



Section J Part J4 Compliance Report

402-420 Pacific Highway
Crows Nest, NSW, 2065

Project No.	P02207
Revision	03
Issued	26 th June 2026
Client	Growthasset Services Pty Ltd

E-LAB Consulting

Where science and engineering inspire design.

Document QA and Revisions

ISSUE	DATE	COMMENTS	ENGINEER	REVIEWER
1	01/08/2025	Preliminary Issue	CL	AS
2	01/10/2025	Preliminary Issue Final	ES	AS
3	26/06/2025	Issued for Amended SSDA	AV	AS

Qualifications:

Information has been based on E-LAB's understanding of the documented development within the information provided. This report outlines the compliance requirements for NCC 2022 Section J Part J4 compliance only.

The project design and construction team are required to review and consider the implications of these recommendations on their design for the project.

The design team shall coordinate with any specific condensation, acoustic, wind, structural, safety, constructability, maintenance or Architectural Design requirements for a particular project.

Insulation values are whole of system values. The impact of framing can significantly derate performance and must be accounted for in the building's design.

Confidentiality:

This document contains commercial information which has been prepared exclusively for the use by The Principal. The document in entirety is confidential. No information contained in this document may be released in part or whole to any third party without the approval of the Author or The Principal.

Authorised by:

Engineering Lab NSW Pty Ltd



Alex Smith | Senior Consultant

Sustainability



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Executive Summary

This ESD Report has been prepared by E-LAB on behalf of Prosper as part of the Environmental Impact Statement (EIS) for a State Significant Development Application (SSDA) for a mixed use residential development at 402-420 Pacific Highway, Crows Nest (the site).

The report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-83076206) on 29 April 2025.

The site is located adjacent to Crows Nest Metro Station and is within the Crows Nest Transit Oriented Development (TOD) Accelerated Precinct which has been identified by the NSW Government to support housing delivery. The Crows Nest TOD Precinct has been subject of recent amendments to the planning controls which came into effect in November 2024.

The site comprises 2,127.7sqm of land at 402-420 Pacific Highway, Crows Nest (SP54033) within North Sydney LGA.

The SSD application seeks approval for demolition of existing structures and construction of a 38 storey mixed use residential building.

The scope of the Section J assessment will be limited to relevant areas of development, namely the two retail tenancies on the Ground Level, the commercial podium on Level 5 and communal areas.

Under NCC 2022, the Project is classified as a Class 2 (Common Area) – Residential Common Areas, Class 5 – Commercial Tenancies/ Office, Class 6 building – Shops, Restaurants and Cafes. Crows Nest, 2065 falls within Climate Zone 5 – Warm Temperate.

The Report will cover the building envelope for the relevant areas of the development. The intent of the assessment is to confirm the proposed systems and thermal performance of the facade complies with Section J, Part J4 (for both Building Fabric and Glazing).

E-LAB have assessed the development and confirm the system will comply with NCC 2022 Part J4, using DtS provisions, provided the stated values are met within this report.

The following performance values are required to demonstrate compliance against code:

Class 2 – Residential Common Area

Glazed Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT*	RECOMMENDATION**
J4D6	New Windows & Doors	U-Value = 3.43W/m ² .K SHGC = 0.28	Double glazed, thermally broken frame

Class 5 – Commercial Tenancies

Glazed Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT*	RECOMMENDATION**
J4D6	New Windows & Doors	U-Value = 4.38W/m ² .K SHGC = 0.26	Double glazed, thermally broken frame



Class 6 – Retail Tenancies

Glazed Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT*	RECOMMENDATION**
J4D6	New Windows & Doors	U-Value = $4.92\text{W/m}^2\cdot\text{K}$ SHGC = 0.24	Double glazed, thermally broken frame

*U-Value represents whole system, including thermal breaks, air gaps, bulk insulation, and metal-on-metal contact.

**This report provides certification for the design of the building fabric only against NCC 2022 Part J4. This does not certify the installation, nor other parts of Section J such as services, air tightness or energy monitoring.

All Spaces

Solid Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT
J4D4	New Roof/Ceiling	R-Value = $3.7\text{ m}^2\cdot\text{K/W}$ Solar Absorptance ≥ 0.45
J4D6	New Walls more than 20% Glazing	R-Value = $1.0\text{ m}^2\cdot\text{K/W}$ Solar Absorptance ≥ 0.60
	New Walls less than 20% Glazing	R-Value = $1.4\text{ m}^2\cdot\text{K/W}$ Solar Absorptance ≥ 0.60
S38C2 – Method 1	New Spandrel	Spandrel Config 1 – No insulation
J4D7	New Floors Without In-Slab Heating or Cooling	R-Value = $2.0\text{ m}^2\cdot\text{K/W}$ No additional insulation required

*R-Value represents whole system, including thermal breaks, air gaps, bulk insulation, and metal-on-metal contact.



1 INTRODUCTION

1.1 PURPOSE

This ESD Report has been prepared by E-LAB as part of the Environmental Impact Statement (EIS) for a State Significant Development Application (SSDA) for a mixed use residential development at 402-420 Pacific Highway, Crows Nest (the site).

- Demolition of all existing structures on the site, tree removal, excavation and site preparation works
- Construction of a 38-storey mixed use building comprising:
 - Six levels of basement car parking
 - A 4-storey podium comprising retail and commercial floor space
 - Above podium resident communal open space and communal floor space
 - 273 residential apartments including affordable housing
 - Rooftop servicing
- Retention of existing access from Oxley Street to basement car parking and construction of a new driveway from Oxley Street to access the ground floor loading dock
- Associated landscaping and public domain works
- Infrastructure servicing.

The report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-83076206) on 29 April 2025 as detailed in the table below.

Table 1: Relevant SEARs considered

ISSUE	SEARS REQUIREMENT	SECTION REFERENCE
Ecological Sustainable Development (ESD)	▪ Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development. ▪ Where relevant, provide an assessment of the development against the standards for non-residential development set out in Chapter 3 of State Environmental Planning Policy (Sustainable Buildings) 2022.	Addressed in Section 2 to Section 4 and Appendix A to C

This report has been prepared by E-LAB Consulting (E-LAB) at the request of Growthasset Services Pty Ltd to demonstrate compliance with the NCC 2022 Volume 1, Section J requirements for Part J4. The report also highlights the steps undertaken to demonstrate compliance, documents the results, and highlights the required performance for the development.

The development, subject of this report, has been assessed using the DtS Pathway. The design has been found to comply with the Requirements of Part J4 of the NCC 2022, provided systems are installed in line with the values stated in this report.



1.2 SUBJECT SITE

The site is located adjacent to Crows Nest Metro Station and is within the Crows Nest Transit Oriented Development (TOD) Accelerated Precinct which has been identified by the NSW Government to support housing delivery. The Crows Nest TOD Precinct has been subject of recent amendments to the planning controls which came into effect in November 2024.

The site comprises 2,127.7sqm of land at 402-420 Pacific Highway, Crows Nest (SP54033) within North Sydney LGA.

The site is currently developed with a four storey mixed use building. Vehicular access to existing basement car parking is from Oxley Street via the adjacent landholding with an easement granting right of carriageway.

The uses surrounding the site comprise:

- Crows Nest Metro Station to the east which has approval for over-station development up to 22 storeys of mixed use and is subject of a current SSD application for up to 27 storeys
- An existing car wash facility and four storey commercial building to the north which is subject of a proposal for a 52 storey mixed use development being considered through the Housing Delivery Authority pathway as SSD with a concurrent rezoning
- A three storey commercial building to the north west with potential for up to 16 storeys of commercial under the Crows Nest TOD controls
- Three to five story mixed use and commercial buildings fronting Pacific Highway located to the south of the site which are subject of a separate SSD application for a 40 storey mixed use development
- Three storey multi-dwelling housing to the west with potential for up to 12 storeys of residential under the Crows Nest TOD controls.



Figure 1 – Site Location (Source: Mecone Mosaic)

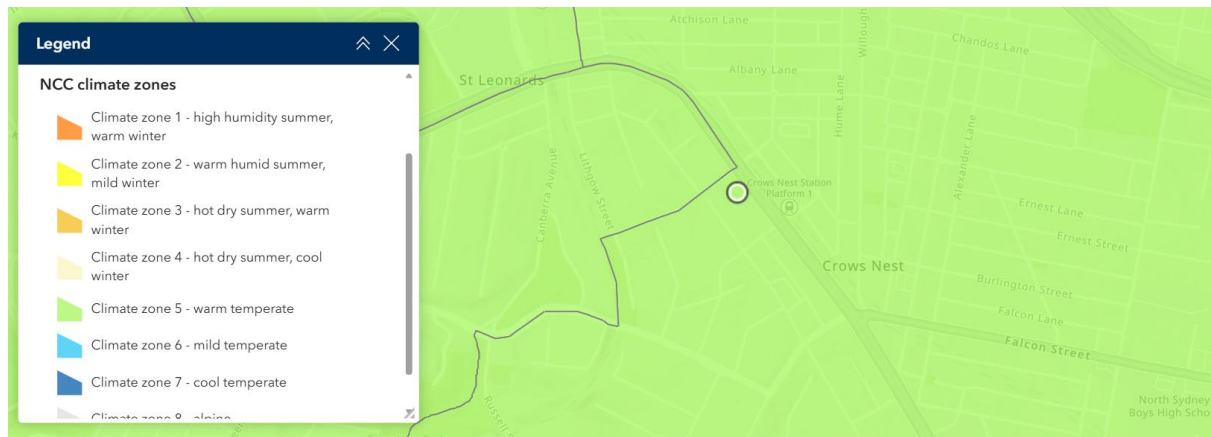


Figure 2 – Site Location – Climate Zone (Source: National Construction Code, Climate Zone Map)

1.3 PROJECT DESIGN

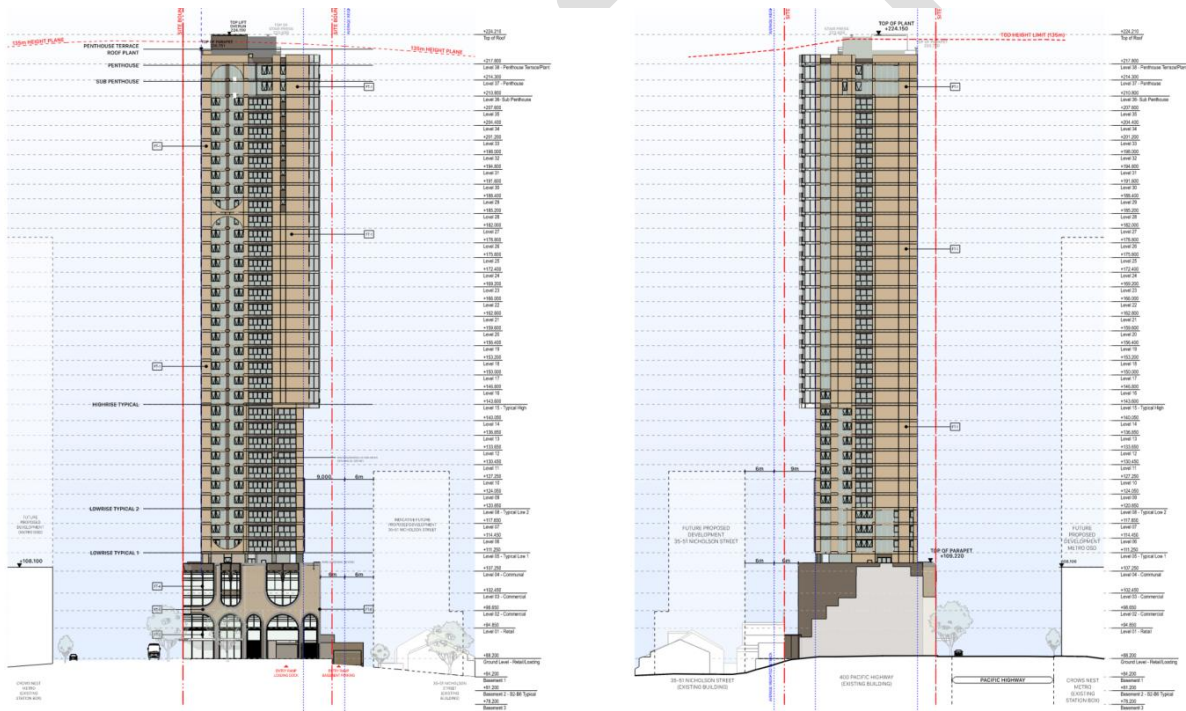


Figure 3 – North & South Elevations

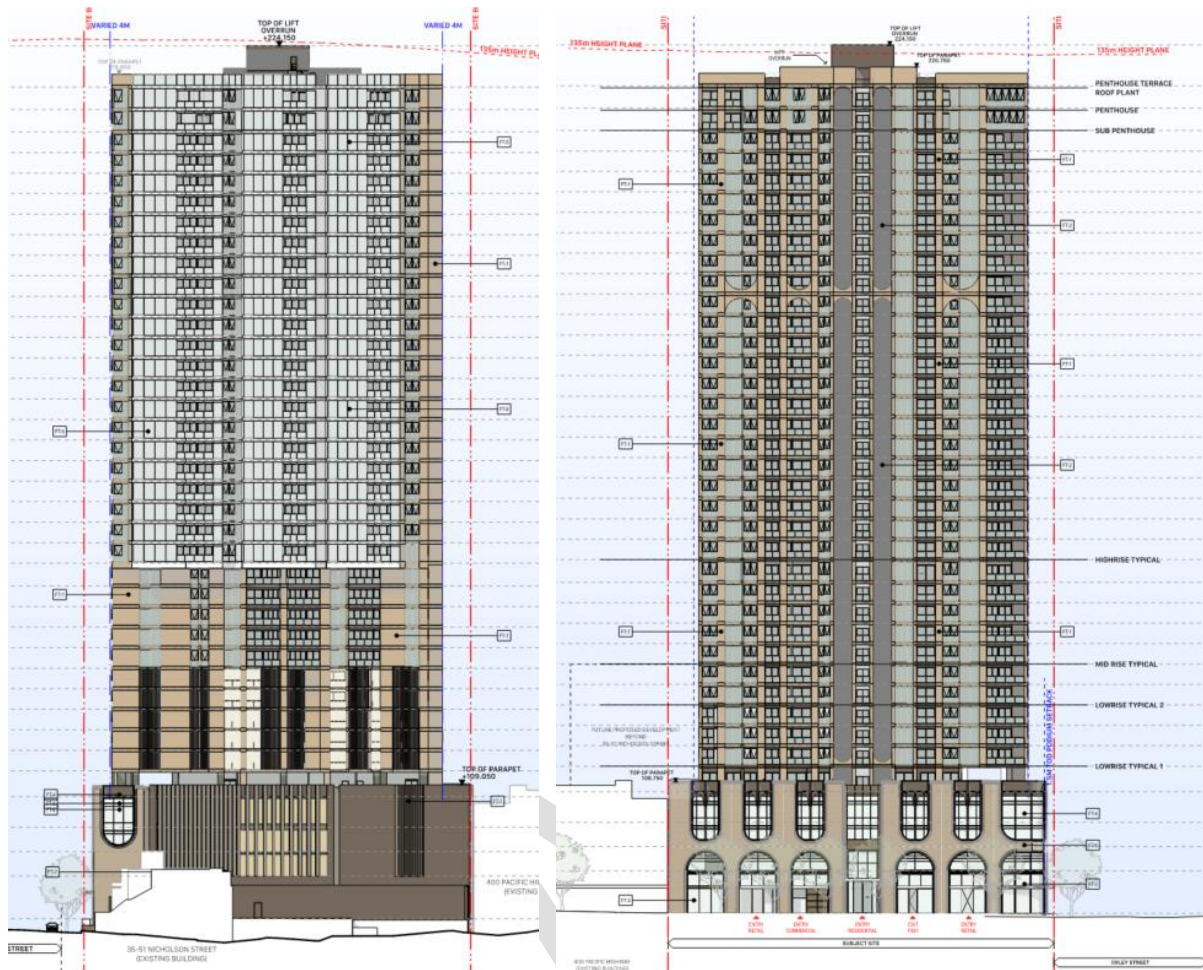


Figure 4 – West & East Elevations

2 BUILDING ENVELOPE REQUIREMENTS

2.1 GLAZING

The following method mentioned below outlines the glazing performance modelled in the J4 compliance solution. This is the minimum performance required to Section J. Any relaxation of these values will need to be confirmed for compliance in writing by the Section J Certifying consultant.

The below values are whole of system values, including the impact of framing.

Class 2 – Residential Common Area

Glazed Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT*	RECOMMENDATION**
J4D6	New Windows & Doors	U-Value = 3.43W/m ² .K SHGC = 0.28	Double glazed, thermally broken frame

Class 5 – Commercial Tenancies

Glazed Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT*	RECOMMENDATION**
J4D6	New Windows & Doors	U-Value = 4.38W/m ² .K SHGC = 0.26	Double glazed, thermally broken frame

Class 6 – Retail Tenancies

Glazed Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT*	RECOMMENDATION**
J4D6	New Windows & Doors	U-Value = 4.92W/m ² .K SHGC = 0.24	Double glazed, thermally broken frame

*U-Value represents whole system, including thermal breaks, air gaps, bulk insulation, and metal-on-metal contact.

**This report provides certification for the design of the building fabric only against NCC 2022 Part J4. This does not certify the installation, nor other parts of Section J such as services, air tightness or energy monitoring.



2.2 BUILDING FABRIC

The following outlines the building fabric performance requirements as modelled in the J4 Proposed solution. This is the minimum performance required to Section J.

All Spaces

Solid Elements:

SECTION J REFERENCE	SECTION J ELEMENT	MINIMUM REQUIREMENT
J4D4	New Roof/Ceiling	R-Value = 3.7 m ² .K/W Solar Absorptance ≥ 0.45
J4D6	New Walls more than 20% Glazing	R-Value = 1.0 m ² .K/W Solar Absorptance ≥ 0.60
	New Walls less than 20% Glazing	R-Value = 1.4 m ² .K/W Solar Absorptance ≥ 0.60
S38C2 – Method 1	New Spandrel	Spandrel Config 1 – No insulation
J4D7	New Floors Without In-Slab Heating or Cooling	R-Value = 2.0 m ² .K/W

*R-Value represents whole system, including thermal breaks, air gaps, bulk insulation, and metal-on-metal contact.

3 PART J5 – BUILDING SEALING

The building envelope must be appropriately sealed to manage the loss of conditioned air from the space. The following building envelope elements must be sealed in accordance with requirements outlined in Appendix C.

- Chimneys and Flues
- Roof Light
- Windows and Doors
- Exhaust Fans
- Ceiling, Walls, Floors
- Evaporative Coolers

DRAFT



4 PART J9 – ON-SITE DISTRIBUTED ENERGY RESOURCES

As part of the NCC 2022 Section J Part J9D4 and J9D5 compliance requirements, the building is required to include facilities for electric vehicle charging equipment and facilities for solar photovoltaic and battery systems.

The building must be provided with electrical distribution boards dedicated to electric vehicle charging. Electrical distribution boards dedicated to serving electric vehicle charging in a carpark must:

- Be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand.
- Have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 am to 7:00 pm daily in a Class 2 building.
- Be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in 100% of car parking spaces in a Class 2 building.

The number of Electrical distribution boards for electric vehicle charging depends on the number of car park spaces. Table below outlines the requirement for each storey of carpark:

Carpark spaces per storey for electric vehicles	Electrical distribution boards for electric vehicle charging per storey
0 - 9	0
10 - 24	1
25 - 48	2
49 - 72	3
73 - 96	4
97 - 120	5
121 - 144	6
145 - 168	7

Figure 3 Electric vehicle distribution board requirement for each storey of a carpark

At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings with:

- Installed solar photovoltaic panels on at least 20% of the roof area or an equivalent generation capacity elsewhere on-site
- Where 100% of the roof area is shaded for more than 70% of daylight hours
- With a roof area of not more than 55 m²
- Where more than 50% of the roof area is used as a terrace, carpark, roof garden, roof light or the like.

The main electrical switchboard of a building must contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for -

- a solar photovoltaic system; and
- a battery system

Please see section J9 in Appendix C for more details.

APPENDIX A – FAÇADE CALCULATORS

DRAFT



Date
6/25/2026

Name
Aljenry Valino

Company
E-Lab Consulting

Position
Sustainability Consultant

Building Name / Address
402-420 Pacific Highway, Crows Nest
402-420 Pacific Highway, Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 2 - apartment building (Common Area)

Storeys Above Ground
1

Tool Version
1.5 (May 2024)

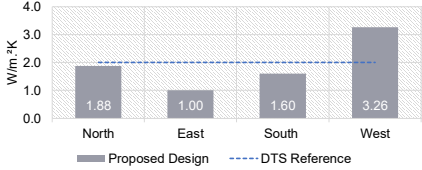
The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

Compliant Solution =
Non-Compliant Solution =

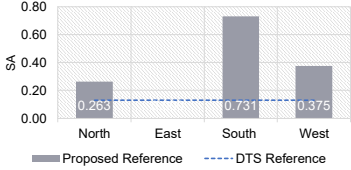
	North	East	Method 1	South	West	Method 2
Wall-glazing U-Value (W/m².K)	1.88	1.00	1.60	3.26	2.00	
Solar Admittance	0.26		0.73	0.37		
AC Energy Value					198	

Method 1

Wall-glazing U-Value



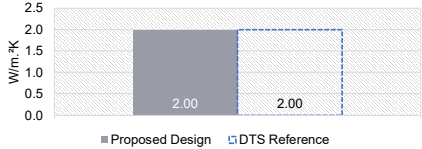
Solar Admittance



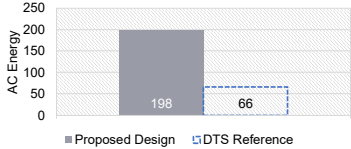
■ Proposed Design - - - DTS Reference

Method 2

Wall-glazing U-Value - ALL



AC Energy Value



■ Proposed Design ■ DTS Reference

Project Details

	North	East	South	West
Glazing Area (m²)	27.0686	0	18.5107	139.9424
Glazing to Façade Ratio	36%	0%	25%	93%
Glazing References	GL01		GL01	GL01 GL02
Glazing System Types	USER (DEFINED)		USER (DEFINED)	USER (DEFINED)
Glass Types	USER (DEFINED)		USER (DEFINED)	USER (DEFINED)
Frame Types	USER (DEFINED)		USER (DEFINED)	USER (DEFINED)
Average Glazing U-Value (W/m².K)	3.43		3.43	3.43
Average Glazing SHGC	0.81	0.00	0.81	0.81
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	47.9	150.48	56.49	10.46
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Rt 1.00	Rt 1.00	Rt 1.00	Rt 1.00

	Wall Thickness	200	200	200	200
	Average Wall R-value (m².K/W)	1.00	1.00	1.00	1.00
	Solar Absorptance	0.6 0.55	0.6 0.55	0.6 0.55	0.6 0.55



Project Summary

Date
6/25/2026

Name
Aljenry Valino

Company
E-Lab Consulting

Position
Sustainability Consultant

Building Name / Address
402-420 Pacific Highway, Crows Nest
402-420 Pacific Highway, Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm
temperate

Building Classification
Class 2 - apartment building
(Common Area)

Storeys Above Ground
1

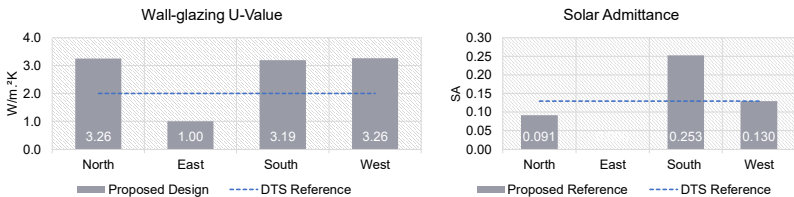
Tool Version
1.5 (May 2024)

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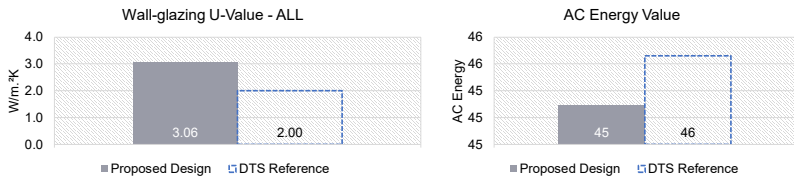
Compliant Solution =
Non-Compliant Solution =

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	3.26	1.00	3.19	3.26	3.06
Solar Admittance	0.09		0.25	0.13	
AC Energy Value					45

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	27.0686	0	18.5107	139.9424
Glazing to Façade Ratio	93%	0%	90%	93%
Glazing References	GL01		GL01	GL01 GL02
Glazing System Types	USER (DEFINED)		USER (DEFINED)	USER (DEFINED)
Glass Types	USER (DEFINED)		USER (DEFINED)	USER (DEFINED)
Frame Types	USER (DEFINED)		USER (DEFINED)	USER (DEFINED)
Average Glazing U-Value (W/m².K)	3.43		3.43	3.43
Average Glazing SHGC	0.28	0.00	0.28	0.28
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	2.1	18.52	2.01	10.46
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Rt 1.00	Rt 1.00	Rt 1.00	Rt 1.00

	Wall Thickness	200	200	200	200
	Average Wall R-value (m².K/W)	1.00	1.00	1.00	1.00
	Solar Absorptance	0.6 0.55	0.6 0.55	0.6 0.55	0.6 0.55



Project Summary

Date
6/25/2026

Name
Aljenry Valino

Company
E-Lab Consulting

Position
Sustainability Consultant

Building Name / Address
402-420 Pacific Highway, Crows Nest
402-420 Pacific Highway, Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 5 - office building

Storeys Above Ground
2

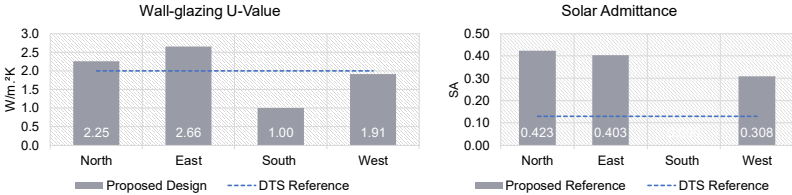
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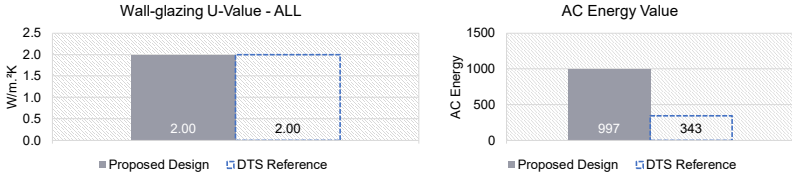
Compliant Solution =
Non-Compliant Solution =

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	2.25	2.66	1.00	1.91	2.00
Solar Admittance	0.42	0.40		0.31	
AC Energy Value					997

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	141.4674	243.7215	0	137.12
Glazing to Façade Ratio	36%	49%	0%	27%
Glazing References	GL04 GL05 GL06 GL07	GL05 GL06 GL07 GL08		GL01 GL02 GL03 GL04
Glazing System Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Glass Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Frame Types	USER (DEFINED)	USER (DEFINED)		
Average Glazing U-Value (W/m².K)	4.38	4.38		4.38
Average Glazing SHGC	0.81	0.81	0.00	0.81
Shading Systems	Horizontal Device	Horizontal Device	Horizontal Device	Horizontal Device
Wall Area (m²)	249.8	253.43	380.46	372.61
Wall Types	Wall Spandrel	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Rt 1.00 Spandrel Config 1 - no	Rt 1.00	Rt 1.00	Rt 1.00

	Wall Thickness	200	200	200	200
	Average Wall R-value (m².K/W)	0.95	1.00	1.00	1.00
	Solar Absorptance	0.6 0.55	0.6 0.55	0.6 0.55	0.6 0.55



Project Summary

Date
6/25/2026

Name
Aljenry Valino

Company
E-Lab Consulting

Position
Sustainability Consultant

Building Name / Address
402-420 Pacific Highway, Crows Nest
402-420 Pacific Highway, Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 5 - office building

Storeys Above Ground
2

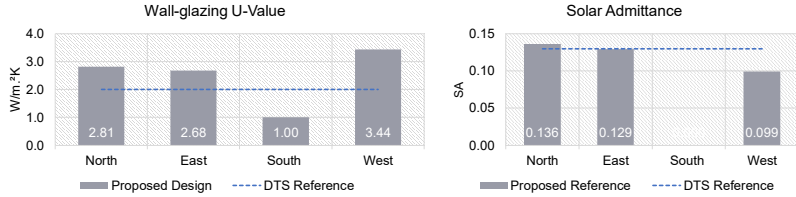
Tool Version
1.5 (May 2024)

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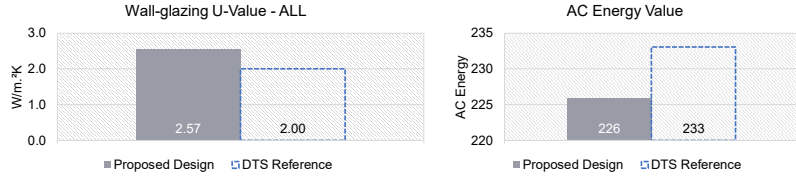
Compliant Solution =
Non-Compliant Solution =

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	2.81	2.68	1.00	3.44	2.57
Solar Admittance	0.14	0.13		0.10	
AC Energy Value					226

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	141.4674	243.7215	0	137.12
Glazing to Façade Ratio	52%	50%	0%	72%
Glazing References	GL04 GL05 GL06 GL07	GL05 GL06 GL07 GL08		GL01 GL02 GL03 GL04
Glazing System Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Glass Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Frame Types	USER (DEFINED)	USER (DEFINED)		
Average Glazing U-Value (W/m².K)	4.38	4.38		4.38
Average Glazing SHGC	0.26	0.26	0.00	0.26
Shading Systems	Horizontal Device	Horizontal Device	Horizontal Device	Horizontal Device
Wall Area (m²)	129.14	246.12	184.38	53.21
Wall Types	Wall Spandrel	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Rt 1.00 Spandrel Config 1 - no	Rt 1.00	Rt 1.00	Rt 1.00

	Wall Thickness	200	200	200	200
	Average Wall R-value (m².K/W)	0.92	1.00	1.00	1.00
	Solar Absorptance	0.6 0.55	0.6 0.55	0.6 0.55	0.6 0.55



Project Summary

Date
6/25/2026

Name
Aljenry Valino

Company
E-Lab Consulting

Position
Sustainability Consultant

Building Name / Address
402-420 Pacific Highway, Crows Nest
402-420 Pacific Highway, Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 6 - department stores, shopping centres

Storeys Above Ground
2

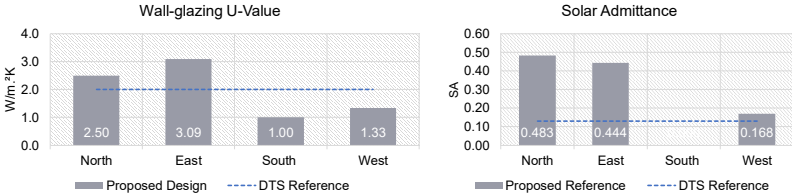
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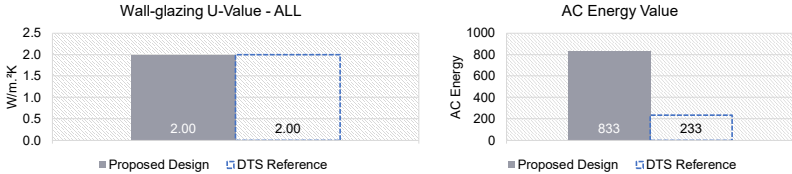
Compliant Solution =
Non-Compliant Solution =

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	2.50	3.09	1.00	1.33	2.00
Solar Admittance	0.48	0.44		0.17	
AC Energy Value					833

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	154.9858	262.4123	0	43.7325
Glazing to Façade Ratio	38%	52%	0%	8%
Glazing References	GL01 GL02 GL03	GL01 GL02 GL03 GL04		GL01
Glazing System Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Glass Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Frame Types	USER (DEFINED)	USER (DEFINED)		
Average Glazing U-Value (W/m².K)	4.92	4.92		4.92
Average Glazing SHGC	0.81	0.81	0.00	0.81
Shading Systems	Horizontal Device	Horizontal Device	Horizontal Device	Horizontal Device
Wall Area (m²)	254.81	238.2	406.4	473.55
Wall Types	Wall Spandrel	Wall Spandrel	Wall	Wall
Methodology	Wall			
Wall Construction	Rt 1.00 Spandrel Config 1 - no	Rt 1.00 Spandrel Config 1 - no	Rt 1.00	Rt 1.00

	Wall Thickness	200	200	200	200
	Average Wall R-value (m².K/W)	0.98	0.93	1.00	1.00
	Solar Absorptance	0.6 0.55	0.6 0.55	0.6 0.55	0.6 0.55



Project Summary

Date
6/25/2026

Name
Aljenry Valino

Company
E-Lab Consulting

Position
Sustainability Consultant

Building Name / Address
402-420 Pacific Highway, Crows Nest
402-420 Pacific Highway, Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 6 - department stores, shopping centres

Storeys Above Ground
2

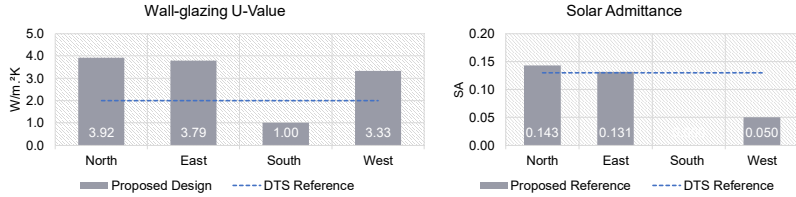
Tool Version
1.5 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

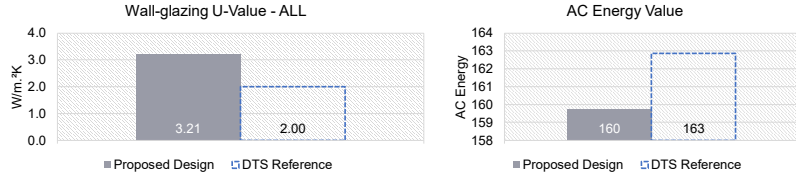
Compliant Solution =
Non-Compliant Solution =

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	3.92	3.79	1.00	3.33	3.21
Solar Admittance	0.14	0.13		0.05	
AC Energy Value					160

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	154.9858	262.4123	0	43.7325
Glazing to Façade Ratio	74%	70%	0%	59%
Glazing References	GL01 GL02 GL03	GL01 GL02 GL03 GL04		GL01
Glazing System Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Glass Types	USER (DEFINED)	USER (DEFINED)		USER (DEFINED)
Frame Types	USER (DEFINED)	USER (DEFINED)		
Average Glazing U-Value (W/m².K)	4.92	4.92		4.92
Average Glazing SHGC	0.24	0.24	0.00	0.24
Shading Systems	Horizontal Device	Horizontal Device	Horizontal Device	Horizontal Device
Wall Area (m²)	55.1	112.51	170.37	29.95
Wall Types	Wall Spandrel	Wall Spandrel	Wall	Wall
Methodology	Wall			
Wall Construction	Rt 1.00 Spandrel Config 1 - no	Rt 1.00 Spandrel Config 1 - no	Rt 1.00	Rt 1.00

	Wall Thickness	200	200	200	200
	Average Wall R-value (m².K/W)	0.90	0.86	1.00	1.00
	Solar Absorptance	0.6 0.55	0.6 0.55	0.6 0.55	0.6 0.55

APPENDIX B – INSULATION MARKUP

DRAFT



INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor Construction
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.

fjcstudio



General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

BASEMENT 1 SUMMARY

COMMERCIAL CAR SPACES: 8
ACCESSIBLE CAR SPACES: 2
BAY DESIGNATED DA ZONE: 1
TOTAL COMMERCIAL CAR SPACES: 11

RESIDENTIAL CAR SPACES: 6
ACCESSIBLE CAR SPACES: 0
TOTAL RESIDENTIAL CAR SPACES: 6

BICYCLE PARKING (EXCL. CAGES): 49

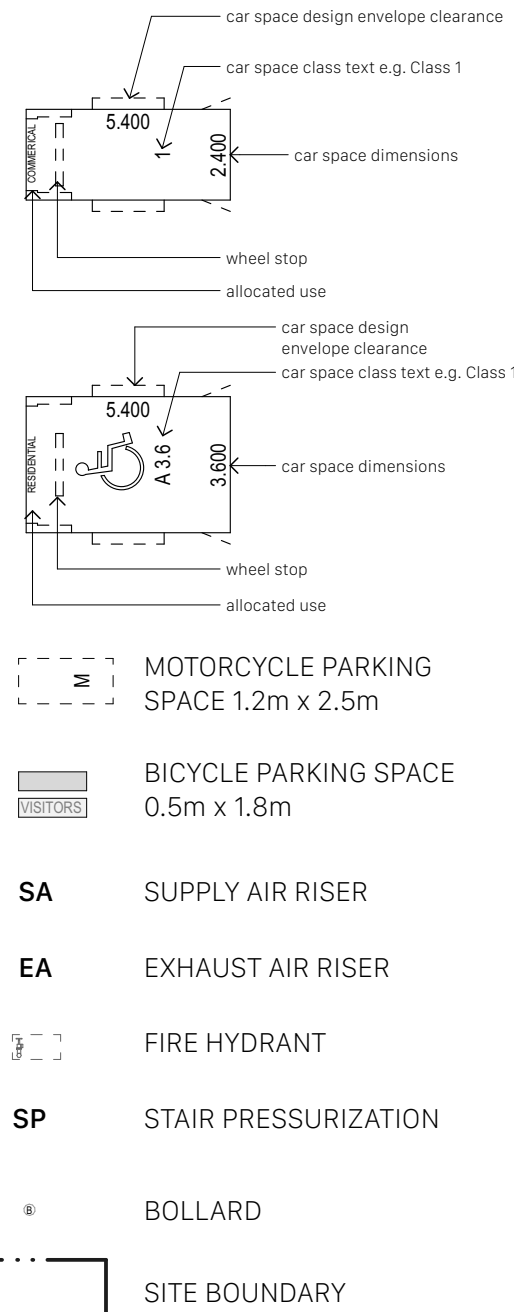
NOTES

INDIVIDUAL RESIDENTIAL STORAGE CAGES ARE SHOWN INDICATIVELY, THEY ARE YET TO BE ALLOCATED TO INDIVIDUAL APARTMENTS

INDIVIDUAL RESIDENTIAL STORAGE CAGES SHOWN TO INCLUDE ONE (1) BICYCLE PARKING SPACE WITHIN THE STORAGE CAGE WHERE IT CAN REASONABLY FIT

OTHERWISE, ALLOWANCES FOR RESIDENTIAL BICYCLE PARKING ARE LOCATED ACROSS THE CARPARK LEVELS IN A CONSOLIDATED AREA

KEY (AS/NZ 2890.1)



Work in Progress

Rev	Date	Description	By	Chk

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100
Basement 1

Scale
1:100 @ A1

Project Code
GBPH

First Issued
Work in Progress

Sheet No.
20B1

Rev
B - WIP

INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor Construction
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301. ELIZABETH CARPENTER 6141.



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- General notes
- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
 - All levels relative to 'Australian Height Datum'.
 - Do not scale drawings.
 - Use figured dimensions only.

Legend

- SITE BOUNDARY
- SETBACKS
- EXISTING RL PER SITE SURVEY
- LIFT 01, 02, 03...
- FIRE STAIR 01, 02, 03...
- FLOOR LEVEL
- UNIT NUMBER
- UNIT TYPE
- INTERNAL NSA
- FIRE STAIR BASEMENT 1, BASEMENT 2...
- 1 BEDROOM UNIT, 2 BEDROOM UNIT, 3 BEDROOM UNIT...
- ACCESSIBLE
- CARPARK INTAKE AIR
- CARPARK EXHAUST AIR
- ELECTRICAL/ COMMUNICATIONS CUPBOARD
- FIRE CONTROL ROOM
- FIRE SERVICES RISER
- FIRE EXTINGUISHER
- FIRE PANEL
- FIRE CONTROL ROOM
- GARBAGE CHUTE
- GARBAGE EXHAUST
- HYDRAULIC CUPBOARD
- KITCHEN EXHAUST
- PRIVATE OPEN SPACE
- RECYCLING BIN
- RAINWATER TANK
- STAIR PRESSURIZATION
- BACK OF HOUSE
- TRANSPORT ORIENTED DEVELOPMENT
- ADAPTABLE UNIT

Work in Progress

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100 Scale
Ground Floor Plan - Retail/Loading 1:100 @ A1

Project Code GBPH First Issued Work in Progress

Sheet No. 20GF Rev B - WIP

INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor Construction
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.

fjcstudio

0 1 2 5m

General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

SITE BOUNDARY

SETBACKS

x RL 88.000 EXISTING RL PER SITE SURVEY

L01, 02, 03... LIFT 01, 02, 03...

FS1, 2, 3... FIRE STAIR 01, 02, 03...

FLOOR LEVEL UNIT NUMBER
8.03
2B
89m² UNIT TYPE INTERNAL NSA

FSB1, B2, B3... FIRE STAIR BASEMENT 1, BASEMENT 2...

1B, 2B, 3B... 1 BEDROOM UNIT, 2 BEDROOM UNIT, 3 BEDROOM UNIT...

ACC. ACCESSIBLE

CP INT CARPARK INTAKE AIR

CPEX CARPARK EXHAUST AIR

E/C ELECTRICAL/ COMMUNICATIONS CUPBOARD

FCR FIRE CONTROL ROOM

F FIRE SERVICES RISER

FEX FIRE EXTINGUISHER
FIRE PANEL

FCR FIRE CONTROL ROOM

GB GARBAGE CHUTE

GE GARBAGE EXHAUST

H HYDRAULIC CUPBOARD

KE KITCHEN EXHAUST

POS PRIVATE OPEN SPACE

RE RECYCLING BIN

RWT RAINWATER TANK

SP STAIR PRESSURIZATION

BOH BACK OF HOUSE

TOD TRANSPORT ORIENTED
DEVELOPMENT

ADAPTABLE UNIT

B= Work in Progress RN

Rev Date Description By Chk

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100 Scale
Level 01 Floor Plan - Retail 1:100 @ A1

Project Code First Issued
GBPH Work in Progress

Sheet No. Rev
2001 B - WIP

AVERAGE WEIGHTED SETBACK

1.5 m

TOP OF SOIL
+91.650

FULL HEIGHT LOURVES

DRAINAGE SUBSTRATE

FULL HEIGHT LOURVES

AWNIN

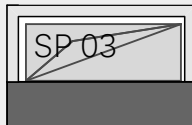
POTENTIAL RETAIL
VOID

VOID
RESIDENTIAL LOBBY

CPEX

11.29 sqm

+94.850
R1 (upper)
RETAIL
1,069 m²



RETAIL LIFT (L06)
INDICATIVE FOR RETAIL FITOUT

1001

1002

1003

1004

1005

1006

1007

1008

1009

1010

1011

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1013

1014

1015

1016

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1248

INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor Construction
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.

fjcstudio

0 1 2 5m

General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

SITE BOUNDARY

SETBACKS

x RL 88.000 EXISTING RL PER SITE SURVEY

L01, 02, 03... LIFT 01, 02, 03...

FS1, 2, 3... FIRE STAIR 01, 02, 03...

FLOOR LEVEL UNIT NUMBER
8.03
2B UNIT TYPE
89m² INTERNAL NSA

FSB1, B2, B3... FIRE STAIR BASEMENT 1, BASEMENT 2...

1B, 2B, 3B... 1 BEDROOM UNIT, 2 BEDROOM UNIT, 3 BEDROOM UNIT...

ACC. ACCESSIBLE

CP INT CARPARK INTAKE AIR

CPEX CARPARK EXHAUST AIR

E/C ELECTRICAL/ COMMUNICATIONS CUPBOARD

FCR FIRE CONTROL ROOM

F FIRE SERVICES RISER

FEX FIRE EXTINGUISHER
FIRE PANEL

FCR FIRE CONTROL ROOM

GB GARBAGE CHUTE

GE GARBAGE EXHAUST

H HYDRAULIC CUPBOARD

KE KITCHEN EXHAUST

POS PRIVATE OPEN SPACE

RE RECYCLING BIN

RWT RAINWATER TANK

SP STAIR PRESSURIZATION

BOH BACK OF HOUSE

TOD TRANSPORT ORIENTED
DEVELOPMENT

ADAPTABLE UNIT

B= Work in Progress RN

Rev Date Description By Chk

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100 Scale
Level 02 Floor Plan - Commercial 1:100 @ A1

Project Code First Issued
GBPH Work in Progress

Sheet No. Rev
2002 B - WIP

AVERAGE WEIGHTED SETBACK

1.5 m

INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor Construction
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.

fjcstudio

0 1 2 5m

General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

SITE BOUNDARY

SETBACKS

x RL 88.000 EXISTING RL PER SITE SURVEY

L01, 02, 03... LIFT 01, 02, 03...

FS1, 2, 3... FIRE STAIR 01, 02, 03...

FLOOR LEVEL UNIT NUMBER
8.03
2B UNIT TYPE
89m² INTERNAL NSA

FSB1, B2, B3... FIRE STAIR BASEMENT 1, BASEMENT 2...

1B, 2B, 3B... 1 BEDROOM UNIT, 2 BEDROOM UNIT, 3 BEDROOM UNIT...

ACC. ACCESSIBLE

CP INT CARPARK INTAKE AIR

CPEX CARPARK EXHAUST AIR

E/C ELECTRICAL/ COMMUNICATIONS CUPBOARD

FCR FIRE CONTROL ROOM

F FIRE SERVICES RISER

FEX FIRE EXTINGUISHER
FIRE PANEL

FCR FIRE CONTROL ROOM

GB GARBAGE CHUTE

GE GARBAGE EXHAUST

H HYDRAULIC CUPBOARD

KE KITCHEN EXHAUST

POS PRIVATE OPEN SPACE

RE RECYCLING BIN

RWT RAINWATER TANK

SP STAIR PRESSURIZATION

BOH BACK OF HOUSE

TOD TRANSPORT ORIENTED
DEVELOPMENT

ADAPTABLE UNIT

B Work in Progress RN

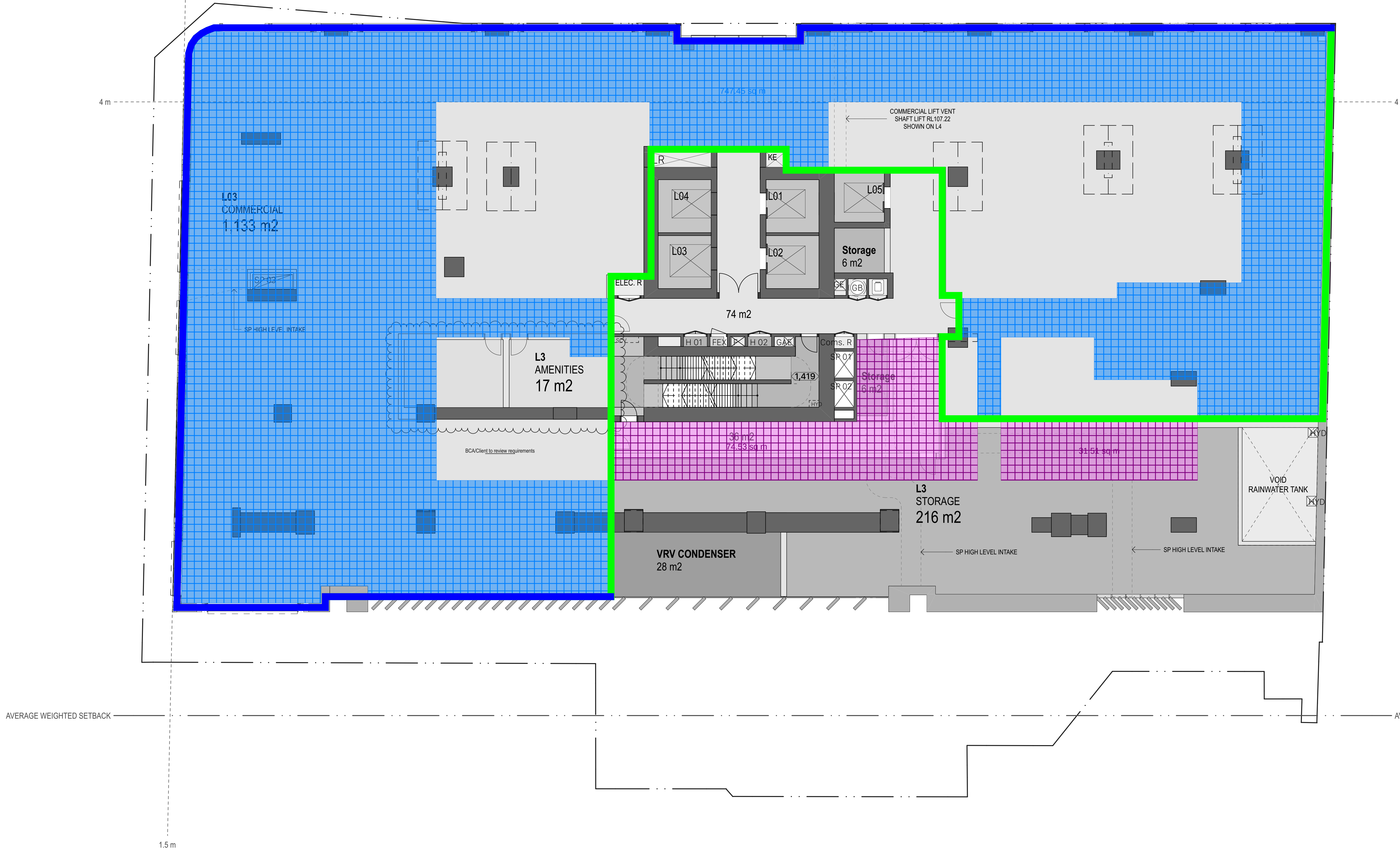
Rev Date Description By Chk

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100 Scale
Level 03 Floor Plan - Commercial 1:100 @ A1

Project Code First Issued
GBPH Work in Progress

Sheet No. Rev
2003 B - WIP



INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor Construction
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.

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0 1 2 5m

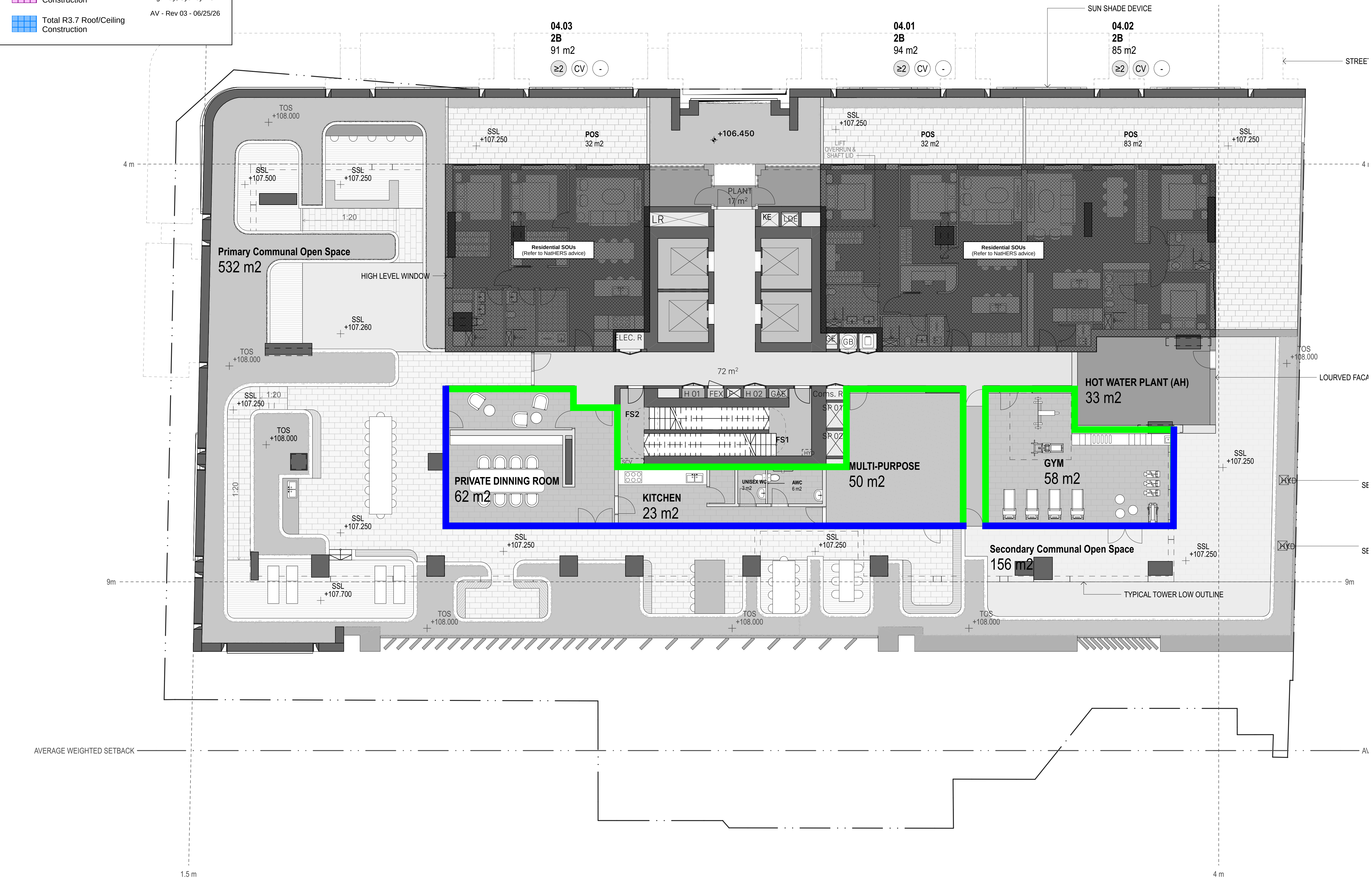


General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

- SITE BOUNDARY
- SETBACKS
- EXISTING RL PER SITE SURVEY
- LIFT 01, 02, 03...
- FIRE STAIR 01, 02, 03...
- FIRE STAIR BASEMENT 1, BASEMENT 2...
- 1 BEDROOM UNIT, 2 BEDROOM UNIT, 3 BEDROOM UNIT...
- ACCESSIBLE
- CARPARK INTAKE AIR
- CARPARK EXHAUST AIR
- ELECTRICAL/ COMMUNICATIONS CUPBOARD
- FIRE CONTROL ROOM
- FIRE SERVICES RISER
- FIRE EXTINGUISHER
- FIRE PANEL
- FIRE CONTROL ROOM
- GARBAGE CHUTE
- GARBAGE EXHAUST
- HYDRAULIC CUPBOARD
- KITCHEN EXHAUST
- PRIVATE OPEN SPACE
- RECYCLING BIN
- RAINWATER TANK
- STAIR PRESSURIZATION
- BACK OF HOUSE
- TRANSPORT ORIENTED DEVELOPMENT
- ADAPTABLE UNIT



Work in Progress

Rev	Date	Description	By	Chk
1	06/25/26	Initial Design	RFJ	EC
2	06/25/26	Revised Design	RFJ	EC
3	06/25/26	Final Design	RFJ	EC

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100 Scale
Level 04 Floor Plan - Communal 1:100 @ A1

Project Code GBPH First Issued Work in Progress

Sheet No. 2004 Rev B - WIP

INSULATION MARK UPS

LEGEND

- Total R1.0 Wall construction
- Total R1.4 Wall construction
- Total R2.0 Floor
- Total R3.7 Roof/Ceiling Construction



P02207 -
402-420 Pacific
Highway, Sydney NSW

AV - Rev 03 - 06/25/26

ARCHITECTS: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.

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0 1 2 5m



General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend

SITE BOUNDARY

SETBACKS

x RL 88.000 EXISTING RL PER SITE SURVEY

L01, 02, 03... LIFT 01, 02, 03...

FS1, 2, 3... FIRE STAIR 01, 02, 03...

FLOOR LEVEL UNIT NUMBER
8.03
2B
89m² UNIT TYPE
INTERNAL NSA

FSB1, B2, B3... FIRE STAIR BASEMENT 1, BASEMENT 2...

1B, 2B, 3B... 1 BEDROOM UNIT, 2 BEDROOM UNIT, 3 BEDROOM UNIT...

ACC. ACCESSIBLE

CP INT CARPARK INTAKE AIR

CPEX CARPARK EXHAUST AIR

E/C ELECTRICAL/ COMMUNICATIONS CUPBOARD

FCR FIRE CONTROL ROOM

F FIRE SERVICES RISER

FEX FIRE EXTINGUISHER
FIRE PANEL

FCR FIRE CONTROL ROOM

GB GARBAGE CHUTE

GE GARBAGE EXHAUST

H HYDRAULIC CUPBOARD

KE KITCHEN EXHAUST

POS PRIVATE OPEN SPACE

RE RECYCLING BIN

RWT RAINWATER TANK

SP STAIR PRESSURIZATION

BOH BACK OF HOUSE

TOD TRANSPORT ORIENTED
DEVELOPMENT

ADAPTABLE UNIT

B- Work in Progress RN

Rev Date Description By Chk

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

GA Floorplans (A1) 1:100 Scale
Level 05-07 Floor Plan - Tower Typical 1:100 @ A1
Low 1

Project Code First Issued
GBPH Work in Progress

Sheet No. Rev
2005 B - WIP

AVERAGE WEIGHTED SETBACK

1.5 m

GLAZING MARK UPS

LEGEND

- Total system glazing - U-Value ≤ 4.92 , SHGC ≤ 0.24
- Total system glazing - U-Value ≤ 4.38 , SHGC ≤ 0.26
- Total system glazing - U-Value ≤ 3.43 , SHGC ≤ 0.28
- NCC Specification S38C2 - Method 1 Spandrel Configuration 1 - No Insulation



P02207 -
402-420 Pacific
Highway, Sydney NSW
AV - Rev 03 - 06/25/26

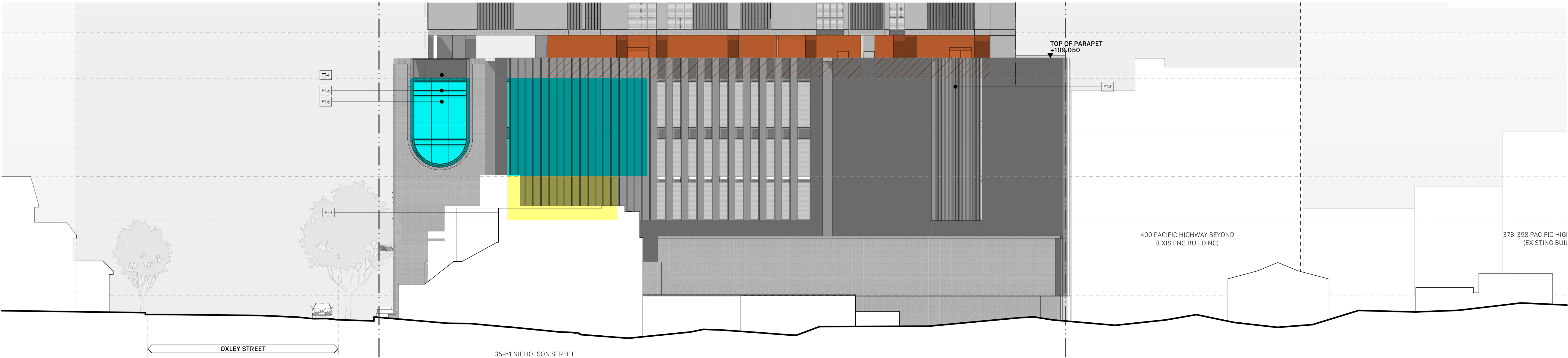
S: RICHARD FRANCIS-JONES 5301, ELIZABETH CARPENTER 6141.



1 ELEVATION Podium - North
1:200



2 ELEVATION Podium - East
1:200



3 ELEVATION Podium - West
1:200

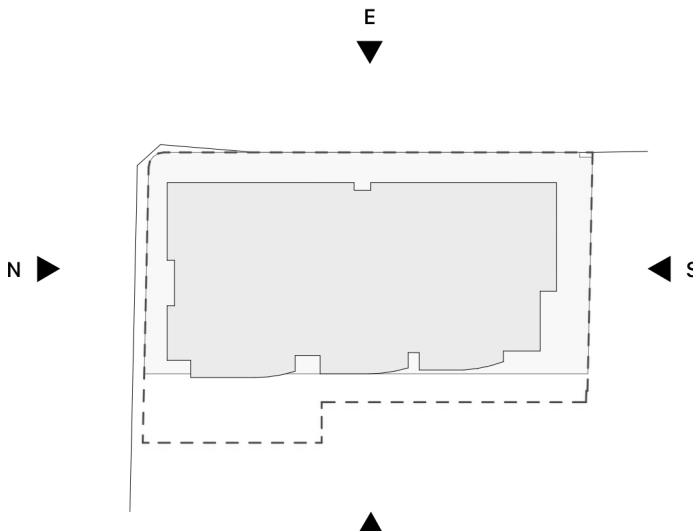
fjcstudio

0 4 10 20m

General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to 'Australian Height Datum'.
- Do not scale drawings.
- Use figured dimensions only.

Legend



BASIX - Facade Types

- FT-1** Warm-toned painted pre-cast panels with integrated bronze coloured aluminium-framed windows
Aluminium louvres
Glass balustrade
Aluminium slab edge cover
- FT-2** Dark bronze horizontal louvres providing ventilation to air cooled condenser units behind
- FT-3** Brick facade with arched brickwork detail
Clear glazing to retail frontage in bronze coloured frames.
Metal framing to glazing
Integrated awning with a combination of aluminium and prefinished FC panels, and with glass infill panels between awning modules.
Horizontal aluminium louvres above for natural ventilation
- FT-4** as FT-3 but with glass panels to L01 within arches to enclose L01 commercial space.
- FT-5** Full height glazing in aluminium framed unitized panels, with vertical aluminium fins (white finish) attached to mullions to provide solar shading and visual privacy. Integrated aluminium slab edge cover finished to match vertical fins.
- FT-6** Brickwork - Light brown tone.
- FT-7** Bronze Aluminum Louvres with Screening device
- FT-8** Bronze Aluminum sun shading device

B - WIP Work in Progress RN

Rev Date Description By Ck

402-420 Pacific Highway, Crows Nest
Australia
402-420 Pacific Highway
Sydney NSW 2065

Elevations Podium - North, East & West
Elevation Scale 1:400 @ A1

Project Code GBPH First Issued Work in Progress

Sheet No. 3003 Rev B - WIP

Work in Progress

APPENDIX C – APPLICABLE CLAUSES

Part J4 Building fabric

Deemed-to-Satisfy Provisions

J4D1 Deemed-to-Satisfy Provisions

[2019: J1.0]

NSW J4D1(1)

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements* J1P1 to J1P4 are satisfied by complying with—
 - (a) J2D2; and
 - (b) J3D2 to J3D15; and
 - (c) J4D2 to J4D7; and
 - (d) J5D2 to J5D8; and
 - (e) J6D2 to J6D13; and
 - (f) J7D2 to J7D9; and
 - (g) J8D2 to J8D4; and
 - (h) J9D2 to J9D5.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

NSW J4D2

J4D2 Application of Part

[2019: J1.1]

The *Deemed-to-Satisfy Provisions* of this Part apply to building elements forming the *envelope* of a Class 2 to 9 building other than J4D3(5), J4D4, J4D5, J4D6 and J4D7 which do not apply to a Class 2 *sole-occupancy unit* or a Class 4 part of a building.

NSW J4D3

J4D3 Thermal construction — general

[2019: J1.2]

- (1) Where *required*, insulation must comply with AS/NZS 4859.1 and be installed so that it—
 - (a) abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must be against the member; and
 - (b) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and
 - (c) does not affect the safe or effective operation of a *service* or fitting.
- (2) Where *required*, *reflective insulation* must be installed with—
 - (a) the necessary airspace to achieve the *required R-Value* between a reflective side of the *reflective insulation* and a building lining or cladding; and
 - (b) the *reflective insulation* closely fitted against any penetration, door or *window* opening; and
 - (c) the *reflective insulation* adequately supported by framing members; and
 - (d) each adjoining sheet of roll membrane being—
 - (i) overlapped not less than 50 mm; or
 - (ii) taped together.



- (3) Where *required*, bulk insulation must be installed so that—
 - (a) it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like; and
 - (b) in a ceiling, where there is no bulk insulation or *reflective insulation* in the wall beneath, it overlaps the wall by not less than 50 mm.
- (4) Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in *Specification 36*.
- (5) The *required Total R-Value* and *Total System U-Value*, including allowance for thermal bridging, must be—
 - (a) calculated in accordance with AS/NZS 4859.2 for a roof or floor; or
 - (b) determined in accordance with *Specification 37* for *wall-glazing construction*; or
 - (c) determined in accordance with *Specification 39* or Section 3.5 of CIBSE Guide A for soil or sub-floor spaces.

J4D4 Roof and ceiling construction

[2019: J1.3]

- (1) A roof or ceiling must achieve a *Total R-Value* greater than or equal to—
 - (a) in *climate zones* 1, 2, 3, 4 and 5, R3.7 for a downward direction of heat flow; and
 - (b) in *climate zone* 6, R3.2 for a downward direction of heat flow; and
 - (c) in *climate zone* 7, R3.7 for an upward direction of heat flow; and
 - (d) in *climate zone* 8, R4.8 for an upward direction of heat flow.
- (2) In *climate zones* 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45.

J4D5 Roof lights

[2019: J1.4]

Roof lights must have—

- (a) a total area of not more than 5% of the *floor area* of the room or space served; and
- (b) transparent and translucent elements, including any imperforate ceiling diffuser, with a combined performance of—
 - (i) for *Total system SHGC*, in accordance with *Table J4D5*; and
 - (ii) for *Total system U-Value*, not more than U3.9.

Table J4D5: Roof lights – Total system SHGC

<i>Roof light</i> shaft index ^{Note 1}	Total area of <i>roof lights</i> up to 3.5% of the <i>floor area</i> of the room or space	Total area of <i>roof lights</i> more than 3.5% and up to 5% of the <i>floor area</i> of the room or space
<1.0	≤ 0.45	≤ 0.29
≥ 1.0 to < 2.5	≤ 0.51	≤ 0.33
≥ 2.5	≤ 0.76	≤ 0.49

Table Notes

- (1) The *roof light* shaft index is determined by measuring the distance from the centre of the shaft at the roof to the centre of the shaft at the ceiling level and dividing it by the average internal dimension of the shaft opening at the ceiling level (or the diameter for a circular shaft) in the same units of measurement.
- (2) The area of a *roof light* is the area of the roof opening that allows light to enter the building.
- (3) The total area of *roof lights* is the combined area for all *roof lights* serving the room or space.



- (1) The *Total System U-Value* of *wall-glazing construction*, including *wall-glazing construction* which wholly or partly forms the *envelope* internally, must not be greater than—
 - (a) for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, U2.0; and
 - (b) for a Class 3 or 9c building or a Class 9a *ward area*—
 - (i) in *climate zones* 1, 3, 4, 6 or 7, U1.1; or
 - (ii) in *climate zones* 2 or 5, U2.0; or
 - (iii) in *climate zone* 8, U0.9.
- (2) The *Total System U-Value* of *display glazing* must not be greater than U5.8.
- (3) The *Total System U-Value* of *wall-glazing construction* must be calculated in accordance with Specification 37.
- (4) Wall components of a *wall-glazing construction* must achieve a minimum *Total R-Value* of—
 - (a) where the wall is less than 80% of the area of the *wall-glazing construction*, R1.0; or
 - (b) where the wall is 80% or more of the area of the *wall-glazing construction*, the value specified in Table J4D6a.
- (5) The *solar admittance* of externally facing *wall-glazing construction*, excluding *wall-glazing construction* which is wholly internal, must not be greater than—
 - (a) for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, the values specified in Table J4D6b; and
 - (b) for a Class 3 or 9c building or a Class 9a *ward area*, the values specified in Table J4D6c.
- (6) The *solar admittance* of a *wall-glazing construction* must be calculated in accordance with Specification 37.
- (7) The *Total system SHGC* of *display glazing* must not be greater than 0.81 divided by the applicable shading factor specified in S37C7.

Table J4D6a: Minimum wall Total R-Value - Wall area 80% or more of wall-glazing construction area

<i>Climate zone</i>	Class 2 common area, Class 5, 6, 7, 8 or 9b building or a Class 9c building other than a <i>ward area</i>	Class 3 or 9c building or Class 9a <i>ward area</i>
1	2.4	3.3
2	1.4	1.4
3	1.4	3.3
4	1.4	2.8
5	1.4	1.4
6	1.4	2.8
7	1.4	2.8
8	1.4	3.8

Table J4D6b: Maximum wall-glazing construction solar admittance - Class 2 common area, Class 5, 6, 7, 8 or 9b building or Class 9a building other than a ward area

<i>Climate zone</i>	<i>Eastern aspect solar admittance</i>	<i>Northern aspect solar admittance</i>	<i>Southern aspect solar admittance</i>	<i>Western aspect solar admittance</i>
1	0.12	0.12	0.12	0.12
2	0.13	0.13	0.13	0.13
3	0.16	0.16	0.16	0.16
4	0.13	0.13	0.13	0.13
5	0.13	0.13	0.13	0.13
6	0.13	0.13	0.13	0.13
7	0.13	0.13	0.13	0.13
8	0.2	0.2	0.42	0.36

Table J4D6c: Maximum wall-glazing construction solar admittance - Class 3 or 9c building or Class 9a ward area

<i>Climate zone</i>	<i>Eastern aspect solar admittance</i>	<i>Northern aspect solar admittance</i>	<i>Southern aspect solar admittance</i>	<i>Western aspect solar admittance</i>
1	0.07	0.07	0.10	0.07
2	0.10	0.10	0.10	0.10
3	0.07	0.07	0.07	0.07
4	0.07	0.07	0.07	0.07
5	0.10	0.10	0.10	0.10
6	0.07	0.07	0.07	0.07
7	0.07	0.07	0.08	0.07
8	0.08	0.08	0.08	0.08

J4D7 Floors

[2019: J1.6]

- (1) A floor must achieve the *Total R-Value* specified in Table J4D7.
- (2) For the purposes of (1), a slab-on-ground that does not have an in-slab heating or cooling system is considered to achieve a *Total R-Value* of R2.0, except—
 - (a) in *climate zone 8*; or
 - (b) a Class 3, Class 9a *ward area* or Class 9b building in *climate zone 7* that has a *floor area* to floor perimeter ratio of less than or equal to 2.
- (3) A floor must be insulated around the vertical edge of its perimeter with insulation having an *R-Value* greater than or equal to 1.0 when the floor—
 - (a) is a concrete slab-on-ground in *climate zone 8*; or
 - (b) has an in-slab or in-screed heating or cooling system, except where used solely in a bathroom, amenity area or the like.
- (4) Insulation *required* by (3) for a concrete slab-on-ground must—
 - (a) be *water resistant*; and
 - (b) be continuous from the adjacent finished ground level—
 - (i) to a depth not less than 300 mm; or
 - (ii) for the full depth of the vertical edge of the concrete slab-on-ground.

Table J4D7: Floors – Minimum Total R-Value

<i>Location</i>	<i>Climate zone 1 — upwards heat flow</i>	<i>Climate zones 2 and 3 — upwards and downwards heat flow</i>	<i>Climate zones 4, 5, 6 and 7 — downwards heat flow</i>	<i>Climate zone 8 — downwards heat flow</i>
A floor without an in-slab heating or cooling system	2.0	2.0	2.0	3.5
A floor with an in-slab heating or cooling system	3.25	3.25	3.25	4.75

Table Notes

For the purpose of calculating the *Total R-Value* of a floor, the sub-floor and soil *R-Value* must be calculated in accordance with *Specification 39* or *Section 3.5* of *CIBSE Guide A*.



Part J5 Building sealing

J5D1 Deemed-to-Satisfy Provisions

[2019: J3.0]

NSW J5D1(1)

- (1) Where a *Deemed-to-Satisfy Solution* is proposed, *Performance Requirements J1P1 to J1P4* are satisfied by complying with—
- (a) J2D2; and
 - (b) J3D2 to J3D15; and
 - (c) J4D2 to J4D7; and
 - (d) J5D2 to J5D8; and
 - (e) J6D2 to J6D13; and
 - (f) J7D2 to J7D9; and
 - (g) J8D2 to J8D4; and
 - (h) J9D2 to J9D5.
- (2) Where a *Performance Solution* is proposed, the relevant *Performance Requirements* must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

NSW J5D2

J5D2 Application of Part

[2019: J3.1]

The *Deemed-to-Satisfy Provisions* of this Part apply to elements forming the *envelope* of a Class 2 to 9 building, other than—

- (a) a building in *climate zones* 1, 2, 3 and 5 where the only means of *air-conditioning* is by using an evaporative cooler; or
- (b) a permanent building opening, in a space where a gas appliance is located, that is necessary for the safe operation of a gas appliance; or
- (c) a building or space where the mechanical ventilation *required* by Part F6 provides sufficient pressurisation to prevent infiltration.

J5D3 Chimneys and flues

[2019: J3.2]

The chimney or flue of an open solid-fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.

J5D4 Roof lights

[2019: J3.3]

- (1) A *roof light* must be sealed, or capable of being sealed, when serving—
- (a) a *conditioned space*; or
 - (b) a *habitable room* in *climate zones* 4, 5, 6, 7 or 8.
- (2) A *roof light required* by (1) to be sealed, or capable of being sealed, must be constructed with—
- (a) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or
 - (b) a weatherproof seal; or
 - (c) a shutter system readily operated either manually, mechanically or electronically by the occupant.



J5D5 Windows and doors

[2019: J3.4]

- (1) A door, openable *window* or the like must be sealed—
 - (a) when forming part of the *envelope*; or
 - (b) in *climate zones* 4, 5, 6, 7 or 8.
- (2) The requirements of (1) do not apply to—
 - (a) a *window* complying with AS 2047; or
 - (b) a fire door or smoke door; or
 - (c) a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security.
- (3) A seal to restrict air infiltration—
 - (a) for the bottom edge of a door, must be a draft protection device; and
 - (b) for the other edges of a door or the edges of an openable *window* or other such opening, may be a foam or rubber compression strip, fibrous seal or the like.
- (4) An entrance to a building, if leading to a *conditioned space* must have an airlock, *self-closing door*, *rapid roller door*, revolving door or the like, other than—
 - (a) where the *conditioned space* has a *floor area* of not more than 50 m²; or
 - (b) where a café, restaurant, open front shop or the like has—
 - (i) a 3 m deep un-conditioned zone between the main entrance, including an open front, and the *conditioned space*; and
 - (ii) at all other entrances to the café, restaurant, open front shop or the like, *self-closing doors*.
- (5) A loading dock entrance, if leading to a *conditioned space*, must be fitted with a *rapid roller door* or the like.

J5D6 Exhaust fans

[2019: J3.5]

An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving—

- (a) a *conditioned space*; or
- (b) a *habitable room* in *climate zones* 4, 5, 6, 7 or 8.

J5D7 Construction of ceilings, walls and floors

[2019: J3.6]

- (1) Ceilings, walls, floors and any opening such as a *window* frame, door frame, *roof light* frame or the like must be constructed to minimise air leakage in accordance with (2)—
 - (a) when forming part of the *envelope*; or
 - (b) in *climate zones* 4, 5, 6, 7 or 8.
- (2) Construction *required* by (1) must be—
 - (a) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
 - (b) sealed at junctions and penetrations with—
 - (i) close fitting architrave, skirting or cornice; or
 - (ii) expanding foam, rubber compressible strip, caulking or the like.
- (3) The requirements of (1) do not apply to openings, grilles or the like *required* for smoke hazard management.

J5D8 Evaporative coolers

[2019: J3.7]

An evaporative cooler must be fitted with a self-closing damper or the like—

- (a) when serving a heated space; or
- (b) in *climate zones* 4, 5, 6, 7 or 8.



Part J9

Energy monitoring and on-site distributed energy resources

J9D4

Facilities for electric vehicle charging equipment

[New for 2022]

- (1) Subject to (2), a *carpark* associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging—
 - (a) in accordance with Table J9D4 in each *storey* of the *carpark*; and
 - (b) labelled to indicate use for electric vehicle charging equipment.
- (2) Electrical distribution boards dedicated to serving electric vehicle charging in a *carpark* must—
 - (a) be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and
 - (b) when associated with a Class 2 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 pm to 7:00 am daily; and
 - (c) when associated with a Class 5 to 9 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily; and
 - (d) when associated with a Class 3 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 48 kWh from 11:00 pm to 7:00 am daily; and
 - (e) be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in—
 - (i) 100% of the car parking spaces associated with a Class 2 building; or
 - (ii) 10% of car parking spaces associated with a Class 5 or 6 building; or
 - (iii) 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and
 - (f) contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and
 - (g) be labelled to indicate the use of the space *required* by (f) is for the future installation of metering equipment.

Limitations

J9D4 does not apply to a stand-alone Class 7a building.

Table J9D4: Electric vehicle distribution board requirement for each storey of a carpark

<i>Carpark spaces per storey for electric vehicles</i>	<i>Electrical distribution boards for electric vehicle charging per storey</i>
0 - 9	0
10 - 24	1
25 - 48	2
49 - 72	3
73 - 96	4
97 - 120	5
121 - 144	6
145 - 168	7

Table Notes

Where there are more than 168 *carpark* spaces per *storey*, one additional distribution board must be provided for each additional 24 spaces or part thereof.



- (1) The main electrical switchboard of a building must—
 - (a) contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for—
 - (i) a solar photovoltaic system; and
 - (ii) a *battery system*; and
 - (b) be sized to accommodate the installation of solar photovoltaic panels producing their maximum electrical output on at least 20% of the building roof area.
- (2) At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings—
 - (a) with installed solar photovoltaic panels on—
 - (i) at least 20% of the roof area; or
 - (ii) an equivalent generation capacity elsewhere on-site; or
 - (b) where 100% of the roof area is shaded for more than 70% of daylight hours; or
 - (c) with a roof area of not more than 55 m²; or
 - (d) where more than 50% of the roof area is used as a terrace, *carpark*, roof garden, *roof light* or the like.

Limitations

- (1) The requirements of J9D5(1)(a)(i) and (b) do not apply to a building with solar photovoltaic panels installed on at least 20% of the roof area.
- (2) The requirements of J9D5(1)(a)(ii) and (b) do not apply to a building with *battery systems* installed.

