

FIXING NOTE:  
Refer to sheet S-04 for all materials and fixings etc, not noted on this sheet.

CROSS SECTION 3 3  
S-02

BASED UNDER THE OFFICIAL INFORMATION ACT

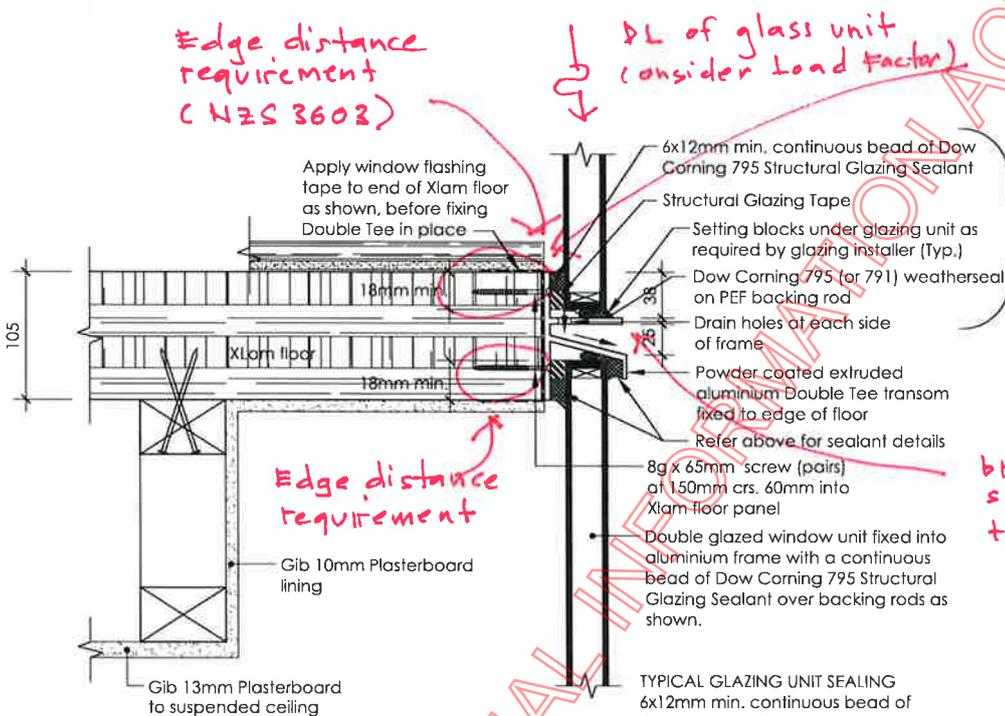
Double glazing units fixed into aluminium T and L frames fixed to timber framing

Double glazing units fixed into aluminium T and L frames fixed to timber framing

mullion shows no STS behind (please confirm)

LOCAL AUTHORITY: <b>AUCKLAND CITY COUNCIL</b>	
CONSULTANT: <b>Q(2)/</b> Jackson Clapperton & Partners Ltd PO Box 71 065 Rosebank Road ph (09) 8200131 cell	
NOTES:	
REVISION HISTORY:	
s 9(2)(a)	
PROJECT:	No: 201504
<b>ISLAND BAY ROAD HOUSE</b>	
6 Island Bay Road Beach Haven AUCKLAND	
SHEET: <b>House Cross Section 3</b>	
SCALES @ A2:	
SCALES @ A4:	Half A2 scale
REF:	
DRAWN/START DATE:	Author
DRWG No:	REVISION:
<b>S-06</b>	
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ACT 1982



WINDOW ABOVE AND BELOW FIRST FLOOR

Edge distance requirement (NZS 3603)

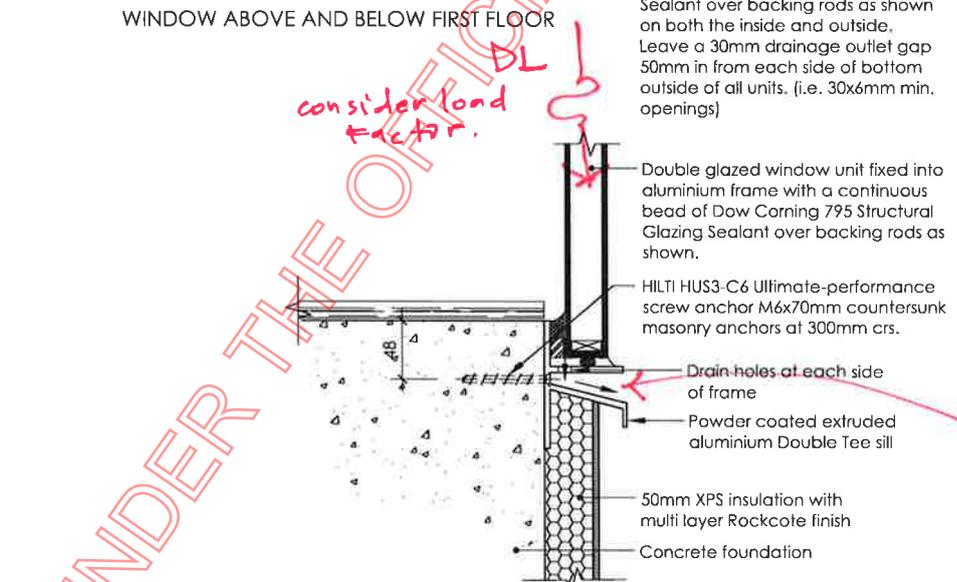
DL of glass unit (consider load factor)

screws both subjected to tension (wind) and shear (DL)

Edge distance requirement

bracket subjected to bending.

DL consider load factor.



WINDOW AT GROUND FLOOR

Double glazed window unit fixed into aluminium frame with a continuous bead of Dow Corning 795 Structural Glazing Sealant over backing rods as shown.

HILTI HUS3-C6 Ultimate-performance screw anchor M6x70mm countersunk masonry anchors at 300mm crs.

Drain holes at each side of frame

Powder coated extruded aluminium Double Tee sill

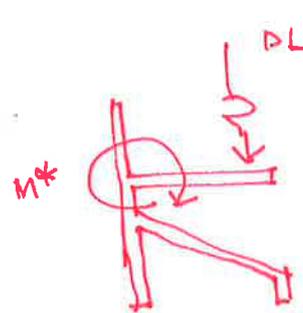
50mm XPS insulation with multi layer Rockcote finish

Concrete foundation

NOTE: Refer to detail above for sealant details

(screw subjected to both tension and shear)

bracket subjected to bending.



note: draft determination report (page 3) shows a different type of bracket.

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wt. of panel (Lower half) =  $3.02 \times \frac{18}{1000} \times 25.5 = 1.39 \text{ kN/m}$   
 $\times 1.35 = 1.87 \text{ kN/m}$

ht = 3020 mm

thk = 8+10 = 18 mm

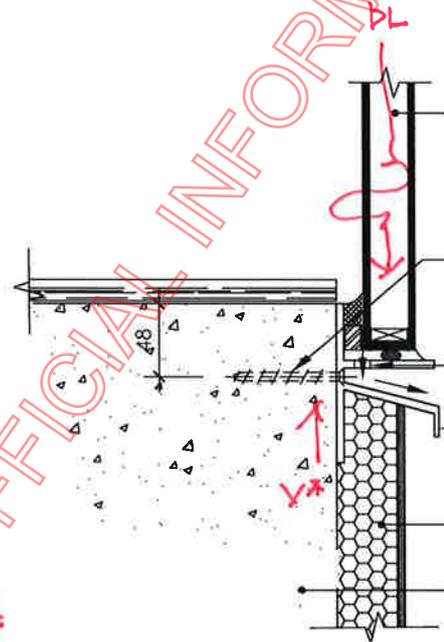
screw spacing = 300 mm

shear load per screw

$V^* = 1.87 \text{ kN/m} \times 0.30 = 0.56 \text{ kN}$

From Hilti manual  
(H453-C6)

Shear, seis = 6.99 kN, ok



no data on sill transom.

WINDOW AT GROUND FLOOR

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$$ht = 2975$$

$$thk = 18 \text{ mm}$$

$$\text{wt. of panel (upper half)} = 2.975 \times \frac{18}{1000} \times 25.5 \times 1.55$$
$$= 1.84 \text{ kN/m}$$

check 8g screw at 150 mm spacing

$$V^* = 1.84 \times 0.15$$

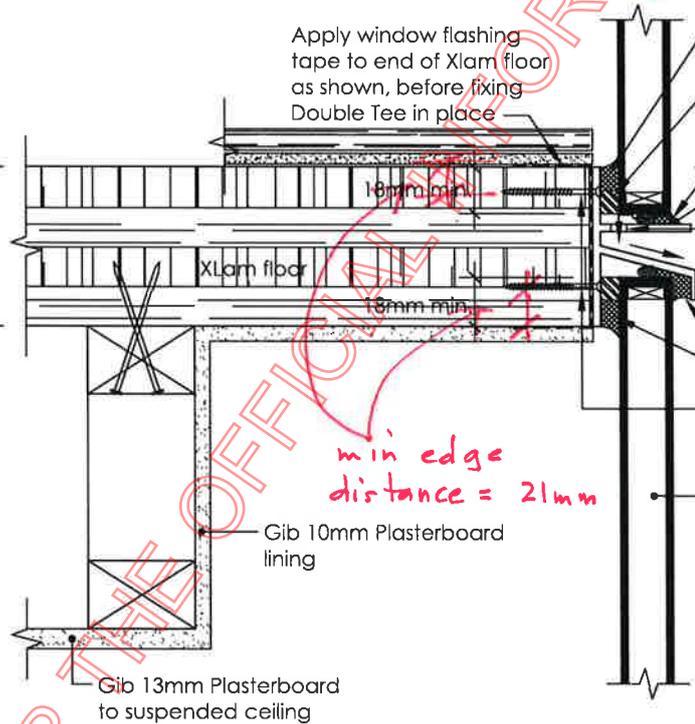
$$= 0.28 \text{ kN}$$

From W253603

For 8g screw (2x)

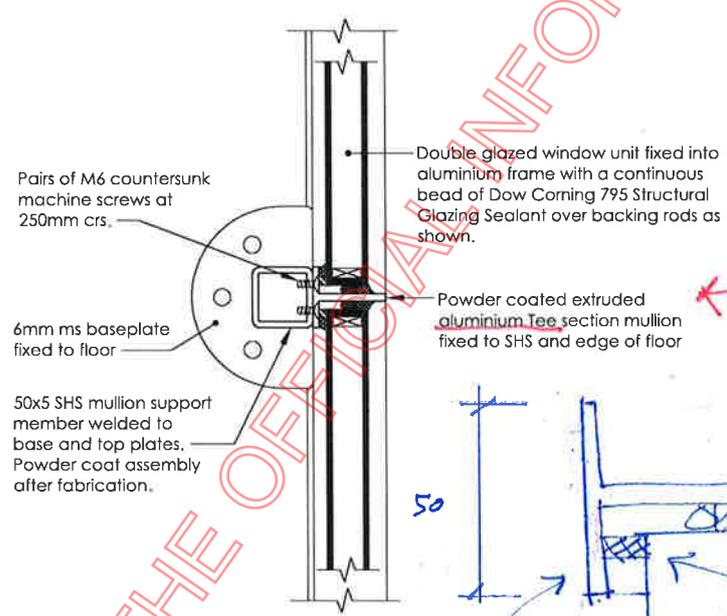
$$= 2 \times 0.7 \times 0.67 \times 105$$
$$= 1.61$$

$$= 1.51 \text{ kN } \underline{\text{ok}}$$

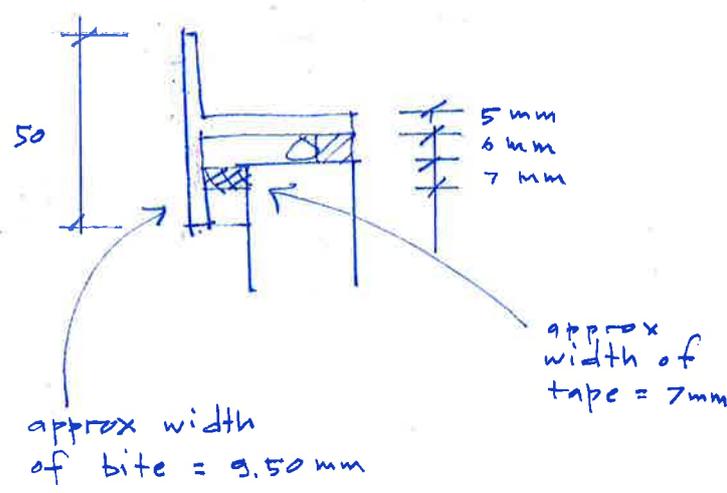


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not all 'T' mullion have SHS post behind.



structural bite ( NZS 4223)

$$\text{bite} = \frac{0.5 \times 2300 \times 1.76}{241}$$

$$= 8.40 \text{ mm}$$

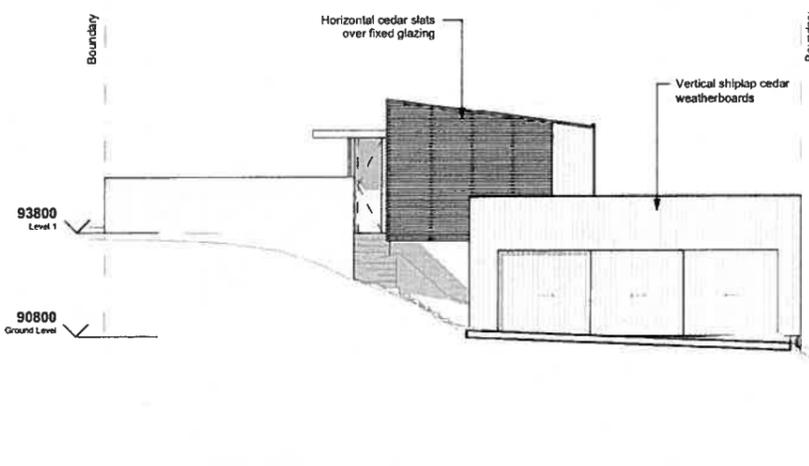
tensile strength of Dow Corning 795

plus 2mm installation tolerance.

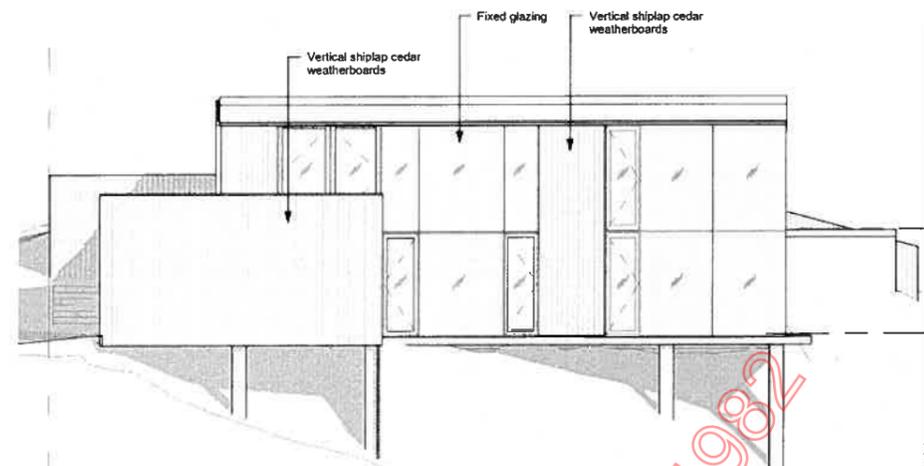
$$\text{total bite width} = 10.40 \text{ mm} > 9.50 \text{ mm}$$

NG

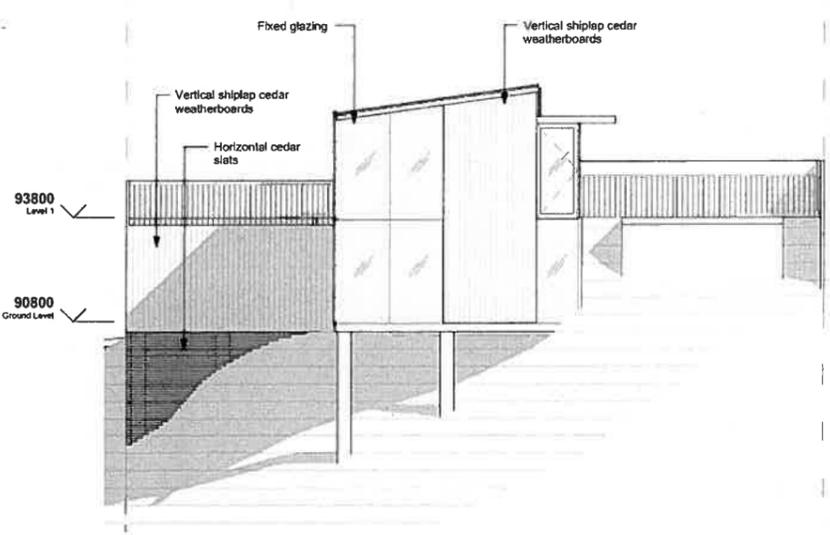
CONFIRM THICKNESS



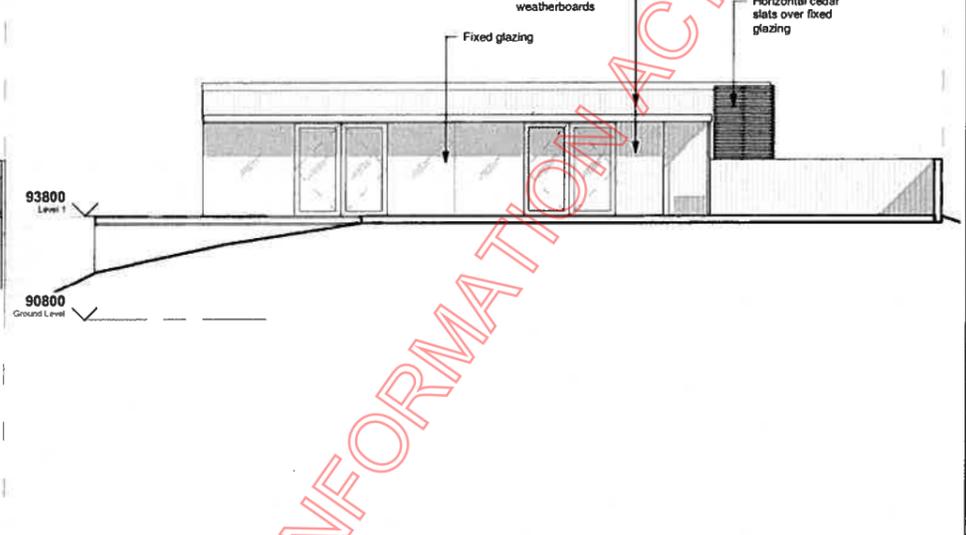
1 North West Elevation  
A1-011 1:100



2 South West Elevation  
A1-011 1:100



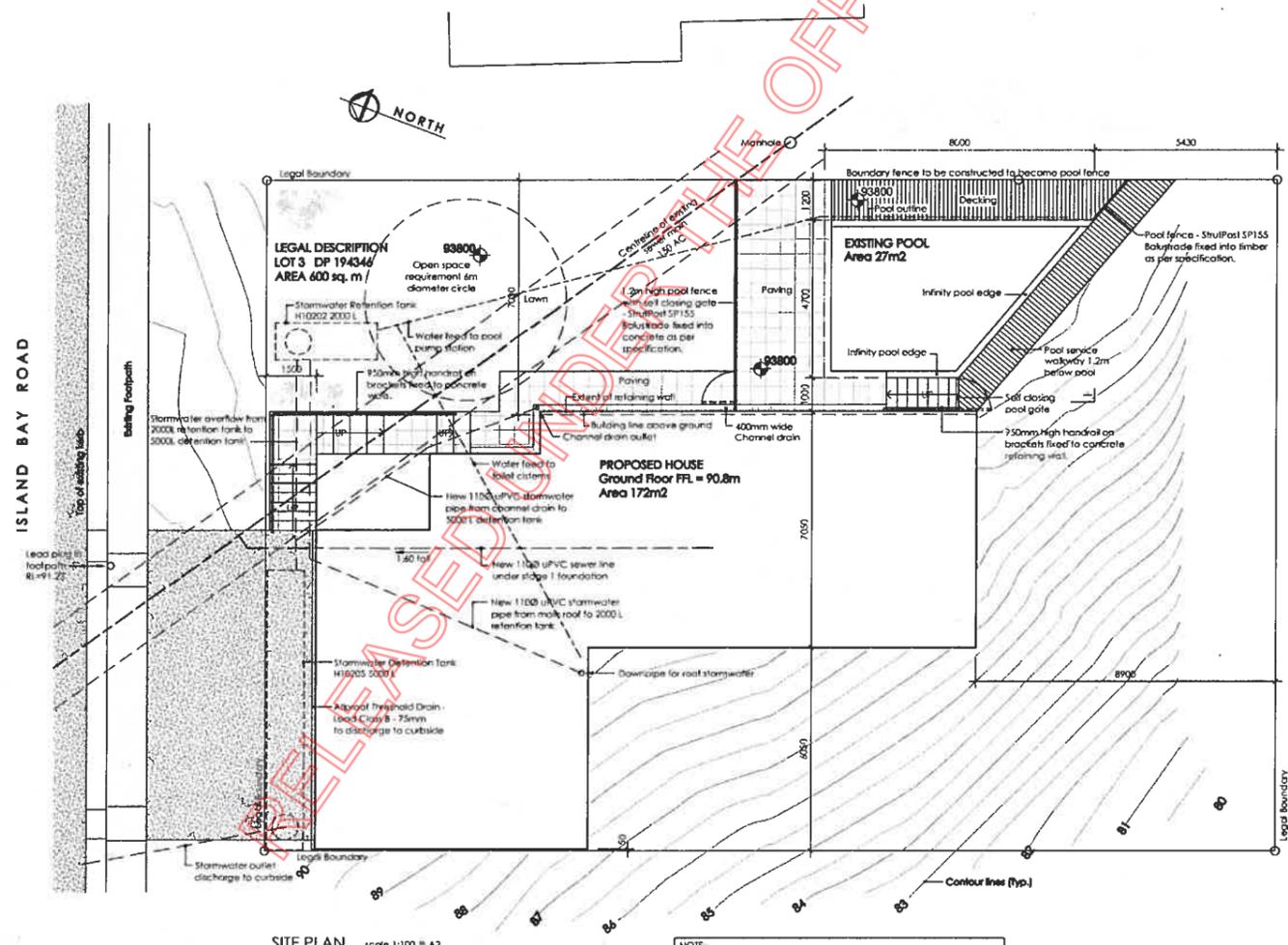
3 South East Elevation  
A1-011 1:100



4 North East Elevation  
A1-011 1:100

BUILDING CONSENT

LOCAL AUTHORITY CONSULTANTS
NOTES:
93800 Level 1 90800 Ground Level
REVISION HISTORY:
s 9(2)(a)
PROJECT: No: 201504 ISLAND BAY ROAD HOUSE
6 Island Bay Road, Beach Haven
SHEET Elevations
SCALES @ A2: 1:100 SCALES @ A4: Half A2 scale
REF: DRAWN/START DATE: Author
DRWG No: A1-401 REVISION:
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SITE PLAN scale 1:100 @ A2

**POOL DECK NOTE:**  
POOL DECKS ARE SHOWN FOR CLARITY ONLY AND DO NOT FORM PART OF THIS CONSENT.  
The deck around the pool is less than 1.5m from finished ground level and thus exempt from consent.

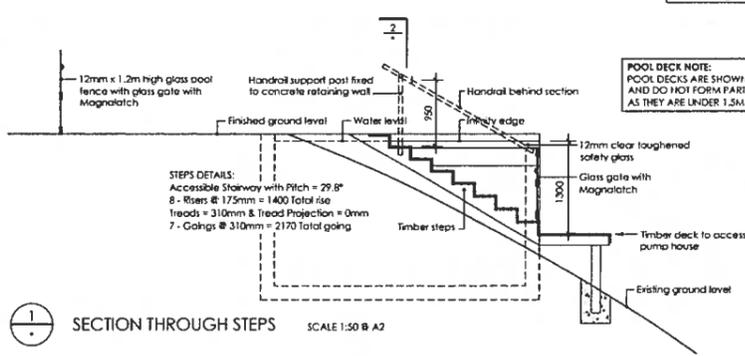
**ALL STEP/STAIR DETAILS:**  
Main Private Stairway with Pitch = 29.8°  
8 - Risers @ 175mm = 1400 Total rise  
Treads = 310mm & Tread Projection = 0mm  
7 - Goings @ 310mm = 2170 Total going

**HANDRAIL NOTE:**  
The handrail to the stair shall be 950mm high and shall be in accordance with NZBC Clause D1 Access Routes.

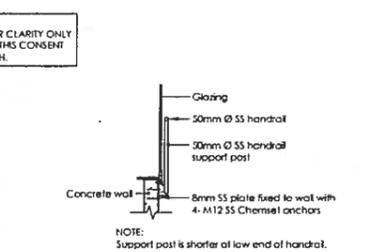
**STAIR SLIP RESISTANCE NOTE:**  
The stair is to have slip resistance on the treads in accordance with section 2.1 slip Resistance on the treads in accordance with section 4.1.7 b) of the NZBC Clause D1 Access Routes.

NOTE: Refer to Architectural drawings for full site and building and details. Refer to stage one consent drawings for full site and foundation details.

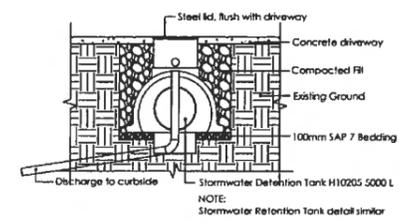
LOCAL AUTHORITY: AUCKLAND CITY COUNCIL
CONSULTANT: s 9(2)(a) Jackson Clapperton & Partners Ltd PO Box 71 085 Rosebank Road ph (09) 8200131 cell 0
NOTES:
REVISION HISTORY:
s 9(2)(a)
PROJECT: No: 201504 ISLAND BAY ROAD HOUSE
6 Island Bay Road Beach Haven AUCKLAND
SHEET Site Plan & Floor Slab Plan
SCALES @ A2: 1:100 SCALES @ A4: Half A2 scale
REF: DRAWN/START DATE: Author
DRWG No: S-01 REVISION: C
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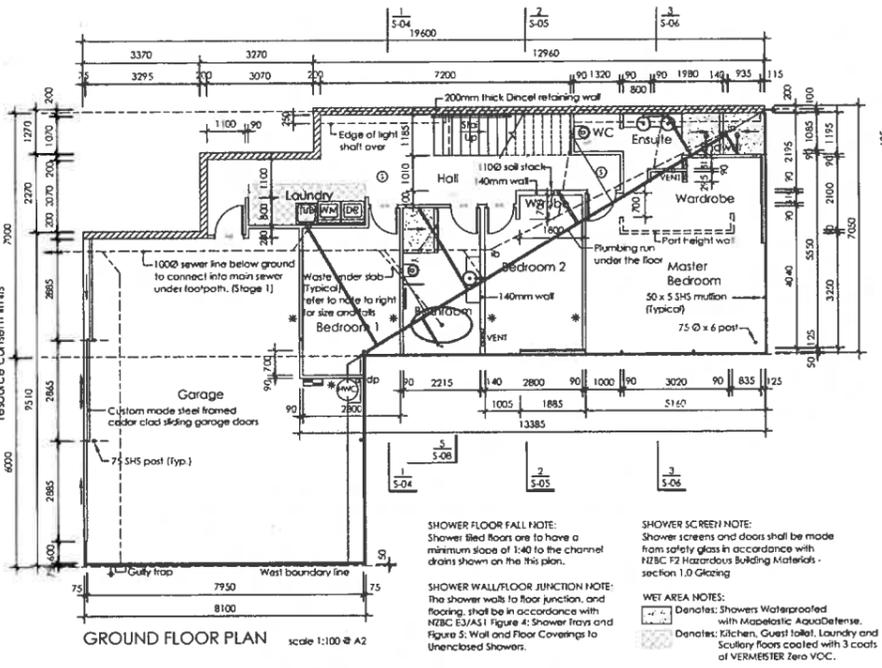
1 SECTION THROUGH STEPS SCALE 1:50 @ A2



2 HANDRAIL SUPPORT POST SCALE 1:50 @ A2



DETENTION TANK SECTION SCALE 1:50 @ A2



- wall legend:**
- 200mm Dintel retaining wall
  - 90mm thick internal
  - 125mm thick exterior wall (175mm - 100mm - 25mm)
  - Windows to building exterior
  - Denotes wall that have 10mm + 13mm Gb board lining both sides of wall
- floor slab legend:**
- Downpipe - in size stated
  - Floor Waste Gully (FWG)
  - Terminal vent
  - inspection bend
  - inspection point
  - inspection joint
  - air admittance valve
  - outdoor hose tap
  - 300L hot water cylinder
  - Ceiling mounted smoke alarm
  - Electric 'SMART' Meter Box
  - COLD water pipes
  - HOT water pipes
- PLUMBING NOTES:** Provide Backflow Prevention to all external Taps on the site. The backwash from the Pool Pump is required to discharge to Private Sewer line via the pipe shown on this plan.

**general note:**

Before commencing any work on site, the main contractor and all subcontractors shall read and fully understand all relevant specifications and drawings, this includes reading all notes.

Do not scale dimensions off the drawings, if in doubt about any dimension ask the designer.

A copy of all product manuals noted on the drawings, or called up in the specifications shall be on site at all times during the construction of the building.

Only drawings marked 'FOR CONSTRUCTION' shall be used for construction of the building.

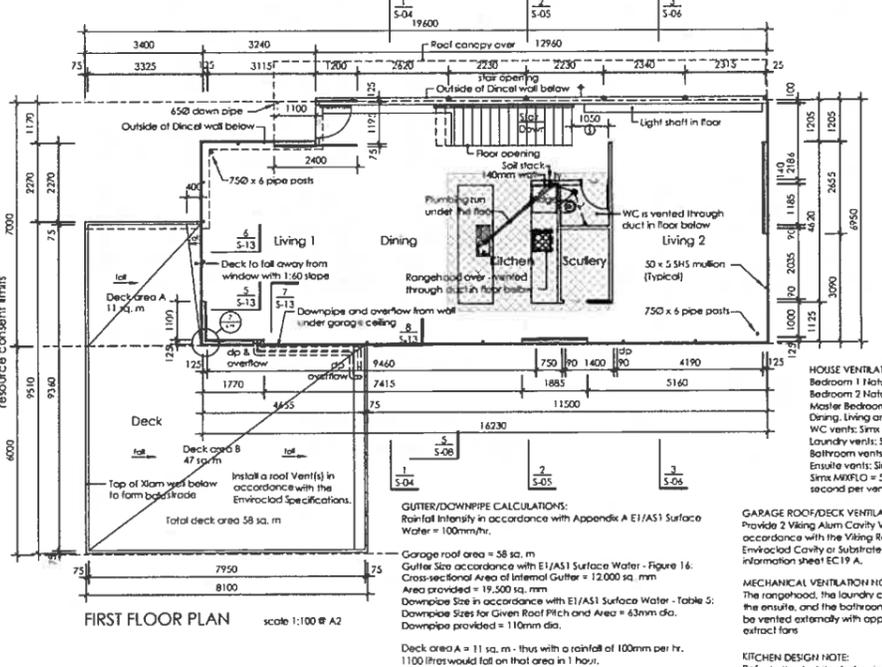
**Insulation notes:**

The house is insulated as follows:  
 SLAB - XPS 50mm R Value = 1.85 / EPS 200mm R Value = 5.56  
 TOTAL UNDERSLAB R VALUE = 7.41  
 RETAINING WALL - 275 50mm R Value = 1.85 / EPS 200mm R Value = 5.56  
 TOTAL RETAINING WALL R VALUE = 7.41  
 WALLS - Xlam 90mm Panel R Value = 0.75 / PIR 50mm insulation / R Value = 2.65  
 TOTAL WALL R VALUE = 3.40  
 GLAZING - double glazed 18mm Argon filled, Low E, Laminated  
 TOTAL GLAZING R Value = 1.10  
 CEILING - Ceiling insulation PIR R Value 3.89 / Double Earth Wool Slaton Bolts R Value 6.4  
 TOTAL CEILING R VALUE = 10.29

**coach screw fixing note:**

All M12 coach screws which fit into Xlam panels shall have a 8mm pre drilled pilot hole in the panel. All M10 coach screws which fit into Xlam panels shall have a 7mm pre drilled pilot hole in the panel.

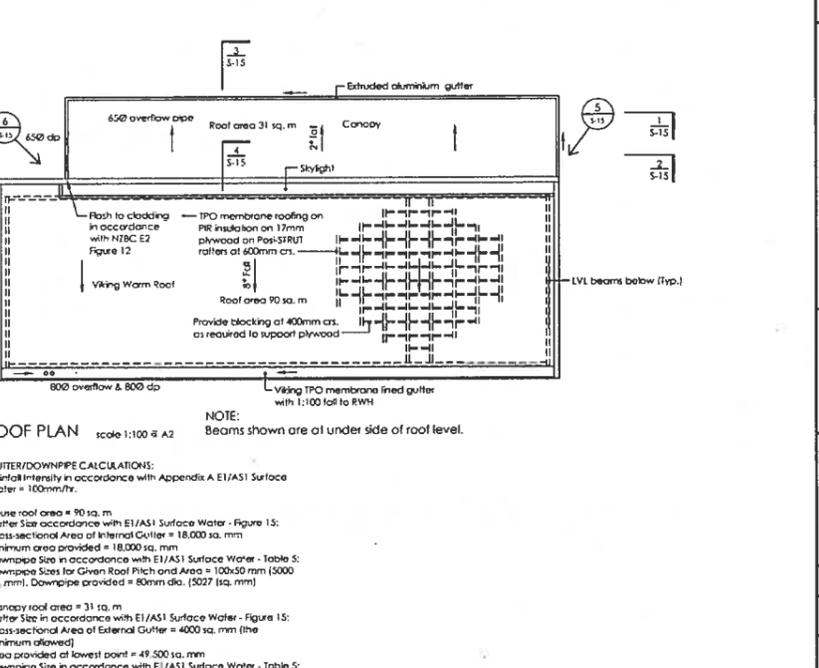
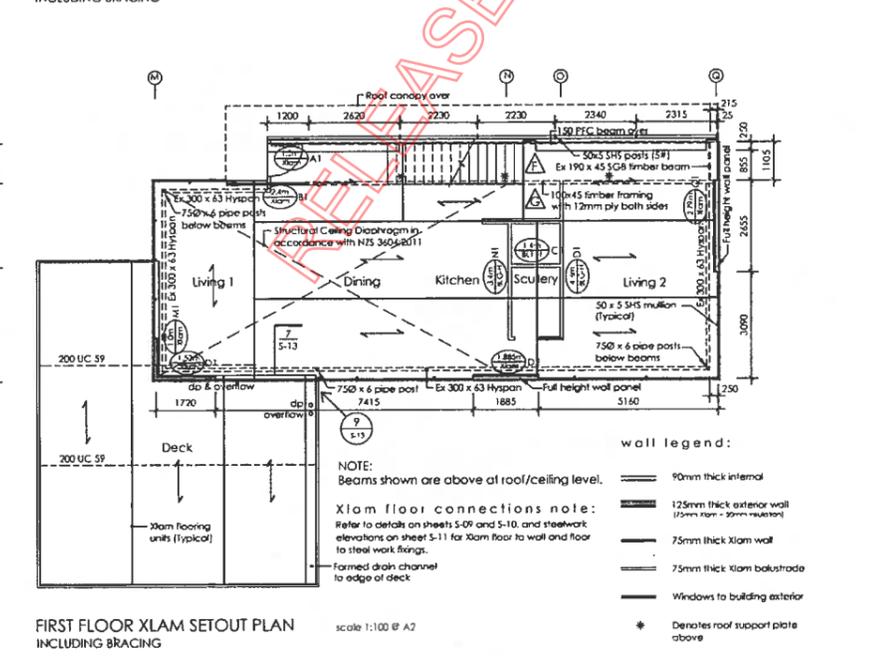
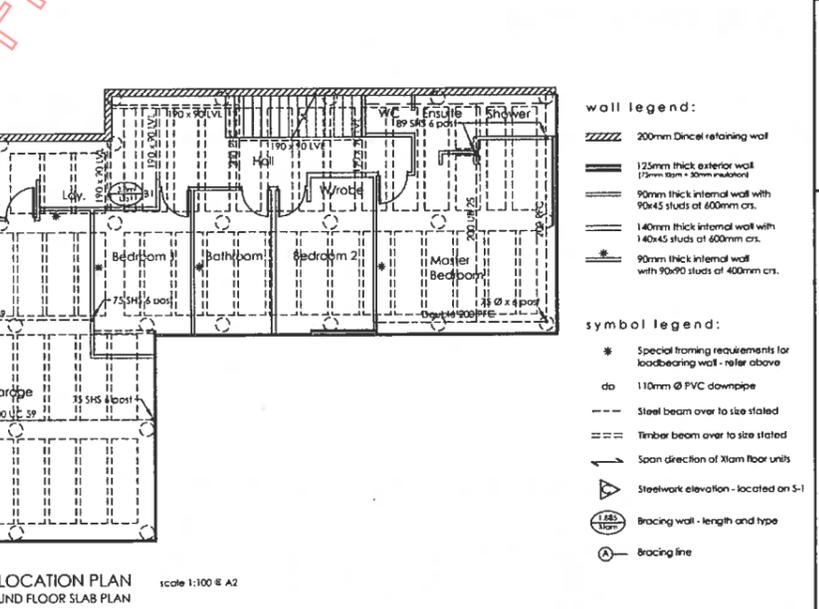
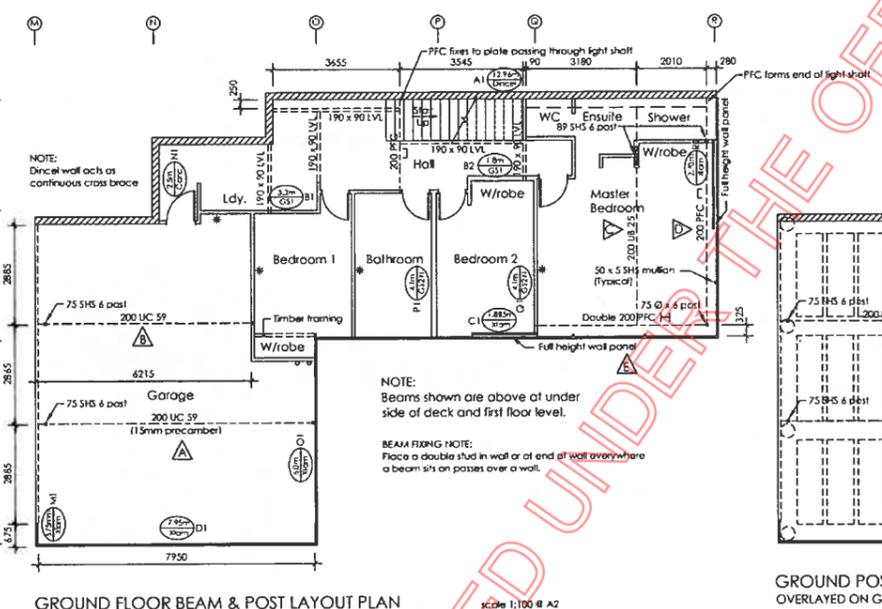
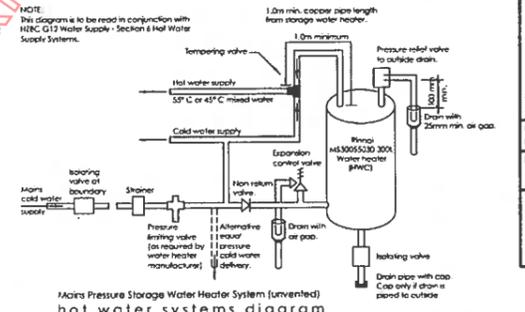
For the following ball and coach screw diameters use washer sizes as below unless noted otherwise on the drawings:  
 up to M8 - 25 x 25 x 1.5mm or 300 x 1.5mm  
 up to M12 - 50 x 50 x 3mm or 600 x 3mm  
 up to M20 - 45 x 45 x 5mm or 750 x 5mm  
 up to M10 - 75 x 75 x 6mm or 850 x 6mm



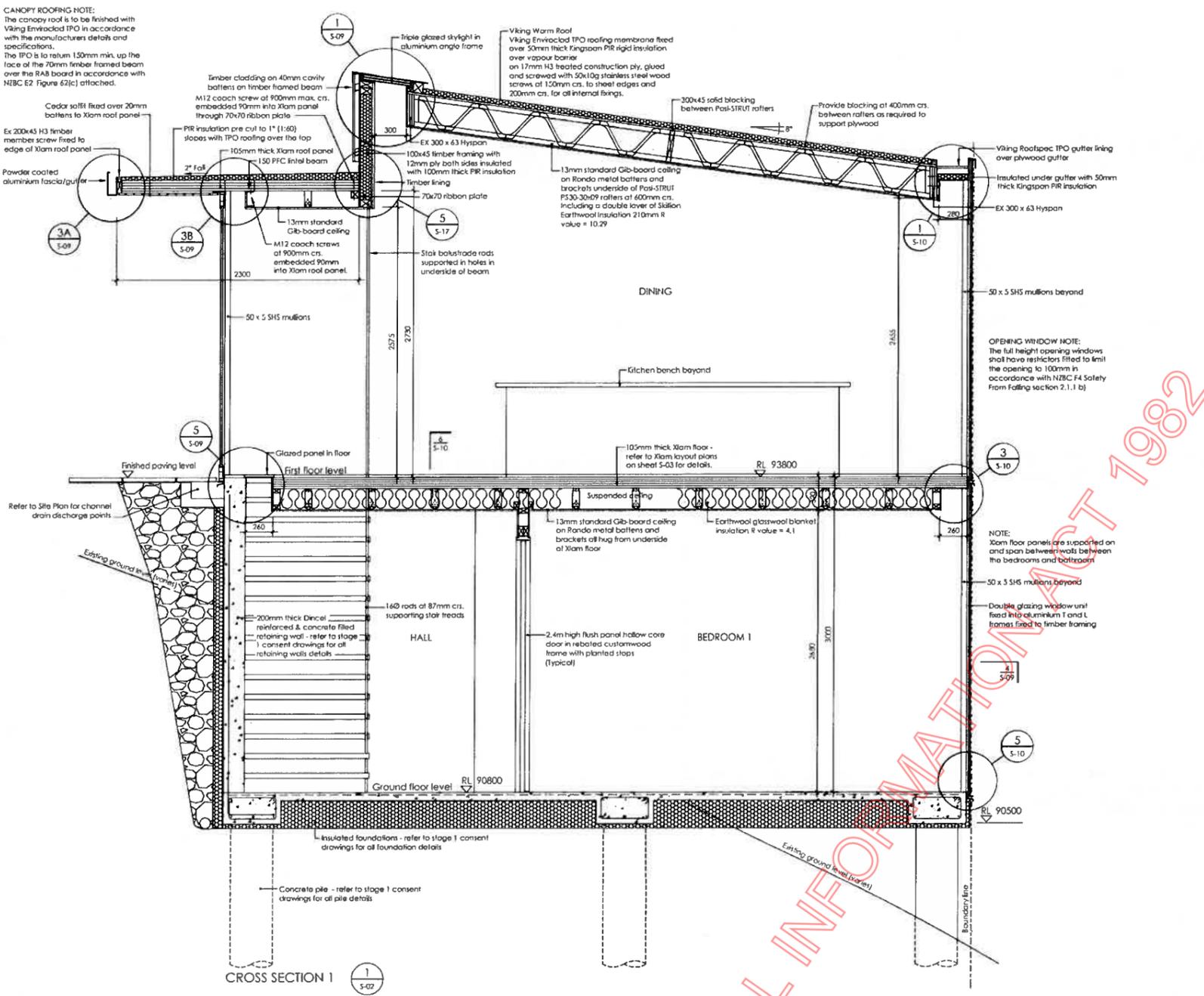
- wall legend:**
- 90mm thick internal
  - 125mm thick exterior wall (175mm - 100mm - 25mm)
  - 75mm thick Xlam wall
  - 75mm thick Xlam balustrade
  - Windows to building exterior
- HOUSE VENTILATION NOTE:** Required 0.61m<sup>2</sup> - Provided 2.9m<sup>2</sup>  
 Bedroom 1 Natural Ventilation - Required 0.36m<sup>2</sup> - Provided 2.9m<sup>2</sup>  
 Master Bedroom Natural Ventilation - Required 1.34m<sup>2</sup> - Provided 2.9m<sup>2</sup>  
 Dining, Living and Kitchen Natural Ventilation - Required 5.65m<sup>2</sup> - Provided 31.9m<sup>2</sup>  
 WC vents: 5mm AXIFLO Fan 82.9 litres per second  
 Laundry vents: 5mm AXIFLO Fan 82.9 litres per second  
 Bathroom vents: 5mm AXIFLO Fan 82.9 litres per second  
 Ensuite vents: 5mm AXIFLO Fan 82.9 litres per second  
 5mm AXIFLO = 597m<sup>3</sup> per hour / 165.8 litres per second / shared at 82.9 litres per second per vented space
- STAR DETAILS:** Main Private Stairway with Pitch = 33.8°  
 15 - Rises @ 187.5mm x 3000 Riser  
 Treads = 285mm x 180mm Projection = 25mm  
 15 - Gange @ 240mm = 3900 Total going
- HANDRAIL NOTE:** The handrail to the stair shall be 950mm high and shall be in accordance with NZBC Clause D1 Access Routes.
- STAIR SIP RESISTANCE NOTE:** The slip slip resistance on the treads in accordance with section 2.1.5.6 Resistance on the treads in accordance with section 4.1.7 b) of the NZBC Clause D1 Access Routes.

**GENERAL CONSTRUCTION NOTES:**

- All work shall comply with the relevant clauses of the NZ Building Code, NZS 3604:2011 Timber Framed Buildings, NZS 3602:2003 Timber and Wood-based Products for use in Building, all other relevant NZ standards, all local authority regulations and other professional product statements.
- All work must comply with the nominated standards, and all work is to comply with the building consent.
- All work shall be carried out by Licensed Building Practitioners, in accordance with the best trade practices.
- All materials shall be new, the best of their respective kind, and shall be used in accordance with manufacturers details and specifications.
- Framing timbers shall be dry to 20% moisture content and finishing timbers dry to 12 - 15% moisture content.
- Structural timber shall be H1.2 treated SG 8 framing to the internal and H2.2 SG 8 where exposed to the weather. All studs/jack studs shall be of 800mm maximum cs, and all dwangs of 800mm maximum cs.
- Check all dimensions on site before beginning construction.
- These plans shall be read in conjunction with the plans and specifications prepared by all other professionals involved in the construction of this building.
- Only drawings that are BUILDING CONSENTED shall be used to construct the building.



CANOPY ROOFING NOTE:  
The canopy roof is to be finished with Viking Enviroclad TPO in accordance with the manufacturer's details and specifications. The TPO is to return 150mm min. up the face of the 70mm timber framed beam over the RAB board in accordance with NIBC E2 Figure 62(c) attached.



CROSS SECTION 1

LOCAL AUTHORITY:  
**AUCKLAND CITY COUNCIL**

CONSULTANT:  
**s 9(2)(a)**  
Jackson Clapperton & Partners Ltd  
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ph (09) 8200131  
cell

NOTES

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
Beach Haven  
AUCKLAND

SHEET:  
**House Cross Section 1**

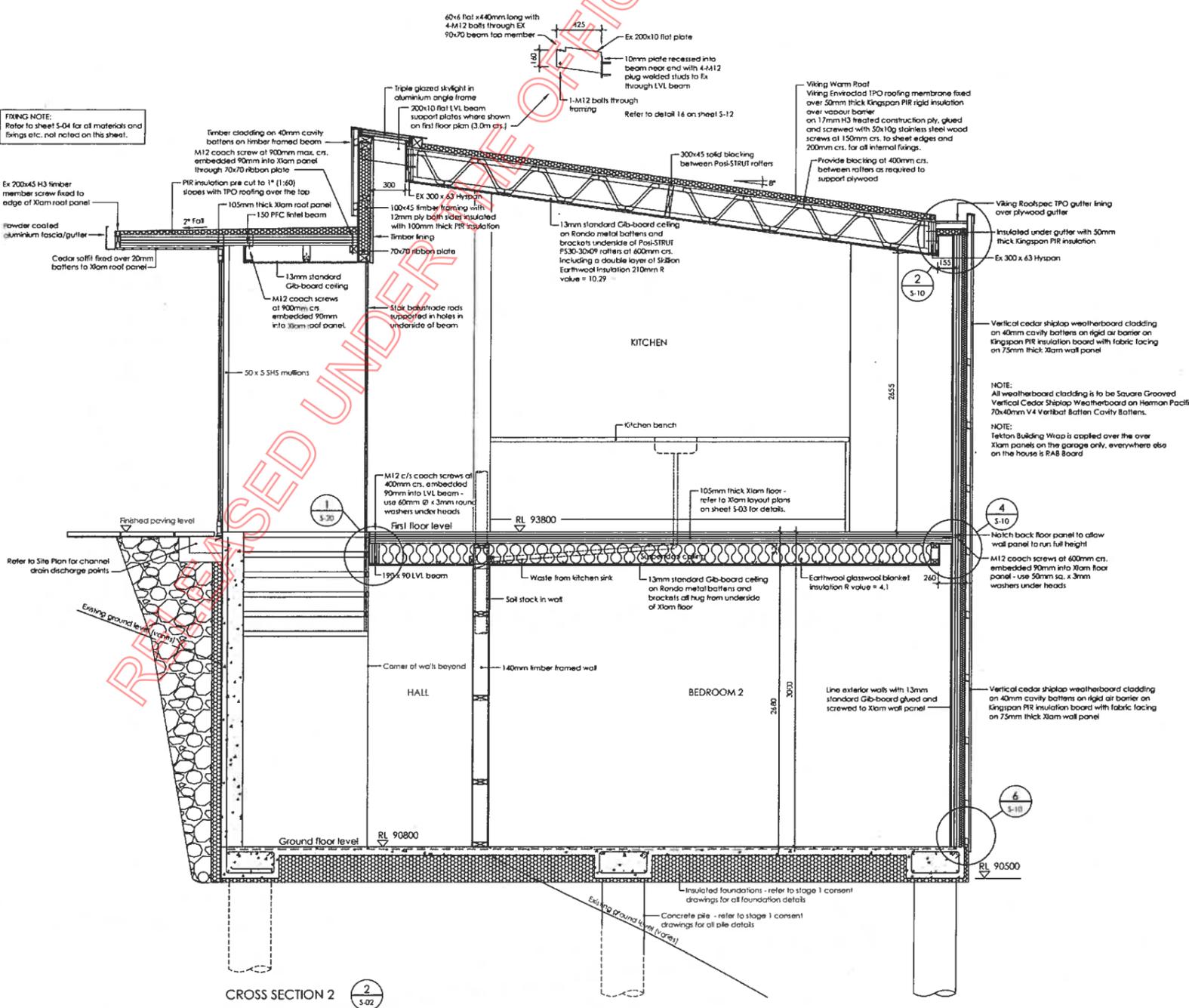
SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author

DRWG No: **S-04** REVISION: **C**

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CROSS SECTION 2

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CONSULTANT:  
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NOTES

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
Beach Haven  
AUCKLAND

SHEET:  
**House Cross Section 2**

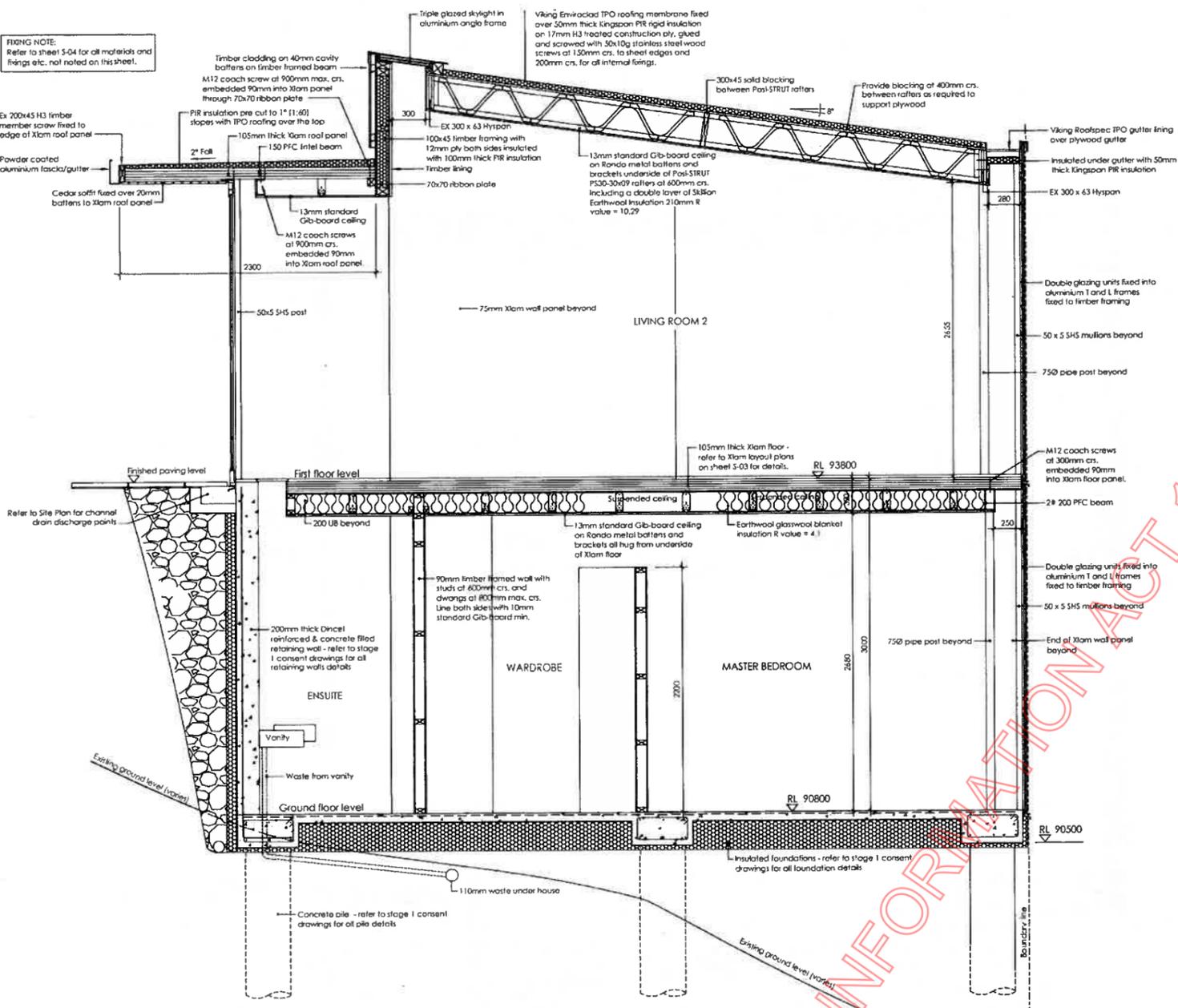
SCALES @ A2:  
SCALES @ A4: Half A2 scale

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DRAWN/START DATE: Author

DRWG No: **S-05** REVISION: **C**

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CROSS SECTION 3

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CONSULTANT:  
S 9(2)(a)  
Jackson Clapperton & Partners Ltd  
PO Box 71 085 Rosebank Road  
ph (09) 8200131  
cell

NOTES:

REVISION HISTORY:

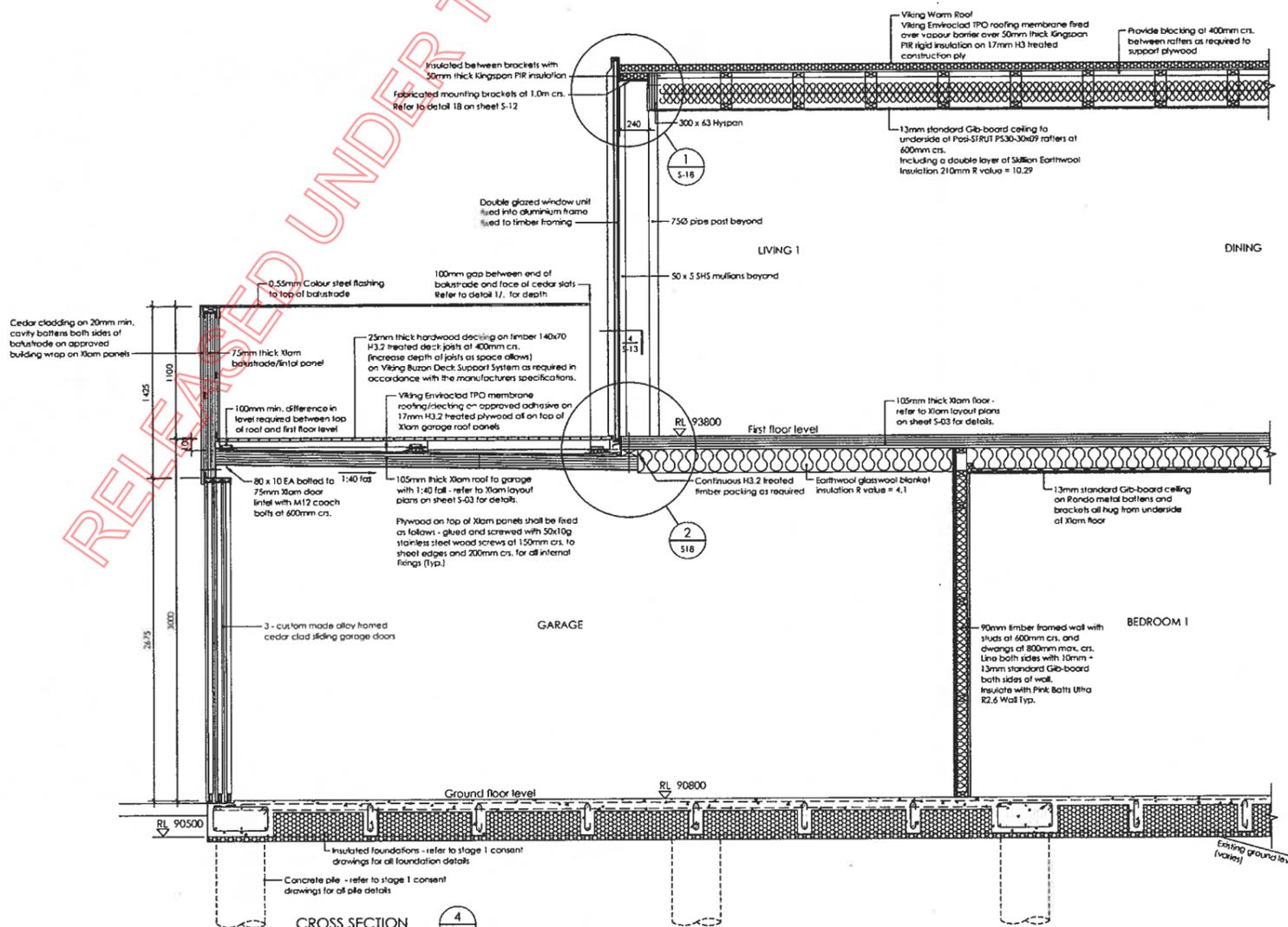
PROJECT: No. 201504  
**ISLAND BAY ROAD HOUSE**  
6 Island Bay Road  
Beach Haven  
AUCKLAND  
SHEET:  
**House Cross Section 3**

SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author  
REVISION:  
DRWG No: S-06  
C

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CROSS SECTION 4

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CONSULTANT:  
S 9(2)(a)  
Jackson Clapperton & Partners Ltd  
PO Box 71 085 Rosebank Road  
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cell

NOTES:

REVISION HISTORY:

PROJECT: No. 201504  
**ISLAND BAY ROAD HOUSE**  
6 Island Bay Road  
Beach Haven  
AUCKLAND  
SHEET:  
**Garage/House Cross Section**

SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author  
REVISION:  
DRWG No: S-07  
C

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Jackson Clapperton & Partners Ltd  
PO Box 71 085 Rosebank Road  
ph (09) 8200131  
cell

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
Beach Haven  
AUCKLAND  
SHEET:  
**Garage Cross Section**

SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF  
DRAWN/START DATE: Author  
DRWG No: S-08  
REVISION: A

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Jackson Clapperton & Partners Ltd  
PO Box 71 085 Rosebank Road  
ph (09) 8200131  
cell

NOTES:

GENERAL NOTES:  
All products listed below are to be used in the construction of the building, and supersede any other products which may be specified on these drawings.

Viking Enviroclad TPO Membrane  
PIR rigid insulation  
J Frame LVL framing  
James Hardie 6mm RAB Board  
Tekton breathable building wrap  
Manitex Innovations Super Stick building tape  
Dow Corning 795  
All exposed fixings 316 stainless steel  
All Aluminium joinery to be T4 6061  
Cedar vertical shiplap weatherboards  
Cavity battens V4 40x70mm Castelated

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
**ISLAND BAY ROAD HOUSE**

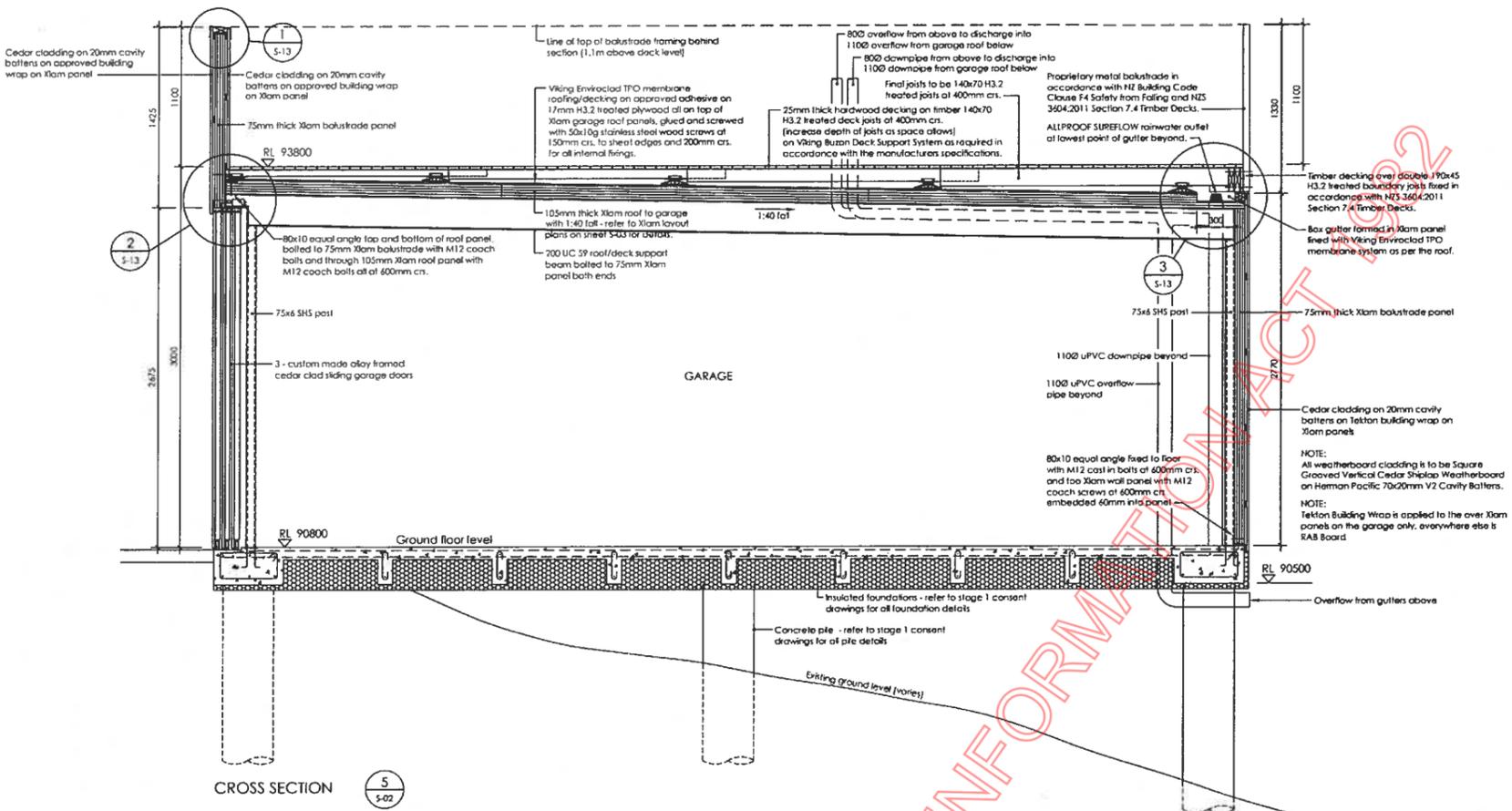
6 Island Bay Road  
Beach Haven  
AUCKLAND  
SHEET:  
**DETAILS**

SCALES @ A2:  
SCALES @ A4: Half A2 scale

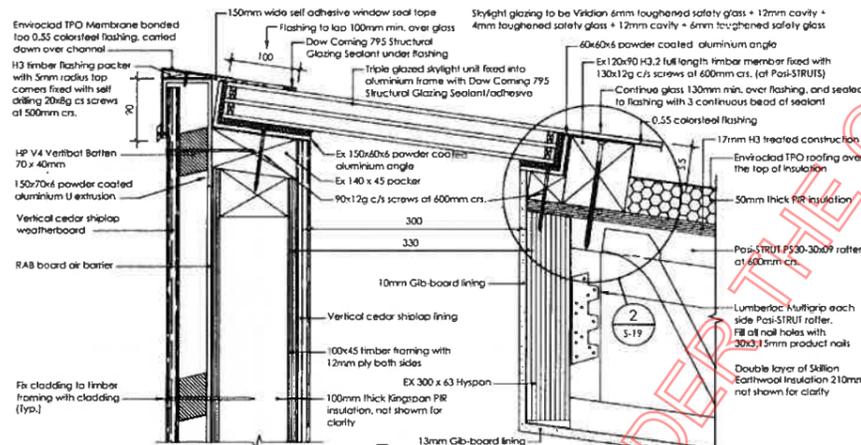
REF  
DRAWN/START DATE: Author  
DRWG No: S-09  
REVISION: C

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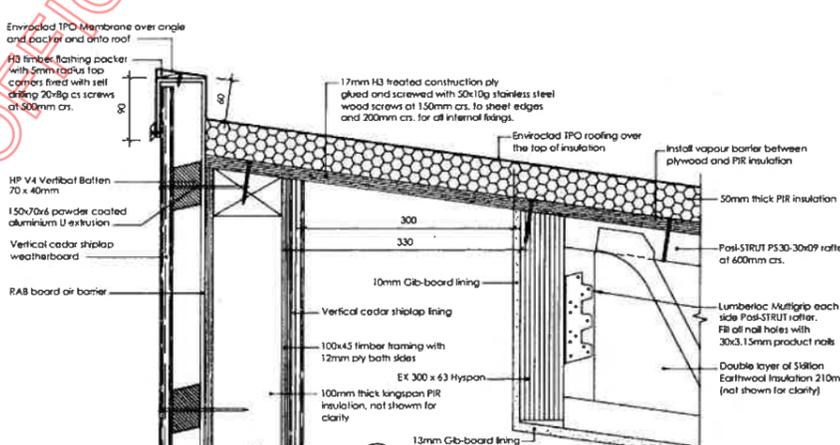
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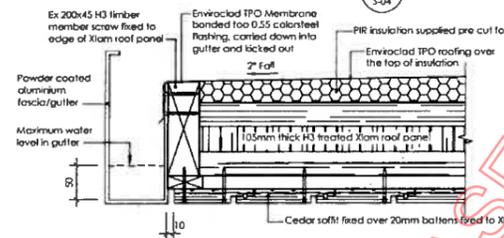
CROSS SECTION S-07



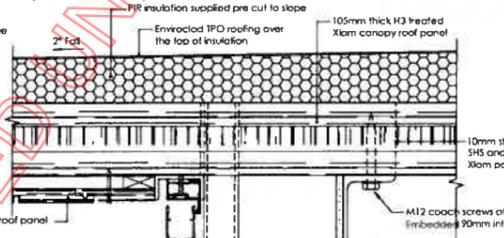
RIDGE SKYLIGHT DETAIL S-19



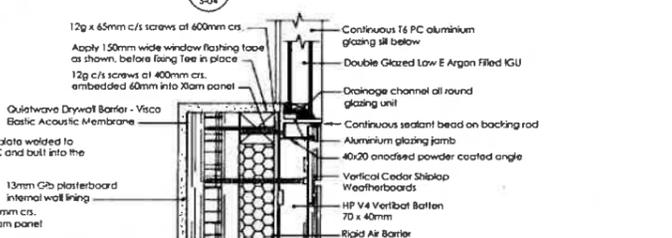
RIDGE TO ROOFING DETAIL S-04



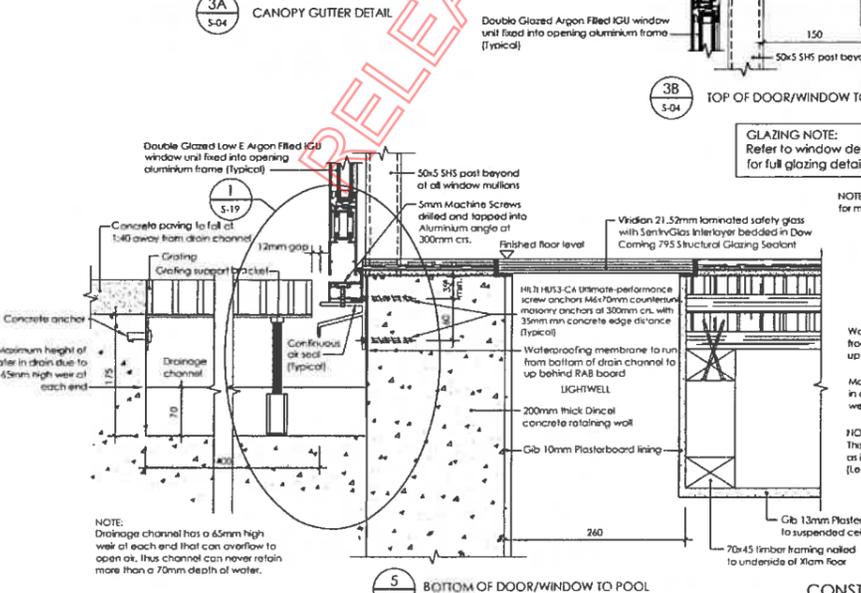
CANOPY GUTTER DETAIL S-04



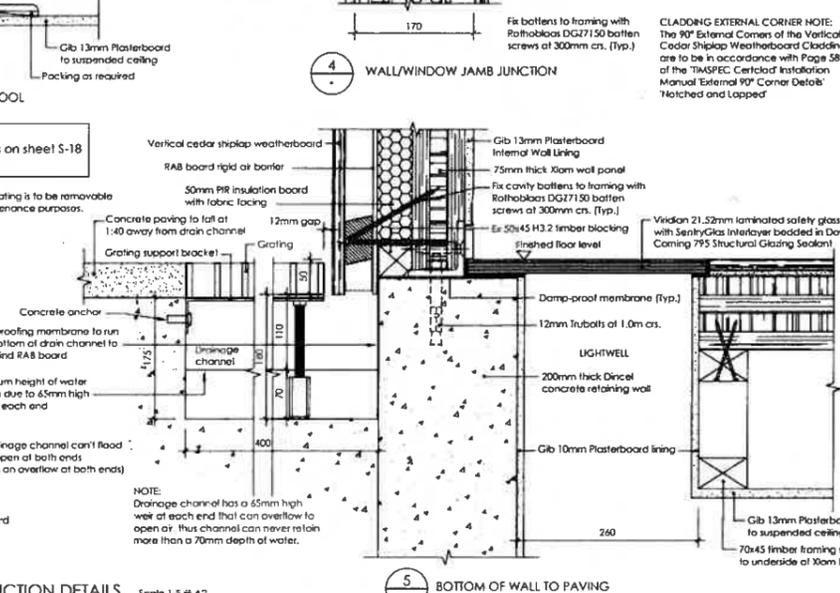
TOP OF DOOR/WINDOW TO POOL S-04



WALL/WINDOW JAMB JUNCTION S-04



BOTTOM OF DOOR/WINDOW TO POOL S-04



BOTTOM OF WALL TO PAVING S-04

CONSTRUCTION DETAILS Scale 1:5 @ A2



CONSULTANT:  
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cell

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
ISLAND BAY ROAD HOUSE

6 Island Bay Road  
Beach Haven  
AUCKLAND  
SHEET  
STEELWORK DETAILS

SCALES @ A2  
SCALES @ A4 Half A2 scale

REF: DRAWN/START DATE: Author  
DRWG No: REVISION:  
S-12 A

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CONSULTANT:  
S 9(2)  
Jackson Corporation & Partners Ltd  
PO Box 71 065 Rosebank Road  
PH (09) 8200131  
cell

NOTES:

REVISION HISTORY:

s 9(2)(a)

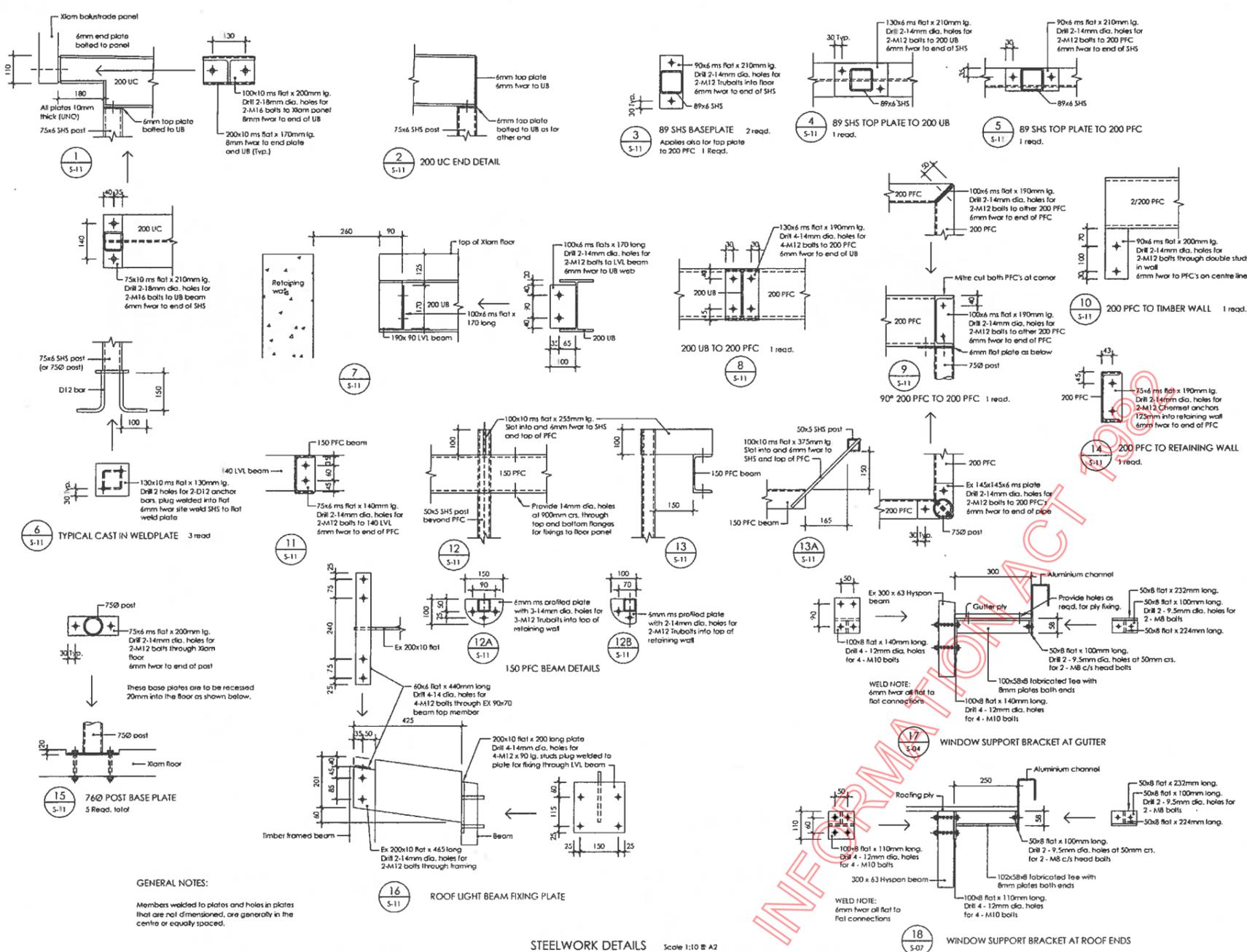
PROJECT: No: 201504  
ISLAND BAY ROAD HOUSE

6 Island Bay Road  
Beach Haven  
AUCKLAND  
SHEET  
MISC. DETAILS

SCALES @ A2  
SCALES @ A4 Half A2 scale

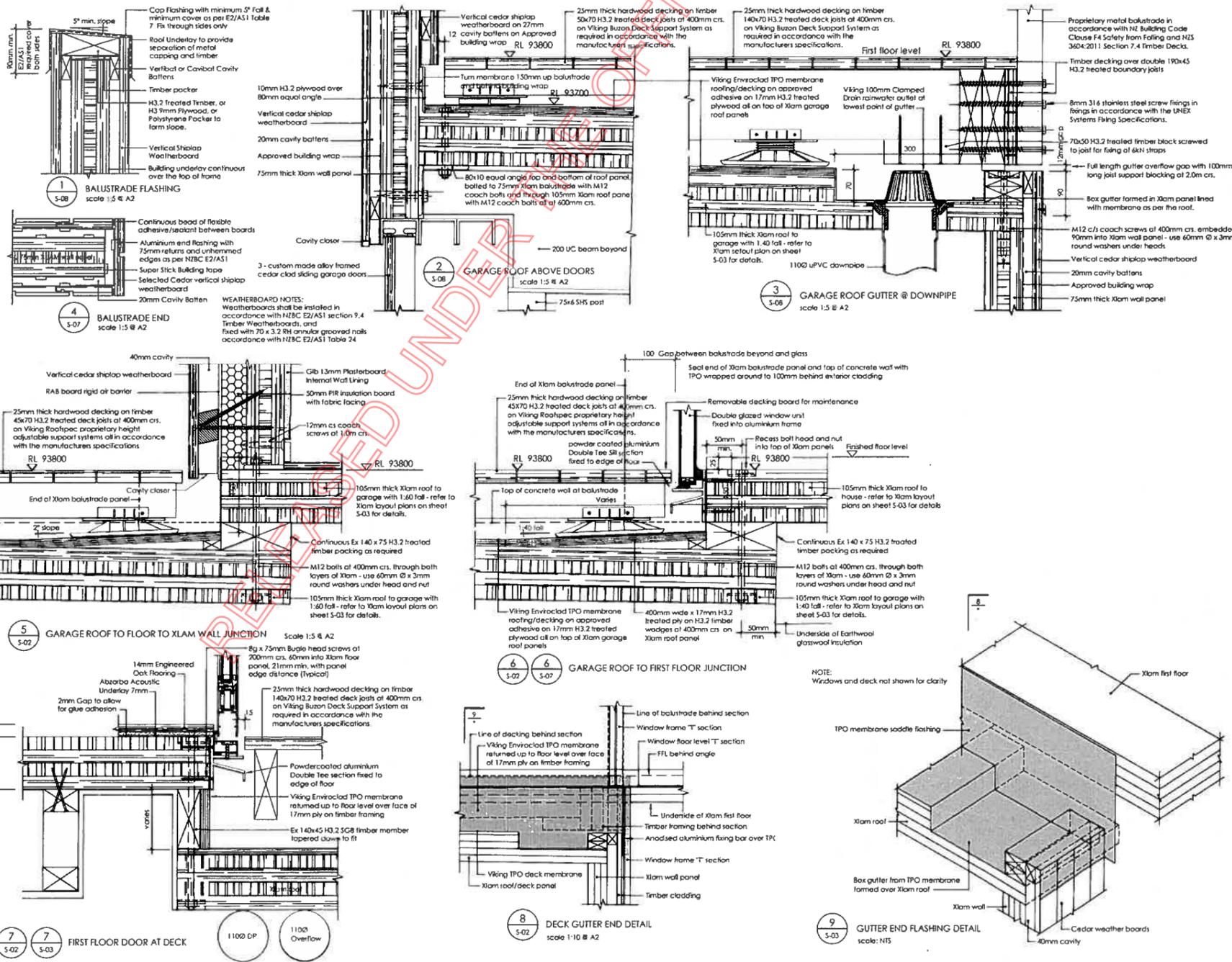
REF: DRAWN/START DATE: Author  
DRWG No: REVISION:  
S-13 B

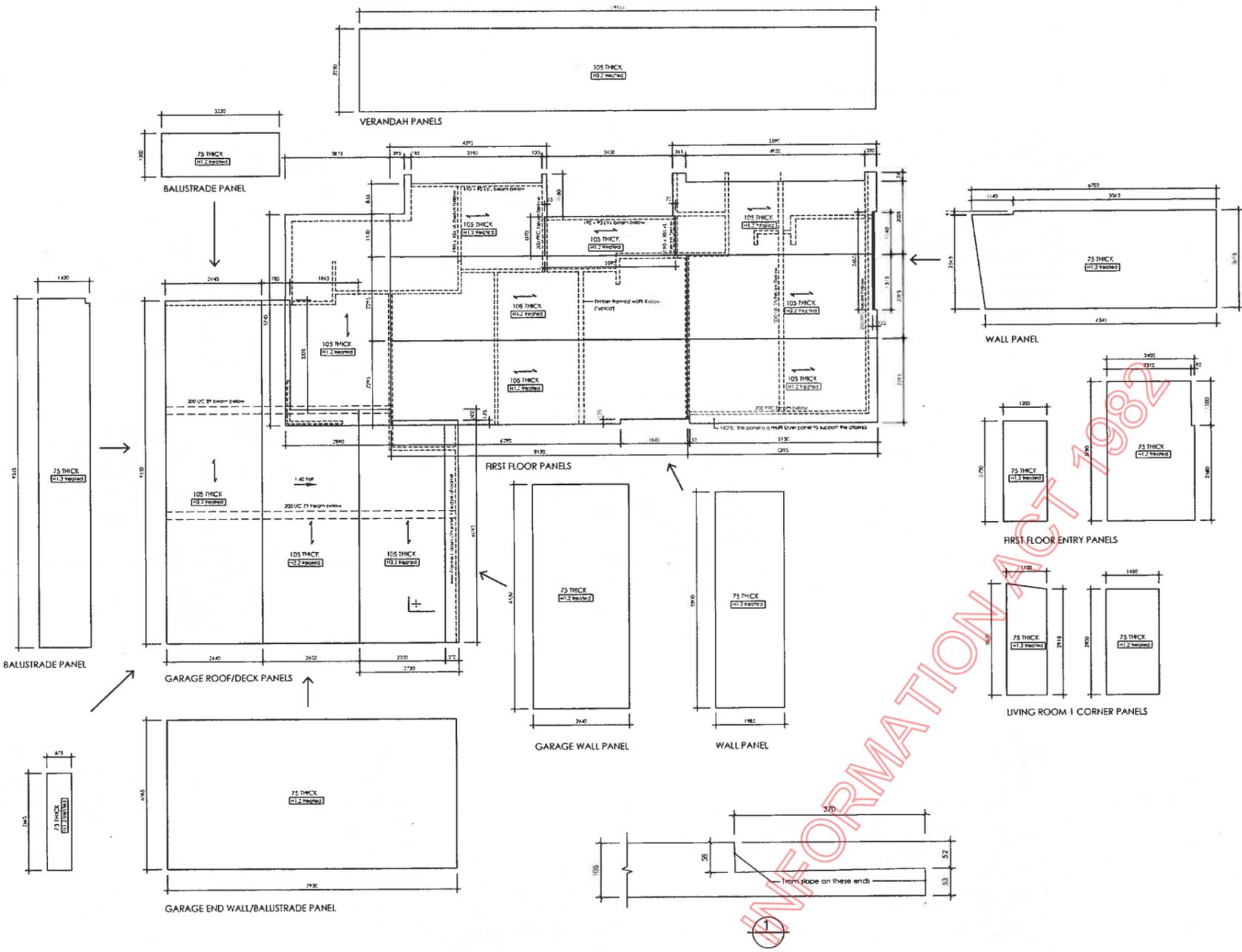
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GENERAL NOTES:  
Members welded to plates and holes in plates that are not dimensioned, are generally in the centre or equally spaced.

STEELWORK DETAILS Scale 1:10 @ A2





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CONSULTANT:  
S. Q. (2) / Jackson Clapperton & Partners Ltd  
PO Box 71 085 Rosebank Road  
ph (09) 8200131  
cell

NOTES:

REVISION HISTORY:

PROJECT: No 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
Beach Haven  
AUCKLAND

SHEET:  
**XLAM PANELS SIZES**

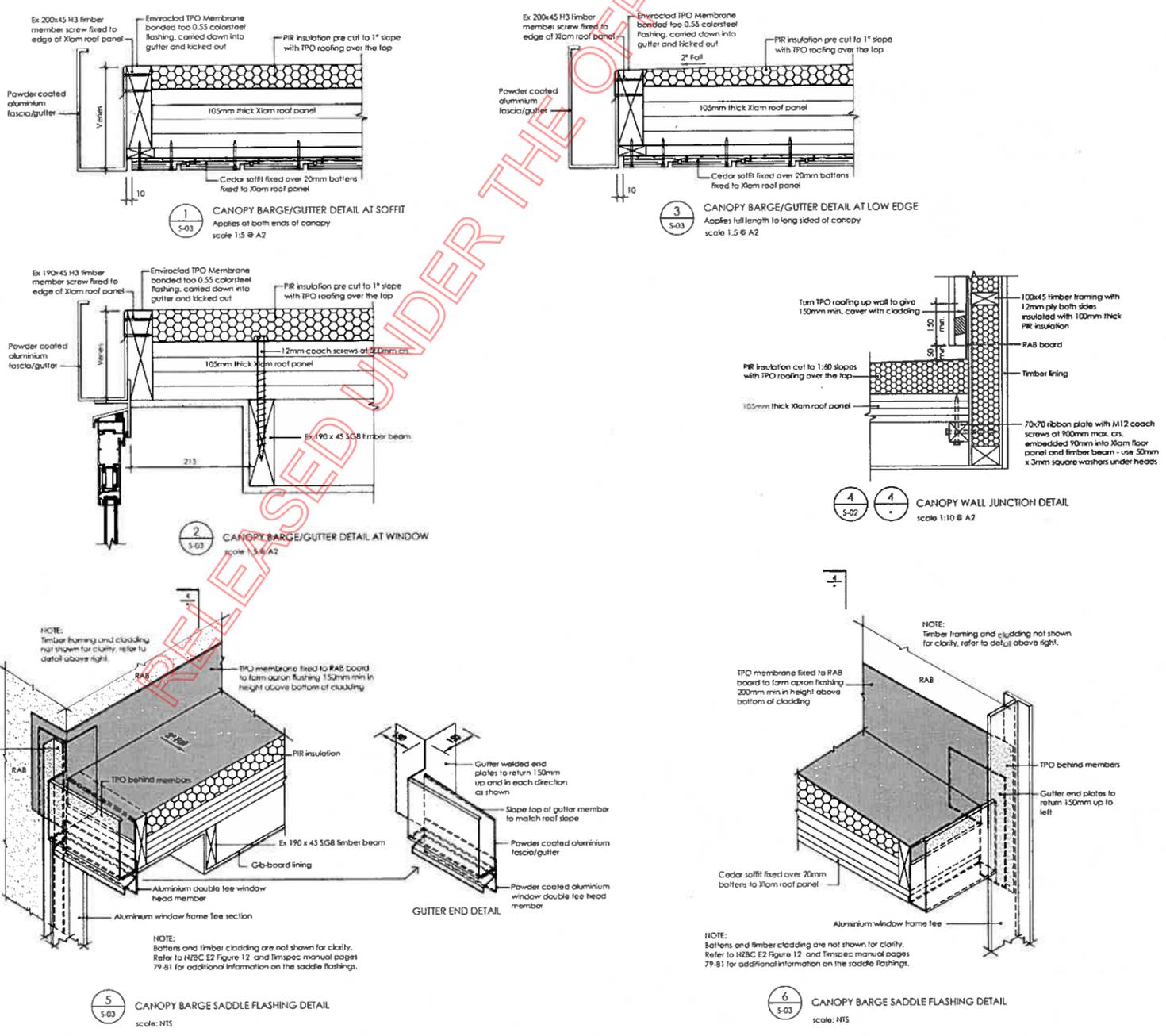
SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author

DRWG No:	REVISION:
S-14	A

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ph (09) 8200131  
cell

NOTES:

REVISION HISTORY:

PROJECT: No 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
Beach Haven  
AUCKLAND

SHEET:  
**CANOPY DETAILS**

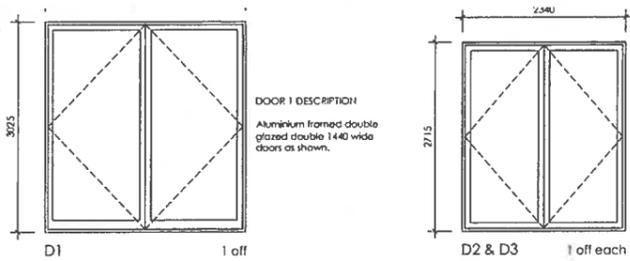
SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author

DRWG No:	REVISION:
S-15	B

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general notes:

Refer to the floor plans and elevations for the door locations.  
 'F' framed window dimensions shown are over the frame and 'U' glazing unit dimensions shown are over the unit.  
 All glazing units are low E double glazed units.  
 All windows and doors are elevated from the outside.  
 All doors windows and glazing units are to be site measured before manufacture.  
 All glass is to be clear float glass.

glazing notes:

Safety glass is to be provided to all doors and windows as required by Building Code Clause F2 Hazardous Building Materials, and in accordance with NZS 4223: Part 3: 1999 Glazing in Buildings - Human Impact Safety Requirements.  
 All glazing to comply with NZS 4223 parts 1, 2 and 3.

LOCAL AUTHORITY: AUCKLAND CITY COUNCIL

CONSULTANT:  
 c q (2) /  
 Jackson Clapperton & Partners Ltd  
 PO Box 71 085 Rosebank Road  
 ph (09) 8200131  
 cell

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
 Beach Haven  
 AUCKLAND

DOOR AND WINDOW ELEVATIONS

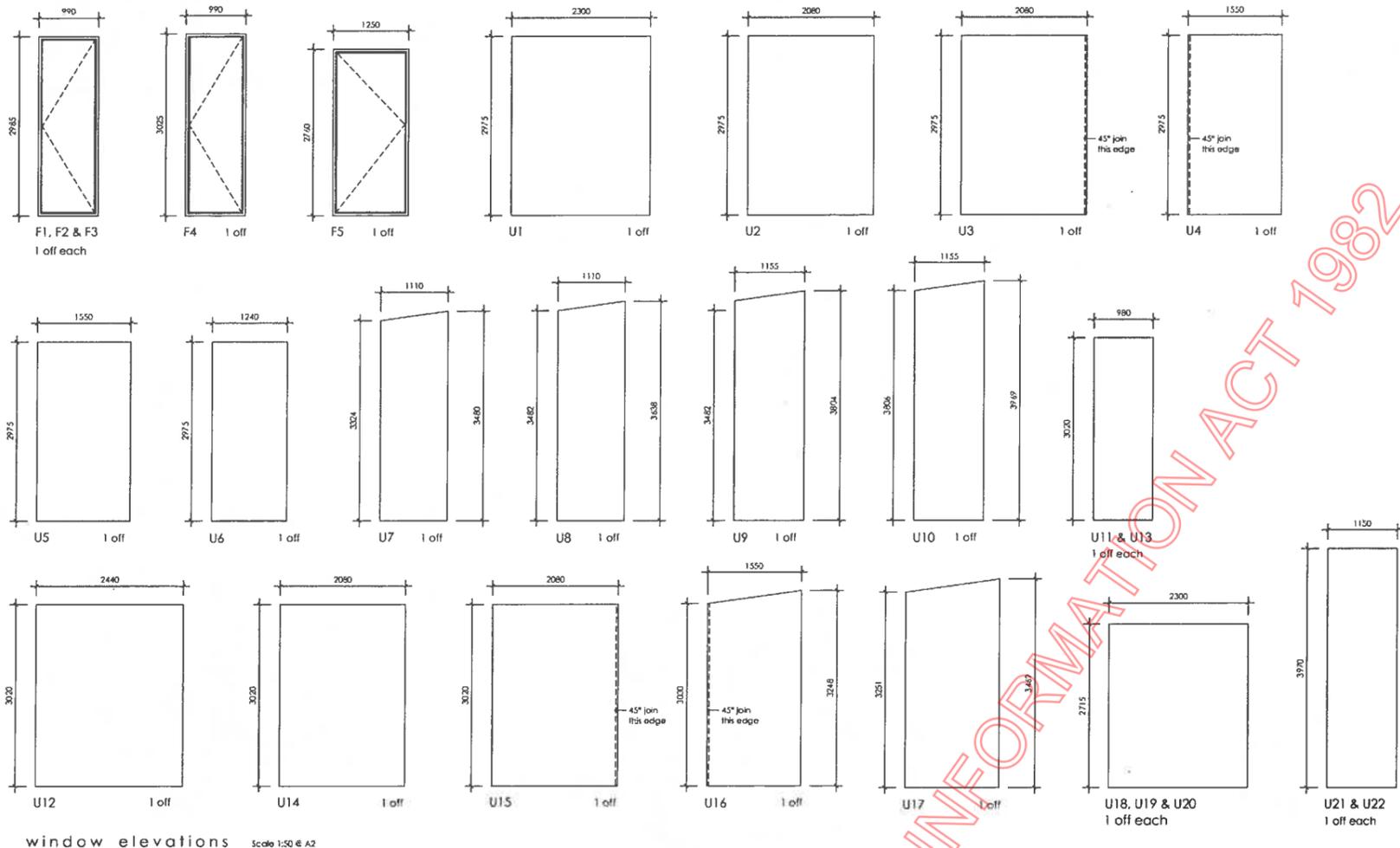
SCALES @ A2  
 SCALES @ A4 Half A2 scale

REF: DRAWN/START DATE: Author

DRWG No: S-16 REVISION:

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window elevations Scale 1:50 @ A2

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 Jackson Clapperton & Partners Ltd  
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 ph (09) 8200131  
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NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No: 201504  
**ISLAND BAY ROAD HOUSE**

6 Island Bay Road  
 Beach Haven  
 AUCKLAND

OPENING WINDOW DETAILS

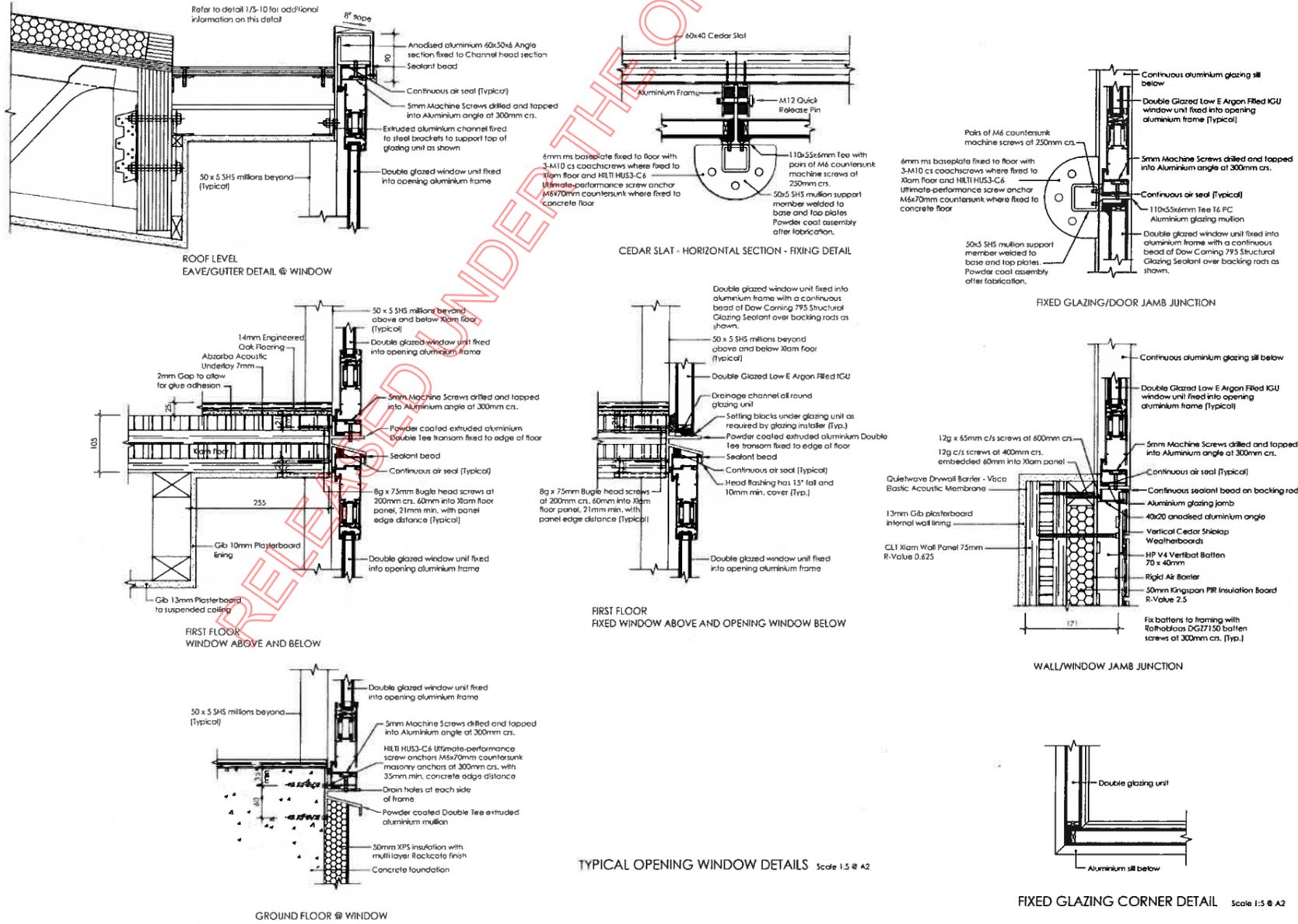
SCALES @ A2  
 SCALES @ A4 Half A2 scale

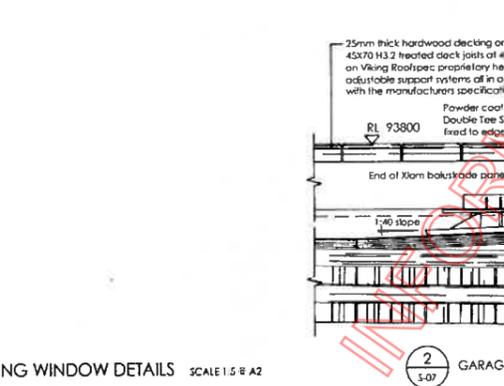
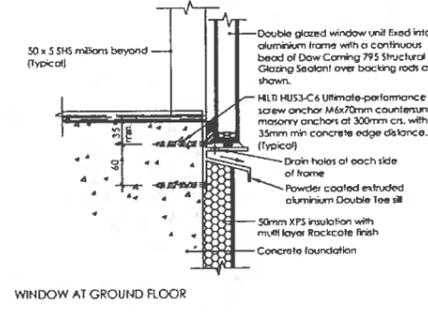
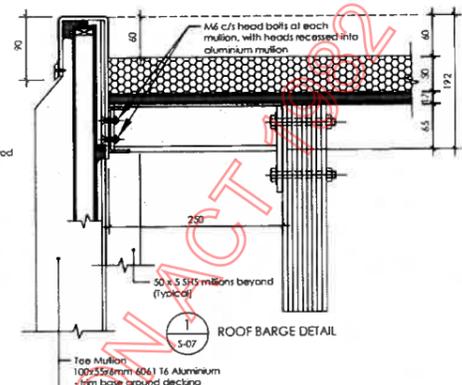
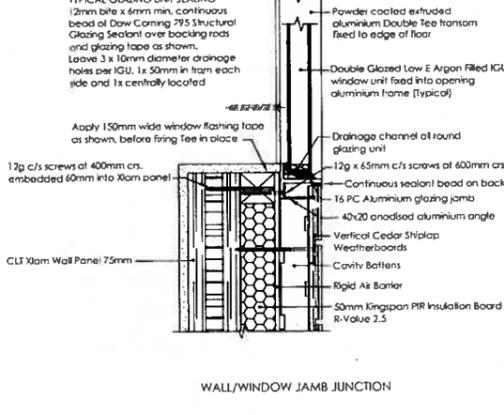
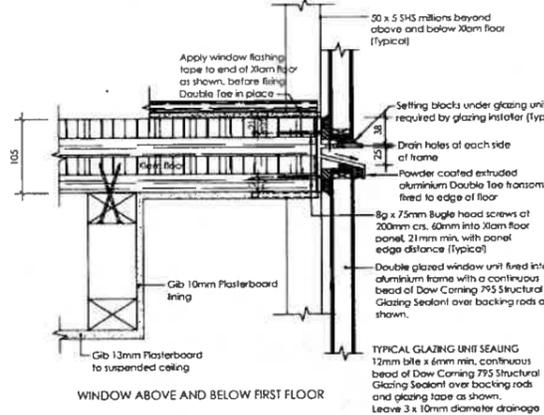
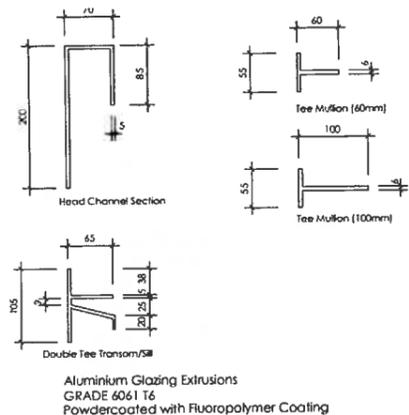
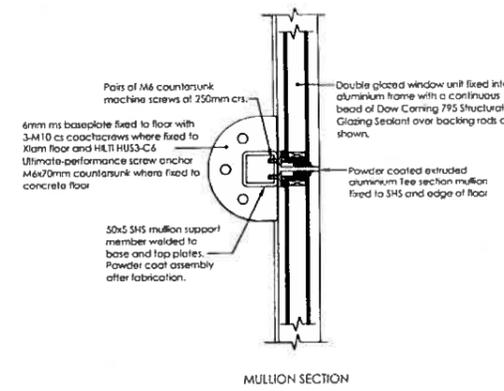
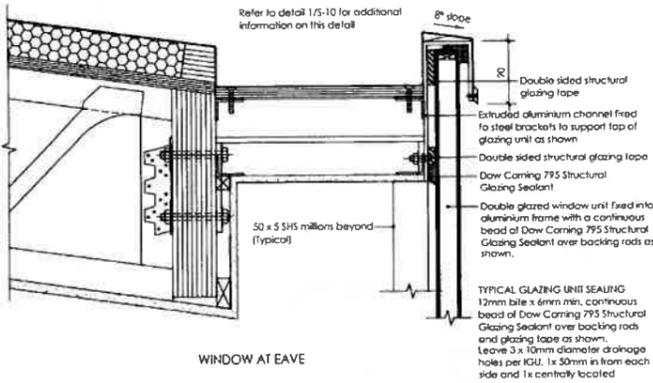
REF: DRAWN/START DATE: Author

DRWG No: S-17 REVISION: A

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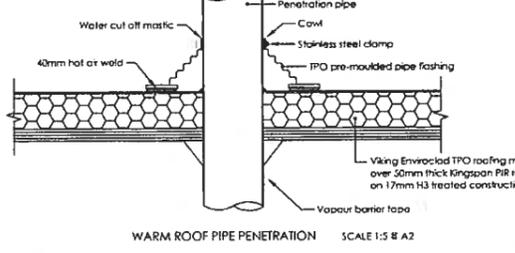
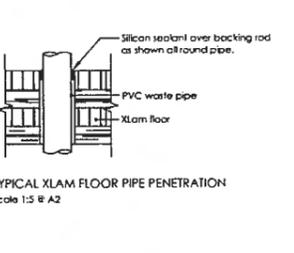
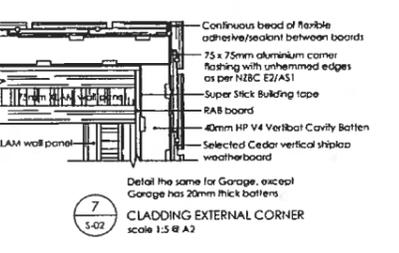
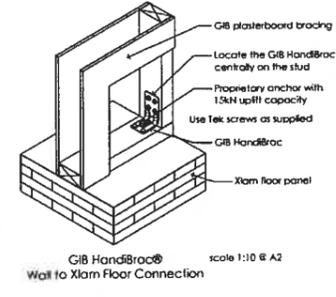
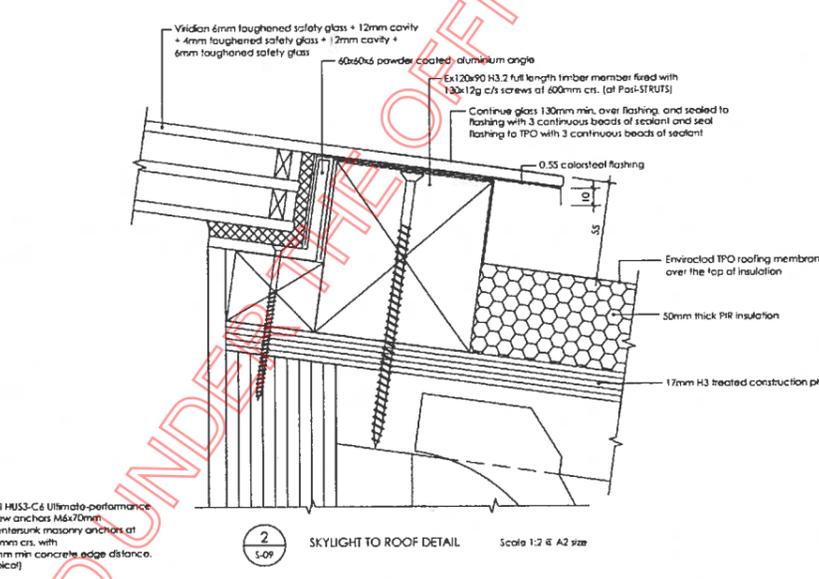
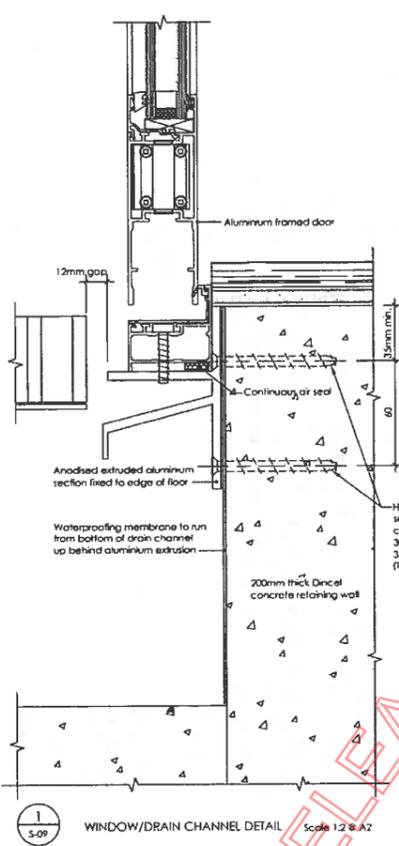
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TYPICAL FIXED GLAZING WINDOW DETAILS SCALE 1:5 @ A2

2 5-07 GARAGE ROOF TO FIRST FLOOR JUNCTION



LOCAL AUTHORITY:  
AUCKLAND CITY COUNCIL

CONSULTANT:  
OJY  
Jackson Clapperton & Partners Ltd  
PO Box 71 065 Rosebank Road  
ph (09) 8200131  
cell

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No. 201504  
ISLAND BAY ROAD HOUSE

6 Island Bay Road  
Beach Haven  
AUCKLAND

SHEET:  
STAIR DETAILS

SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author  
DRWG No: S-20  
REVISION:

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cell

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No. 201504  
ISLAND BAY ROAD HOUSE

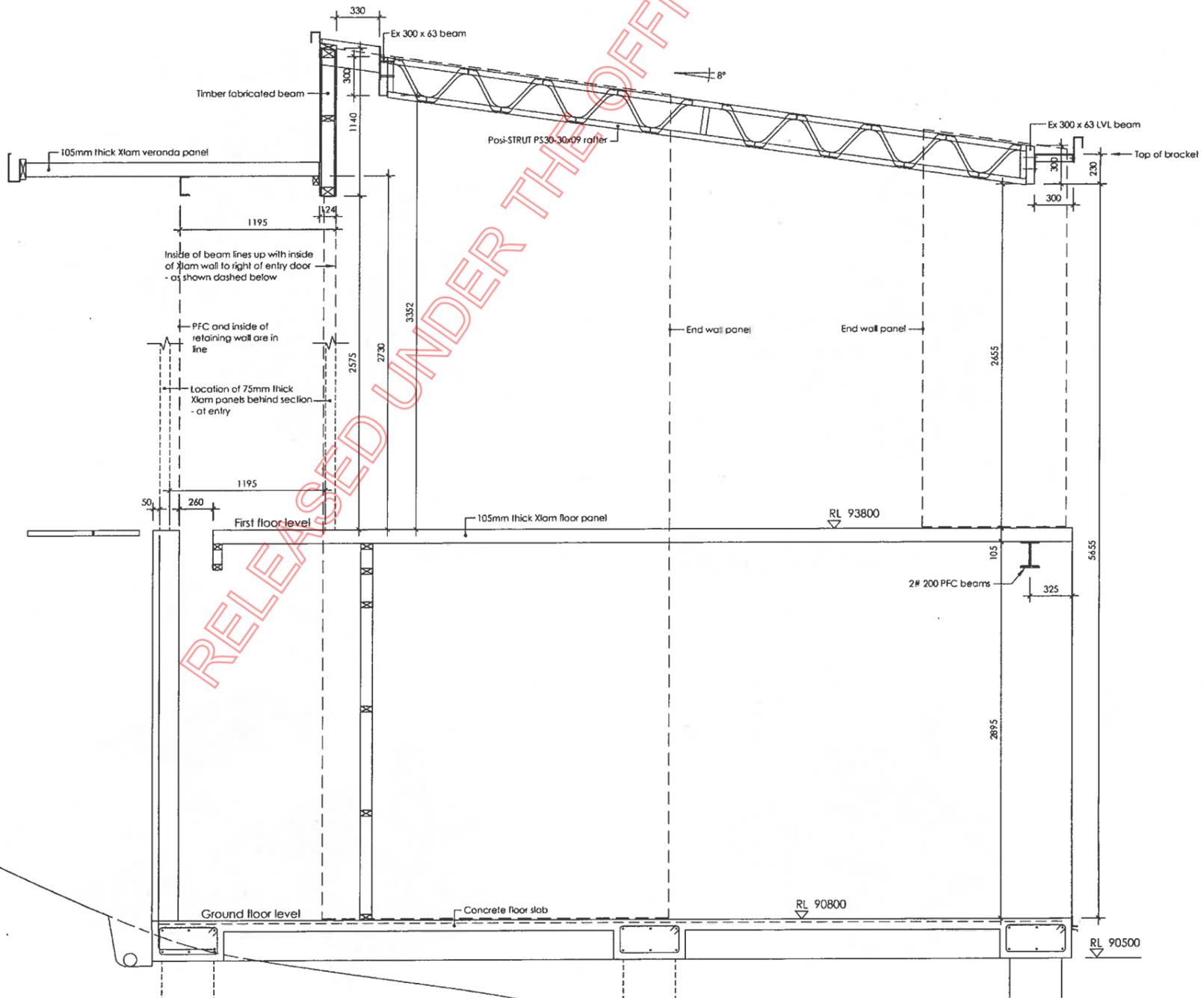
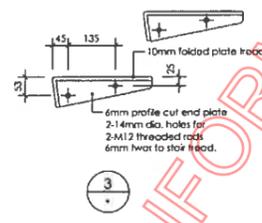
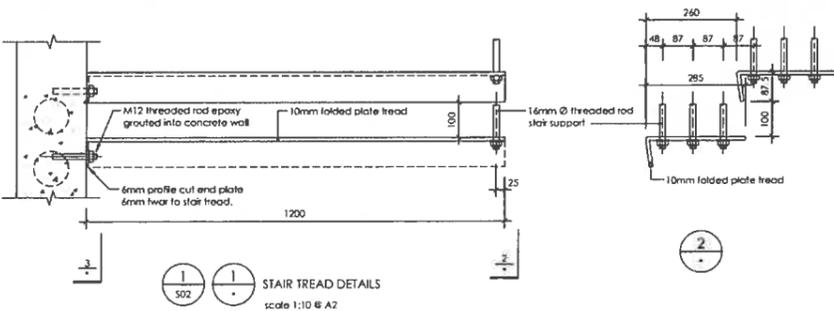
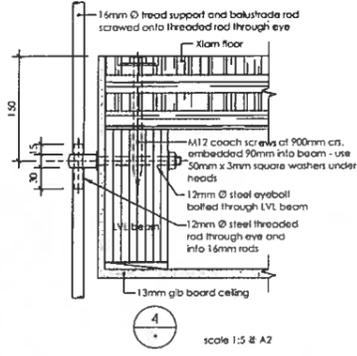
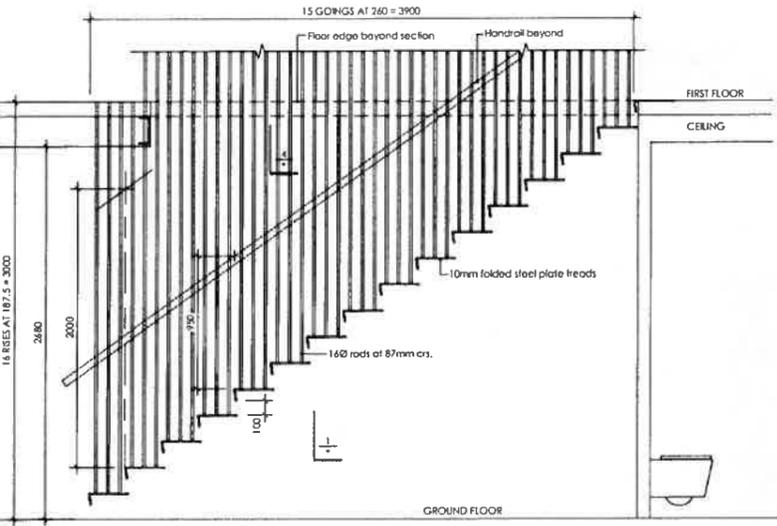
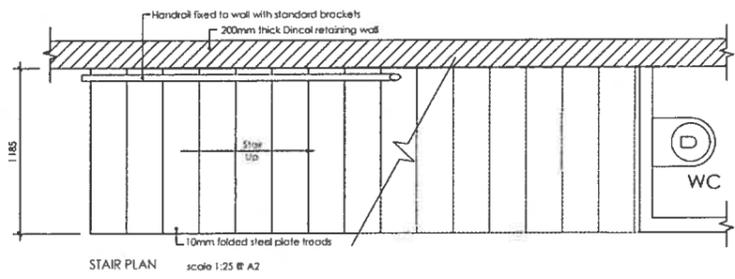
6 Island Bay Road  
Beach Haven  
AUCKLAND

SHEET:  
SETOUT DRAWING

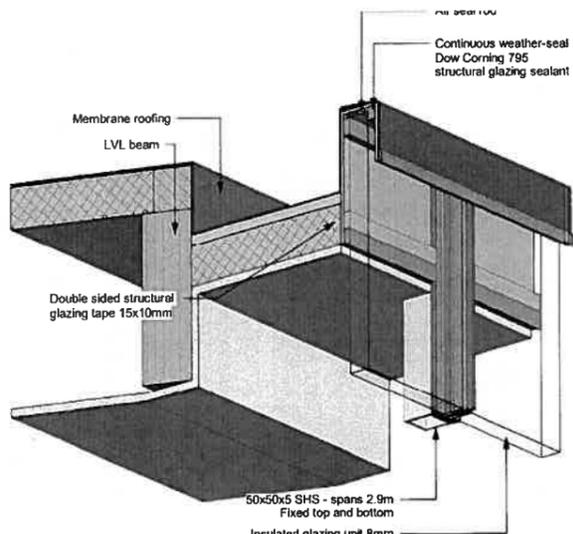
SCALES @ A2:  
SCALES @ A4: Half A2 scale

REF:  
DRAWN/START DATE: Author  
DRWG No: S-21  
REVISION: A

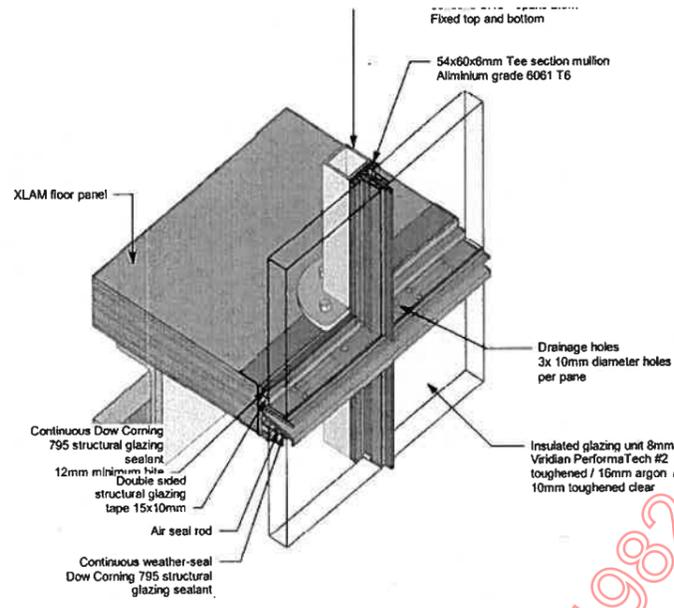
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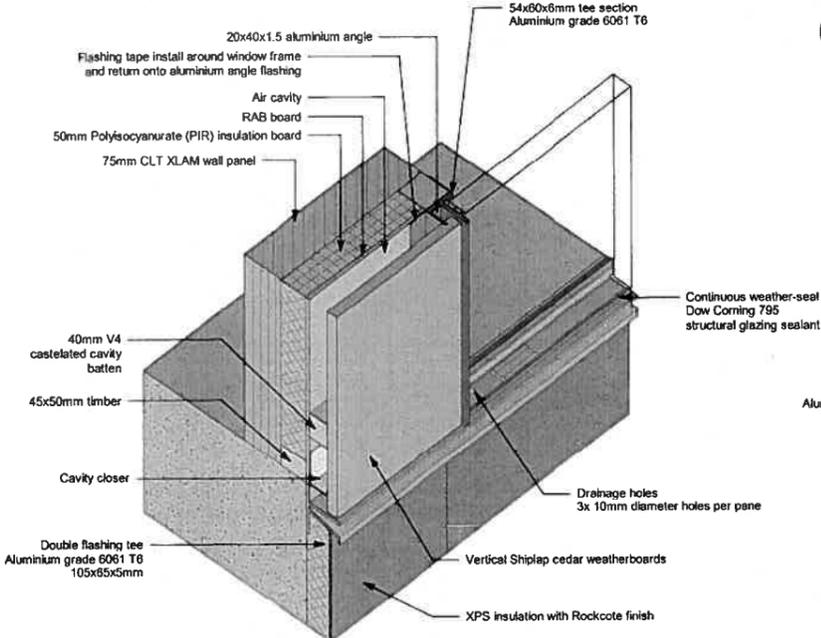
RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982



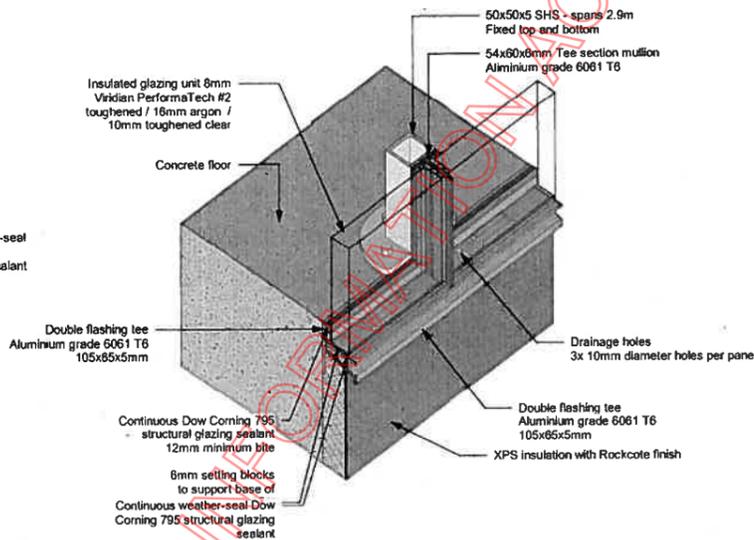
3 Typical Glazing Head Isometric Detail



1 Typical Glazing Isometric Detail



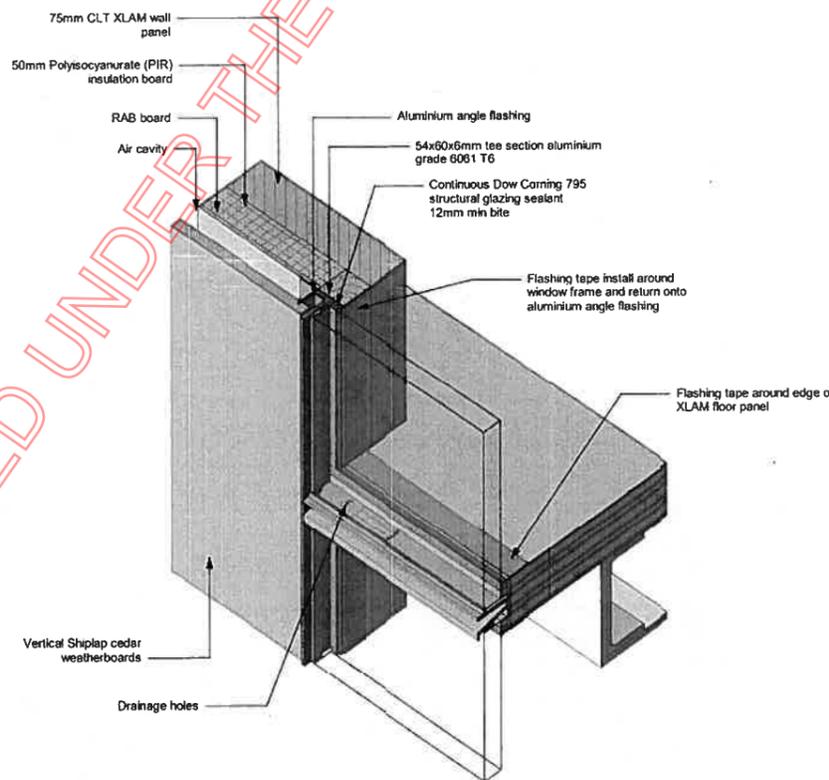
2 Typical Glazing to Wall Panel Isometric Detail



4 Typical Glazing Sill Isometric Detail

BUILDING CONSENT

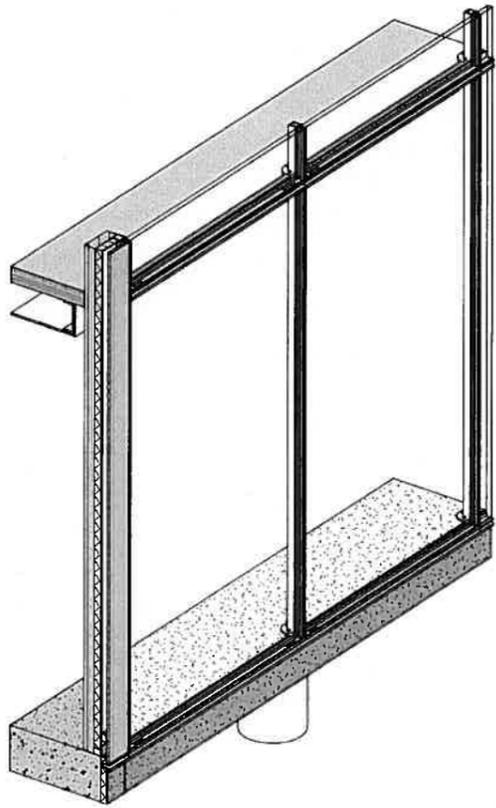
LOCAL AUTHORITY
CONSULTANTS
NOTES:
REVISION HISTORY:
s 9(2)(a)
PROJECT: No. 201504 ISLAND BAY ROAD HOUSE
6 Island Bay Road, Beach Haven
SHEET: Typical Glazing Details
SCALES @ A2: Half A2 scale
REF: DRAWN/START DATE: Author
DRWG No: A4-202 REVISION:
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4/2/2018 5:11:47 PM



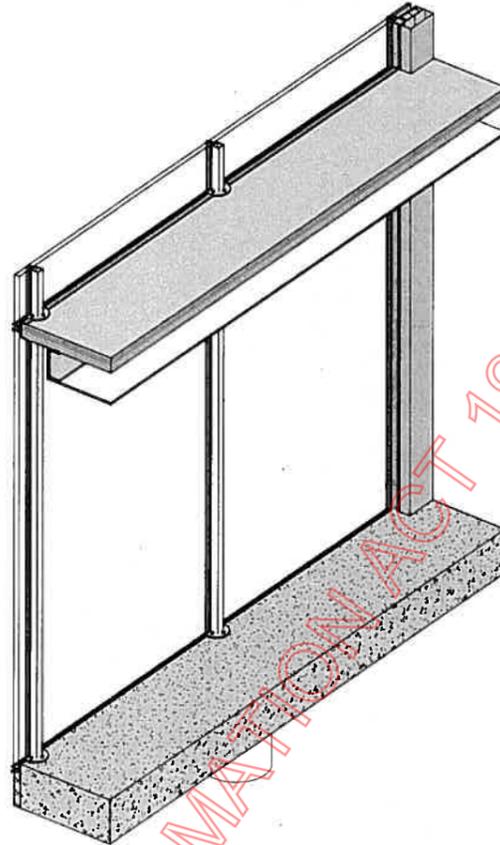
1 Typical Glazing to Wall Panel Isometric Detail at Midfloor

LOCAL AUTHORITY
CONSULTANTS
NOTES:
REVISION HISTORY:
s 9(2)(a)
PROJECT: No. 201504 ISLAND BAY ROAD HOUSE
6 Island Bay Road, Beach Haven
SHEET: Typical Glazing Details - Sheet 2
SCALES @ A2: Half A2 scale
REF: DRAWN/START DATE: Author
DRWG No: A4-203 REVISION:
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4/2/2018 5:11:52 PM

BUILDING CONSENT



1 Typical Glazing Panels - 3D



2 Typical Glazing Panels - 3D Interior

LOCAL AUTHORITY  
CONSULTANTS

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No. 201504  
ISLAND BAY ROAD HOUSE

6 Island Bay Road, Beach Haven

SHEET:  
Typical Glazing Details - Sheet 3

SCALES @ A2  
SCALES @ A4 Half A2 scale

REF:  
DRAWN/START DATE: Author

DRWG No: A4-204 REVISION:

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BUILDING CONSENT

LOCAL AUTHORITY  
CONSULTANTS

NOTES:

REVISION HISTORY:

s 9(2)(a)

PROJECT: No. 201504  
ISLAND BAY ROAD HOUSE

6 Island Bay Road, Beach Haven

SHEET:  
Typical Glazing Details - Sheet 4

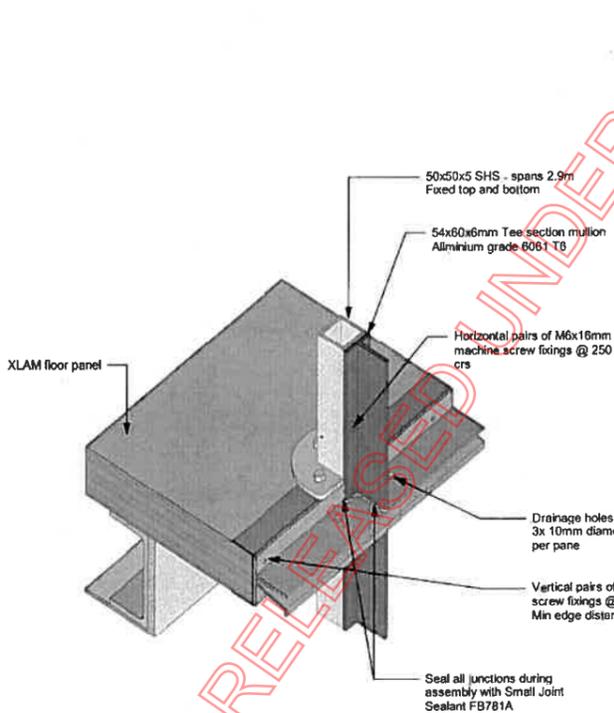
SCALES @ A2  
SCALES @ A4 Half A2 scale

REF:  
DRAWN/START DATE: Author

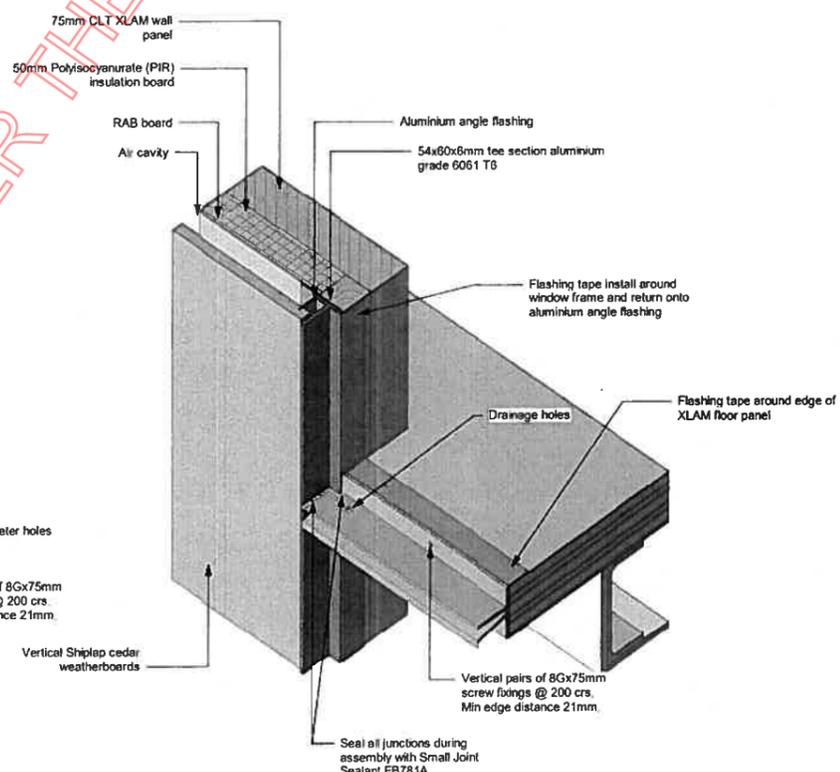
DRWG No: A4-205 REVISION:

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BUILDING CONSENT



2 Typical Mid-floor Sill to Mullion to Floor Panel Sealing and Fixing Isometric Detail



1 Typical Mid-Floor Sill to Jamb to Wall Panel Sealing and Fixing Isometric Detail

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**From:** Emma van den Eykel  
**Sent:** Tuesday, 17 April 2018 9:40 a.m.  
**To:** Determinations  
**Subject:** FW: Expert Report: 6 Island Bay Rd, Beachlands (Ref 2975) [UNCLASSIFIED]

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Could this email please be saved to MAKO and the linked documents printed?

Cheers,  
Emma

---

**From:** Corban Walls s 9(2)(a)  
**Sent:** Thursday, 5 April 2018 9:27 a.m.  
**To:** Tony Marshall  
**Cc:** Malcolm McCluskey ([Malcolm.McCluskey@aucklandcouncil.govt.nz](mailto:Malcolm.McCluskey@aucklandcouncil.govt.nz))  
**Subject:** Re: Expert Report: 6 Island Bay Rd, Beachlands (Ref 2975) [UNCLASSIFIED]

Hi Tony,

I had trouble yesterday as I tried to email the files through with no luck as your server blocked them due to file size:

Please download from  
here: [https://www.dropbox.com/sh/qkioz8kh63tzcoi/AACjR6\\_0alKWpV6aT0vVGngQa?dl=0](https://www.dropbox.com/sh/qkioz8kh63tzcoi/AACjR6_0alKWpV6aT0vVGngQa?dl=0)

Please confirm that you've received them.

Thanks, Corban

s 9(2)(a)

Corban Walls  
s 9(2)(a)

On 4/04/2018, at 9:20 AM, Corban Walls s 9(2)(a) > wrote:

Hi Tony,

Thanks for clarifying. I found a mistake on the updated drawings so had to get it amended, hence why I didn't send yesterday.

Please find attached updated drawings. More info to follow due to file size.

Thanks, Corban

<sp\_signature.jpg>

Corban Walls

s 9(2)(a)

<Island Bay Road House - Revised Determination Drawings - 29.03.2018 copy.pdf>

On 3/04/2018, at 3:18 PM, Tony Marshall <[Tony.Marshall@mbie.govt.nz](mailto:Tony.Marshall@mbie.govt.nz)> wrote:

Hello Corban

MBIE is required to receive and take account of submissions on a determination until it is issued. We are unable to 'decline' submissions – if you have this material you are able to provide it.

Regards

Tony Marshall  
Senior Adviser, Determinations

Housing & Tenancy Services, Market Services  
Ministry of Business, Innovation & Employment  
*Hikina Whakatutuki - Lifting to Make Successful*

[tony.marshall@mbie.govt.nz](mailto:tony.marshall@mbie.govt.nz) | Telephone: +64 (4) 901 8362 Ext 48362  
15 Stout Street, Wellington 6011

---

**From:** Corban Walls s 9(2)(a)

**Sent:** Tuesday, 3 April 2018 3:05 p.m.

**To:** Tony Marshall

**Cc:** Malcolm McCluskey ([Malcolm.McCluskey@aucklandcouncil.govt.nz](mailto:Malcolm.McCluskey@aucklandcouncil.govt.nz))

**Subject:** Re: Expert Report: 6 Island Bay Rd, Beachlands (Ref 2975)  
[UNCLASSIFIED]

Hi Tony,

Thanks for your email.

I spent last week obtaining and producing all the additional info required in the report. I'm minutes away from sending this to you. Are you able to add it into the existing determination?

Thanks, Corban

<image001.jpg>

Corban Walls  
s 9(2)(a)

On 3/04/2018, at 2:56 PM, Tony Marshall  
<[Tony.Marshall@mbie.govt.nz](mailto:Tony.Marshall@mbie.govt.nz)> wrote:

Hello Corban

The expert's report has provided a detailed technical response to the revised consent information submitted during the processing of the determination.

It is intended that the determination be now finalised and issued. The final determination (and the expert's report) will provide a clear indication of what is now required for the fixed glazing to be considered compliant, and this will be left to the parties to resolve.

The matter can be referred back to MBIE for another determination if agreement is unable to be reached on specific issues.

Regards

Tony Marshall  
Senior Adviser, Determinations

Housing & Tenancy Services, Market Services  
Ministry of Business, Innovation & Employment  
*Hikina Whakatutuki - Lifting to Make Successful*

[tony.marshall@mbie.govt.nz](mailto:tony.marshall@mbie.govt.nz) | Telephone: +64 (4) 901 8362 Ext  
48362  
15 Stout Street, Wellington 6011

<image002.jpg>

---

**From:** Corban Walls s 9(2)(a) ]  
**Sent:** Monday, 26 March 2018 2:34 p.m.  
**To:** Tony Marshall  
**Cc:** Malcolm McCluskey  
([Malcolm.McCluskey@aucklandcouncil.govt.nz](mailto:Malcolm.McCluskey@aucklandcouncil.govt.nz))  
**Subject:** Re: Expert Report: 6 Island Bay Rd, Beachlands (Ref 2975) [UNCLASSIFIED]

Hi Tony,

Thanks a lot for your email and report. I found the report to be professional and accurate in most instances. There were a few things which I have noted in red to the attached.

Can you please tell me, if I go ahead and provide the additional information as requested and noted (in red) on the report will

this result in the determination being decided in my favour. I simply can't afford to carry on further if there'll be more to do. This has cost me tens of thousands of dollars and over 18 months in delays so far.

Please find attached. I look forward to hearing from you.

Thanks, Corban

<image001.jpg>

Corban Walls  
s 9(2)(a)



On 21/03/2018, at 10:14 AM, Tony Marshall  
<[Tony.Marshall@mbie.govt.nz](mailto:Tony.Marshall@mbie.govt.nz)> wrote:

Hello All

Attached is a copy of the expert's report for the above property sought by MBIE in response to the detailed submission received from the applicant on 1 February 2018.

The Ministry will amend the determination and reissue it for comment but will not do so until the parties have responded to the attached – can you please do so on or before 6 April 2018.

Please contact the Determinations team on (0800) 242 243 or email [determinations@mbie.govt.nz](mailto:determinations@mbie.govt.nz) if you have any questions.

Regards

Tony Marshall  
Senior Adviser, Determinations

Housing & Tenancy Services, Market Services  
Ministry of Business, Innovation & Employment  
*Hikina Whakatutuki - Lifting to Make Successful*

[tony.marshall@mbie.govt.nz](mailto:tony.marshall@mbie.govt.nz) | Telephone: +64 (4)  
901 8362 Ext 48362  
15 Stout Street, Wellington 6011

<image003.jpg>

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<Report Appendices Island Bay (Ref 2975) 200318.pdf><Expert Report Island Bay (Ref 2975) 200318.pdf>

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---

## STRUCTURAL GLAZING COVER LETTER

6 Island Bay Road, Beach Haven

3rd April 2018

### Included:

- Cover Letter
- Technical Specification for Structural Glazing
- Typical Structural Glazing Details
- FacadeLab Letter and Certificate of Accreditation
- Dow Corning 795 Structural Glazing Sealant Specification
- Gaska Tape VK Series Specification
- Viridian Performa Tech 206 Specification
- WANZ AAMA 501.2 Watertightness Filed Test Procedure
- Dow Corning Design Approval
- Jackson Clapperton Engineering Design for specific wind load
- Windspeed Conversion Chart
- Architects Report with final comments
- Updated set of drawings

### Changes to drawings include:

- Update all drawings to show 50x50x5mm Steel SHS mullion supports behind all mullions
- Amended text error on S-18 referring to backing rods
- Increase edge distance of all sill fixings into XLAM from 17mm to 21mm
- Amended drawing notes to demonstrate three IGU sill drain holes as specified
- Provided additional Isometric mullion to frame details to clarify sealing and connection details
- Amended detail fixing SHS mullion supports top and bottom of XLAM floor panel as specified (Sheet S-10 details 3&5.)

### Architects Report - Comments:

There are some contradictions and mistakes within the report as highlighted. One typo appears to provide contrary results.

#### 5.12 - B

Engineers calculations already provided for fixing SHS mullions into XLAM floor top and bottom (Section E of eng calcs). Additional details provided on Sheet S-10 details 3&5.

#### 5.13 - 3

Design approval has been confirmed by Dow Corning. Viridian Glass refused to provide a PS1 for the project until Dow Corning had approved the design and confirmed adhesion warranty cover for this specific project. Refer to attached email from Viridian Glass.

#### 5.13 - 4 & 5.14

I must reiterate my point about the adhesion compatibility testing. Compatibility testing is performed on material samples taken from the actual 'run' of material being used for this specific project. In order to achieve this samples are taken from the actual run of aluminium and glass to be used in the construction of the building. To perform this test on any other material would be deemed pointless. The test is undertaken to prove the adhesion performance of the structural

glazing sealant to the coating on the aluminium extrusion. This is a standard and non-rigorous procedure and focuses as much on the quality of the powder coating adhesion to the aluminium extrusion as the adhesion to the glass itself. This is industry standard practice for structural glazing and I've never heard of anyone having to purchase joinery and glazing before building consent has been granted.

#### 5.5

In regards to the Glazing Tape otherwise referred to as a 'Spacer', this tape is double sided but provides NO longterm structural qualities. To put it simply it's a spacer, a spacer that determines the structural silicon thickness, the fact that it has double-sided adhesive, basically aides the installer and provides a secondary safety precaution while the sealant cures. However, I have increased the width of the Tee Mullion to (now 54mm) allow for additional tape and sufficient structural sealant. Also the glazing tape can be purchased at any width as it comes on a wide roll and is cut to the desired width by the supplier at the time of order. Regarding the structural silicon, these calculations are done as per of Viridian Glass PS1.

#### 5.7 - A

FacadeLab are accredited and audited by IANZ under ISO 17025 to carry out NZS 4284, NZS 4211, NZBC/M1 and also AS 2047 tests so their equipment and methods qualify for each of these standards and they all draw from AS/NZS 4420.1. Refer to attached letter from FacadeLab.

#### 5.9 - B

Refer to attached letter from FacadeLab.

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## TECHNICAL SPECIFICATION FOR STRUCTURAL GLAZING

6 Island Bay Road, Beach Haven

### Introduction

The glazier and project manager (Corban Walls) shall read and fully understand this technical specification before commencement of any glazing work as this document contains important information on the correct glazing specifications for Viridian Glass Structural Glazing units. Failure to comply with these specifications will void the Viridian Glass warranty and severely limit any liability Viridian Glass may have for the product. Insulating Glass Units shall be installed in accordance with the glazing requirements of AS/NZS 4666 unless otherwise specified.

Silicone structural glazing utilises a high performance silicone sealant to attach glass, metal, or other panel materials to a metal frame in lieu of gaskets and mechanical attachments. The wind-load stresses on the facade are transferred through the structural silicone sealant to the structure of the building. The structural silicone sealant must maintain its adhesive and cohesive properties in order to support the panels under wind-load. Only silicone sealants are suitable for use in structural glazing applications. A considerable amount of time has been spent developing and testing silicone sealants to meet the needs of structural glazing application. Whenever a silicone sealant is used to structurally bond facade panels, a comprehensive quality control procedure must be established to assure the smooth, efficient, trouble-free completion of the project. Specific quality control procedures must be followed on all structural glazing projects in order to obtain a Dow Corning Structural Warranty.

Minimum Glazing Dimensions – for specified framing system:

- (a) Edge Clearance – not less than 6mm;
- (b) Face Clearance – not less than 6mm;
- (c) Edge Cover (head flashing) – not less than 10mm

### Glazing Blocks

Glazing blocks made of Polyethylene "PE" or Poly propylene "PP" are recommended. Blocks made of polyamide (reinforced with fiber glass) may also be used. Aromatic synthetic material is to be avoided, e.g. polystyrene "PS", acryle butadienstyrole copolymere "ABS" or any other polyblends or copolymers. The use of blocks made of PVC must also be avoided due to the risk of plasticiser migration. No plasticiser containing layers (no rubber, EPDM based glazing blocks or layer) may be used on glazing blocks. The minimum width of each setting block shall be not less than 3mm greater than the unit and setting blocks shall be located to equally support all panes of glass and shall be fixed to prevent displacement during installation and service. The size, number and location of setting / location blocks and distance pieces shall be determined by the glazier.

### Structural Glazing

Structural sealant used as a secondary seal in IGU must be specified for structural glazing when placing the order. Dow Corning® 3363 Insulating Glass Sealant is used as a secondary seal for

structural glazing applications. Closed-cell PE beads are recommended to be used as backing material (backer rod), as used for window / wall joints.

The uses of the following one-part silicone sealants are recommended for weather-sealing IGU structural glazing. Any other types of sealants other than specified below must be checked for compatibility with the components of IGU's and approved by an authorised representative of Viridian Glass.

Weather Sealants: Dow Corning 795 Silicone Structural Glazing Sealant  
Structural Glazing: Dow Corning 795 Silicone Structural Glazing Sealant

#### Prerequisites:

- Glass and all other substrates in contact with sealants are tested for adhesion and compatibility, and approved by Dow Corning prior to commencement of work.
- All structural glazing shall be made up of Viridian 8 mm toughened safety PerformaTech glass (outer pane) + 16 mm argon cavity + 10 mm clear toughened safety glass (Inner Pane)
- PerformaTech Low E glass to face the exterior of the building and shall be clearly labelled from the factory to prevent onsite confusion.

#### Site Conditions:

- The building structure shall be scaffolded and fully shrink-wrapped to ensure a controlled and dry working environment. Scaffolding needs to be carefully designed to allow for glazing installation.
- The site shall be thoroughly cleaned, dried and clear with all construction dust vacuumed and removed from site prior to installation
- Forecast weather conditions must be mild with light wind conditions in order to ensure work is completed satisfactorily
- No tradesmen or person shall enter the site other than tradesmen or person assisting with glazing work until glazing is complete
- Extreme care shall be taken after glazing is completed to ensure insulated glazing units remain untouched and undamaged
- Glazing shall be fully masked and covered to ensure sealant remains clean and uncontaminated during the 21 day curing process

#### Window Frames

- The building structure supporting the window frames shall be constructed to a tolerance of no more than +/- 2.0mm
- Glazing structure and support frames shall be constructed and installed to a tolerance of no more than +/- 2.0mm across flats and diagonals covering all dimensions
- Dimensional accuracy shall be checked and confirmed by laser and manual measurement prior to installation of insulated glazing units
- All frame intersections and junctions should be fully sealed during assembly with Fabricator Small Joint Sealant FB781A.
- Shimming or packing of any window framework shall be more than max 3.0mm thickness, avoid where possible
- XLAM floor panels shall be made larger on the glazing edge to allow precise trimming to match the concrete slab below

- Fixing of frames shall be undertaken strictly as outlined by structural engineer;
  - Sill fixings into Concrete = Vertical pairs of HILTI HUS3-C6 M6x70mm @ 300mm c/c. Min edge distance 35mm
  - Sill fixings into Xlam CLT = Vertical pairs of 8Gx75mm screw fixings @ 200mm c/c. Min edge distance 21mm
  - Jamb Fixings into framing = 12Gx65mm screw fixings @ 600mm c/c. Min edge distance 21mm
  - Tee Mullion to SHS Mullion = Pairs of M6x16mm (G8.8) 250mm c/c or 4x pairs per metre

NOTE: All aluminium tee mullions must have 50x50x5mm Steel SHS mullion support fixed behind in accordance with the structural engineers specification as designed

### Installation

- Cleaning of glass and frame is carried out strictly in accordance with Dow Corning 795 instructions. Refer to Dow Corning 795 Structural Glazing Sealant Specification which shall remain attached to this document at all times
- Dry fit insulated glazing units prior to final install to ensure compatibility and accuracy
- No twisting of glass is permitted in any scenario beyond the maximum threshold of +/-2.0mm from edge to edge
- Drainage holes shall remain free from blockage or obstruction during glass installation
- Glazing clamps shall be installed on mullions and sill transoms (minimum 1 per meter) as an additional safety precaution and remain in place until structural sealant is fully cured (21 days)

### Onsite Glazing Test Procedure:

- Two sacrificial test windows shall be constructed onsite, simultaneously, alongside and under identical site conditions as the permanently installed windows. Sacrificial insulated glazing units shall be install and deglazed from the window frames and evaluated by a qualified Dow Corning agent to ensure satisfactory sealant adhesion between the insulated glazing unit and the window frame once the structural sealant is fully cured.
- Sacrificial test windows shall be 1000mm x 1000mm in size, fixed into a temporary framed wall on the first floor. To replicate varying site conditions Test Window One shall be located at the Northern end of the building and Test Window Two at the Southern end of the building

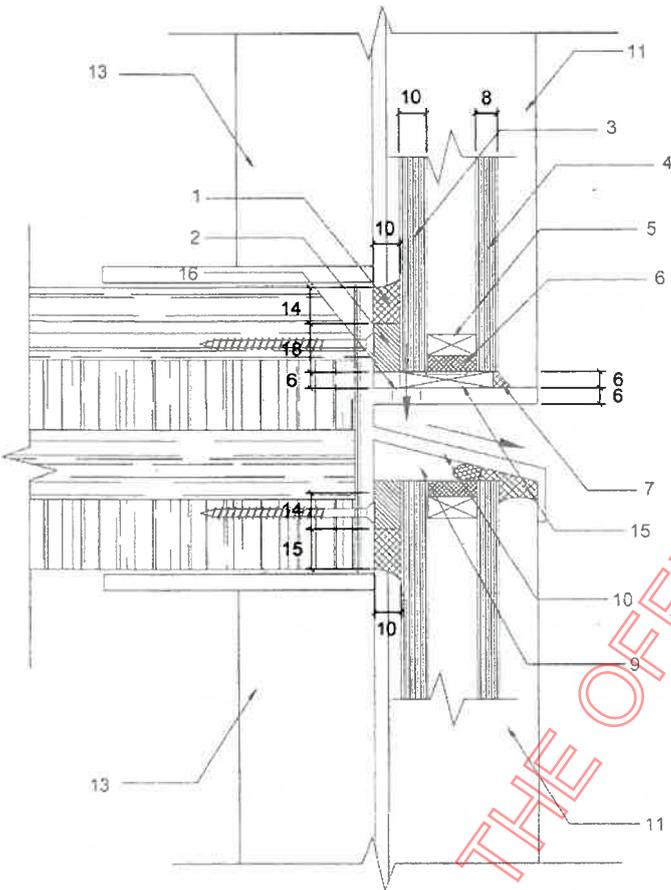
### Onsite Watertightness Junction Testing:

Watertightness Test AAMA 501.2 shall be undertaken on but not limited to the following junctions;

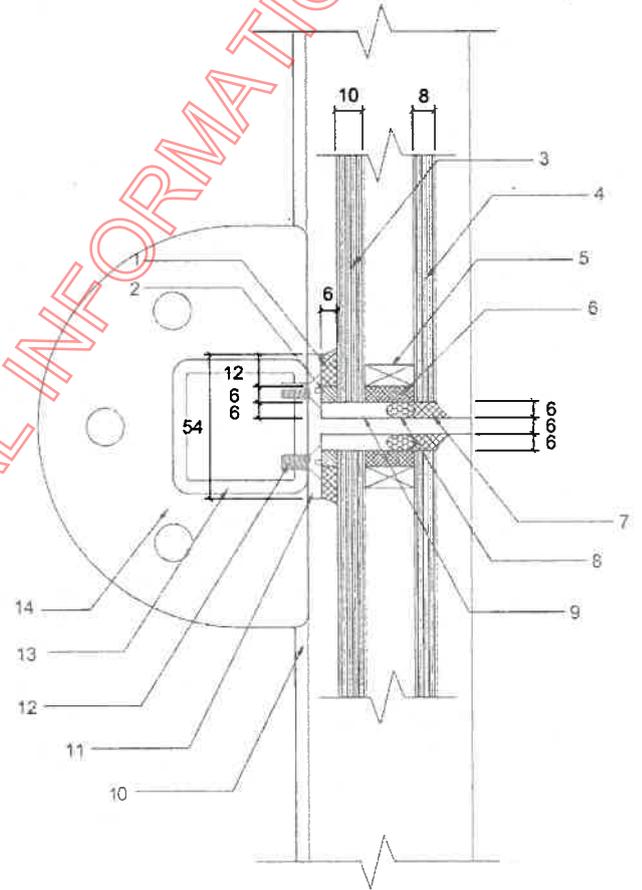
- Mullion to sill junction
- Mullion to head junction
- Mid floor sill to frame junction
- Mid floor sill to upper and lower mullion junction

The test shall be performed before wall linings are installed, independently and in conjunction with an Air Leakage vacuum test. The Watertightness and Air Leakage test must be witnessed by the Project Manager and the full and final test report must be provided to Auckland Council prior to obtaining Code Compliance Certificate.

TYPICAL STRUCTURAL GLAZING DETAILS



TYPICAL SILL SECTION



TYPICAL MULLION SECTION

1. Structural Sealant 12mm min bite (Dow Corning 795)
2. Spacer / Glazing Tape 6mm min (VK1826SA)
3. Inner Pane (10mm Toughened Glass)
4. Outer Pane (8mm Toughened Performatech Glass)
5. IGU Black Spacer
6. IGU Secondary Seal
7. Weather Seal (Dow Corning 795)
8. PE Backer Rod
9. Sealant Free Rebate
10. Double Tee Sill
11. 54x60x6mm Aluminium Tee
12. M6 Machine Screws (3x pairs per meter)
13. 50x50x5mm Steel SHS Mullion Support
14. 6mm Steel Base Plate
15. Setting Block (PE Backer Rod between)
16. Drain Hole

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PO Box 285, Kumeu, Auckland, New Zealand  
Phone: +64 9-415 2800 Mob +64 21-977 876

28<sup>th</sup> March 2018

To whom it may concern

**Re: Expert Island Report (Ref 2975)**

This is to confirm that the water for these tests is applied through a water flow meter that is calibrated yearly. The water is applied at 5L/min per nozzle which each cover approx. 1.4m<sup>2</sup>, this exceeds the required 0.05 L/m<sup>2</sup>/sec. The water meter checks are performed as part of every test as well as a visual check of the sample to ensure there is good water coverage on the relevant parts of the sample. Photos and video clips of the test are available on request.

Also of note that while the junction between the timber cladding and glazing frame was not specifically included in the test, the junctions between the 4 glazing panes were interpreted as the focus of the test rather than the standard cladding junctions.

There was no practical or meaningful method found to include the 6mm defect holes from VM1 Series 2 & 3 so sections of the sealant were removed as per the NZS4284 seal degradation test sequence and the results recorded in the report.

Attached is a copy the IANZ Scope of accreditation for the lab.

If there are any queries regarding the test method or report please feel free to contact me.

Yours Sincerely,

s 9(2)(a)

Managing Director

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## Laboratory Accreditation Programmes

Schedule to <b>CERTIFICATE OF ACCREDITATION</b>	
<b>Laboratory</b>	FacadeLab Limited
<b>Address</b>	PO Box 285, Kumeu, 0841 320 Rosedale Road, Albany Industrial Estate, Albany, Auckland, 0632
<b>Telephone</b>	09 412-2800
<b>Fax</b>	09 412-7723
<b>URL</b>	www.facadelab.co.nz
<b>Authorised Representative</b>	s 9(2)(a) [Redacted] General Manager
<b>Client No.</b>	9055
<b>Programme</b>	Mechanical Testing Laboratory
<b>Accreditation Number</b>	1091
<b>Initial Accreditation Date</b>	26 June 2013
<b>Conformance Standard</b>	NZS ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories
<b>Testing Services Summary</b>	4.42 Assemblies and Structures
<b>Signatories</b>	s 9(2)(a) [Redacted] 4.42

Authorised: General Manager	<i>P. Bam</i>	Issue 4	Date: 02/02/17	Page 1 of 2
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International Accreditation New Zealand - Private Bag 28908 - Remuera - Auckland  
Telephone 09-525 6655 - Facsimile 09-525 2266 www.ianz.govt.nz



Schedule to

**CERTIFICATE OF ACCREDITATION**

FacadeLab Limited  
 Mechanical Testing Laboratory  
**SCOPE OF ACCREDITATION**

Accreditation No 1091

**4.42 Assemblies and Structures**

## (a) Windows and doors

The test requirements defined in NZS 4211:2008 in accordance with the test methods of AS 4420:1996

The test requirements defined in AS 2047:2014 in accordance with the test methods of AS 4420:1996

The following tests in accordance with AS 4420:1996:

Method 1	Test sample, preparation for tests, the test sequence
Method 2	Deflection test
Method 3	Operating force test
Method 4	Air infiltration test
Method 5	Water penetration resistance test
Method 6	Ultimate strength test

## (b) Wall, floor and ceiling panels

The following tests in accordance with AS/NZS 4284:2008

Clause 8.3	Structural test at Serviceability Limit State
Clause 8.4	Air infiltration test
Clause 8.5	Water penetration by static pressure (and as modified by E2/VM1 (7/04))
Clause 8.6	Water penetration by cyclic pressure (and as modified by E2/VM1 (7/04))
Clause 8.8	Structural strength at Ultimate Limit state

The following tests in accordance with AS/NZS 4505:2012

Appendix A	Ultimate Wind Pressure Test (excluding A6.3.2 – resistance to ultimate wind pressure for cyclone regions and excluding A6.3.3(a) measuring both in-plane and out-of-plane forces).
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Authorised:  
 General Manager

*P. Barr*

Issue 4

Date: 02/02/17

Page 2 of 2

## Product Information Construction



# Dow Corning® 795

## Structural Glazing Sealant

### FEATURES

- Meets ASTM C1184 for Structural Silicone Sealant
- Meets ASTM C719 Class 50 High movement capability +/-50% in well designed weatherseal joint
- Excellent adhesion to a wide range of substrates including glass, anodized and coated aluminum profiles
- Non corrosive cure system

### BENEFITS

- Ease of use – all-temperature gunnability and easy tooling
- The cured product exhibits excellent weathering characteristics, and a high resistance to ultra-violet radiation, heat and humidity.
- High ultimate tensile strength which makes it suitable for structural bonding applications
- Excellent mechanical properties

### COMPOSITION

- One-part, neutral-cure, RTV silicone sealant

One-part, neutral-cure silicone sealant

### APPLICATIONS

- *Dow Corning® 795* Structural Glazing Sealant is a one-component Silicone sealant designed for site or factory glazing and curtainwall production. It requires contact with air as it reacts with atmospheric moisture to cure to a tough but flexible silicone rubber. *Dow Corning® 795* Structural Glazing Sealant can be used where dual structural and weatherseal applications are desired. It has up to +/- 50% movement capability in a well-designed weatherseal joint.

### TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test <sup>1</sup>	Property	Unit	Result
<b>As Supplied</b>			
ASTM C 679	Tack-Free Time, 50% RH	hours	1.5 ( max)
	Curing Time at 25°C, 50% RH	days	7-14
	Full Adhesion	days	14-21
ASTM C 639	Flow, Sag or Slump	mm	0
	Working Time	minutes	20-30
	Specific Gravity		1.44
	VOC Content <sup>2</sup>	g/l	32
	<b>As Cured - 7 Days at 25°C (77°F), 50% RH</b>		
ASTM D 412	Tensile Strength (Ultimate)	MPa	2.3
	Elongation	%	670
ASTM C661	Durometer Hardness, Shore A	points	35
ASTM D624	Tear Strength, Die B	kN/m	13
<b>As Cured – After 21 days at 25°C (77°F), 50% RH</b>			
ASTM C 794	Peel Strength	kg/cm	8.5
ASTM C 1135	Tensile strength, at 100% elongation	MPa	0.6
	Ultimate Tensile strength, at break	MPa	1.2
	Ultimate elongation at break	%	400
ASTM C 719	Joint Movement Capability	%	±50
<b>As Cured – After 21 days at 25°C, 50% Relative Humidity followed by 5,000 hours in a QUV weatherometer, ASTM G 53</b>			
ASTM C 1135	Tensile strength, at 100% elongation	MPa	0.6
	Ultimate Tensile strength, at break	MPa	1.1

<sup>1</sup>ASTM – American Society for Testing and Materials.

<sup>2</sup>Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds. For a VOC data sheet for a specific sealant color, please send your request to [product.inquiry@dowcorning.com](mailto:product.inquiry@dowcorning.com).

## DESCRIPTION

*Dow Corning*®795 Structural Glazing Sealant is a one-part, neutral-cure, architectural-grade sealant that easily extrudes over a wide temperature range. This cold-applied, non-sagging silicone material cures to a medium-modulus rubber upon exposure to atmospheric moisture. The cured sealant is durable and flexible enough to accommodate  $\pm 50$  percent movement of original joint dimension when installed in a properly designed weatherseal joint. In a properly designed structurally glazed joint, the sealant is strong enough to support glass and other panel materials under high wind-load and seismic effects.

## APPROVALS/ SPECIFICATIONS

*Dow Corning*®795 Structural Glazing Sealant meets the requirements of: ASTM Specification C 1184 for structural silicone sealants ASTM Specification C 920, Class 50

## COLORS

*Dow Corning*®795 Structural Glazing Sealant is available in 4 colors: black, white, gray and bronze.

## HOW TO USE

When *Dow Corning*®795 Structural Glazing Sealant is used in structural applications the structural joint design MUST be reviewed by a Dow Corning technical service specialist.

Complete design and installation guidelines are contained in the Dow Corning Asia Technical Manual, and must be followed for warranty applications when using this product.

## JOINT DESIGN

Structural joints sealed with *Dow Corning*®795 Structural Glazing Sealant should have a minimum depth (or bite) of 6mm. For large site-glazed joints the sealant or bite should be not more than 15mm when the sealant can cure from one side only. When an open-cell moisture-permeable spacer tape is used, a structural bite up to 30mm can cure to optimum strength. The exact structural

bite should always be calculated. The thickness of the structural sealant joint or glueline should be 6mm minimum. As it must accommodate thermal and dynamic movements the actual joint movements should be calculated. Ideally the bite to glueline ratio should be not more than about 3:1.

## ACCESSORY SELECTION

The appropriate selection of all accessories such as setting blocks and backing materials is important to avoid discoloration or adhesion-related problems due to incompatibility. Dow Corning will also assess the suitability of proposed accessory materials as part of the standard testing services. Silicone-based setting blocks are generally recommended for best compatibility.

## PREPARATORY WORK

Thoroughly clean all substrates to be sealed, removing all contaminants such as grease, oil, dust, frost or water. All metal, glass, or other surfaces should be cleaned with the recommended solvent, using a lint free cloth.

## METHOD OF APPLICATION

Install backing material or joint filler, setting blocks, spacer shims and tapes. Mask areas adjacent to joints to ensure neat sealant lines. Apply *Dow Corning*®795 Structural Glazing Sealant in a continuous operation using positive pressure. (The sealant can be applied using many types of air-operated guns and most types of bulk dispensing equipment.) Before a skin forms (typically within 15 minutes), tool the sealant with light pressure to spread the sealant against the backing material and joint surfaces. Remove masking tape as soon as the bead is tooled.

## HANDLING

### PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL

SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEB SITE AT DOWCORNING.COM, OR FROM YOUR DOW CORNING SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CORNING CUSTOMER SERVICE.

## USABLE LIFE AND STORAGE

When stored at or below 27°C (80°F), *Dow Corning*®795 Structural Glazing Sealant has a shelf life of 12 months from the date of manufacture. Refer to product packaging for "Use By Date."

Questions about the use of *Dow Corning*®795 Structural Glazing Sealant can be answered by calling your local Dow Corning Application Sales Engineer. Our laboratory personnel and technical service staff are also available for assistance.

## PACKAGING INFORMATION

*Dow Corning*®795 Structural Glazing Sealant is supplied in 300 ml disposable plastic cartridges and 600 ml foil sausages.

## LIMITATIONS

*Dow Corning*®795 Structural Glazing Sealant should not be used for structural applications without the prior written approval of Dow Corning Construction Industry Technical Services Department. Each project should be specifically and separately approved by Dow Corning.

Project specific approval involves the following prerequisites:

- Joint dimensioning and print reviews.
- Successful laboratory adhesion and compatibility testing to all building components.
- Observance of professional sealant application and workmanship standards.

- Users should always consult Dow Corning Technical Services Department for adhesion recommendation.

Dow Corning shall not be held liable for any possible claims arising from structural glazing use of Dow Corning <sup>®</sup>795 Structural Glazing Sealant for projects which have not been specifically approved by Dow Corning.

For projects which have been approved, Dow Corning will issue a structural adhesion warranty on a case by case basis at the user's request. It is the user's exclusive responsibility to ensure project compliance with local building regulations.

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

**HEALTH AND ENVIRONMENTAL INFORMATION**

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our Web site, [dowcorning.com](http://dowcorning.com) or consult your local Dow Corning representative.

**LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

**DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.**

**DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

*We help you invent the future.* <sup>TM</sup>

[dowcorning.com](http://dowcorning.com)



**Gaska Tape Inc.**  
INNOVATORS IN FOAM AND TAPES

**VK Series**  
Spacer Tape

## Description

Gaska Tape's VK Series products are available as a medium or high density closed-cell Polyvinyl Chloride foam. Designed specifically as a "spacer in structural silicone curtain wall applications."

Both products are coated on each side with an aggressive, high performance S3 solvent acrylic pressure-sensitive adhesive and covered with a 5 mil blue polypropylene film liner.

Can also be used in a wide variety of other applications that previously relied on costly high-density urethane gaskets for spacing, vibration dampening or cushioning.

## Performance Characteristics

- Resilient weather seal.
- Compatible with most chemical cured silicone sealants.
- VK Series spacer materials have a six-month shelf life on Solvent Adhesives.
- VK Series offers a good balance of peel strength (PSTC-1) at 2-lbs./linear inch and shear strength (PSTC-7) at 30 hours.
- VK Series is a cost effective substitute for Polyurethane foam substrates.
- VK Series also offers good adhesion to stainless steel, glass, aluminum, painted metal and vinyl. It is a cost-effective and viable gasket option for a variety of other industries including industrial equipment manufacturing, automotive glass/windshield and building construction.
- Black color standard.
- Other colors available upon request.



**VK1826SA**



**VK2526SA**

## Industry Applications

- Automotive
- Construction
- H.V.A.C.
- Industrial
- Leisure
- Transportation
- Retail

• Several well known silicone manufacturers have approved the VK Series in compatibility testing with their silicones. Results available upon request.

• VK Series is a very economical alternative to costly high-density urethanes.

• Good chemical resistance and is compatible with silicone materials, has a workable service temperature range, plus good weatherability.

• Inherently resistant to fire, ultraviolet rays, most chemicals, acids and solvents.

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## VK Series

Spacer Tape

### Roll Sizes

Available Thicknesses:  
VK1826SA .031" - .375" (0.8mm - 9.5mm)  
VK2526SA .031" - .250" (3.2mm - 6.4mm)

Available Widths:  
.250" - 57" (6.4mm - 1448mm)

Available Lengths:  
25' - 302' (7.7M - 92M)

### Benefits & Features

Characteristics common to all Gaska Tape closed-cell vinyl foam products include the ability to make a long life seal against air, moisture, light and dust penetration. They cushion and absorb vibration and shock. They also insulate in thermal, electrical and sound applications.

### Typical Physical Properties\*

Test Method		VK1826SA	VK2526SA
ASTM D-1056	<b>Density</b> (lbs./cu.ft.) (kg/m <sup>3</sup> )	<b>19</b> <b>304</b>	<b>25</b> <b>400</b>
ASTM D-2240	<b>Hardness</b> (shore 00)	<b>65</b>	<b>90</b>
ASTM D-1056	<b>Compression Deflection @ 25%</b> (psi) <b>kPa</b>	<b>15 (2)</b> <b>103</b>	<b>25 (2)</b> <b>172</b>
ASTM D-1056	<b>Compression Set @ 25%</b>	<b>2.5 (2)</b>	<b>2.3 (2)</b>
ASTM D-1056	<b>Water Absorption</b> (% by volume)	<b>2.2</b>	<b>1.2</b>
ASTM D-412	<b>Tensile Strength</b> (psi) <b>kPa</b>	<b>85</b> <b>586</b>	<b>175</b> <b>1207</b>
ASTM D-412	<b>Percent Elongation</b>	<b>70</b>	<b>90</b>
ASTM C-518	<b>Thermal Conductivity</b> (k factor) (btu-in.)/(hr.sq.ft.) (°F) <b>w/mK</b>	<b>0.29</b> <b>0.044</b>	<b>0.33</b> <b>0.048</b>
	<b>Recommended Service Temperature</b> (°F) (°C)	<b>-10 - 210</b> <b>-23 - 100</b>	<b>-10 - 210</b> <b>-23 - 100</b>
	<b>Recommended Application Temperature</b> (°F) (°C)	<b>50 - 110</b> <b>10 - 45</b>	<b>10 - 110</b> <b>10 - 45</b>
	<b>Fungi Resistance</b>	<b>Good</b>	<b>Good</b>
	<b>Oxidation Resistance</b>	<b>Good</b>	<b>Good</b>
	<b>Weather Resistance</b>	<b>Good</b>	<b>Good</b>

#### Notes:

Gaska Tape VK Series Spacer has a six-month shelf life on Solvent Adhesives.

- (1) Gaska Tape Procedure  
(2) 10% Compression

Typical performance properties and characteristics are based on samples tested and are not guaranteed for all samples of this product.

Data is intended as a guide only and is presented without guarantees and without assumption of liabilities resultant from the use of information provided. This data is not to be used for specification purposes.

### Warranty

Gaska Tape Inc. warrants its product to be free from defects in material and workmanship for a period of twelve (12) months beginning on the date of purchase, provided the purchaser installs and uses the products according to any instructions provided by Gaska Tape Inc. Any product which fails during the warranty period due to a defect will be replaced.

Upon request, Gaska Tape Inc. will be pleased to provide a copy of its written Limited Warranty with complete details of coverage, conditions and limitations.

Gaska Tape Inc. makes no other warranty, expressed or implied, and specifically disclaims and disavows any implied warranty of merchantability and of fitness for a particular use.

International Inquiries:  
Phone: 00-574-294-5431

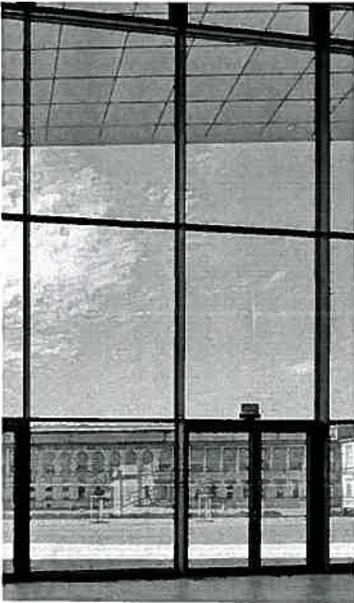
1810 W. Lusher  
P.O. Box 1968  
Elkhart, IN 46515-1968

 **Gaska Tape Inc.**  
INNOVATORS IN FOAM AND TAPES  
www.gaska.com

Phone: 574-294-5431  
Fax: 574-293-4504  
Toll free: 800-423-1571  
email: sales@gaska.com

# PerformaTech<sup>®</sup> 206

Premium Low-E glass with Solar Control



High Performance Solar Control Insulated Glass Units featuring advanced thermal insulation properties and excellent neutrality.

**Viridian**<sup>™</sup>  
we ♥ glass

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# 68% Light Transmission with a Shading Coefficient of 0.38

## What is PerformaTech® 206?

PerformaTech® 206 is a high performance solar control Insulated Glass Unit (commonly known as Double Glazing) featuring a soft coat Low-E coating.

## Application

PerformaTech® 206 Insulated Glass Units can be used in residential or commercial buildings, for windows, facades or overhead glazing. Due to the unique properties of the coating, it is ideally suited to applications requiring a high light transmittance, low shading coefficient and excellent neutrality. The varying thickness options create extended functionality allowing more design flexibility whilst retaining excellent neutral aesthetics.

## Benefits

PerformaTech® 206 balances the advantages of a high performance neutral solar control product with:

- High light transmission of 68%
- Low shading coefficient of 0.38
- 1.1W/m<sup>2</sup>K U-value
- High degree of neutrality

PerformaTech® 206 can be used to create more comfortable interiors by reducing overheating and the need for costly air conditioning, whilst at the same time noticeably reducing heat loss. The high light transmission can also reduce the requirement for interior lighting during daylight hours, helping reduce energy costs even further. Being a glass with high neutrality means you achieve a high level of solar heat reduction without the dark appearance resulting from grey tinted glass.

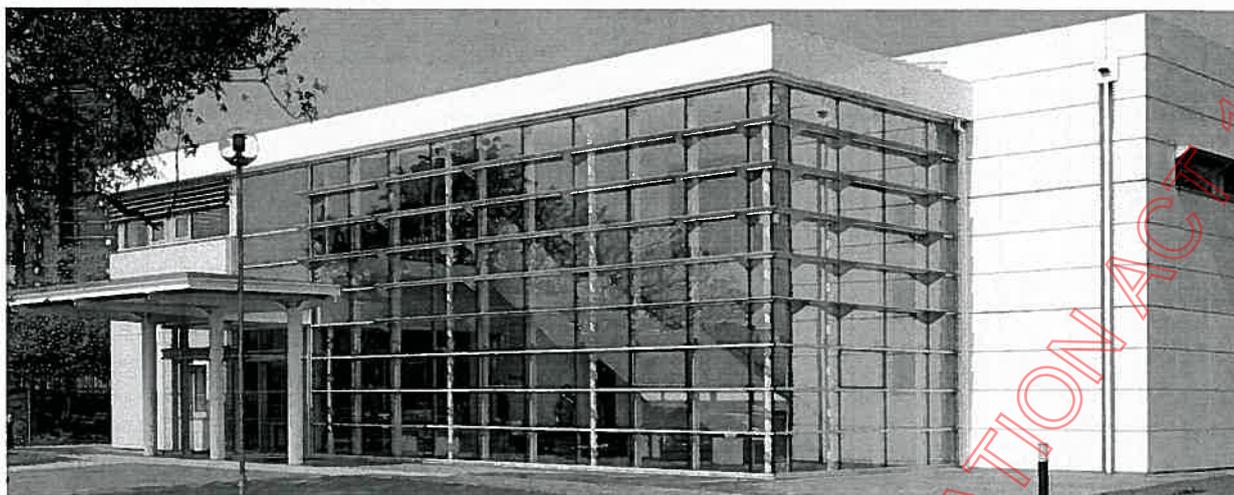
## Range

PerformaTech® 206 is available locally in New Zealand in sizes up to 3000mm x 2500mm. Sizes above this can be supplied after consultation with the Viridian Team but may require manufacture off-shore. Maximum sizes are determined by a combination of windload, human impact safety compliance requirements and manufacturing limitations.

## Performatech® 206 with VLam Hush

This premium offer provides the building occupant with the solar control and insulation benefits of PerformaTech® 206 combined with an improved level of security and a high level of performance in acoustic insulation.



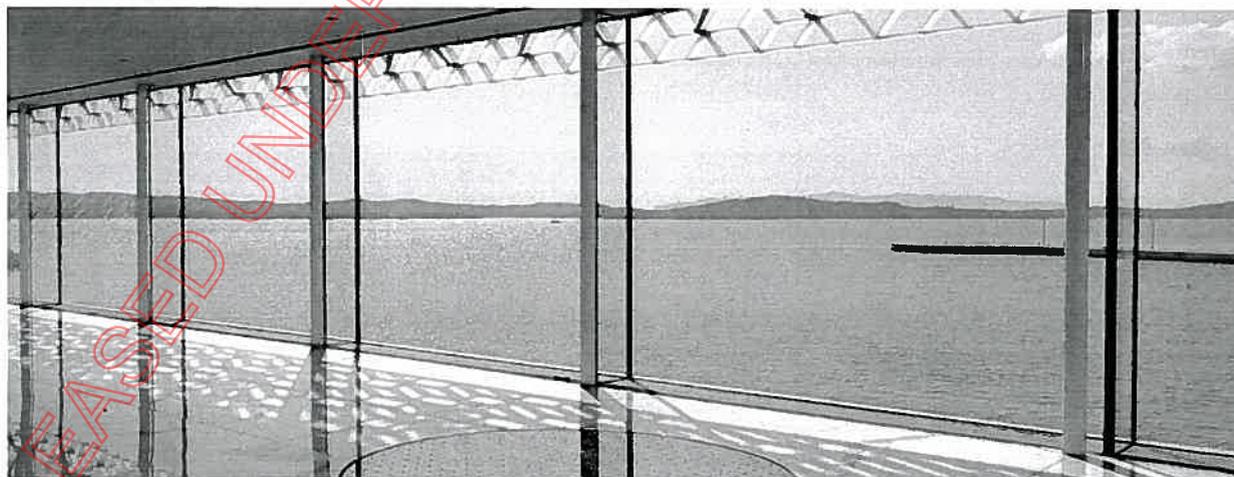


### Technical Specifications

	PerformaTech® 206 with clear glass	PerformaTech® 206 with clear glass	PerformaTech® 206 with 6.76mm VLam Hush
Inner pane	Clear	Clear	Acoustic Laminate
External pane	PerformaTech 206	PerformaTech 206	PerformaTech 206
Composition	4(12)4	6(12)6	6(16)6,76
Coated side	Face 2	Face 2	Face 2
SC	0.38	0.38	0.38
LT	69 %	68 %	68 %
LRe	13 %	13 %	13 %
LRI	15 %	15 %	15 %
U value air	1.6	1.6	1.3
U value argon	1.2	1.2	1.1
Rw	30	34	38



LT, LRe + LRI are based on NFRC 100-2010 conditions, U-Value based on EN673 conditions.



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Product Key



Energy



Noise



Fire Protection



Structural



Bathroom



Security



Decorative



Storm



Knowledge



Clear Vision

For architectural and design enquiries please contact

**Euroglass Creative**

The Loft, 76 Gladstone Road  
Parnell, Auckland  
Phone 0800 622 800

**Auckland**

2 Mana Place, Manukau,  
Auckland  
Phone 09 624 0610  
Phone 0800 387 645

**Hamilton**

660 Arthur Porter Drive,  
Hamilton  
Phone 07 846 0725  
Phone 0800 803 808

**Tauranga / Mt Maunganui**

51 Portside Drive  
Mt Maunganui 3116  
Phone 07 547 6204

**Palmerston North**

29 Railway Road  
Roslyn  
Palmerston North 4414  
Phone 06 351 4000

**Wellington**

41-43 Pirie Crescent  
Moera, Lower Hutt  
Phone 04 568 5251  
Phone 0800 838 485

**Nelson**

7-9 Tokomaru Place  
Wakatu Estate, Stoke  
Phone 03 543 7300  
Phone 0800 367 452

**Blenheim**

15 Bomford Street,  
Blenheim  
Phone 03 578 0850

**Christchurch**

44 Mandeville Street  
Riccarton, Christchurch 8011  
Phone 03 943 8700

**Central Otago**

11 Hughes Crescent  
Cromwell  
Phone 03 445 9300

**Dunedin**

Corner of Midland &  
Otaki Streets, Dunedin  
Phone 03 455 2280  
Phone 0800 222 178



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28 March 2018

## THERMAL AND OPTICAL PROPERTIES OF

**8mm PerformaTech 206 toughened + 16 mm argon + 10 mm clear toughened**

Shading coefficient	U Value	UV transmission %	Tdw-ISO
0.37	1.1	19	50

Visible light %			Solar %	
Transmission	Reflectance out	Reflectance in	Transmission	Reflectance
66	13	14	27	36

**Note:** Visible, total solar and UV data are based on laboratory spectrophotometric measurements and reduced using Window 7 software. U Value is based on EN673 conditions, and the balance on NFRC 100-2010 conditions.

1. **Shading coefficient** – the ratio of solar heat gain through the glass relative to that through 3mm clear glass. The smaller the number the lower the heat gain.
2. **U Value** – measurement unit is Watts per degree Celcius ( $W/m^2\text{°C}$ ) and is a measure of the rate of heat gain or loss through glazing due to environmental differences between outdoor and indoor air.
3. **UV transmission** – the percentage of UV light transmitted measured in the light range of 300 – 380nm. The lower the number the slower fading occurs.
4. **Tdw-ISO** – damage weighted transmission. The percentage of UV and visible light transmitted measured in the light range of 300 – 600nm. The lower the number the slower fading occurs.
5. **Visible light transmission** – percentage of normally incident visible light passing through the glass. The wave length range for visible light is 380 to 780nm. The higher the percentage the more daylight.
6. **Visible light reflectance** – percentage of normally incident visible light reflected toward the exterior.
7. **Solar transmission** – percentage of normally incident solar energy passing through the glazing. The wave lengths measured for solar energy is 300 to 2500nm.
8. **Solar reflectance** – percentage of normally incident solar energy reflected toward the exterior.
9. Glass breakage is not covered by warranty unless a thermal safety assessment has been carried out by Viridian.
10. All toughened glass has a degree of bow and roller wave distortion. This is an attribute of all heat treated glass and is not a fault.

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## APPENDIX B 1

## WINDOW ASSOCIATION OF NEW ZEALAND

QUALITY ASSURANCE AND DIAGNOSTIC WATER LEAKAGE  
FIELD CHECK OF INSTALLED FENESTRATION ELEMENTS IN  
ACCORDANCE WITH AAMA 501.2

## GENERAL

The detailed test method outlined in this procedure is based on AAMA 501.2 – 03 "Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls and Sloped Glazing Systems", using an external controlled pressure water spray nozzle.

The purpose of the test procedure is to provide a quality assurance and diagnostic field water check method for installed fenestration elements including storefronts, curtain walls, and sloped glazing systems. This field test procedure is intended to evaluate those joints, gaskets and sealant details in the glazing which are designed to remain permanently closed and water tight. The procedure is not intended to test the rated or specified water performance representative of a wind driven rain event

This field test method is not appropriate for testing operable components such as operable windows and doors. The WANZ procedure based on AAMA 502-08 is the proper test method for field water penetration resistance testing of operable windows and doors.

## PROCEDURE

Turn on water supply valve (and booster pump if required) and adjust water pressure to the required 205 to 240 kPa (30 to 35 psi) with the control valve.

The designated test area shall be divided into and evaluated in 1.5 m sections of the framing and joint. The nozzle shall be held at a distance of 305 mm (1 ft)  $\pm$  25 mm (1 in) from the location under test. Each 1.5 m section of test area shall be evaluated for a period of 5 minutes by slowly moving the nozzle back and forth over the test section (see Figure 4) while maintaining the nozzle perpendicular to the plane of the wall.

*NOTE: It is recommended that a gauge rod be attached to the end of the nozzle to ensure that the specified distance from the joint under test is maintained.*

Working from the exterior, the wall test section shall be selectively wetted progressing from the lowest horizontal framing member, then the adjacent framing intersections, then the adjacent vertical framing members, etc. During the test, an observer on the indoor side of the wall, using a flashlight if necessary, shall check for any water leakage and shall note where it occurs.

If no water leakage occurs during the five minute test, the next 1.5 m of framing shall be wetted for five minutes, and testing continued in this manner until the entire test area is tested.

For this water leakage field check, water leakage is defined as any uncontrolled water that appears on any normally exposed interior surfaces, that is not contained or drained back to the exterior, or that can cause damage to adjacent materials or finishes. Water contained within drained flashings, gutters, and sills is not considered water leakage. The collection of up to 15 ml (1/2 oz) of water in a five minute test period on top of an interior stop or stool integral with the system shall not be considered water leakage.

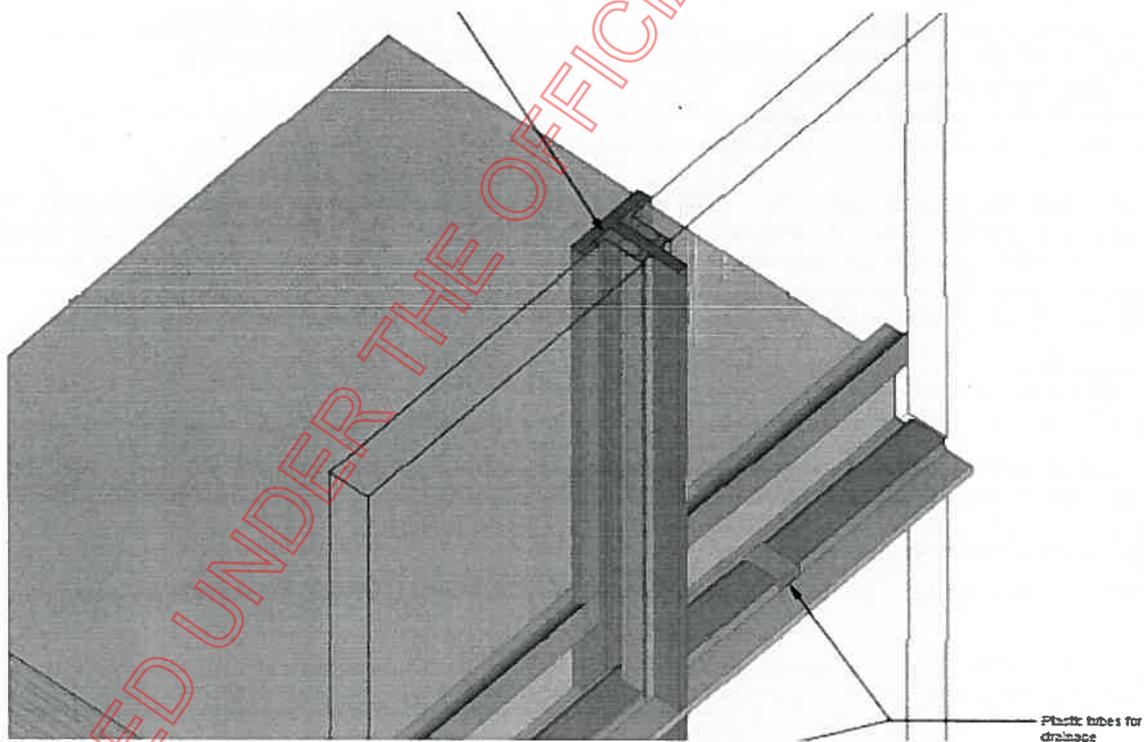
From: s 9(2)(a) @viridianglass.co.nz  
Subject: RE: Island Bay Rd House  
Date: 17 January 2017 at 12:40 PM  
To: Corban Walls s 9(2)(a)  
Cc: s 9(2)(a) @euroglass.co.nz, s 9(2)(a) @euroglass.co.nz

YG

Hi Corban

The local Dow Corning agent has said that they are prepared to offer an adhesion warranty for the project provided we fulfil a number of conditions such as:

- Full print review
- Testing of samples for compatibility
- At least two deglaze on site to check the quality of the silicone.
- Dust free environment





Building Code Clause(s).....B1 & B2\*

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on page 2)

Our Ref:- 2003/004/H

ISSUED BY:.....Jackson Clapperton & Partners Ltd.....

(Design Firm)

TO:.....Alexandra & Corban Walls.....

(Owner/Developer)

TO BE SUPPLIED TO:.....Auckland Council.....

(Building Consent Authority)

IN RESPECT OF:.....New Dwelling (Stage 2).....

(Description of Building Work)

AT:.....6 Island Bay Road, Birkdale, Auckland, 0626.....

(Address)

LOT 3 DP 194346 SO

We have been engaged by the owner/developer referred to above to provide structural engineering design

services in respect of the requirements of

(Extent of Engagement)

Clause(s) .....B1 & B2\*.....(\* only those elements covered by our design).....of the Building Code for All  or Part only  (as specified below), of the proposed building work.

- 1. Roof structure, roof beams, floor beams, walls, floors, wall bracing, handrails, connections & supports.

The design carried out by us has been prepared in accordance with:

Compliance Documents issued by the Ministry of Business, Innovation & Employment..... B1/VM1, B1/AS1.....or (verification method / acceptable solution)

Alternative solution as per the attached schedule.....

The proposed building work covered by this producer statement is described on the drawings titled

Island Bay Road House.....and numbered Ref 201504 sheets S-01 to S-12..... together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

- (i) Site verification of the following design assumptions Loads to AS/NZS1170
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

CM1  CM2  CM3  CM4  CM5 (Engineering Categories) or  as per agreement with owner/developer (Architectural)

I, s 9(2)(a) am:

(Name of Design Professional)
(Approved Author no. 1037)

CPEng .....7518.....#

Reg Arch .....#

I am a Member of :  IPENZ  NZIA and hold the following qualifications:..BE, 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 s 9(2)(a) ON BEHALF OF Jackson Clapperton & Partners Ltd.....

(Design Firm)

Date 14/12/2017 (signature)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000\*.

This form is to accompany Form 2 of the Building (Forms) Regulations 2004 for the application of a Building Consent.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, IPENZ AND NZIA

# Jackson Clapperton & Partners Ltd

Consulting Engineers  
16a Saunders Place, Avondale, Auckland  
P.O. Box 71065, Rosebank Road, Auckland  
e-mail: jcp.ltd@xtra.co.nz

Geomechanics Laboratory

Registered Surveyors  
Ph: (09) 820 0131  
(09) 820 0132  
Fax: (09) 820 0133

**Our Ref:** 2003/004/H

**Date:** 20/09/2016

**Project:** New Dwelling at 6 Island Bay Road, Birkdale  
for Corban Walls.

These calculations cover the design of the second stage of the dwelling and covers the structure from the top of the concrete ground floor slab. It also excludes the Dincel concrete retaining wall which runs down the Eastern side of the ground floor.

The Dincel wall, the ground floor concrete slab, foundation beams, foundations and sub-floor bracing were all undertaken as a first stage and have previously been issued with a Building Consent. Work is currently underway on that first stage.

**Loads** (to AS/NZS 1170)

<b>Roof :</b>	TPO roofing on 105mm thick XLAM, Gib or Cedar lining/soffits.		
	G = 0.75 kPa	Qu = 0.25 kPa	
		Qc = 1.0 kN	
<b>Roof :</b>	Kingspan KS1000 roof panels on PS25-25x09 Posi-struts @ 666mm c/c @ 8 degrees. 13mm Gib.		
	G = 0.45 kPa	Qu = 0.25 kPa	
		Qc = 1.0 kN	
<b>Upper External walls:</b>	G = 0.60 kPa		(Cedar weatherboards on 20mm battens on Kingspan insulation board on 75mm XLAM panels.)
<b>Partitions</b>	G = 0.40 kPa		(90x45 or 140x45 timber framed walls with Gib linings)
<b>Up. Floor:</b>	105mm XLAM Flooring with 13mm gib. ceiling		
	G = 0.65 kPa	Qu = 1.5 kPa	
		Qc = 1.8 kN	

**Wind Loading:** (AS/NZS 1170.2:2002)

Importance Level- Allow for Importance level 2.

Design Working life at least 50 years. Therefore APE-: Wind = 1/500  
E/Q= 1/500  
SLS1 = 1/25

Region A1 to A7  $V_{R500} = 45$  m/s &  $V_{R25} = 37$  m/s  
Any direction  $M_d = 1.0$  Building height = 10.0 m

Assume Terrain category 3 area for 440m before waters edge. Then cat 1.

$$\text{Therefore terrain cat.} = \frac{(3)(440) + (1)(60)}{500} = 2.76 \quad \therefore M_{(z,cat)} = 0.87 \text{ for ULS \& SLS}$$

Site lies on the side of a Hill.  $H = 95$  m  $\therefore H/2 = 47.5$  m

From topographical map  $L_u = 190$  m  $\therefore \phi = 0.250$

$$1.44L_u = 274 \text{ m} \quad \& \quad 1.6H = 152 \text{ m}$$

Site is approx. 30 m from crest, therefore inside the topographical zone.

$$\text{Therefore } M_h = 1.40 \text{ at crest} \quad M_{h(at site)} = \frac{(M_h - 1)(1.44L_u - x)}{1.44L_u} + 1 = 1.36$$

**Jackson Clapperton & Partners Ltd**

Consulting Engineers &amp; Regd Surveyors

P.O. Box 71085, Rosebank Road, Auckland

Ph: (09) 8200-131

Fax: (09) 8200-133

Project:

New Dwelling for Corban Walls  
at 6 Island Bay Road, Birkdale

Ref. No:

2003/004/h

Page No.

2

Date:

20/09/2016

Designed:

MD

$$\& M_s = 1.0$$

$$\therefore V_{site} = V_R M_d (M_{z,cat} M_s M_t) = 53.1 \text{ m/s (ULS)} \quad (\text{Equiv. to between Very High \& Extra High wind})$$

$$\& V_{ssite} = V_R M_d (M_{z,cat} M_s M_t) = 43.7 \text{ m/s (SLS)}$$

$$p_u = (0.5)(1.2)(V_{des,\theta})^2 C_{fig} C_{dyn} = 1.69 \text{ kPa} \quad (\text{ULS})$$

$$p_s = (0.5)(1.2)(V_{des,\theta})^2 C_{fig} C_{dyn} = 1.14 \text{ kPa} \quad (\text{SLS})$$

Consider E/Q loading.

$$C(T) = C_h(T) Z R N(T,D) \quad \text{Adopt } C_h(T) = 3 \quad \text{as worst case.}$$

$$Z = 0.13 \quad R = 1.0 \quad \text{for APE} = 1/500 \quad N(T,D) = 1.0$$

$$R = 0.25 \quad \text{for APE} = 1/25$$

$$\text{ULS} \quad C(T) = (3)(0.13)(1.0)(1.0) = 0.390 \quad S_p = 0.70$$

$$\text{SLS} \quad C(T) = (3)(0.13)(1.0)(0.25) = 0.098 \quad S_p = 0.70$$

$$\text{Assume } \mu = 1.25 \quad \text{ULS, for nominally ductile concrete.} \quad \& \mu = 1.0 \quad \text{for SLS}$$

$$\text{Therefore} \quad C_d(T) = \frac{C(T) S_p}{k_\mu} = \frac{(0.39)(0.7)}{1.25} = 0.218 \quad \text{Where } k_\mu = \mu$$

$$\& \quad C_d(T) = \frac{C(T) S_p}{k_\mu} = \frac{(0.098)(0.7)}{1.0} = 0.068$$

$$\text{Therefore } E_u = (0.218)Wt$$

$$\& E_s = (0.068)Wt$$

# STATIC PRESSURE & WIND CONVERSION CHART

Please note that these values do NOT include pressure coefficients.

STATIC PRESSURE			WIND SPEED		
Pa	mm H2O	psf	m/s	km/h	mph
50	5.1	1.04	9.13	32.9	20.4
75	7.6	1.57	11.18	40.2	25.0
100	10.2	2.09	12.91	46.5	28.9
150	15.3	3.13	15.81	56.9	35.4
200	20.4	4.18	18.26	65.7	40.8
250	25.5	5.22	20.41	73.5	45.7
300	30.6	6.27	22.36	80.5	50.0
400	40.8	8.35	25.82	93.0	57.8
450	45.9	9.40	27.39	98.6	61.3
500	51.0	10.44	28.87	103.9	64.6
600	61.2	12.53	31.62	113.8	70.7
700	71.4	14.62	34.16	123.0	76.4
800	81.6	16.71	36.51	131.5	81.7
900	91.8	18.80	38.73	139.4	86.6
1000	102.0	20.89	40.82	147.0	91.3
1100	112.2	22.97	42.82	154.1	95.8
1200	122.4	25.06	<small>SITE ACTUAL SLS = 43.7 m/s - 114.0Pa</small> 44.72	161.0	100.0
1300	132.6	27.15	46.55	167.6	104.1
1400	142.8	29.24	48.30	173.9	108.1
1500	153.0	31.33	<small>VERY HIGH ULS = 50.0 m/s - 155.0Pa</small> 50.00	180.0	111.8
1600	163.1	33.42	51.64	185.9	115.5
1700	173.3	35.51	<small>SITE ACTUAL ULS = 53.1 m/s - 169.0Pa</small> 53.23	191.6	119.1
1800	183.5	37.59	54.77	197.2	122.5
1900	193.7	39.68	<small>Actual site ULS is = 4.4% higher than Very High Wind Zone</small> 56.27	202.6	125.9
2000	203.9	41.77	57.74	207.8	129.1
2100	214.1	43.86	59.16	213.0	132.3
2200	224.3	45.95	60.55	218.0	135.5
2300	234.5	48.04	61.91	222.9	138.5
2400	244.7	50.13	63.25	227.7	141.5
2500	254.9	52.21	64.55	232.4	144.4
2600	265.1	54.30	65.83	237.0	147.3
2700	275.3	56.39	67.08	241.5	150.1
2800	285.5	58.48	68.31	245.9	152.8
2900	295.7	60.57	69.52	250.3	155.5
3000	305.9	62.66	70.71	254.6	158.2
3500	356.9	73.10	76.38	275.0	170.8
4000	407.9	83.54	81.65	293.9	182.6
4500	458.9	93.98	86.60	311.8	193.7
5000	509.8	104.43	91.29	328.6	204.2
5500	560.8	114.87	95.74	344.7	214.2
6000	611.8	125.31	100.00	360.0	223.7
6500	662.8	135.76	104.08	374.7	232.8

Ref 2975

# BUILDING CONSENT APPLICATION – ADDITIONAL SUBMISSIONS REVIEW

Address of Property

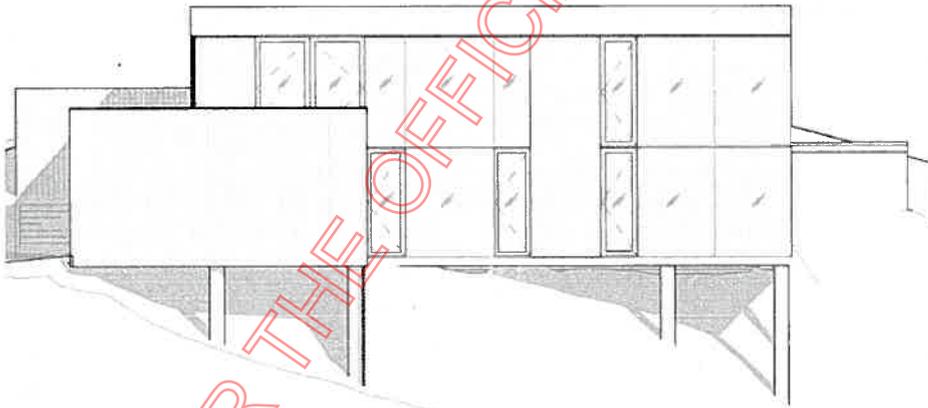
6 Island Bay Road  
Beach Haven, Auckland

MIBE Determination Reference number

2975

Date of Report

20 March 2018



Summary of matters to be determined
Compliance of custom fixed window joinery with NZBC clauses B1, B2 and E2

Name of Assessor preparing report:

s 9(2)(a)

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**CONTENTS**

1 SUMMARY..... 3

2 APPLICATION DETAILS ..... 4

3 INTRODUCTION..... 5

4 GENERAL DESCRIPTION OF THE BUILDING..... 6

5 REVIEW OF REVISED SUBMISSIONS ..... 8

6 OUTCOME..... 17

APPENDIX A Submissions

- Weathertightness testing report
- PS1 – Structural engineer
- PS1 – Glass supplier
- emails from applicant and Auckland Council

APPENDIX B Review of structural calculations by MBIE consulting engineer

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