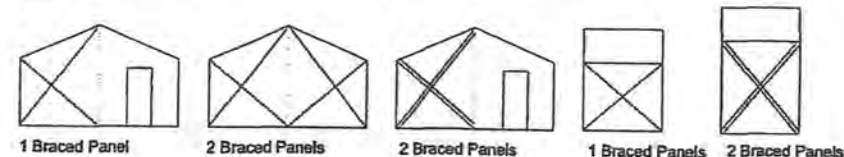
<p>FREDERICK R. SMITH chartered consulting engineer</p>	<p>These buildings erected in accordance with these drawings will comply with the New Zealand Building Code.</p> <p><i>[Signature]</i></p> <p>F R Smith BE (civil) MIPENZ MACENZ MIEAust CPEng RPEQ (6225)</p>	<p>TOTALSPAN A Division of VERSATILE BUILDINGS LTD 1, HORNBY</p>	<p>Drawing Title: Flashing Details</p>
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UTILITY BUILDINGS ONLY							
	U1 Front Barge Flashing PA Door Jamb Flashing		A2 Roller Door Head Flashing Window Sill Flashing Window Jamb Flashing				
	U2/U3 PA Door Frame		B3a Building Corner Flashing (up to 12m span buildings) Roller Door Jamb Flashing PA Door Jamb Flashing (up to 12m span buildings) Awning Flashing				
	U4 PA Door Frame		B12 PA Door Weather Seal Flashing				
	U5 PA Door Frame		C2 Window Head Flashing PA Door Head Flashing				
			B13 Roller Door Inner Jamb Flashing				
			C3 Firewall Building Corner Flashing Building Corner Flashing (15m span buildings and over plus Utility buildings) Utility Side Barge Flashing				

DRAWN: PB	DATE: 13.6.07	REVISION		TOTALSPAN BUILDINGS A Division of VERSATILE BUILDINGS LTD 112 Waterloo Road, Hornby P.O.Box 11-013, Christchurch PH: (09) 261 2306 FAX: (09) 262 1535	STEEL FRAMED BUILDINGS	FLASHING MEASUREMENT DETAILS	JDB No.
CHECKED: AY	SCALE: 1:3	DESCRIPTION	DATE				DRAWING No.
							TS/FM/1
							REVISION SUFFIX

NOTE:

1. Bracing shall be 27X0.6mm G550 steel strap fixed with 4 #10 tek screws each end.



2. BRACING LOCATION GABLE WALLS:

Buildings 2 to 4 Bays long, excluding garaport bays shall have 2 braced panels in at least one gable wall.

Building 5 bays and longer, excluding garaport bays shall have 2 braced panels in each of the gable walls.

When building is gable entry, braced panels in gable wall shall be relocated to the side wall as close as possible to the gable with the doors.

3. BRACING LOCATION SIDE WALLS

Buildings 2 to 4 bays long shall have 1 braced panel located as close as possible to the gable end wall on each side wall of the building.

Buildings 5 bays and longer excluding garaport bays shall have at least 2 braced panels in each side wall.

There must be 1 braced panel in the first four bays and 1 braced panel in the last four bays, both located as close as possible to the gable end walls and there must be no more than 5 bays between each braced panel.

4. BRACING RELOCATION SIDE WALLS:

If a braced panel can not be achieved with the above rules, then the conflicting braced panel shall be relocated in the opposite wall side and as close as possible directly opposite the original location. This can be relocated into or beside an existing braced panel.

If 1 or more braced panels are relocated from one side wall to the other, then add 1 braced panel to a gable wall. This can be relocated into or beside an existing braced panel.

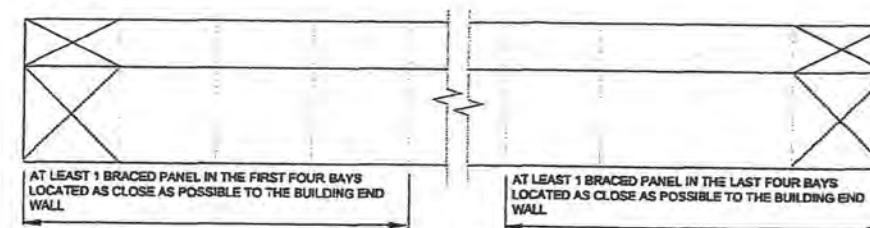
5. ROOF BRACING LOCATION

Buildings, 2 to 4 bays excluding garaport bays shall have 1 braced panel located in one of the end bays

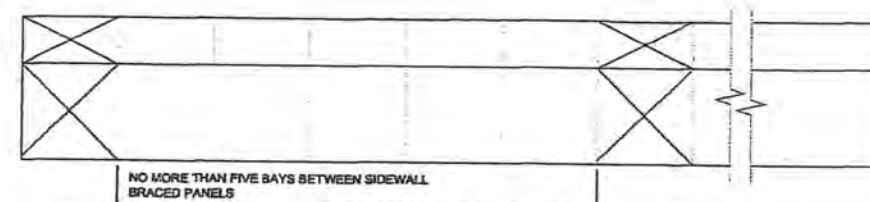
Buildings, 5 bays and longer excluding Garaport bays, shall have at least 3 braced panels, 2 located in each end bay and there must be no more than five bays between each braced panel.

Refer to sheet 1 for single cross or double cross roof bracing patterns per bay per side.

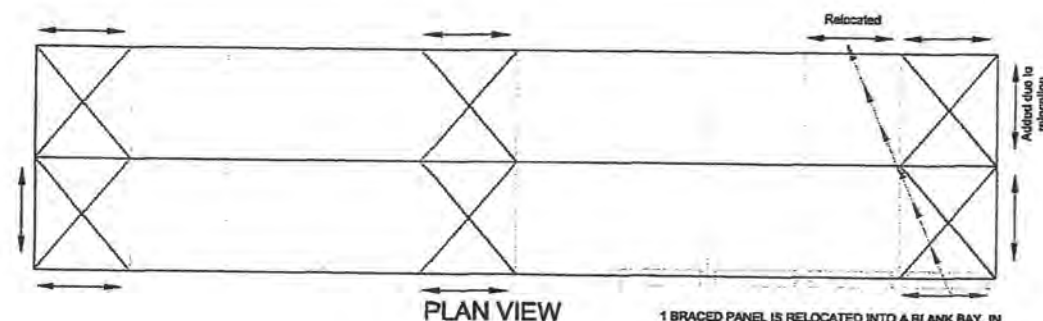
Other configurations of openings shall be specific design.



SIDE WALL ELEVATION

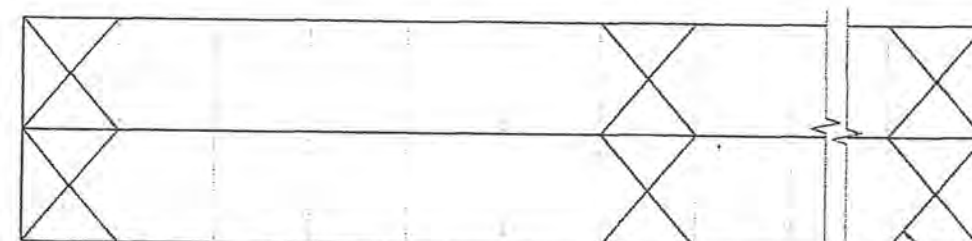


SIDE WALL ELEVATION



PLAN VIEW

1 BRACED PANEL IS RELOCATED INTO A BLANK BAY, IN THE OPPOSITE SIDE WALL, DUE TO 4 ROLLERDOORS IN THE LAST 4 BAYS



PLAN VIEW

REFER TO SHEET 1 FOR SINGLE CROSS OR DOUBLE CROSS ROOF BRACING PATTERNS PER BAY PER SIDE.

FREDERICK R. SMITH
chartered consulting engineer

Design of buildings erected in accordance with these drawings will comply with the New Zealand Building Code.

F R Smith
BE (civil) MIPENZ MACENZ MIEAust
CPEng RPEQ (6225)

TOTALSPAN

A Division of VERSATILE BUILDINGS LTD
1, HORNBY

Drawing Title:

BRACING - WALLS AND ROOF

For: Stephanie & Glenn Peach
Lot 18
Te Horo
Country Estate



Engineered By:
F R Smith Consultant

**Producer Statement
Structural Details**

CLIENT:

Stephanie & Glenn Peach
Lot 18
Te Horo
Country Estate

BUILDING:

Size & Stud Height: 11.750m long x 11.750m wide, with 3.000m stud height, Bay Size 4.000m
Wind Zone: VERY HIGH
Area: 138.063m²

NOTES

Copyright: These drawings must not be reproduced without express permission from Fred R. Smith Consultants and Versatile Buildings Limited

Building Classification: New Zealand Buildings designed for Class 5 Category as defined in NZS4203:1992 Table 2.3.1 and for normal structures as defined in AS 1170.2:1989 Table 3.2.9 for Australian buildings

INDEX

Cover Page (this page)
Producer Statement: F.R. Smith Consultants - Design
Producer Statement: Versatile Buildings/BHP - Durability
Specifications - Building Components
Site Plan
Drainage Plan
Building Elevations

Section - End Wall
Building Details
Roof Plans
Flashing Details
Bracing Reference

I certify that buildings erected in accordance with these drawings will conform to the requirements of the New Zealand and Australian Building Codes.

F R Smith BE (civil) MIPENZ, MACENZ, MEIAust, no. 2410880, Cp.Eng. RPEQ (6225)

PRODUCER STATEMENT - DESIGN

Issued by: **Fredrick Roland Smith**
to: **Totalspan Buildings, a division of Versatile Buildings Limited**
for the: **Local Territorial Authority**
in respect of: **Steel Framed Totalspan Buildings**

Frederick R Smith Consulting Engineer has been engaged to provide design services in respect of the requirements of Clause B1 and B2 of the Building Regulations 1992 for all of the work as specified of the building work.


The design has been checked in accordance with B1/VM1, B1/VM4, B2/VM1, AS/NZS 1170:2002, NZS 3101, and AS/NZS 4600 of the approved documents issued by the Department of Building and Housing and the work is described on drawings prepared by Frederick R Smith Consulting Engineer and Versatile Buildings Limited.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$500,000 I BELIEVE ON REASONABLE GROUNDS that subject to:

1. Foundation support ground to have a safe bearing capacity of at least 75kPa
2. The ultimate basic wind speed in the area not exceeding 45 or 50 metres per second, depending on the wind (Regions A6,A7 and W)
3. Basic roof snow loading does not exceed what is listed in these specifications
4. Roof live loads not exceeding 0.25kPa and not being used as an access path
5. All proprietary products meeting the requirements of the performance specification
6. Building being cleaned and inspected bi-annually by owner and any corrosion being treated and repaired

then the drawings and other documents according to which the buildings are proposed to be constructed comply with the relevant provisions of the Building code.

As a designer I have taken all reasonable steps to verify design assumptions. I am satisfied on reasonable grounds that in relation to the building work specified above the provisions of the Building Code would be met if the building work were properly completed in accordance with the drawings, specifications and other documents according to which the building is proposed to be constructed and which have been submitted with the application. I understand this Producer Statement if accepted may be relied upon for the purpose of establishing compliance with the Building Code

Signed: 
BE(Civil), CPENG(NZ), MIPENZ, MACENZ,
CPENG(Aust), MIEAust 2410880, RPEQ 6225,

Date **22 June 2007**
Address **504 Blenheim Road**
Christchurch

MANUFACTURERS STATEMENT - DURABILITY

To satisfy the requirements of Clause B2: "Durability" of the NZBC and to ensure the cladding material meets a durability life the following provisions must apply:

Range of Product and Use

Specification:	AS1397:2001
Coating Type:	Zinc/Aluminium & Painted.
Steel Thickness Range:	0.35mm - 0.95mm BMT
Steel Grade Range:	G300 - G550
Application:	Standard Totalspan Roof Cladding on Class V Building category as per NZS4203:1992 and AS1170.2:2002 Table 3.2.9
Fasteners:	Screws to be #10 x 16 Tek screws, Class 3 Zinc plated to comply with AS/NZS1111.2-2000 Bolts to be M10 & M12-4.6.3 Hex commercial zinc plated to comply with AS/NZS 1111.2-2000 Screwbolts to be M10x75 Zinc plated complying with AS3566.2-2002

Requirements, Limitations and Exclusions

- Applicable to buildings in Sea-Spray zone and exposure zones 1,2,3 & 4 in accordance with Clause 4, Durability, NZS 3604:1999 which is an acceptable solution under clause B2 of the NZBC.
- Fixing and installation of the cladding must be done exactly in accordance with Totalspan Buildings Fixing Guide
- Normal and regular maintenance must be carried out on the exterior surface of the cladding and the following guide must be followed to ensure the durability requirements are met.

Regular Maintenance

Exposure Zones 1,2,3 & 4. (All areas other than sea spray zones - see below)

Rain washing only required on exposed sections, sheltered or protected areas such as under spouting, top cladding boards and tops of doors require washing every 3 months.

Sea Spray Zones (Within 500m from the sea or 100m from sheltered harbours or inlets) and areas of Geothermal Activity.

Rain-washing only required on exposed areas. Sheltered and protected areas such as under spouting, top cladding boards and tops of doors require washing down every month and whenever corrosive salts are present.

Extended Maintenance, Painting or Repainting

Extended Durability

Once the metallic coating or the paint system has weathered away, signs of red rust for bare materials or signs of the metallic coating for painted material, painting of the entire surface is required to extend the life of the cladding product. Paint manufacturers recommendations are to be followed for surface preparation and paint type to be used.

Evident Corrosion

Areas that show signs of white or red rust/corrosion (typically unwashed areas) require cleaning back with a stiff brush and cleaner to remove all dust, surface contaminants and corrosion products and present a sound substrate for painting. Priming of the surface and application of two coats of paint as per the Paint Manufacturer's recommendations is then required. Particular attention needs to be paid to laps (side, end, flashing etc) where earlier corrosion may start due to moisture and dirt entrapment. If evident corrosion is not treated quickly, rapid deterioration of the sheet may occur which could result in perforation. At this stage replacement of the affected sheet is the best option.

References

1. NZS 3604, Clause 4, Durability.
2. Totalspan Buildings Assembly Instructions
3. New Zealand Building Code 2004
4. Australian Building Code 1989

Jeffrey Geayley

for Totalspan Buildings Limited
112 Waterloo Road
Christchurch
New Zealand

Dated: 5th April 2006

Building Tables

Zoned:	T.C.2 Rural	Wind Region:	Region W (V.High)
Wind Zone:	Very High		
Bay Size:	4.0m		
Live Roof Load:	0.25 kpa		
Roof Snow Load:	0.86kpa		
Inner Purlins:	B80x40(2)	Row Numbers:	16
Ridge & Gutter Purlins:	C80x40		
Girts:	B80x40(2)	End Wall:	4
End Wall Post - On Edge:	C15010		
Roof Frames - Portals:	B22012		

GENERAL

- 1- All work shall conform to the New Zealand Building Code.
- 2- Check diagonals to ensure building is square.

LOADINGS

- 1- Buildings are designed to AS/NZS 1170 for NZS 3604 HIGH and VERY HIGH. Design Wind Speeds to limit state levels of 45 and 50m/s, T.C.2 roof live load of 0.25kPa, and basic Roof Snow loads of 0.86kPa. Heavier snow loads will be specific design as will buildings used for habitable purposes.
- 2- The roofing is not designed for point loads of 1 Kn.

FOUNDATIONS

- 1- Support ground to have a safe bearing capacity of at least 75 kPa. In weaker ground building loads to be taken to subsoil which has a bearing capacity of at least 75 kPa.

CONCRETE

- 1- Remove vegetation and loose material from the site of the building, backfill with compacted hardfill, if required, and lay a blinding of sand to the underside of the concrete slab. Ensure the surface of the slab will be at least 100mm above the highest level of cleared ground around the slab.
- 2- Concrete shall have a maximum aggregate size of 20mm, slump of 80mm maximum and a 20 MPa compression strength at 28 days.
- 3- The concrete floor slab shall be 100mm thick with a 200 x 200 mm. edge thickening and a D16 rod continuous around the perimeter of the slab with 600 laps and 75 bottom cover.
- 4- Concrete slab to be reinforced with 668 mesh placed 30mm maximum below the slab surface with 225mm laps.
- 5- Provide a 0.25mm black polythene dampproof and slip layer under the slab taped with 100mm laps (optional but recommended).
- 6- Fix roof frames to concrete with M10 galvanised screwbolts screwed into holes drilled in the slab.

STEELWORK

- 1- All structural framing members shall be G550-1.0mm BMT, G500-1.2mm BMT, G450-1.5mm, 1.9mm BMT grade steel galvanised to Z200 (G550 for 80 x 40 boxed and single channels). Cleats to be G450, Z200.
- 2- Purlins and girts shall be 80 x 40 x 0.75 B.M.T. lipped, crimped channel located at centres shown on the drawings.
- 3- Boxed members to be flange fixed with #10 Tek screws at 600 centres
- 4- Screws to be #10 x 16mm long Tek screws Class 3 zinc plated, fixed at a minimum edge distance of 6mm and to a 12mm minimum pitch.
- 5- Girts to be connected with 2 #10 Tek screws each side of girt.
- 6- Steelwork shall conform to:
NZS 4203 Loadings Code
NZ/AS 4600 Cold Formed Steel Structures Code
NZ/AS 1397:1993
AS 1562:1962 Design and Installation of Metal Roofing
AS 1111/1112 Hex Commercial Bolts and Screws
AS 3566 Self Drilling Screws for Building

CLADDING

- 1- Roof and wall sheeting shall be 0.35 B.M.T., G550 grade steel zincaluminized to AZ150 and rolled to profile as detailed.
- 2- Roof sheets shall be fixed to ridge and eaves purlins with a Tek screw at every rib, as shown, tek screw to alternative ribs at intermediate fixings, all complete with neoprene washers tightened firmly but not to form depressions in the roof cladding. Ensure all roof fixings are waterproof.
- 3- Wall sheeting shall be fixed to the eave purlins and to the rafters of the end wall frames with a Tek screw at third points of each pan and to third points of alternate pans at other girts and fixings.
- 4- Ridges, gables and all penetrations to be flashed with similar sheet steel.
- 5- Guttering to be fixed with Tek screws and joint sealed with silicone. Fit downpipes to guttering to discharge to an approved stormwater drainage system, provided by the Owner.
- 6- Frame for personnel door and windows with 80 x 40 x 0.75 unlipped channels. Flange connect members with 2 screws to each flange. Fix jambs to floor with 40x40x1.2 angle cleat having 1/M10 screwbolt to concrete and 2 Tek screws to jamb.

FREDERICK R. SMITH
chartered consulting engineer

buildings erected in accordance with these drawings will comply with the New Zealand Building Code.

F R Smith
BE (civil) MIPENZ MACENZ MIEAust
CPEng RPEQ (6225)

TOTALSPAN

A Division of VERSATILE BUILDINGS LTD
I. HORNBY

Drawing Title:

SPECIFICATIONS

For: Stephanie & Glenn Peach
Lot 18
Te Horo
Country Estate

PRODUCER STATEMENT - PS1 - DESIGN

(Guidance notes on the use of this form are printed on the reverse side*)

ISSUED: ISP Consulting Engineers Ltd

TO: **Glen & Stephanie Peach**
(Owner / Developer)

TO BE SUPPLIED TO: Kapiti Coast District Council
(Building Consent Authority)

IN RESPECT OF: **Foundations for proposed Totalspan Shed**
(Description of Building Work)

AT: **Lot 18 Te Horo Estate**
(Address)

LOT...18.....DP...394017.....SO.....

We have been engaged by the owner/developer referred to above to provide **structural design services and construction monitoring of specifically design elements** in respect of the requirements of Clause B1 (B2 of specifically designed elements) of the building code for

**Part only as specified of building work:**

- Foundations for Totalspan Shed

The design carried out by us has been prepared in accordance with Compliance Documents issued by Department of Building & Housing B1, VM1 & VM4 (foundations)

The proposed Building work covered by this producer statement is described on the drawings titled Lot 18 Te Horo Estate and numbered S1

On behalf of the Design Firm, and subject to:

- (i) Site verification of the following design assumptions: Driven piles to be confirmed on site by Engineer.
- (ii) All proprietary products meeting their performance specifications requirements;

I Believe on reasonable grounds the building, if constructed in accordance with the drawings, specifications, and other documents provided will comply with the relevant provisions of the building code.

I, John O'Hagan am CPEng #179947

I am a member of: IPENZ and hold the following qualifications: BE(Hons), NZCE(Civil), MIPENZ, CPEng

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

SIGNED BY John O'Hagan ON BEHALF OF ISP Consulting Engineers Ltd

Date 1 August 2008

(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 provide 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.

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1992. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suite of producer statements has been revised as at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design

Intended for the use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 Design Review

Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 Construction

Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:20031 ; or Schedules E1/E2 of NZIA's SCC 2007 2

PS 4 Construction Review

Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.
This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, IPENZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence-based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ) or the New Zealand Institute of Architects (NZIA) provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

Professional Indemnity Insurance

As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to \$500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-5)3 (OL1-OL4)2. The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2003

2 NZIA Standard Conditions of Contract SCC 2007 (1st edition)

3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)

www.acenz.org.nz
www.ipenz.org.nz
www.nzia.co.nz

PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW

(Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: ISP Consulting Engineers Ltd
TO: **Glen & Stephanie Peach**
(Owner/Developer)
TO BE SUPPLIED TO: **Kapiti Coast District Council**
(Building Consent Authority)
IN RESPECT OF: **Proposed Total Span Shed**
(Description of Building Work)
AT: **Lot 18- Te Horo Estate, Derham Road, Te Horo**
(Address)

LOT: 18 DP: 394017

ISP Consulting Engineers Ltd has been engaged by Glen & Stephanie Peach

to provide ☐ CM1 ☒ CM2 ☐ CM3 ☐ CM4 ☐ CM5 observation services
(Engineering Categories)

in respect of clause(s) B1, VM1 of the Building Code for the building work described in documents relating to Building Consent No # **080625**. We have sighted these Building Consents and the conditions of attached to them.

Authorised instructions / Piling & Drilling Services- Pile Log dated 24/9/08 and site Inspection notes from TotalSpan dated 22/5/09 (copies attached) have been issued during the course of the works.

On the basis of ☒ this ☐ these review(s) and information supplied by the contractor during the course of the works,

I believe on reasonable grounds that ☐ All ☒ **Part only as specified of building work outside the scope of NZS3604:1999 only.**

- *Shed Foundations*

Of the building works have been completed in accordance with the relevant requirements of the Building Consents and Building Consent Amendments identified above, with respect to Clause(s) B1, VM1 of the Building Regulations.

I, John O'Hagan am CPEng Registered No. 179947

I am a Member of IPENZ and hold the following qualifications: NZCE(Civil), BE (Hons), MIPENZ, CPEng

The Construction Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$200,000*.

The Construction Review Firm is a member of ACENZ

SIGNED BY John O'Hagan **ON BEHALF OF** ISP Consulting Engineers Ltd.

Date: 26th May 2009

Signature :

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Construction Review 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 to accompany **Forms 6 or 8 of the Building (Form) Regulations 2004** for the issue of a Code Compliance Certificate.

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1992. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suite of producer statements has been revised as at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design

Intended for the use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 Design Review

Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 Construction

Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:20031 ; or Schedules E1/E2 of NZIA's SCC 2007 2

PS 4 Construction Review

Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.
This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, IPENZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence-based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ) or the New Zealand Institute of Architects (NZIA) provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

Professional Indemnity Insurance

As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to \$500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-5)3 (OL1-OL4)2. The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2003

2 NZIA Standard Conditions of Contract SCC 2007 (1st edition)

3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)

www.acenz.org.nz

www.ipenz.org.nz

www.nzia.co.nz

Kiwi Green Contracting Ltd

Installers of Aerated Wastewater Treatment Systems



Lisa 0274 540515
Greg 027 2436866
Ph/Fax 04 905 2757
kiwgreen@paradise.net.nz

PRODUCER STATEMENT

In respect of:	Air Tech™ 9000 A.W.T.S Household Sewage Treatment Systems
Attn:	Kapiti Coast District Council
For:	G & S Peach, Lot 18 Te Horo Country Estate, Te Horo

We believe that we have designed the above wastewater treatment system having regard to the basic performance criteria incorporated in the following standards and guidelines:

AS/NZ 1546:1.1998:	On-site Wastewater Treatment Units Part 1 – Septic Tanks
AS/NZ 1547:2000	On-site Domestic-Wastewater Management
NZS 4610 : 1982	Household Septic Tank Systems
ARC Environment:	TP 58 November 1994 – On-site Wastewater Disposal from Household and Institutions

and the requirements of:

NZ Building Code:	Section B2	Durability
	Section G13	Foul Water
	Section G14	Industrial Wastes

PERFORMANCE:

The system is designed to achieve the following quality of effluent treatment:

BOD	:	15 to 20mg/l
Total Suspended Solids	:	20 to 30mg/l
Faecal Coliforms	:	0 to 200/100ml (after disinfection/soil treatment)



REL PLASTICS LTD

EFFLUENT DISPOSAL:

The design of the effluent disposal system is based on the discharge of 1320 litres per day of treated effluent, at a hydraulic loading of 4mm per square metre. The required disposal area is 330 square metres.

The effluent is to be dispersed through a subsurface Naan dripline irrigation system. 220m of Naan pipe will be laid. The proposed sitting and layout of the disposal area is shown on the attached plan. The irrigation line will be surface mounted, mulched and planted with suitable vegetation.

The on-site contractor is ultimately responsible for ensuring the system is installed in accordance with the Company's installation specifications.

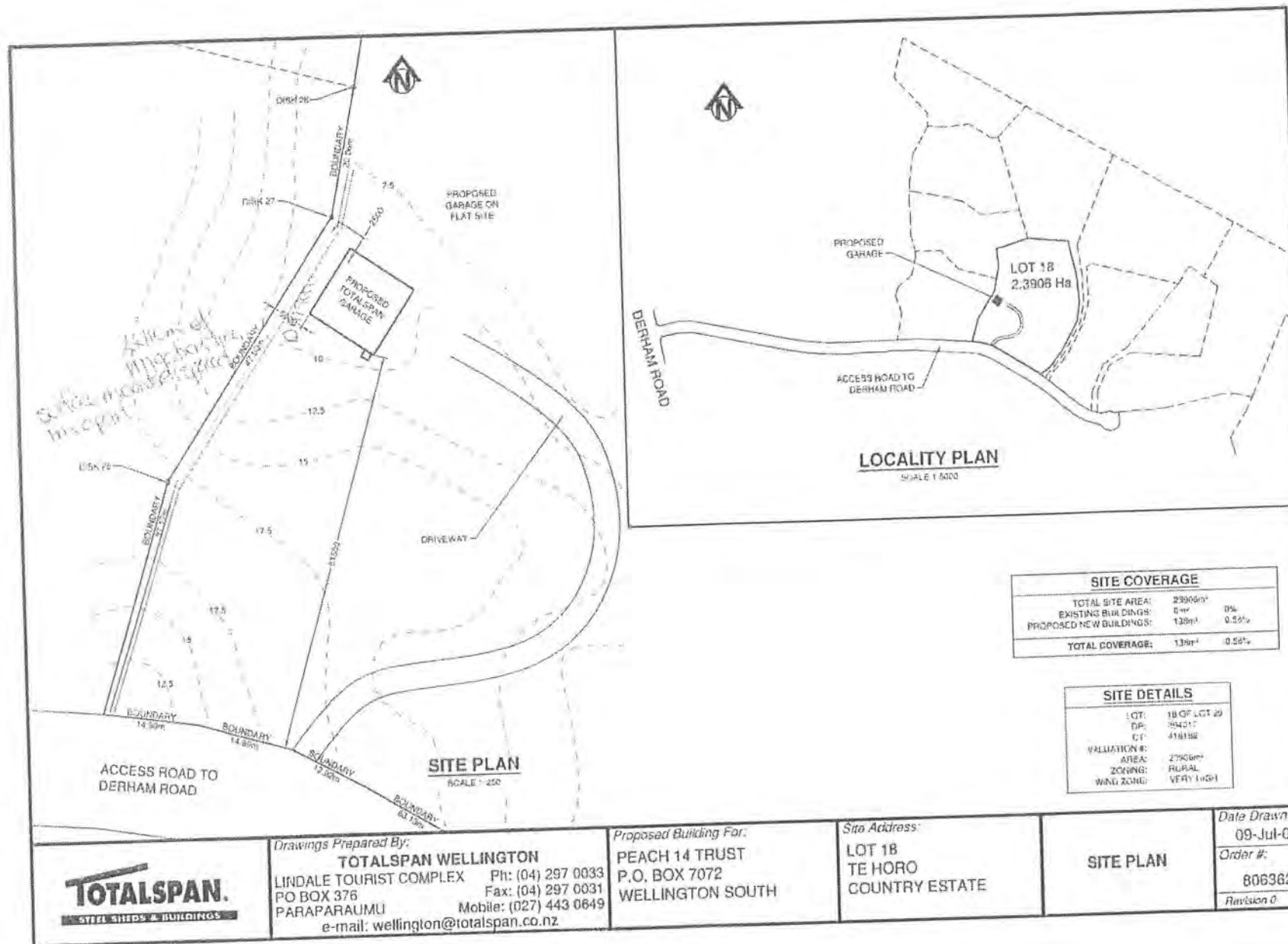
An approved installation Agent will be responsible for the commissioning of the system.



Lisa Burns
DIRECTOR



RX PLASTICS LTD



Kiwi Green Contracting Ltd

Installers of Aerated Wastewater Treatment Systems



Lisa 0274 540515
Greg 027 2436866
Ph/Fax 04 905 2757
kwiigreen@paradise.net.nz

SEWAGE TREATMENT AND EFFLUENT DISPOSAL DESIGN

Treatment Process	:	Aerated Wastewater Treatment System (A.W.T.S)
System Design	:	Air Tech™ 9000
Design Capacity	:	2000ltrs per day (maximum)

DESIGN LOADINGS : AS/NZ 1547:2000

Number of Bedrooms	:	4 + 1
Number of persons	:	8
Water Supply	:	Tank: Roof Water Storage
Wastewater Flow	:	165ltrs per person per day
Total Wastewater Flow	:	8 x 165 = 1320 ltr per day
Soil Category Type	:	4mm D.I.R per day

1320 litres/4mm = 330²m of irrigation disposal area required

EFFLUENT DISPOSAL

Effluent dispersement will be NAAN DAN purple compensating emitter irrigation lateral.
Emitters will be at .600mm spacings with a 2.1ltr per/hr flow rate.
The irrigation system will incorporate a vacuum break and line flushing valve.
An Arkal inline ring disc filter will protect the dripper lateral.

SOIL TYPE

The elevated site has a north west aspect and receives good sun exposure. The area designated for the effluent disposal via drip irrigation lateral will be planted with suitable vegetation that will have very good nutrient uptake. Evapotranspiration will be greatly assisted given the sunny aspect of the site.




RZ PLASTICS LTD

The soil condition is 200mm-300mm of topsoil over sand. Given the elevated nature of the site, soil type has been assessed at - 4mm D.I.R per day.

RESERVE DISPOSAL AREA

There is available land and landscape for additional disposal if required.


Lisa Burns
DIRECTOR



RX PLASTICS LTD

CONSUMERS COPY

- ☐ Plumbers,
☐ Gasfitters and
☐ Drainlayers Board

PLUMBERS, GASFITTERS AND DRAINLAYERS BOARD
GASFITTING CERTIFICATION CERTIFICATE
 (Pursuant to the Gas Act 1992 and the Gas Regulations 1993 and amendments)
ENERGY WORK CERTIFICATE
 (Pursuant to the Building Act 1991)

Certificate No **490923**

9th Floor, 70 The Terrace
 PO Box 10655
 WELLINGTON
 Tel 04 494 2970
 Fax 04 494 2975
 website www.pgdb.co.nz

THIS CERTIFICATE IS NOT TRANSFERABLE

Installation address:

Please complete in block letters

(Box No's not acceptable)

(Number)

(Street name)

(Suburb)

(Town/City)

(Family/Business name)

Consumer:

(Title)

(Initials)

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

Appliance

Flue

Ventilation

Qty	Type	Location	Make/model	Input rate	Type	Location	Type	Location
1	Water Heater	West end of workshop	Reu SST	40 mja	Nil	inside	complies	

Validity authenticated in
 accordance with KCDC Policy 002
 03 JUN 2009

Signature:

Category	Type (Regulation 24(1))
<input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Temporary <input type="checkbox"/> Other	<input checked="" type="checkbox"/> New <input type="checkbox"/> Addition, <input type="checkbox"/> Extension, <input type="checkbox"/> Replacement <input type="checkbox"/> Alteration <input type="checkbox"/> Repair following accident

Gas Type ☐ NG ☒ LPG ☐ TLP ☐ Bio

Name of Gas Supplier

 Pipework Installed ☒ YES ☐ NO
 (attach pipework diagram)

Test Results		Other Testing
5 min	Duration	Combustion
7 kPa	Test pressure	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
0 kPa	Loss / gain	Ventilation
2.8 kPa	Working pressure	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Test Date

I certify that :-

- ① All appliances and fittings worked on by me or by persons working under my supervision are safe and that all work carried out was in accordance with all applicable requirements of the Gas Act 1992 and Gas Regulations 1993 as amended.
- ② 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 Regulations 1993 as amended.
- ③ Gasfitting work to which this certificate applies
 - ☐ does ☒ does not include work on an appliance or fitting imported or manufactured by a person for their own use.

Certifiers Name

Address

Registration No

Signature

Date

Registered Gasfitter/s Supervised by certifier

Name

Registration No

Name

Registration No

Certificate owner

Registration No

On behalf of

Address

(If other than certifying gasfitter)

TOTALSPAN GUARANTEE

Subject to the exclusions described below Totalspan guarantees all structural framing for 25 years, and all other materials and workmanship for 5 years, as being free from defects.



Totalspan guarantee does not cover:

- Buildings that are constructed within 500 metres of the coastline or other hostile environment;
- Any manufactured item supplied by Totalspan which is covered by a manufacturer's warranty and any defect in a building caused by a defect in a manufactured item. Manufactured items include, but are not limited to, roller doors, appliances, floor fixings, fixtures, automatic door openers and equipment;
- Any consequential loss suffered by the customer including but not limited to payment of rent, the cost of alternative accommodation and traveling expenses.
- Defects arising as a result of an act or omission on the part of the customer or any third parties, or failure to maintain the building as per the maintenance instructions included with the sales contract;
- Buildings that have not been used for the purpose, or in the environment, communicated to Totalspan at the time of purchase, where the use to which the building has been put or the environment in which it has been constructed is a use or an environment for which the building is not suitable and has caused the defect giving rise to the claim;
- Defects arising as a result of an act of God.

Claims under guarantee:

- All claims under this guarantee must be made in writing within 30 days of the date on which the customer first became aware of the defect giving rise to the claim.
- All claims must be made within the 25 years or 5 years, as the case may be, of the date of issue of Totalspan's final invoice.
- Totalspan will not be required to satisfy any claim unless and until the customer has paid the purchase price of the building in full.

Customer name: Glenn & Stephanie Peach
Site address: 132 Derham Road Te Horo
Building type: Portal building Size: 11.750 x 11.750 Date of invoice: NFD806362
Factory invoice # NT00007478 Manufacture date: 18/09/08
Company name: Kokari Limited Trading as: Totalspan Wellington
Totalspan's representative (print name): Nick Weyland
Totalspan's representative signature: *Nick Weyland*



STEEL SHEDS & BUILDINGS

WHO CAN? TOTALSPAN!

Electrical Certificate of Compliance

No. 2725394

No. of attachments

for prescribed electrical work that is carried out on electrical installations and involves the placing or positioning or the replacing or repositioning of conductors (including fittings attached to those conductors).
To be completed whether or not an inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer Mr + Mrs Peach

Phone:

Address of installation 601 8 Pahl Finch lane Te Hono

Postal address of customer (if not as above)

WORK DETAILS

☐ No. of lighting outlets☐ No. of ranges☐ No. of socket outlets☐ No. of water heaters

Was any installation work carried out by the homeowner?

☐ Yes ☐ No

Please tick (✓) as appropriate where work includes:

☒ Mains☒ Main earthing system☒ Switchboard☐ Electric linesDescription Main Board Meter Board
+ Builders temp to garage.

It is recommended that test results be recorded here:

Visual Examination ☐Earth Continuity ☐Bonding ☐Polarity ☐

Insulation Resistance _____ Mohm

Other _____

If necessary attach any pages with sketches of work done

CERTIFICATION OF WORK

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

ELECTRICAL WORKER DETAILS

Name

P. G. Hester

Registration no.

E8531

Company

PCE

Signature

[Signature]

Date

10/9/08

Contact Ph No.

027 44 222 87

CERTIFICATION OF ELECTRIC LINES

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

Name Policy authenticated in accordance with KCDC Policy 002

Registration no.

03 JUN 2009

Company

Signature: [Signature]

Date

Contact Ph No.

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector



New mains



Switchboard



Earthing system



Installation work in hazardous areas

I certify that the inspection has been carried out in accordance with the requirements of regulation 41 of the Electricity Regulations 1997.

Name

Brian Kershaw

Registration no.

I247667

Signature

[Signature]

Date

11-9-08

Daytime Contact Ph No.

Electrical Certificate of Compliance

for prescribed electrical work that is carried out on electrical installations and involves the placing or positioning or the replacing or repositioning of conductors (including fittings attached to those conductors).

To be completed whether or not an inspection is required.

No. 2725220

No. of attachments

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer Mr Peck

Phone:

Address of installation Lot 18 Paul Finch Lane Te Hara

Postal address of customer (if not as above)

WORK DETAILS

13 No. of lighting outlets

No. of ranges

14 No. of socket outlets

1 No. of water heaters

Please tick (✓) as appropriate where work includes:

☒ Mains☐ Main earthing system

Was any installation work carried out by the homeowner?

☐ Yes ☒ No☐ Switchboard☐ Electric linesDescription Sub board in garage
lights + power.

It is recommended that test results be recorded here:

Visual Examination ☐Earth Continuity ☐Bonding ☐Polarity ☐

Insulation Resistance _____ Mohm

Other _____

If necessary attach any pages with sketches of work done

CERTIFICATION OF WORK

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

ELECTRICAL WORKER DETAILS

Name

A. Cotter

Registration no.

E8531

Company

PCE

Signature

A. Cotter

Date

12 2 09

Contact Ph No.

027 44 222 87

CERTIFICATION OF ELECTRIC LINES

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

Name

Certified by authenticated in
accordance with KCDC Policy 9.2

Registration no.

Company

Signature

Date

Contact Ph No.

INSPECTION DETAILS

 Electrical work requiring inspection by a registered electrical inspector☐ New mains☐ Switchboard☐ Earthing system☐ Installation work
in hazardous areas

I certify that the inspection has been carried out in accordance with the requirements of regulation 41 of the Electricity Regulations 1997.

Name

Registration no.

Signature

Date

Daytime Contact
Ph No.

FREDERICK R SMITH

REGISTERED PROFESSIONAL ENGINEER
P O Box 35 422, Browns Bay, Auckland
Phone/Fax 09 473 1262

desgr date file page
FRS MAR 2001 2200 1
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VERSATILE BUILDINGS
CHRISTCHURCH

RANGE OF ENCLOSED BUILDINGS

N2 ONLY

GENERAL

SPANS 3.5, 4.5, 6, 7, 8, 9, 10, 11, 12 m

WALL HTS. 2.4, 2.7, 3.0, 3.6, 4.2, 4.8 m

RAM SPACINGS 3.0, 3.5, 4.0, 5.0, 6.0 m

ROOF SLOPE 15°

CLADDING SPIC-N-SPAN RMT 0.35 mm

WALLS & CURTS 80x40x2.5 C
C15010

DESIGN CRITERIA

1. STRUCTURE RISK MULTIPLES
CATEGORY II Mr 20-9
(BUILDINGS OF A SECONDARY NATURE)
2. TERRAIN CATEGORY - URBAN T.C. 3
- RURAL T.C. 2
3. WIND ZONES
MEDIUM 35 m/s
HIGH 45 m/s
V. HIGH 50 m/s
4. SNOW BACK ROOF LOAD S 1.2 kPa
60 m/s
70 m/s

LOADINGS

G.

CLADDING

0.01 kPa

PURLINS

50 x 100 x 5

0.01 kN/m

C15010

0.02 kN/m

Q

0.25 kPa

NO POINT LOAD

S

SUBIC ROOF SREW LOADS

1.2 kPa

W

V	S 35 m/s				S 45 m/s				S 50 m/s			
M _{1s}	0.93				0.93				0.93			
M _r	0.90				0.90				0.90			
WIND MT. h	≤3	3.6	4.2	4.8	≤3.0	3.6	4.2	4.8	≤3.0	3.6	4.2	4.8
T.C. 2 M _{2ent}	0.88	0.87	0.89	0.90	0.88	0.87	0.89	0.90	0.88	0.87	0.89	0.90
V ₂	24.50	25.49	26.07	26.37	32.02	32.77	33.52	33.90	35.58	36.41	37.24	37.67
q, kPa	0.37	0.39	0.41	0.42	0.62	0.64	0.67	0.69	0.76	0.80	0.83	0.85
T.C. 3 M _{2ent}	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
V ₂	21.47	21.97	21.97	21.47	28.25	28.25	28.25	28.25	31.39	31.39	31.39	31.39
q	0.29	0.29	0.29	0.29	0.48	0.48	0.48	0.48	0.59	0.59	0.59	0.59
				S 60 m/s				S 70 m/s				
M _{1s} =1.0				1.00				1.00				
M _r												
M _{2ent}				0.88	0.87	0.89	0.90	0.88	0.87	0.89	0.90	
T.C. 2				V ₂	51.0	52.2	52.4	51.0	59.5	60.90	62.5	63.0
				q	1.50	1.63	1.71	1.75	2.12	2.23	2.33	2.38
T.C. 3				M _{2ent}	0.75		0.75	0.75				0.75
				V ₂	45.00			52.5				
				q	1.22	1.22	1.22	1.22	1.65	1.65	1.65	1.65

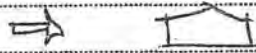
REGISTERED PROFESSIONAL ENGINEER
P O Box 35 422, Browns Bay, Auckland
Phone/Fax 09 473 1262

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3

EXTERNAL WIND PRESSURE

$\theta = 0^\circ$



WINDWARD WALL

w/w

Cpe 0.7 →

WINDWARD ROOF

w/r

h/d/Cpe

Cpe

SPAN	3.5	4	5	6	7	8	9	10	11	12
h = 3.0	0.56/0.92↑	0.75/0.86↑	0.60/0.76↑	0.50/0.70↑	0.43/0.63↑	0.38/0.60↑	0.33/0.56↑	0.30/0.52↑	0.27/0.52↑	0.25/0.50↑
3.6	1.03/1.0↑	0.92/0.94↑	0.72/0.83↑	0.60/0.76↑	0.51/0.70↑	0.45/0.66↑	0.40/0.62↑	0.36/0.58↑	0.33/0.56↑	0.30/0.52↑
4.2	1.20/1.0↑	1.05/1.0↑	0.84/0.90↑	0.70/0.82↑	0.60/0.76↑	0.53/0.78↑	0.47/0.68↑	0.42/0.63↑	0.38/0.60↑	0.35/0.58↑
4.8	1.37/1.0↑	1.20/1.0↑	0.96/0.98↑	0.80/0.88↑	0.69/0.82↑	0.60/0.76↑	0.53/0.73↑	0.48/0.69↑	0.44/0.65↑	0.40/0.62↑

LEEWARD ROOF

L/R

Cpe 0.5 ↑

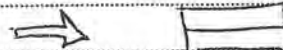
LEEWARD WALL

L/W

$\theta = 0^\circ$ $\alpha = 15^\circ$

Cpe 0.3 →

$\theta = 90^\circ$



WINDWARD WALL

w/w

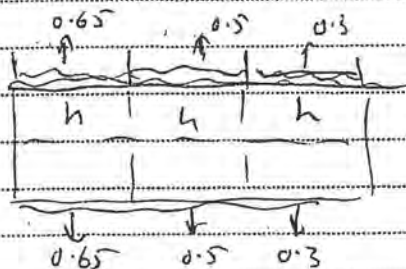
Cpe 0.7 →

ROOF

h/d/Cpe

SPAN m	3.5	4	5	6	7	8	9	10	11	12
h = 3.0	0.99/1.3↑	0.88/1.2↑	0.73/1.1↑	0.63/1.0↑	0.56/0.9↑	0.51/0.9↑	0.47/0.9↑	0.43/0.9↑	0.41/0.9↑	0.38/0.9↑
3.6	1.16/1.3↑	1.04/1.3↑	0.85/1.2↑	0.72/1.1↑	0.66/1.0↑	0.58/0.9↑	0.53/0.9↑	0.49/0.9↑	0.46/0.9↑	0.43/0.9↑
4.2	1.37/1.3↑	1.19/1.3↑	0.97/1.3↑	0.81/1.1↑	0.73/1.1↑	0.66/1.0↑	0.60/0.9↑	0.55/0.9↑	0.52/0.9↑	0.48/0.9↑
4.8	1.51/1.3↑	1.34/1.3↑	1.09/1.3↑	0.95/1.2↑	0.82/1.1↑	0.73/1.1↑	0.67/1.0↑	0.61/0.9↑	0.57/0.9↑	0.53/0.9↑

SIDEWALLS



FREDERICK R SMITH

desgrn date

file

page

REGISTERED PROFESSIONAL ENGINEER

P O Box 35 422, Browns Bay, Auckland

Phone/Fax 09 473 1262

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4

AREA REDUCTION FACTORSCROSS WIND TRIBUTARY AREA FOR RAFTERS

FRAME CENTRE m	3	3.5	4	5	6						
FRAME SPANS	3.5	10 m ²	1.00	12	1.00	14	0.98	18	0.96	21	0.94
4	12	1.00	14	0.97	16	0.97	20	0.95	24	0.91	
5	15	0.98	18	0.96	20	0.95	25	0.90	30	0.89	
6	18	0.96	21	0.94	24	0.91	30	0.89	36	0.89	
7	21	0.94	25	0.90	28	0.90	35	0.89	42	0.87	
8	24	0.91	28	0.90	32	0.89	40	0.88	48	0.88	
9	27	0.90	32	0.89	36	0.89	45	0.88	54	0.88	
10	30	0.89	35	0.89	40	0.88	50	0.88	60	0.84	
11	33	0.89	39	0.88	44	0.88	55	0.84	66	0.84	
12	36	0.89	42	0.87	48	0.88	60	0.84	72	0.83	

LONG WIND TRIBUTARY AREA FOR RAFTERS & COLUMNS

FRAME SPANS	3.5	29 m ²	0.89	33	0.89	38	0.88	48	0.86	57	0.85
(2h+span)	4	30	0.89	35	0.89	40	0.87	50	0.85	60	0.84
ASSUME	5	33	0.89	38	0.88	44	0.87	55	0.85	66	0.84
h=3m	6	36	0.89	39	0.88	48	0.86	60	0.84	72	0.83
	7	39	0.88	46	0.86	52	0.85	65	0.84	78	0.82
	8	42	0.87	49	0.85	56	0.85	70	0.83	84	0.82
	9	45	0.87	53	0.85	60	0.84	75	0.83	90	0.81
	10	48	0.85	56	0.85	64	0.84	80	0.82	96	0.81
	11	51	0.85	60	0.84	68	0.83	85	0.82	102	0.80
	12	54	0.85	63	0.84	72	0.83	90	0.81	108	0.80

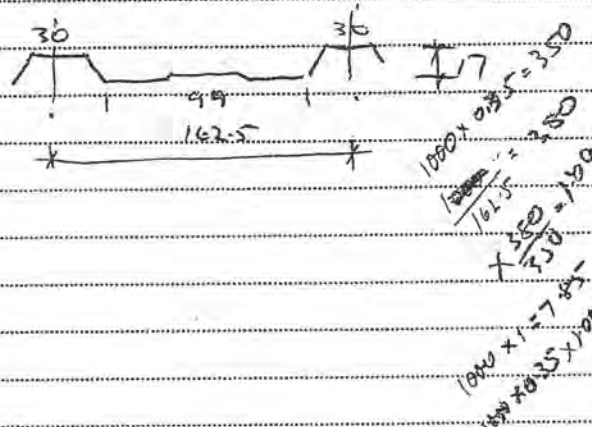
INTERNAL WIND PRESSURE

ALL WALLS EQUALLY PERMEABLE

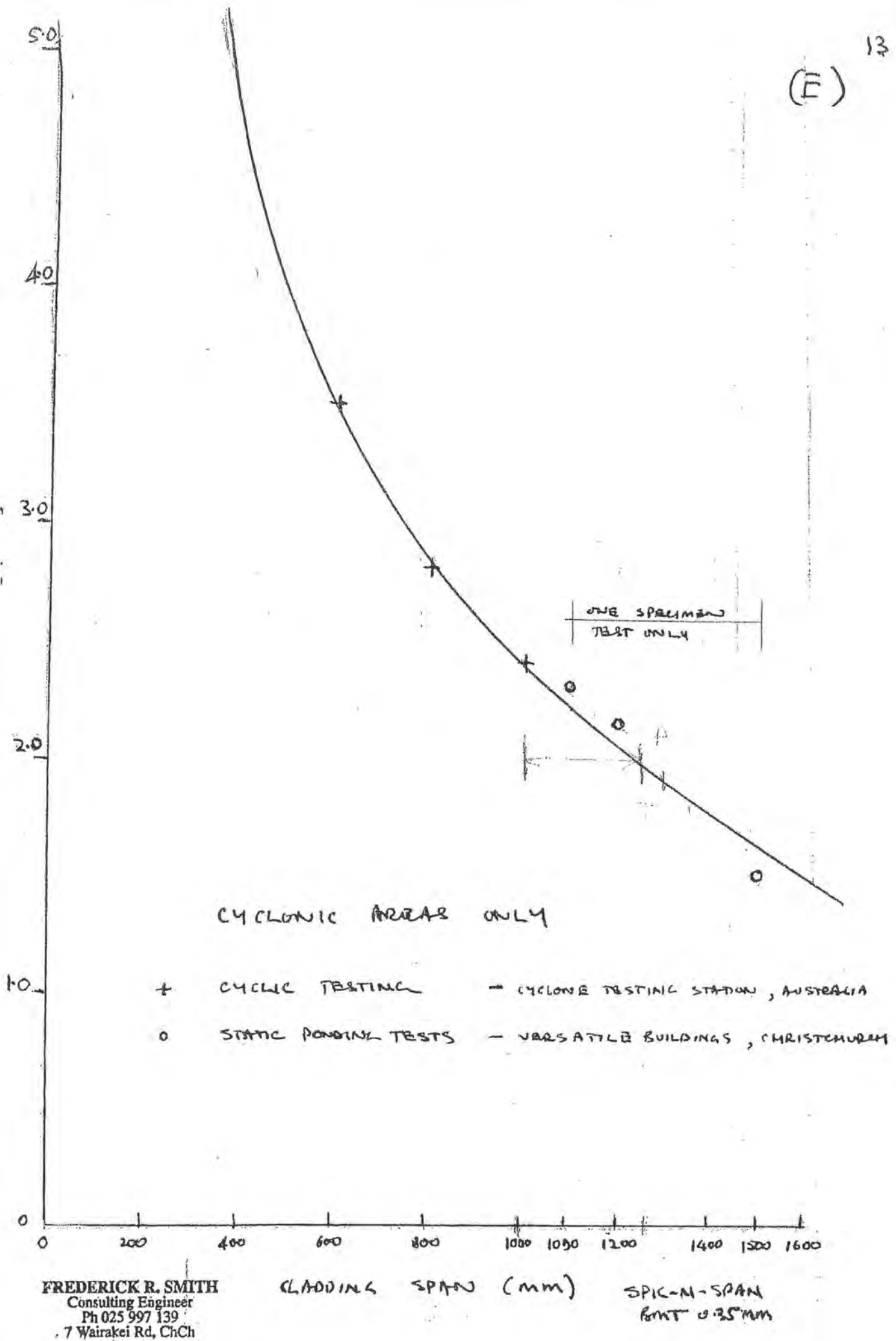
Cp -0.3 or 0.0

ROOF & WALL CLADDINGS

SPIC-N-SPEAN 2.250 RMT 0.35 mm



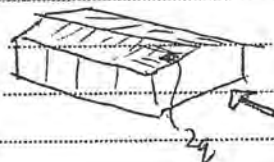
(E)



ROOF CLADDING - END BAYS

MAXIMUM LOADING WILL OCCUR IN THE END BAY, ADJACENT TO THE END WALL, UNDER LONG WIND CONDITIONS ALLOWING FOR LOCAL WIND PRESSURE

LOCAL WIND PRESSURE, $K_e = 2.0$



SO THE EXTERNAL WIND PRESSURE

$$P_e = C_{pe} K_e q$$

$$= -1.3 \times 2 q$$

$$= -2.6 q$$

AND $= 1.0$ ON SURROUNDING AREAS

EXCEPT THAT $K_e \times C_{pe} \neq -2.0$

	S35	S45	S50
4.5m HIGH WALLS	0.42	0.69	0.85
2.0	0.84	1.38	1.70

ALL < 2.0 kPa OK

WALL CLADDING - END BAYS

MAXIMUM LOADING IN END BAY ADJACENT TO END WALL UNDER LONG WIND CONDITIONS

$$C_{pe} = 0.65 \rightarrow$$

$$\text{LOCAL WIND PRESSURE} = 0.65 \rightarrow$$

$$C_{pi} = 0.00$$

MAX PEAK PRESSURE ON SHEETING $= 2 \times 0.65 = 1.3 \rightarrow$

	S35	S45	S50
q	0.42	0.69	0.85
1.3q	0.55	0.90	1.11

ALL < 2.0 kPa OK

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PURLIN & GIRT SECTIONS - STRENGTH ONLY

SECTION	AREA mm ²	MOMENT CAPACITY ϕM_n kNm			
		0	1	2	3
80x40x8	138	1.38	1.58	1.84	
x0.7		1.21	1.37	1.61	
80x40x8	275	2.76	3.10	3.68	
x0.7		2.42	2.21	3.22	
C15010	295	5.40	6.12	7.20	
C15012	352	6.48	7.34	8.64	
C15015	443	7.28	8.25	9.71	
C15019	568	9.22	10.45	12.30	

PURLIN & GIRT SPACING

PURLINS				GIRTS			
SPAN	RAFTER	PURLIN	NO. PURLINS	WALL	WALL HT	FLOOR -	MID GIRT
m	LESS 80mm	SPACING	INC BAYS PURLIN	HEIGHT	LESS 200mm	MID GIRT	TO BAYS EXC BAYS PURLIN
3.5	1892	954	3	2.4		1200	1200
4	1990	995	3	2.7		1200	1500
5	2588	1294	3	3.0		1200 3x1000	2x900
6	3025	1008	4	3.6		1200	2x1200
7	3523	1181	4	4.2		1200	2x1500
8	4141	1035	5	4.8		1200	3x1200
9	4658	1164	5				
10	5176	1294	5				
11	5692	1138	6				
12	6210	1242	6				

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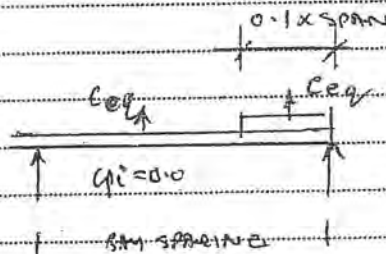
PURLINS

MAX. PURLIN LOADING

IN END BAY WITH LONG

WIND AND LOCAL WIND

PRESSURE



$$C_e = 1.3$$

$$\text{EQUIVALENT UDL } w_e = \left[(1.3 + 0.0 + \frac{1.3 \times 1.3 \times 0.1}{\text{BAY SPACING}}) q - 0.02 \right] \text{ PURLIN SPACING}$$

T.C.2.

$$= \left[(1.3 + \frac{0.17 \text{ SPAN}}{\text{BAY SPACING}}) q - 0.02 \right] \text{ purlin spacing}$$

ASSUME WIND HT 4.5m

WIND	S35 $q=0.42$					S45 $q=0.69$					S50 $q=0.85$				
SPAN	3	3.5	4	5	6	3	3.5	4	5	6	3	3.5	4	5	6
3.5	0.57	0.57	0.56	0.55	0.52	0.97	0.45	0.43	0.42	0.40	1.20	1.17	1.16	1.13	1.12
4	0.62	0.61	0.60	0.58	0.57	1.03	1.06	0.94	0.97	0.96	1.28	1.25	1.23	1.21	1.18
5	0.63	0.61	0.60	0.57	0.56	1.39	1.35	1.33	1.31	1.29	1.72	1.67	1.64	1.59	1.56
6	0.67	0.65	0.63	0.62	0.60	1.11	1.08	1.05	1.02	1.00	1.37	1.33	1.30	1.26	1.23
7	0.62	0.79	0.77	0.75	0.72	1.36	1.32	1.28	1.21	1.14	1.68	1.63	1.58	1.53	1.48
8	0.72	0.70	0.67	0.65	0.62	1.14	1.15	1.11	1.07	1.03	1.47	1.42	1.37	1.32	1.28
9	0.86	0.83	0.80	0.77	0.73	1.43	1.37	1.32	1.27	1.22	1.76	1.70	1.64	1.58	1.51
10	0.99	0.95	0.91	0.87	0.83	1.60	1.59	1.51	1.45	1.38	2.02	1.95	1.87	1.79	1.71
11	0.90	0.86	0.82	0.77	0.72	1.49	1.43	1.37	1.31	1.24	1.84	1.77	1.69	1.61	1.54
12	1.01	0.97	0.92	0.86	0.83	1.67	1.61	1.55	1.46	1.38	2.06	1.97	1.88	1.79	1.70

Mth WEL2

8 L=3 KNM

SPAN	3	3.5	4	5	6	3	3.5	4	5	6	3	3.5	4	5	6
3.5	0.64	0.67	1.12	1.72	2.43	1.09	1.45	1.86	2.58	4.05	1.35	1.79	2.32	3.53	5.04
4	0.70	0.93	1.20	1.81	2.57	1.16	1.55	1.99	3.03	4.32	1.42	1.91	2.46	3.78	5.31
5	0.93	1.24	1.60	2.41	3.42	1.56	2.07	2.66	4.09	5.81	1.94	2.56	3.28	4.97	7.02
6	0.75	1.00	1.26	1.94	2.70	1.25	1.65	2.10	3.19	4.50	1.52	2.04	2.60	3.94	5.54
7	0.92	1.21	1.52	2.34	3.24	1.53	2.02	2.58	3.78	5.13	1.89	2.50	3.16	4.78	6.66
8	0.81	1.07	1.34	2.03	2.79	1.34	1.76	2.22	3.34	4.64	1.65	2.17	2.74	4.13	5.76
9	0.97	1.27	1.60	2.41	3.29	1.61	2.10	2.64	3.97	5.49	1.98	2.60	3.28	4.94	6.80
10	1.11	1.45	1.82	2.72	3.74	1.87	2.43	3.02	4.53	6.21	2.27	2.99	3.74	5.03	7.07
11	1.01	1.32	1.64	2.41	3.37	1.68	2.19	2.74	4.09	5.58	2.07	2.71	3.38	5.03	6.93
12	1.14	1.49	1.86	2.75	3.74	1.88	2.47	3.10	4.58	6.21	2.32	3.02	3.76	5.59	7.65

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T.C.2
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WAVE	S35					S45					S50				
SPRINCE	3	3.5	4	5	6	3	3.5	4	5	6	3	3.5	4	5	6
3.5	0.64	0.87	1.12	1.72	2.45	1.09	1.25	1.86	2.58	4.05	1.35	1.79	2.32	3.53	5.04
	BC8070(2)	BC8080(1)	BC8080(2)	C10	C10(1)	BC8070(1)	C10	BC10	C10(1)	C15(2)	BC8080(2)	C10	C10	C10(2)	C19(2)
		BC8070(1)				BC8080				BC10					BC10(1)
4	0.70	0.93	1.20	1.51	2.57	1.16	1.55	1.99	3.03	4.32	1.44	1.91	2.46	3.75	5.31
	BC8070	BC8080(1)	BC8080(2)	C10	C10(1)	BC8070(2)	C10	C10	C10(1)	C15(2)	BC8080(2)	C10	C10	C12(2)	C19(2)
	C8080(2)	BC8080(1)												BC10	BC10(2)
5	0.93	1.24	1.60	2.41	3.42	1.56	2.07	2.66	4.09	5.81	1.94	2.76	3.28	4.97	7.02
	BC8070	BC8080(2)	C10	C10	BC10	C10	C10	C10	C15	BC10(2)	C10	C10	C10	C15(2)	BC12(2)
	BC8080				C12(2)					BC10(1)				BC10	
6	0.75	1.00	1.26	1.44	2.70	1.25	1.65	2.10	3.19	4.50	1.52	2.04	2.60	3.94	5.54
	C8080(2)	BC8070(2)	C10	C10	C10(2)	BC8070(2)	C10	C10	C10(2)	C15(2)	C10	C10	C10	C12(2)	C19(2)
										BC10				BC10	BC10(2)
7	0.92	1.21	1.52	2.34	3.24	1.53	2.02	3.56	3.78	5.13	1.89	2.50	3.16	4.75	6.66
	BC8070	BC8080(2)	C10	C10	C12(2)	C10	C10	C10(1)	C12(2)	C19(2)	C10	C10	C10	C15(2)	BC12(2)
					BC10					BC10	BC10(2)			BC10	
8	0.81	1.07	1.34	2.03	2.79	1.34	1.76	2.22	3.34	4.64	1.65	2.17	2.74	4.13	5.76
	BC8070	BC8070(1)	C10	C10	C10(2)	BC8080(1)	C10	C10	C10(2)	C19(2)	C10	C10	C10	C12(2)	
										BC10(1)				BC10	BC10(2)
9	0.47	1.27	1.60	2.41	3.29	1.61	2.10	2.64	3.97	5.49	1.98	2.60	3.28	4.94	6.50
	BC8070(1)	BC8080(2)	C10	C10	C12(2)	C10	C10	C10	C12(2)	C19(2)	C10	C10	C10	C15(2)	BC12(2)
					BC10					BC10	BC10(2)			BC10	
10	1.11	1.45	1.82	2.72	3.74	1.87	2.43	3.02	4.53	6.21	2.27	2.99	3.74	4.03	7.70
	BC8080	C10	C10	C10	C15(1)	C10	C10	C10	C15(1)	BC12(2)	C10	C10	C10(1)	C12(2)	BC15(2)
					BC10					BC10				BC10	
11	1.01	1.32	1.64	2.41	2.37	1.65	2.19	2.74	4.09	5.58	2.07	2.71	3.35	5.03	6.95
	BC8070(1)	C10	C10	C10	C10	C10	C10	C10	C12(2)	C19(2)	C10	C10	C10	BC10	BC12(2)
										BC10	BC10(2)			C19(1)	
12	1.14	1.49	1.86	2.75	3.74	1.88	2.47	3.10	4.56	6.21	2.32	3.02	3.76	5.59	7.65
	BC8080	C10	C10	C10	C15(1)	C10	C10	C10	C15(1)	BC12(2)	C10	C10	C10(1)	C19(1)	BC15(2)
					BC10					BC10				BC10(1)	

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PURLINS

WIND ZONES	SSS	MEDIUM	\$45 HIGH	SSO	U HIGH
T.C. 2					
SPAN SPACINGS (PURLIN LENGTHS)	3	4	5	6	6
PURLIN CRS	80L	80L	80L	80L	80L
934	80L	80L	80L	80L	80L
995	80L	80L	80L	80L	80L
1294	80L	80L	80L	80L	80L
1008	80L	80L	80L	80L	80L
1181	80L	80L	80L	80L	80L
1015	80L	80L	80L	80L	80L
1164	80L	80L	80L	80L	80L
1294	80L	80L	80L	80L	80L
1138	80L	80L	80L	80L	80L
1242	80L	80L	80L	80L	80L

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PURLINS

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$$W_e = \left[(1.3 + \frac{0.17 \text{ SPAN}}{\text{BAY SPACING}}) q - 0.02 \right] \text{ PURLIN SPACING}$$

T.C. 3

WIND	S35 q=0.29					S45 q=0.48					S50 q=0.59				
BAY SPACING	3	3.5	4	5	6	3	3.5	4	5	6	3	3.5	4	5	6
SPAN 3.5	0.39	0.38	0.38	0.37	0.36	0.66	0.65	0.64	0.63	0.62	0.92	0.81	0.79	0.78	0.77
4	0.42	0.41	0.41	0.40	0.39	0.71	0.70	0.69	0.67	0.66	0.98	0.86	0.85	0.83	0.81
5	0.59	0.57	0.54	0.52	0.51	0.95	0.93	0.91	0.89	0.87	1.18	1.15	1.13	1.10	1.07
6	0.46	0.44	0.43	0.42	0.41	0.77	0.75	0.73	0.66	0.64	0.95	0.92	0.90	0.87	0.85
W _e 7	0.56	0.54	0.52	0.50	0.49	0.94	0.96	0.88	0.85	0.83	1.16	1.13	1.09	1.05	1.02
8	0.49	0.47	0.46	0.44	0.42	0.82	0.80	0.77	0.74	0.71	1.01	0.98	0.95	0.92	0.88
9	0.59	0.56	0.54	0.52	0.50	0.98	0.95	0.91	0.88	0.84	1.22	1.17	1.13	1.08	1.04
10	0.67	0.64	0.62	0.59	0.57	1.13	1.08	1.04	1.00	0.95	1.39	1.32	1.29	1.24	1.18
11	0.64	0.58	0.56	0.53	0.51	1.03	0.99	0.94	0.90	0.86	1.27	1.22	1.17	1.12	1.06
12	0.69	0.66	0.63	0.60	0.56	1.15	1.10	1.05	1.00	0.95	1.42	1.36	1.30	1.24	1.18