façadelab

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PO Box 285, Kumeu, Auckland, New Zealand

Phone: +64 9-415 2800 Mob +64 21-977 876

Test report: 23-02

Testing of Panelux 3 mm Aluminium on the PANELAB 'LAB' system in accordance with AS/NZS 4284:2008 'Testing of Building Facades'

Project	Panelux 3 mm Aluminium on the PaneLAB 'LAB' system
Client 1	PANELAB LIMITED 155 Sunnybrae road, Hillcrest Auckland 0627, New Zealand
Client 2	MULFORD PLASTICS LIMTED 5 Arthur Brown Pl, Mount Wellington, Auckland 1060, New Zealand
Test Sample:	Designed, specified and installed by PANELAB Ltd
Test Dates	16-18 March 2023
Test Schedule	The test order specified in AS/NZS 4284:2008 was followed, with sections a, b, c, d, and g requested
Persons Present	Richard Gibbs (Facadelab manager) John Burgess (IANZ authorised signatory), At various times - Wayne Sullivan (Panelab)
Test Facility	Facadelab Ltd, 320 Rosedale Rd, Albany, Auckland.

IANZ accredited testing officer: John Burgess

IANZ accreditation number for testing 1091, including AS/NZS 4284.

Figure 1: Photo of Panelab System with window and jointing

Tested by: John Burgess, IANZ Signatory. Checked by: Richard Gibbs

Contents

1. Figures

2. Tables

3. Summary

The test sample was subjected to tests from the AS/NZS 4284:2008 testing suite with the following results. Refer to the test specification and AS/NZS 4284:2008 for detailed performance criteria.

3.1. Preliminary Test

Complies, with SLS pressure ±2.5 kPa, static water penetration of 455 Pa and cyclic water penetration up to 900 Pa

3.2. Structural (Deflection) test at SLS

Complies with deflection requirement of span/250 at ±1515 Pa

3.3. Air Infiltration Test

Complies, with air leakage of ≤1.6 L/m^2 at ±150 Pa

3.4. Static Water Penetration Test

Complies with requirements at 455 Pa air pressure with water

3.5. Cyclic Water Penetration Test

Complies with requirements, testing up to 455 - 900 Pa cyclic air pressure with water

3.6. Seismic Testing at Serviceability Limit State

Not requested

3.7. Post SLS Seismic Cyclic Water Penetration Tests

Not requested

3.8. Pressure Test at Ultimate Limit State

Complies with requirements at ±2.5 kPa, then at -3.1 kPa and +3.7 kPa.

4. Notation

The reference numbers from the AS/NZS 4284:2008 'Testing of building facades' document are used in the following, for ease of reference.

5. Principle

A sample of a building façade forms one face of an eternally mounted pressure chamber and is sealed at its perimeter and then successively subjected to tests.

6. Apparatus

The Panelab aluminium cladding system was tested using the Facadelab test facility located at 320 Rosedale Rd, Albany.

7. Sample

7.1. Test Sample

7.1.1. Orientation

The sample was constructed into the booth so that the exterior (wet side) of the sample is inside the booth. Unless noted otherwise, observations are made from the interior (dry side) of the sample.

7.1.2. Sample Description

The test arrangement consisted of a section of the aluminium panel system with overall size 4300 mm wide by 3600 mm high. The system was largely face sealed over a cavity, and was installed into a timber framed opening in the test rig with a window, and an outcropping balcony.

The sample, together with 'as-built' drawings are shown in the photos and drawings in the Appendix, together with the 'Parts list'.

The infill structure around the sample was constructed with a composite multiboard.

7.2. Drawings

Drawings and certificate of identification were supplied after the testing are attached as appendices at the end of this report. The drawings are dated 12 June 2023 Version A and the Certificate of Identification from Panelab Limited dated 12 July 2023.

7.2.1. Modifications to the sample during construction

None

7.2.2. Modifications to the sample during testing

During the cyclic water testing, the sub-sill system below the window was found to be leaking due to inadequate sealing at the interior of the window. This was rectified by the client and testing continued.

The gutter box was found to be leaking due to incorrect folding of the corners. This did not affect the testing.

8. Procedure

Note the same clause numbers have been used as in AS/NZS 4284 for ease of reference in the below.

8.1. Test Sequence

8.1.1. General

The tests were performed using the testing procedures of AS/NZS 4284:2008 in the cladding test facilities of Facadelab Limited in the following sequence.

Preliminary SLS pressure test at ±2500 Pa

Preliminary static water test at 455 Pa, and three phases of cyclic water penetration testing from 225 to 900 Pa

Serviceability deflection tests on timber at ±1515 Pa.

Air infiltration test on the total of the sample and booth at ±150 Pa

Water penetration static at 455 Pa

Water penetration cyclic with three cycles from 225 to 900 Pa

Serviceability deflection tests on spandrel panel at ±1500 Pa.

ULS air pressure at ±2.5, -3.1 and +3.7 kPa

8.1.2. Variation in Test Sequence

There was no variation in test sequence.

8.2. Preliminary Tests

Preliminary testing at 8.2.1 and 8.2.2 below was conducted.

8.2.1. Preliminary Static Air Pressure

The test sample was subjected to the positive and negative SLS design wind pressures. Air pressures of ±2.5 kPa were applied to the test sample.

8.2.2. Water

8.2.2.1. Preliminary static water test

A preliminary static water penetration test at an air pressure of 445 Pa was carried out as required by clause 8.5 of AS/NZS 4284:2008.

8.2.2.2. Preliminary cyclic water test

A preliminary cyclic water penetration test at air pressures varying from 225 to 900 Pa was carried out as required by clause 8.6 of AS/NZS 4284:2008.

8.3. Structural Test at Serviceability Limit State (SLS)

The deflection of a central stud was assessed, followed by the deflection of a large spandrel panel.

8.3.1. Structural Test Pressures

The SLS test pressures used were calculated by the specifier as ±1500 Pa.

8.3.2. Location of the Displacement Transducers

The displacement transducers were located as close as possible to the end of the stud, within 5 mm of the end of the timber, centrally located.

8.3.3. Pressure Loading Sequence

The pressure loading sequence requested by the specifier was as per AS/NZS 4284 and required ramping up under positive pressure in four steps, being 303, 606, 909, 1212, and 1515, before continuing with the ramp down, then repeating the cycle under negative pressures to -1515 Pa, as in Fig 1 of AS/NZS 4284: 2008.

8.3.4. Calculation of deflection/span ratio

This was undertaken with a span of 2340 mm for the stud The standard requires that no framing members shall deflect by greater than span/250 mm, with the distance measured between fixing positions.

8.3.5. Calculation of successive member displacement

Calculations of the successive member displacement of the timber stud was not undertaken.

8.3.6. Calculation of maximum displacement

This quantity was calculated and compared to the allowable displacement, which is normally 20 mm unless a lower displacement is allowed by the specifier.

8.4. Air Infiltration

An air infiltration test at a pressure difference of ±150 Pa across the unit of cladding system was undertaken. The air infiltration and exfiltration shall not exceed 1.6 l/m²s.

8.5. Water Penetration by Static pressure

The static water penetration test pressure of 455 Pa was nominated by the specifier. No visible water leakage shall be recorded through the sample.

8.6. Water Penetration Test by Cyclic Pressure

The three stages of cyclic water penetration were nominated as follows:

Stage 1: 225 – 454 Pa

Stage 2: 303 - 606 Pa

Stage 3: 454 - 909 Pa

No visible water leakage shall be recorded through the sample.

8.7. BMU Restraint Test

A BMU restraint test was not requested as part of the AS/NZS 4284:2008 test procedure.

8.8. Structural Test at Ultimate Limit State (ULS)

The test pressures of ±2500 Pa were nominated by the specifier, with extended pressures of ±3.1 and +3.7 k Pa applied subsequently.

8.9. Seismic Testing at Serviceability Limit State

Not requested.

8.10. Seal Degradation Testing

No seal degradation testing was requested as part of the AS/NZS 4284:2008 test procedure.

8.11. Seismic Testing at Ultimate Limit State

Not requested.

8.12. Spandrel panel displacement testing

Following the completion of other tests, the airseal was removed and the SLS air pressure was applied across the cladding/spandrel panels to determine cladding face deflections.

The transducers were located on the spandrel panel as close as possible to the edges, and centrally between the two outer probes. The pressures used in the deflection testing went up to 1515 in four steps, before returning to zero, ramping down to -1515, and back to zero Pa.

The displacement in the largest spandrel panel (956 mm) was measured for the portion of the panel that was most free to move – being off the stiffeners. There was no deflection specification provided for the spandrel deflection, so this was undertaken for information.

The results are shown in the same table as the displacement in the structure, in the next section.

9. Results

9.1. General

The performance requirements below, resulted from the request by the specifier.

9.1.1. Preliminary Tests

Results of preliminary testing undertaken are recorded below.

9.1.2. Preliminary Static Pressure

There was no visible dislodgement of any elements following SLS pressure testing.

9.1.3. Preliminary Static Water

Preliminary Static Water Test			
Stage	Air pressure (Pa)	Duration	Result (Clause 9.4)
0	0	5 minutes	Complies
1	455	15 minutes	Complies
2	0	5 minutes	Complies

Table 1: Preliminary static water test pressures

Initially there was water spitting through a defect in the sealing of the sill at the rear of the tray, although after sealant was applied, the system complied.

9.1.4. Preliminary Cyclic Water

Preliminary Cyclic Water Test			
Phase	Air pressure (Pa)	Duration	Result (Clause 9.4)
	0	5 minutes	Complies
1	225-455	5 minutes	Complies
2	300-600	5 minutes	Complies
3	450 - 900	5 minutes	Complies
	0	5 minutes	Complies

Table 2: Preliminary cyclic water test pressures

9.2. Structural Test at Serviceability Limit State (SLS)

The full set of results for the SLS deflection test of the stud and the 'spandrel' cladding panel are contained in the appendix, section 10.6.1.

9.2.1. Deflection/Span Ratios

The net deflection of the stud and the spandrel is shown in Table 3. The deflection/span ratio of the stud complies with the requirements.

Deflection/Span Ratio					
Reference	Span (mm)	Max Net Deflection (mm)		Requirement	Complies
Stud	2330	1.98 / -2.52		<9.32	Yes
Spandrel	948	12.5 / -15.25		Not specified	N/A

Table 3: Deflection span table for stud and panel

9.2.2. Successive Member Displacement

Not requested.

9.2.3. Maximum displacement

The maximum displacement of the central stud is shown in Table 3. The maximum displacements comply with the requirements.

9.3. Air Infiltration

This test was undertaken to determine the airtightness of the 15.5 m² sample. Since the total air leakage of the sample plus the booth was less than the required value, the leakage through the sample alone was not calculated.

Overall area: 15.5 m²

Allowable leakage, at 1.6 l/m²/s 24.8 l/s

Airtightness Measurements @ 150 Pa ΔP		
	Positive pressure (infiltration) l/s	Negative pressure (exfiltration) l/s
Measured (booth + sample)	17.3 ± 0.1	19.3 ± 0.2
Calculated sample leakage	< 17.4	< 19.5

Table 4: Air tightness leakage results

The uncertainty in the airflow measurements has been assessed with the facadelab Excel-based 'Expanded Uncertainty Calculator'. The airtightness of the sample complied with the air leakage requirements, having an air leakage of less than 24.8 l/s under positive or negative pressure. The expanded uncertainty is 0.1 l/s with a coverage factor of 2.1 for the positive pressure, and 0.2 l/s with a coverage factor of 2.4 for the negative pressure.

9.4. Water Penetration

The results of the static and cyclic water tests, as per clause 8.5 are shown below.

9.4.1. Static Pressure Water Penetration

Static Water Test			
Stage	Air pressure (Pa)	Duration	Result (Clause 9.4)
0	0	5 minutes	Complies
1	455	15 minutes	Complies
2	0	5 minutes	Complies

Table 5: Static water leakage results

The sample met the performance requirements of the standard.

9.4.2. Cyclic Pressure Water Penetration

Cyclic Water Test			
Phase	Air pressure (Pa)	Duration	Result (Clause 9.4)
0	0	5 minutes	Complies
1	225-455	5 minutes	Complies
2	300-600	5 minutes	Complies
3	450 - 900	5 minutes	Complies
	0	5 minutes	Complies

Table 6: Cyclic water test results

The sample met the performance requirements of the standard.

9.5. BMU Restraint Test

Not requested.

9.6. Structural Test at Ultimate Limit State Air Pressure

Ultimate Limit State (ULS) Air Pressure Test	
Air pressure (kPa)	Result
+3.7	OK
-3.1	OK

Table 7: Ultimate limit state air pressure results

On inspection, there was no visible dislodgement of materials, failure of fixings, breakage of cladding or permanent distortion of cladding following ULS pressure testing.

Prepared By:

John Burgess (IANZ Signatory)

24 July 2023

Verified By:

Richard Gibbs (Lab Manager)

24 July 2023

10. Appendices

10.1. Test Request

AS/NZS 4284:2008 20

PaneLAB #23-02

SPECIFIC TEST REQUIREMENTS

Section	Test Name	Clause	Required parameters		
a	Preliminary test	8.2.1			
	SLS pressure	8.2.2/8.3	SLS(+) = 2500 Pa		
			SLS(–) = 2500 Pa		
	Water static	8.2.3/8.5	Static water test pressure = 455 Pa		
	Water—Cyclic	8.2.3/8.6	Cyclic test pressure Stage 1 = 455 Pa		
		8.2.3/8.6	Cyclic test pressure Stage 2 = 600 Pa		
		8.2.3/8.6	Cyclic test pressure Stage 3 = 900 Pa		
b	Structural test at SLS	8.3.2	Location of transducers noted on drawings? Y/N		
		8.3.3	Pressure steps? 5 steps		
			Max. displacement? = —— mm		
Members or panels		Deflection/span limit ratio			
Timber Stud - tbc		L/250			
SPANOREL		INFORMATION ONLY			
c	Air infiltration test	Test pressure	(+) = 150 Pa		
			(–) = 150 Pa		
		Air infiltration limit = 1.6 (l/m²s)			
d	Water test (static and cyclic)	Pressure (Pa)	Duration (mins)	Duration and spray intensity	
	Static	455	→	15 min, 0.05 L/m² s	
	Cyclic 1	225-454	→	5 min, 0.05 L/m² s	
	Cyclic 2	303~606	→	5 min, 0.05 L/m² s	
	Cyclic 3	454-909	→	5 min, 0.05 l/m²s	
~~Additional water penetration requirements~~?					
~~e~~	~~Seismic at SLS~~		~~(Water test repeated after)~~		
	~~Support beam movement allowed =~~				
	~~Number of cycles =~~				
	~~Frequency of movement =~~				
~~f~~	~~BMU restraint~~		~~Test load across face of sample =~~	~~kN~~	
			Test load perpendicular to sample =	kN	
g	Strength at ULS	Test pressure	(+) = 2500 Pa		
			(–) = 2500 Pa		
~~h~~	~~Seismic at ULS~~				
	~~Support beam movement allowed =~~ mm				
	~~Number of cycles =~~				
	~~Frequency of movement =~~ Hz				
~~i~~	~~Seal degradation~~		~~10% air seal removal?~~ ~~Y/N~~		
~~Describe seals to be altered~~					

Figure 2: Test request

Tested by: John Burgess, IANZ Signatory. Checked by: Richard Gibbs

10.2. Certification of Identification

Drawings in this report have been supplied by the client, who has verified that they represent the sample tested in the below 'Certification of Identification'. Only the details that were in the test are shown here.

PANELAB
ALUMINIUM FACADE TECHNICIANS

12 July 2023

Facade Lab
PSP Limited
320 Rosedale Road
Albany 0632

Attention: Richard Gibbs

Dear Richard,

This note is to confirm that the supply, fabrication and installation of our PANELUX LAB system into the Facade Lab Test Booth, Albany, is an accurate depiction as shown on the Panelab prepared Work Shop drawings numbered A0.0 through to A4.1 (as attached.)

Kind regards

Wayne Sullivan / DIRECTOR
PANELAB LIMITED
155 Sunnybrae Road
Hillcrest
Wairau Valley 0627

PANELAB
ALUMINIUM
FACADE
TECHNICIANS

155 Sunnybrae Road
Hillcrest, Auckland
09 443 8165
www.panelab.co.nz

Figure 3 Certificate of Identification

10.3. Parts list

PANELAB
ALUMINIUM FACADE TECHNICIANS

DATE: 12 July 2023

CLIENTS
PANELAB LIMITED
155 SUNNYBRAE ROAD
HILLCREST 0627
PO BOX 33 300 TAKAPUNA

MULFORD PLASTICS LIMITED
5 ARTHUR BROWN PLACE
MT WELLINGTON
PO BOX 51065 PAKURANGA

SYSTEM TESTED
Product PANELUX / 3mm thick Solid Aluminium.
Installed using PANELAB LAB system

PARTS LIST
*Panelux Solid Aluminium panels
*3mm solid aluminium
*Panelab LAB extruded fixing bracket system
*10 G stainless steel screws
*545 Alunminium rivets
*15mm PEF backing rod
*Dow Corning 791 silicon sealant
*Bostic Paneltac bonding glue
*Extruded aluminium angle / box section / brackets / flashings
*Commercial glazed aluminium window / sill tray / head flashing
*Iso Propl Alcohol cleaner / clean rags / masking tape

Wayne Sullivan
DIRECTOR

PANELAB
ALUMINIUM
FACADE
TECHNICIANS

155 Sunnybrae Road
Hillcrest, Auckland
09 443 8165
www.panelab.co.nz

Figure 4 - List of parts

10.4. Drawings

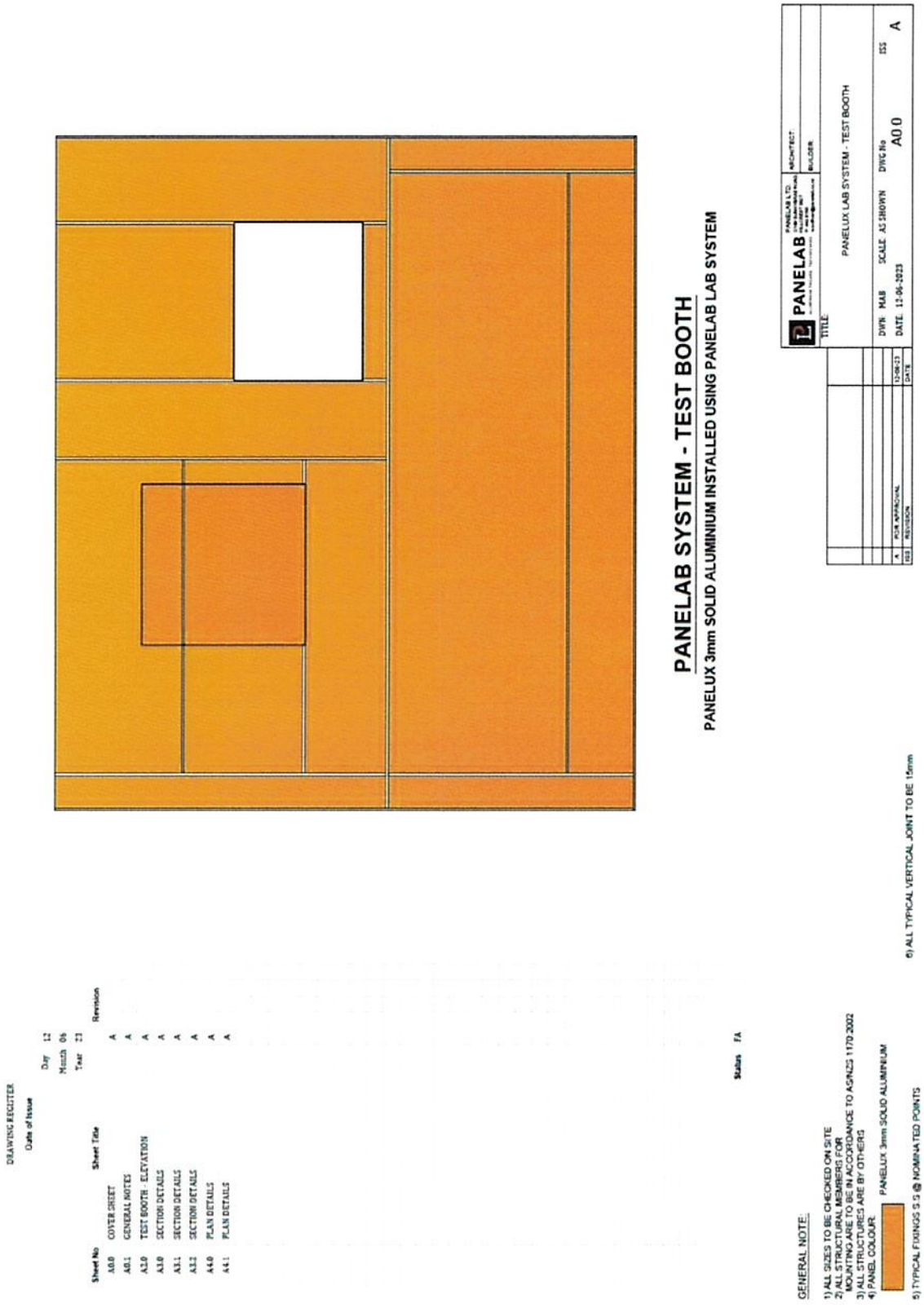


Figure 5: Panelab system in test booth

GENERAL NOTES

1.0 SCOPE OF WORKS

The scope of work consists of design, supply, fabrication and installation of specified aluminum panel to "PANELAB CLADDING SYSTEM" installation method. The installation shall be complete with all necessary anchors and fittings to provide a total system.

2.0 DESIGN CONCEPT

The Panelab cladding system provided on this project only forms one part of the building envelope. The building envelope incorporates many other elements such as windows, building wrap, flashing etc. Which are not part of our scope. We recommend that the whole building envelope be reviewed by a suitably qualified person/body in order to satisfy performance requirements.
The Panelab cladding system panel layout shown on the drawings are intended to follow the architectural intent but may differ from the exact layout on the architectural drawings.

3.0 REQUIREMENTS FROM PRECEDING TRADES

- Project Design
- Framing Construction
- Window Installation
- Air Barrier and Flashing Installation

Any variance to this may result in additional cost and delays.
Refer to drawings for sequencing of other trades in respect to the panel system.

4.0 QUALITY CONTROL

A. A quality control system covering all stages of design, fabrication and installation of the aluminum composite material and accessories will be performed.
B. A quality control representative of our company will inspect and issue a compliance certificate on completion of installation.

5.0 GUARANTEE AND MAINTENANCE

The Panelab cladding system will be guaranteed for a limited period against failures. The panel installation will be structurally sound and free from permanent distortion and deformation under wind and moisture loads. The material and finishes will meet the criteria set forth in the warranty. The guarantee is subject to maintenance requirements. Please refer to the website for a copy: www.panelab.co.nz

6.0 MODIFICATION OF PANELAB SYSTEMS BY OTHERS AFTER COMPLETION OF INSTALLATION

Contractors performing work or adding elements to the Panelab cladding system after completion of the installation (that were not considered in the Shop Drawings) must ensure that any fixtures following the panel installation comply with the system design principles. Forming penetrations in the system, changing panel colour with signage or adding pressure to the panels may adversely influence the perfomance of the system. The panels are not designed to act as structural support or anchor for any additional fixtures. Care must be taken that components fixed to the composite panels will not adversely affect them.

7.0 DRAWINGS NOTES

- Please do not scale the drawings. If unsure about anything, please ask for clarification. All dimensions shown are to be confirmed on site prior to panels being fabricated.
- When using metallic colours, a change of grain direction on adjoining panels can result in apparent colour variation.
- Only items marked as "by PANELAB" are by Panelab. All other items are by and for the cost of others.

IMPORTANT NOTES

1.0 These shop drawings represent our interpretation of Architectural and Structural drawings and our contract requirements (scope of work) for this contract.

2.0 Prior to manufacturing for this project, all dimensions, method of construction and existing conditions must be checked and corrected or approved by the builder. Panelab is not responsible for checking preceding trades, construction standards or structural accuracy.

3.0 Panelab assume no responsibility for detailing other trade's products/interfaces unless adequate information is supplied and shown for our shop drawings process at time of drawing.

4.0 We assume no responsibility for measurements or details affecting any work or materials other than ours.

REFERENCE NOTES

1.0 SHOP DRAWING

The purpose of these Shop Drawings are to obtain approval from the Client/Client's Representative for our interpretation of the Architectural design and to provide an accurate set of workings for Panelab site staff.
Upon approval of these drawings, Panelab site staff will adopt them as working documents and will follow them closely with the architectural contract drawings.
Therefore careful review is advised.
Upon approval these drawings may be used by the client for issuance to contracted builders and regulatory bodies as necessary.

2.0 SHOP DRAWING APPROVAL

Shop Drawing Review and Approval is necessary to provide the Client / Client's Representative the opportunity to review details that may have been based on Architectural Drawings prepared during earlier stages of the project.
Changes incorporated may include further development of the Architectural Drawings, variations and the incorporation of proprietary product etc.

The reviewer should as a minimum consider the following:

a. Are all the specified Panelab Cladding details understandable?
b. Are there sufficient details provided to clarify our requirements from preceding trades?
c. Are Panelab Shop Drawings a fair reflection of the current architectural design?
d. Are the positioning of the Panelab joints acceptable? Whether they align or do not align with other building elements.
e. Are there any changes to be made to the Building Consent resulting from these Panelab drawings?

All dimensions on these shop drawings are regarded as indicative only, other than where shown as "critical". This may include alignment with other elements, grid references or other dimensions that may be critical to them. (e.g. boundary lines, height to boundary limits, etc.)

3.0 SITE CHECK

The purpose of the Site Check is to confirm site safety, actual as-built dimensions, evaluate acceptability of preceding trades readiness Panelab's install, set up profiles for efficient panel measuring, installation and instruction diagrams drawn on the building underlay to simplify installation.
The information gathered from Site Check will be used to prepare Site Observation Reports.

PROPRIETARY MATERIAL LEGEND

1.0 ALUMINIUM SHEET

PANELUX 3mm solid aluminium panel. Aluminium Alloy 3003-H24

2.0 ALUMINIUM EXTRUSION

Panelab LAB system
All extrusions unless otherwise noted, shall be formed of aluminium grade 6060-T5.

3.0 SCREWS & RIVETS

For all exterior applications: stainless steel grade 316(A4/70)

4.0 SHIMS

High density polyethylene, or similar high density impact resistant plastic, maximum packing 20mm, packers to be stacked neatly.

5.0 ALL DISSIMILAR MATERIALS TO BE SEPARATED WITH AN APPROPRIATE ISOLATOR

6.0 FIXING REQUIREMENTS

A) RIVETS:
All rivets min 4mm diameter (2.8mm stem diameter), aluminium.
Intermittently spaced rivets shall be applied at 250cc unless otherwise noted.

B) SCREWS:
All screws from panel to panel min 10 gauge unless otherwise noted.
Intermittently spaced screws between panel assembly components shall be applied at min 200cc unless otherwise noted.

All screws to structure min 10 gauge unless otherwise noted.
Intermittently spaced screws from panel assemblies to Timber structure shall be applied at min 600cc unless otherwise noted.

Intermittently spaced screws from panel assemblies to Concrete structure shall be applied at min 600cc unless otherwise noted.

All screws to timber, min 40mm embedment to timber. Screws shall always be applied directly to centre of backing member. Min 20mm edge distance from centre of screw to edge of timber.

All screws to aluminium or steel substrate: screws shall fully penetrate substrate to allow full engagement of thread.

All screws to concrete/concrete block, min 50mm embedment to substrate, screws fixed with Ramset DNP nylon plugs. Min edge distance 50mm. Length of screws shall not be scaled from drawing.

7.0 PANEL STIFFENING REQUIREMENTS

All panels to be stiffened with aluminium stiffeners running across the short direction of the panel. Stiffeners must extend the full width of the panel, less 50mm at each end.

Stiffeners: aluminium box section, min 20x20x1.6mm 6060 T5 hollow square section.

Stiffener spacings as required or refer to PS1.

8.0 FABRICATION REQUIREMENTS

Aluminium panel folds: machine routed to 0.7mm thickness and bend formed.
Primary fixing extrusion: Panelab LAB system, LA custom profile.
Secondary fixing extrusion: Panelab LAB system, LB custom profile.
16x16, 20x20, 30x30 or 40x40 1.6mm aluminium equal angles used where detailed.
0.7mm aluminium channel underflashing at panel joints.
Weepholes: 8mm diameter holes or 8mm slots, applied 50mm from panel ends.

PANELAB	PANELAB LTD.	ARCHITECT:		
		BUILDER:		
TITLE: PANELUX LAB SYSTEM - TEST BOOTH				
DWN: MAB	SCALE: AS SHOWN	DWG No		ISS
DATE: 12-06-2023		A0.1		A

A	FOR APPROVAL	12-06-23
ISS	REVISION	DATE

Figure 6:Panelux LAB system specification

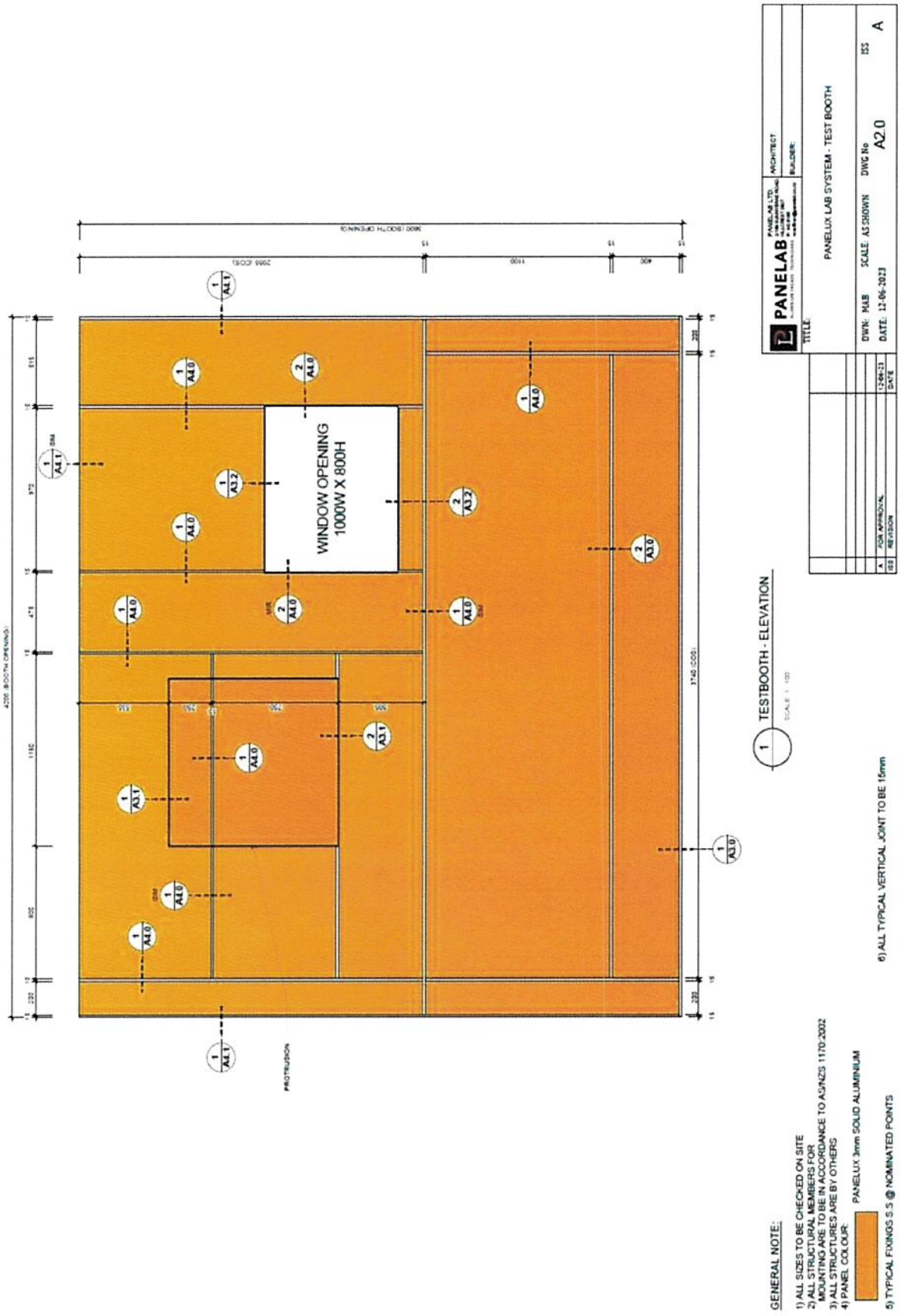


Figure 7:Panelux detail identification

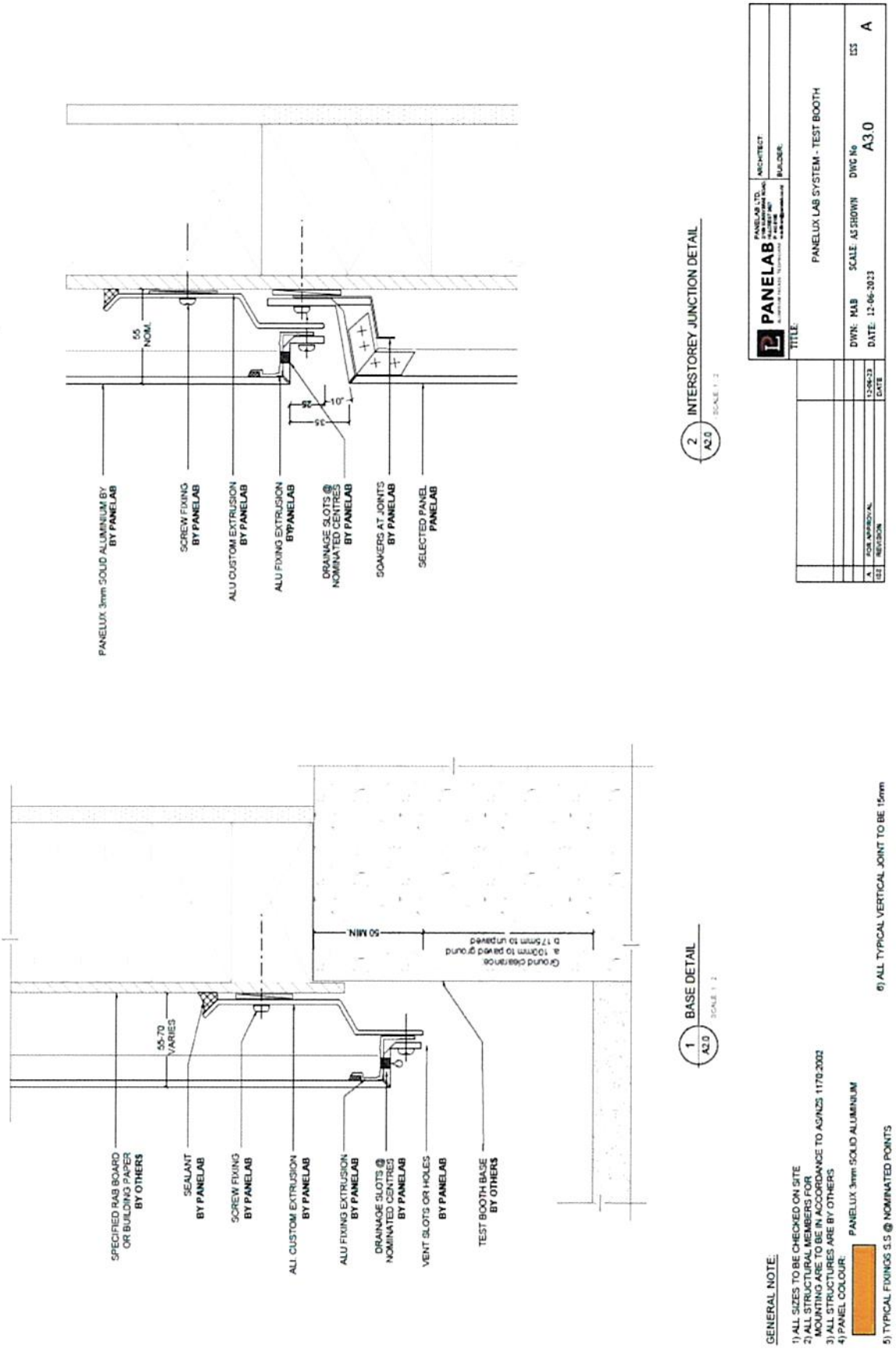


Figure 8: Interstorey and base details

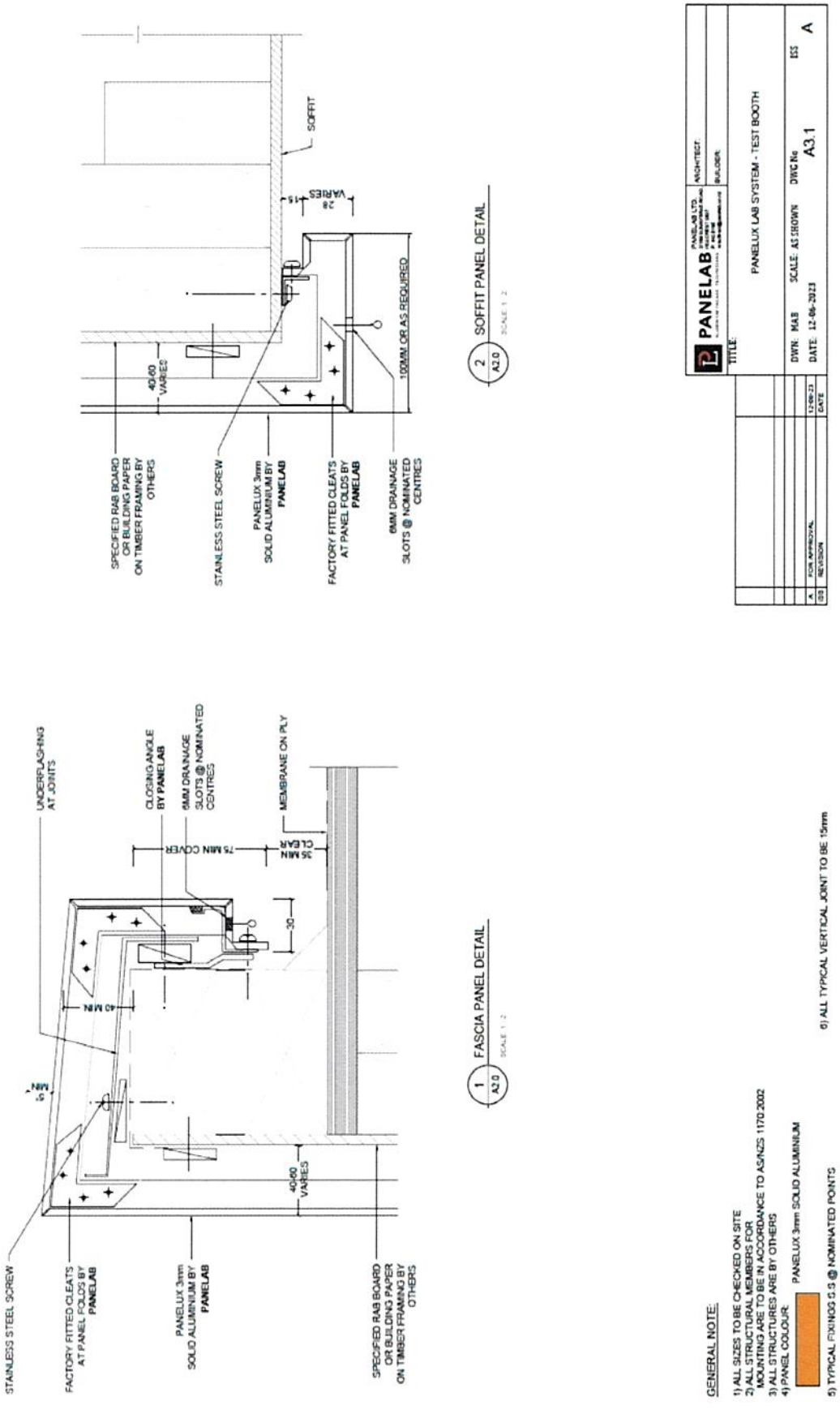


Figure 9: Soffit and fascia details

Tested by: John Burgess, IANZ Signatory. Checked by: Richard Gibbs

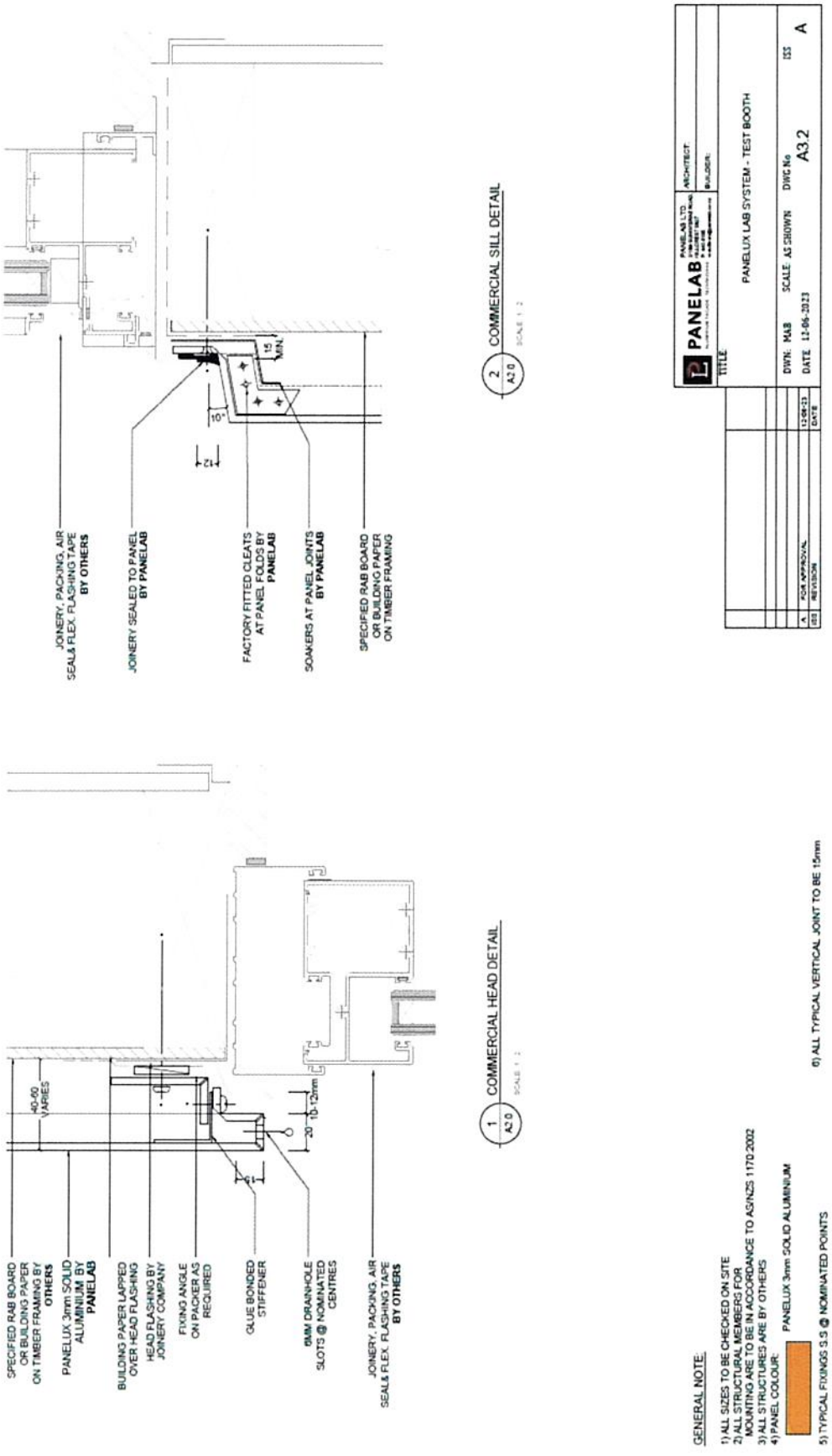


Figure 10: Commercial window head and sill details

Tested by: John Burgess, IANZ Signatory. Checked by: Richard Gibbs

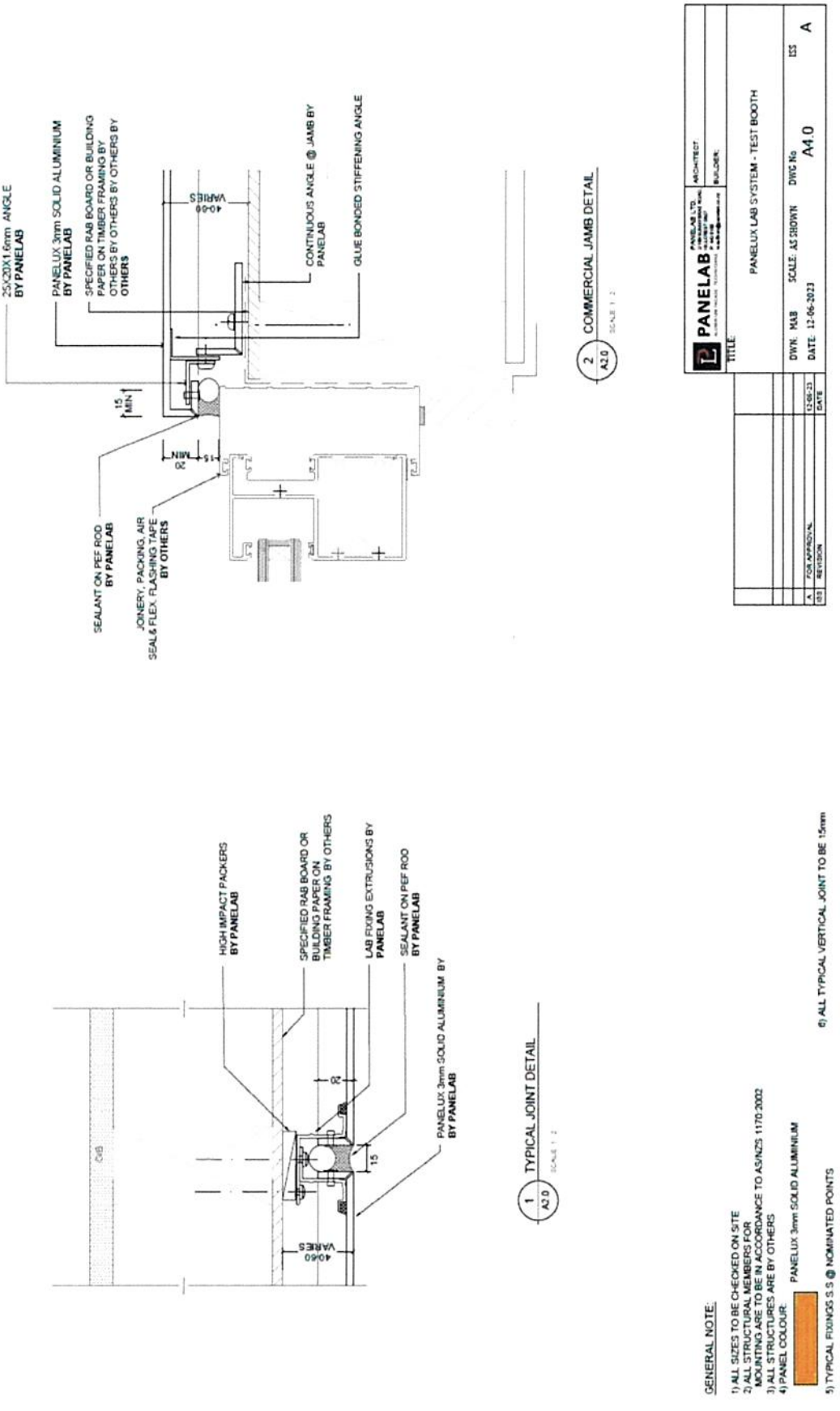


Figure 11: Commercial window jamb and typical panel joint details

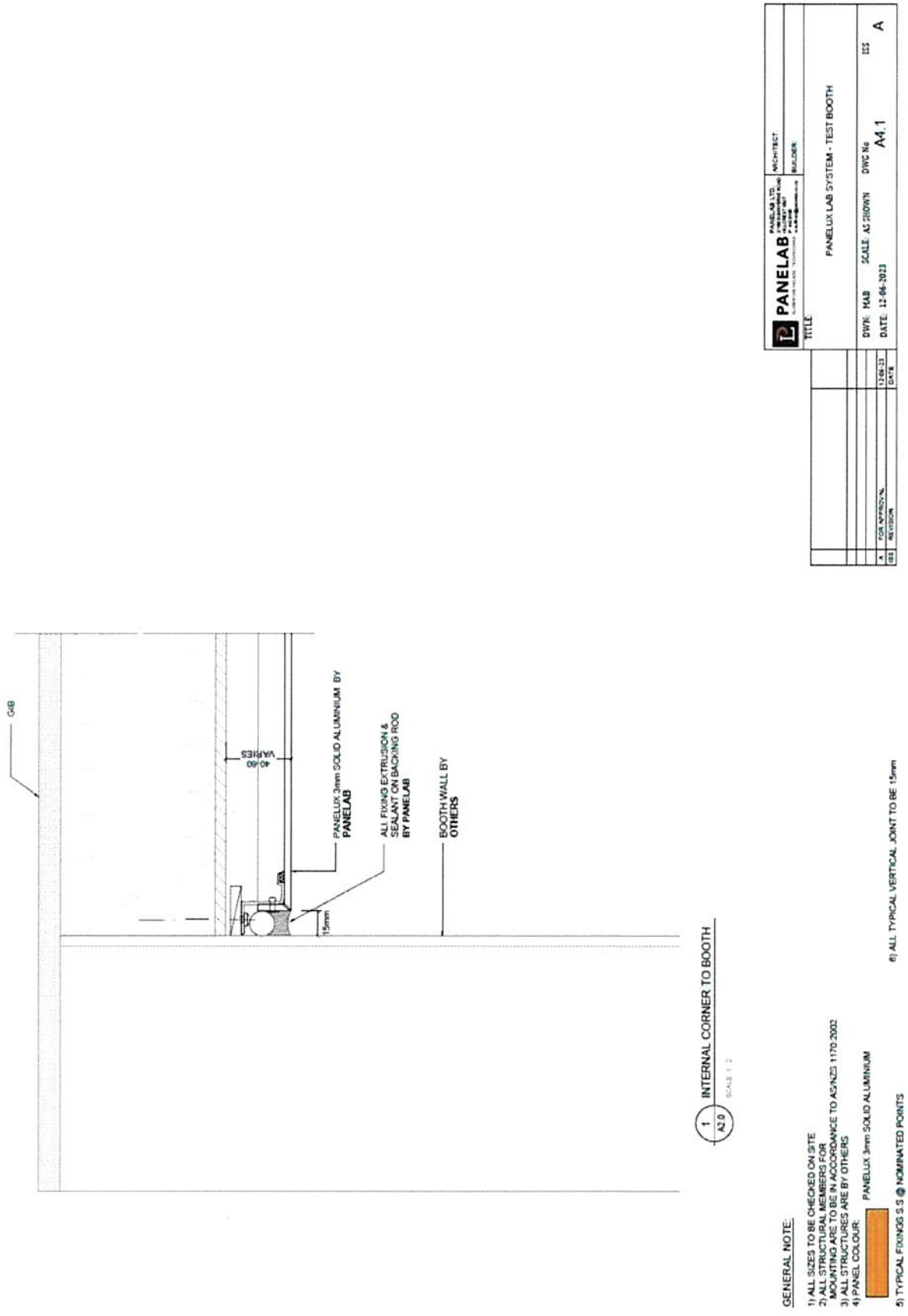
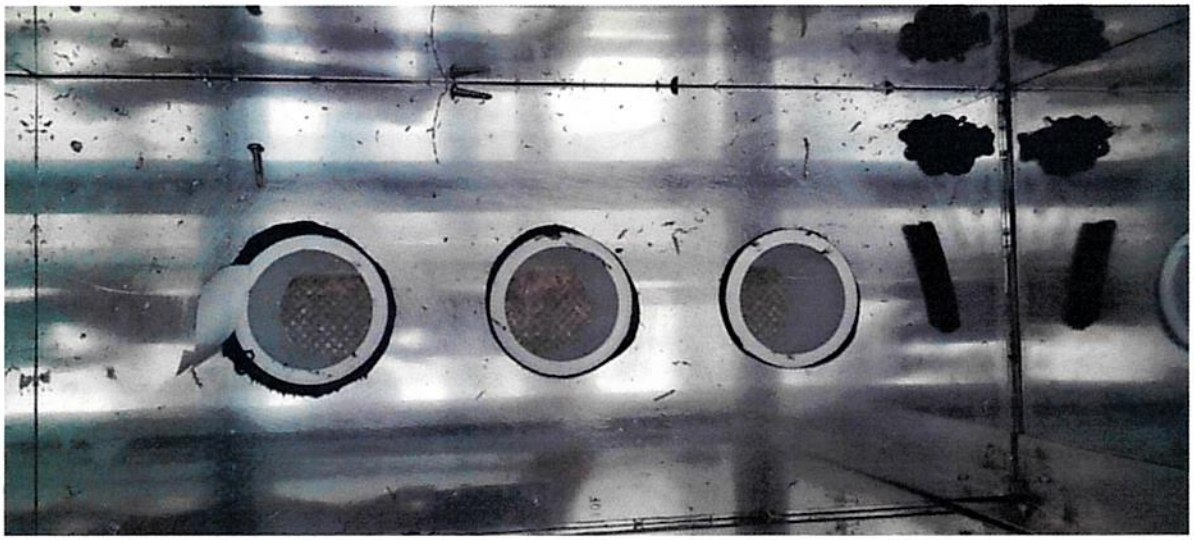
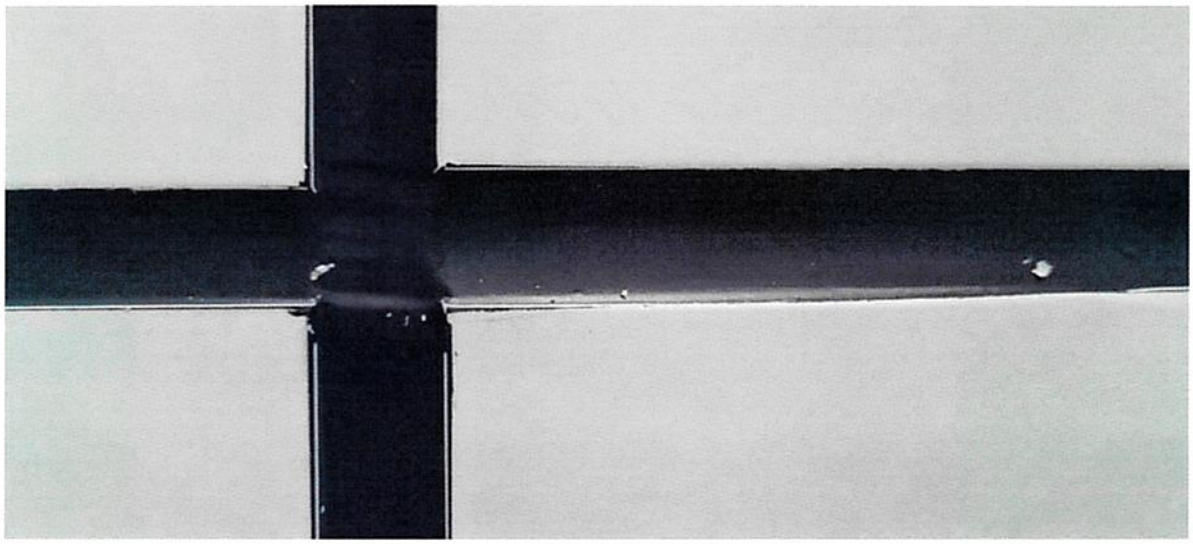
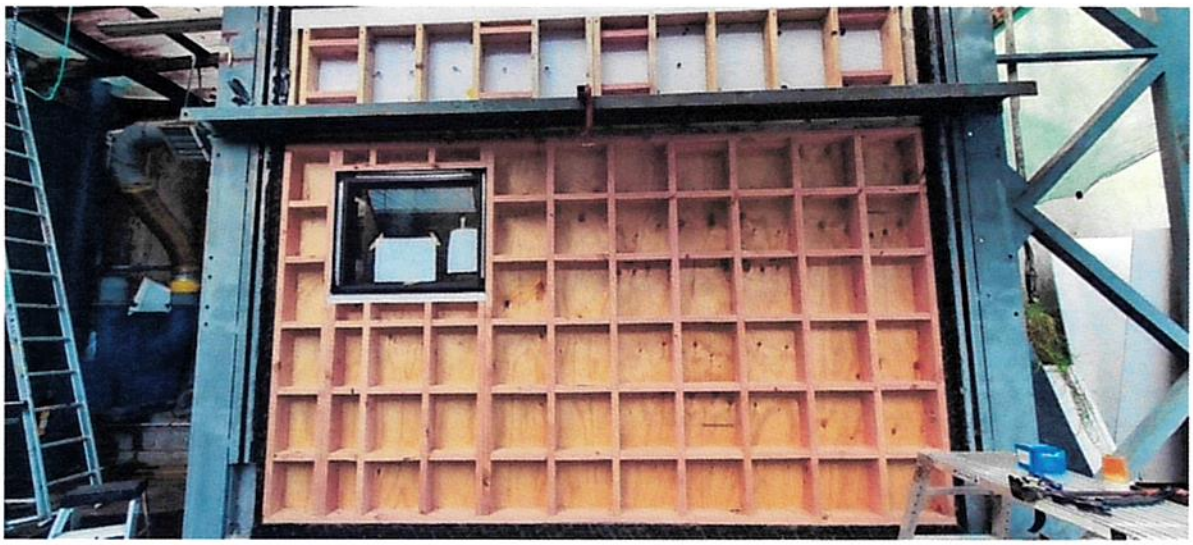


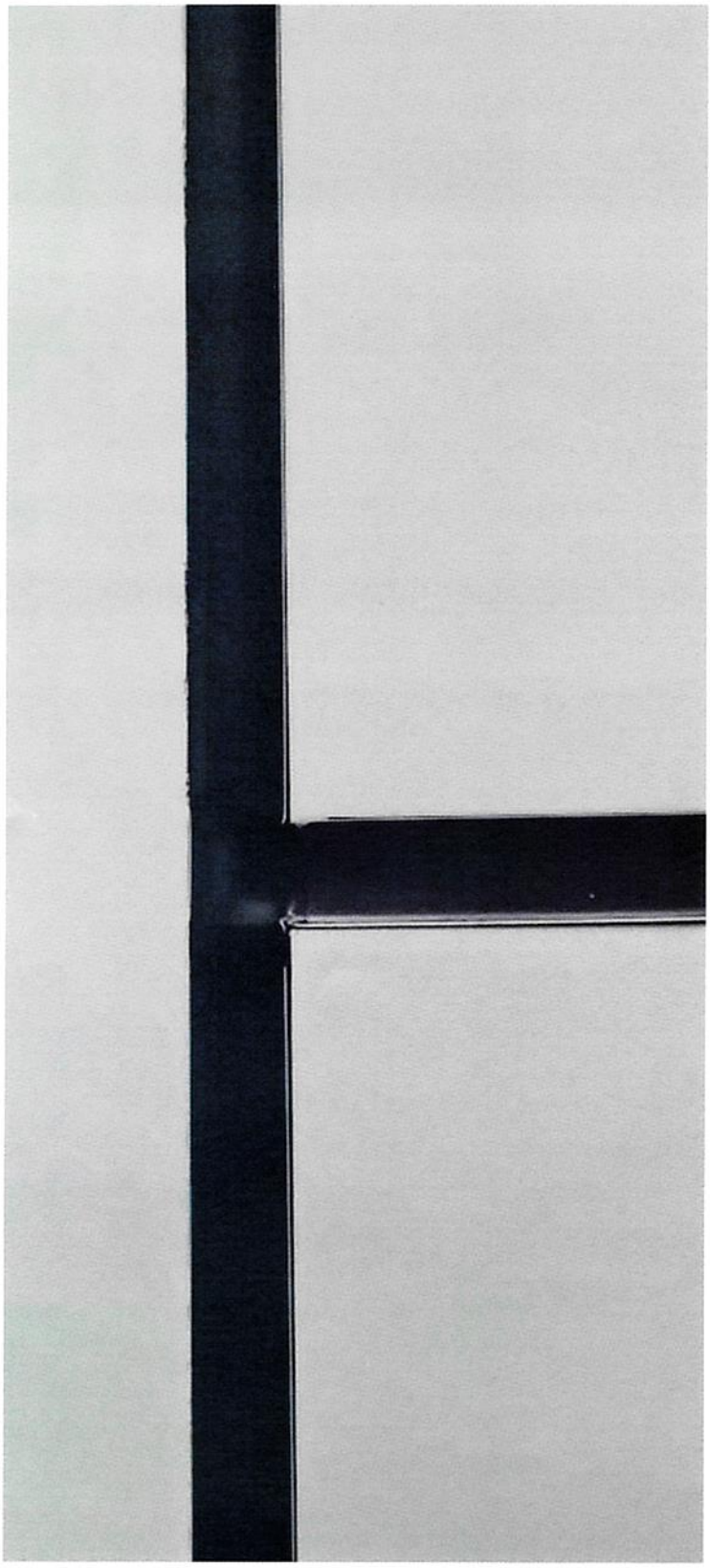
Figure 12: Internal corner to booth detail

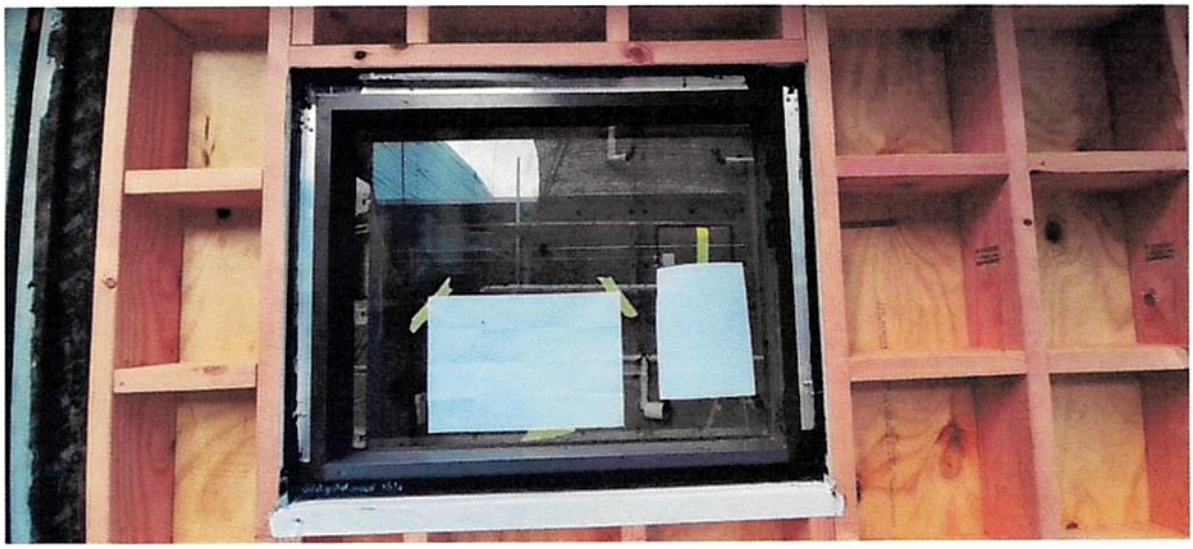
10.5. Photos

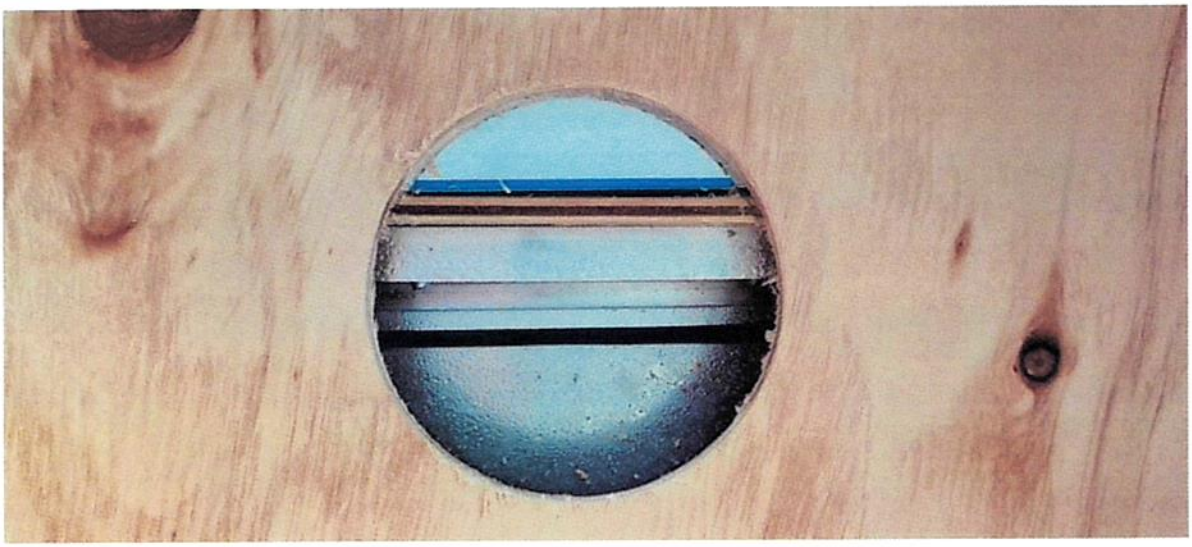


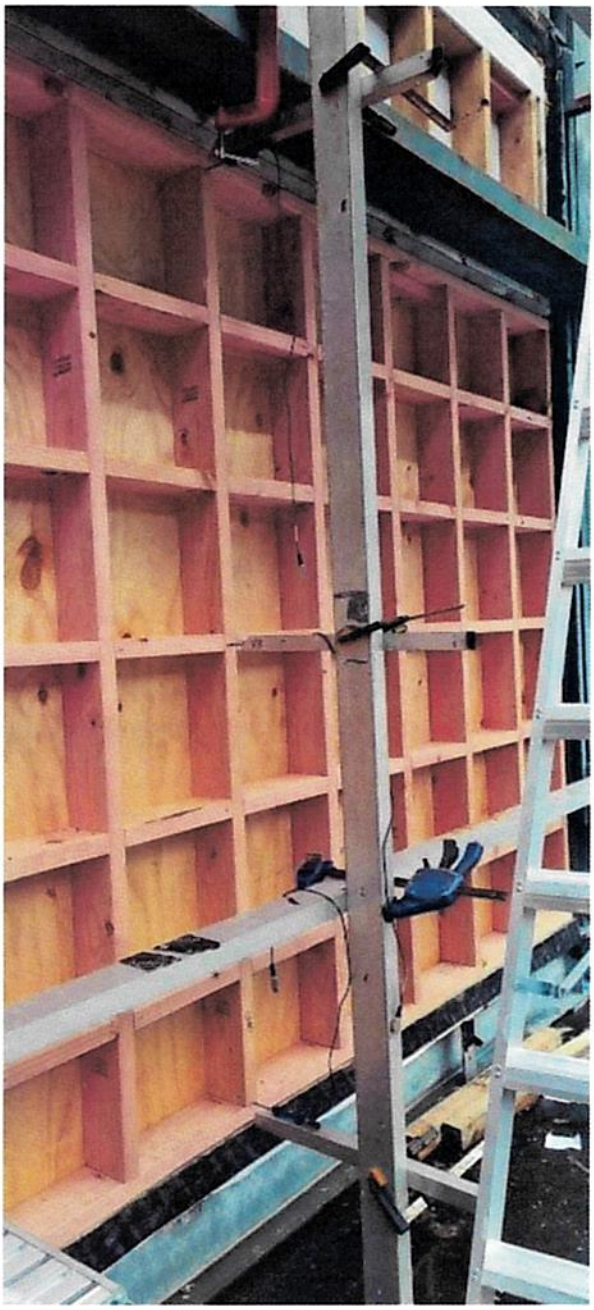












10.6. Serviceability Deflections

10.6.1. Stud Deflections

Displacements					
				Net centre deflection (mm)	
Pressure (Pa)	Top (mm)	Mid (mm)	Bott (mm)	Measured	Calculation check
0	0	0	0	0	0
1515	6.21	7.66	5.19	1.97	1.96
0	0.2	0.55	0.79		-0.055
0	0	0	0		0
303	0.97	1.25	0.69		-0.42
606	2.26	2.87	1.91		-0.785
909	3.52	4.36	2.83		-1.185
1212	4.78	5.79	3.66		-1.57
1515	6.12	7.24	4.47		-1.945
0	0.14	0.12	0.05		-0.025
1515	6.15	7.25	4.5		-1.925
1212	5.35	6.37	4.17		-1.61
909	4.35	5.29	3.73		-1.25
606	3.19	4.03	3.16		-0.855
303					
0	0	0	0	0	0
-1515	-10.67	-12.87	-10.02	-2.52	2.525
0	-4.76	-6.27	-6.77		0.505
0	0	0	0		0
-303	-0.99	-1.15	-0.58	-0.37	0.365
-606	-2.09	-2.44	-1.25	-0.77	0.77
-909	-3.35	-3.8	-1.93	-1.16	1.16
-1212	-4.62	-5.22	-2.62	-1.61	1.6
-1515	-6.01	-6.74	-3.4	-2.04	2.035
0	-0.2	-0.22	-0.25	-0.01	-0.005
-1515	-6.39	-7.06	-3.57	-2.08	2.08
-1212	-5.62	-6.14	-3.25	-1.71	1.705
-909	-4.75	-5.08	-2.86	-1.28	1.275
-606	-3.64	-3.86	-2.38	-0.86	0.85
-303	-2.18	-2.41	-1.73	-0.46	0.455
0	0	0	0	0	0
1515	8.57	10.69	8.85	1.98	-1.98
0	1.97	2.84	3.71	0	0
				1.98	
				-2.52	

Table 8: Displacements in the timber stud

10.6.2. Spandrel Deflections

Displacements					
				Net centre deflection (mm)	
Pressure (Pa)	Top (mm)	Mid (mm)	Bott (mm)	Measured	Calculation check
0	0	0	0	0	0
1500					
0	0			0	
500	-3.24	-7.57	-2.36	-4.77	-4.77
1000	-6.71	-16.07	-4.86	-10.28	-10.285
1500	-9.65	-23.46	-6.78	-15.25	-15.245
0	0	0	0		0
-500	2.73	6.65	1.88	4.34	4.345
-1000	6.33	13.74	4.07	8.54	8.54
-1500	9.34	20.08	5.81	12.5	12.505
0	0.5	0.65	0.45	0.17	0.175
				12.5	
				-15.25	

Table 9: Displacement in the spandrel panel