NCC 2019 Section J DTS Assessment

Longueville

16 Northwood Road, Northwood NSW 2066

Pathways Property Group c/o Carestruct Pty Ltd

Attention: Andrew Tetlow

Document History

Issue	Project	Description	Author	Date
A	140101	NCC Section J 2019 DTS Assessment	Luke Williams	6th August 2020

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Contents

1. Executive Summary

Aspire Sustainability Consulting has been engaged by Pathways Property Group to assess the proposed development at 16 Northwood Road, Northwood NSW 2066, against Section J Deemed-to-Satisfy requirements of the 2019 National Construction Code (NCC). This advice covers Section J Parts J1-J3. J Parts J5-J8 must be achieved in design by relevant services disciplines for the whole development.

1.1. NCC 2019: Thermal Bridging

It is important to note total system R-values for walls, floors, roofs & ceilings from conditioned to unconditioned spaces must now account for thermal losses arising from thermal bridging, significantly increasing required insulation depths in order to achieve a targeted R-value when compared to NCC 2016. Section 3 contains insulation requirements that account for losses due to thermal bridging and provides the insulation depths required to achieve the total system R-values stated in Table 1 below.

1.2. Summary of J1.5 Building Fabric Performance Requirements

The following tables provide a summary of the fabric requirements for the development.

Table 1: Part J1.5 Building Fabric Performance Requirements

Fabric Element	Required Total System R-Value	Notes
Roofs/Ceilings	R3.7	Solar Absorptance (SA) <0.45. Please see Section 3.1.2.
External Walls	>R1.5	Please see Section 3.1.5.
Internal Walls	>R1.5	Please see Section 3.1.5.
Ground Floor with Unconditioned Below	R2.00	Please see Section 3.1.7.

Mark ups showing locations where insulation should be applied are contained in Appendix A.

Table 2: Part J1.5 Glazing Performance Requirements

Level	Orientation	Total System U-Value	Total System SHGC	Notes
L1, L2, L3, L5, L6	All	<6.00 (Single)	<0.49 (L. Tint)	Please see Section 3.1.5.
L4	All	<6.00 (Single)	<0.35 (M. Tint)	Please see Section 3.1.5.

A detailed breakdown of the façade calculator inputs is contained in Appendix B.

1.3. Air Locks

As per Part J3.4 (d), entrance doors to conditioned spaces must have either an airlock, be self-closing or revolving.

The following sections contain a breakdown of the information used to carry out the assessment, as well as details on the Section J performance requirements to be adopted throughout the development.

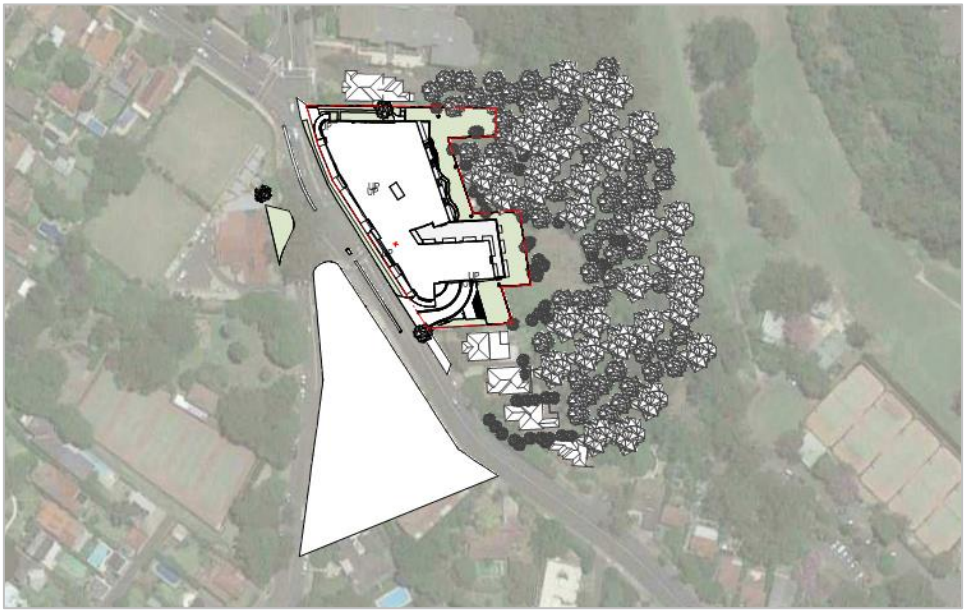
2. Introduction

Aspire Sustainability Consulting has been engaged by Pathways Property Group to assess the proposed mixed-use development against Section J Deemed-to-Satisfy requirements of the 2019 National Construction Code (NCC).

2.1. Project Address & NCC Climate Zone

The development is located at 16 Northwood Road, Northwood NSW 2066, and is located within NCC Climate Zone 5.

Figure 1: Site Location



2.2. Building Classes

The proposed 6 Level development comprises a Class 9C development with 123 Sole Occupancy Units with associated office & leisure spaces, as well as a Ground Level containing retail & office space. The following NCC classes are applicable:

Table 3: Summary of Building Classes

Building Class	Location	Comment
Class 7a	L1 Car Park	All portions of building to be assessed under NCC 2019 Section J.
Class 9c	L1 – L3, L5 & L6	
Class 6 Retail	L4	
Class 5 Office	L4	

2.3. Information used for Assessment

The following architectural drawings were used to complete the assessment:

- 2924-WIP DA Architectural Set_200730 issued by Morrison Design Partnership on 30th July 2020;
- NCC Section J 2019.

2.4. Compliance Verification Requirements

This advice provides performance requirements relating to the building fabric (J1), glazing (J1) & building sealing (J3). The remaining J Parts J5-J8 must be documented in design by relevant services engineers.

Table 4: Section J Documentation Requirements

Section J Part	Comment
Part J1: Building Fabric & Glazing	Performance requirements outlined in this report must be achieved in order to comply with DTS provisions.
Part J3: Building Sealing	Performance requirements outlined in this report must be achieved in order to comply with DTS provisions.
Part J5: Air Conditioning and Ventilation Systems	DTS Compliance to be documented by **mechanical engineer**.
Part J6: Artificial lighting and Power	DTS Compliance to be documented by **electrical & engineer.**
Part J7: Hot Water Supply	DTS compliance to be documented by **hydraulics Engineer.**
Part J8: Access for Maintenance and Facilities for Monitoring	DTS Compliance to be documented by **electrical engineer.**

2.5. Disclaimer

Performance requirements contained within this report are based on current documentation as indicated in Section 2.3. Following changes to the referenced documents it should be communicated to Aspire Sustainability Consulting for review, to ensure any changes do not impact compliance with the NCC.

The following Sections contain a detailed assessment against NCC 2019 Section J, Parts J1 – J3.

3. Section J DTS Requirement Breakdown: Parts J1-J3

For the purpose of this report, the building envelope means any part of the building fabric that separates a conditioned space from either the exterior of the building or an un-conditioned space within the building.

3.1. J1 Building Fabric

The following requirements must be implemented in design:

3.1.1. Thermal Construction

Insulation must be installed in compliance with AS/NZS 4859.1:

- adjoining insulation must abut / overlap and butt up against studs, joists, noggins, etc. where the insulation must be against the member;
- it must form a continuous barrier & must not interfere with services or fittings.

Reflective insulation must be installed with:

- the necessary airspace to achieve the required R-Value between the reflective side of the insulation and the building lining or cladding;
- the reflective insulation closely fitted against any penetration, door or window opening;
- the reflective insulation adequately supported by framing members;
- each adjoining sheet must either overlap not less than 50mm or be taped together.

Bulk insulation must be installed so that:

- it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like;
- in a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50mm.

3.1.2. J1.3 Roof & Ceiling

Insulation should be applied to areas highlighted in Appendix A, according to the values contained in the following tables:

Table 5: Indicative Build-up of Concrete External Roof – Required Minimum 3.70 Total System (SA<0.45)

Component	Conductivity	Depth (mm)	R-Value
Outdoor air film (7m/s)	-	-	0.04
200mm Dense Concrete Slab (SA <0.45)*	1.44	200	0.14
Air Gap (unreflective, unventilated)	-	-	0.22
136mm Insulation (batts laid over ceiling & frame)	**0.044**	**136**	**3.10**
13mm Plasterboard	0.17	13	0.08
Indoor air film (still air)	-	-	0.12
Total Construction Thickness		**349**	
Total System R-Value	**-**	**-**	**3.70**

*Notes:

- Thermal bridging has not been factored into the above calculation. It is assumed insulation will be laid directly over ceiling and any framing systems;
- External roof finish must be equal to, or less than Solar Absorptance 0.45 (light colour).

3.1.3. Thermal Breaks - Ceilings

A roof that has metal sheet roofing fixed to metal purlins, metal rafters or metal battens and has a ceiling lining fixed directly to the metal purlins, metal rafters or metal battens must have a thermal break installed as per J1.3(d).f.

3.1.4. J1.4 Roof Lights

There are no roof lights proposed to conditioned space.

3.1.5. J1.5 Walls and Glazing

The average total System U-Value of the wall & glazing constructions must not be greater than **U2.0 (R0.5)**. Appendix B shows the average U-value for wall & glazing constructions to be **<2.0**, therefore complying with Section J.

External Walls

Insulation should be applied to areas highlighted in Appendix A, according to the values contained in the following tables:

Table 7: Indicative Build-up of 110mm Brick External Wall with Internal Steel Frame

Component		Fraction (%)	Depth (mm)	Conductivity	R-Value
Outdoor air film (7m/s)		-		-	0.04
110mm Clay Brick		100	110	0.78	0.14
Bridged Layer ***35mm x 92mm steel stud @ 600 Centres 90mm Bulk Insulation****	**Frame**	**8**	**132 (92mm Frame + 40mm airgap)** ***90mm Insulation within frame***	**0.063 (Bridged) 0.044 (Insulation)**	**1.45**
	Insulation (0.044w/m/k)	**92**			
13mm Plasterboard		100	13	0.17	0.08
Indoor air film (still air)		-		-	0.12
Total Construction Thickness			**255**		
Total System R-Value		**-**		**-**	**1.83**

* The Insulation R-value used in this assessment is based on **90mm bulk insulation** with a thermal conductivity of **0.044**, a steel bridging layer with a thermal conductivity of **47.5** and an **8% bridging area** (area where insulation cannot be installed due to stud wall & noggins) when viewed perpendicular to the vertical plane. Calculations are in accordance with NZS2414:2006.

Table 8: Indicative Build-up of 140mm Concrete Block External Wall with Internal Steel Frame

Component		Fraction (%)	Depth (mm)	Conductivity	R-Value
Outdoor air film (7m/s)		-		-	0.04
140mm Dense Conc Block		100	140	0.85	0.16
Bridged Layer ***35mm x 92mm steel stud @ 600 Centres 50mm PIR Insulation****	**Frame**	**8**	**90 (90mm Frame)** ***50mm Insulation within frame***	**0.061 (Bridged) 0.023 (Insulation)**	**1.50**
	Insulation (0.023w/m/k)	92			
13mm Plasterboard		100	13	0.17	0.08
Indoor air film (still air)		-		-	0.12
Total Construction Thickness			**243**		
Total System R-Value		**-**		**-**	**1.90**

* The Insulation R-value used in this assessment is based on **50mm PIR insulation** with a thermal conductivity of **0.023**, a steel bridging layer with a thermal conductivity of **47.5** and an **8% bridging area** (area where insulation cannot be installed due to stud wall & noggins) when viewed perpendicular to the vertical plane. Calculations are in accordance with NZS4214:2006.

Internal Walls

Insulation should be applied to areas highlighted in Appendix A, according to the values contained in the following table:

Table 9: Indicative Build-up of Plasterboard Internal Wall System

Component		Fraction (%)	Thickness (mm)	Conductivity	R-Value
Indoor air film (still air)		-	-		0.12
13mm Plasterboard		100	13	0.17	0.08
Bridged Layer ***R0.26 Thermal Break 35mm x 92mm steel stud @ 600 Centres 75mm Insulation****	**Frame**	**8**	**92 (Frame)** ***75mm Insulation within frame***	**0.069 (Bridged) 0.044 (Insulation)**	**1.34**
	Insulation (0.044 w/m/k)*	92			
13mm Plasterboard		100	13	0.17	0.08
Indoor air film (still air)		-	-		0.12
Total Construction Thickness			**128**		
Total System R-Value		**-**	**-**		**1.74**

* The Insulation R-value used in this assessment is based on **75mm bulk insulation** with a thermal conductivity of **0.044**, a steel bridging layer with a thermal conductivity of **47.5** and an **8% bridging area** (area where insulation cannot be installed due to stud wall & noggins) when viewed perpendicular to the vertical plane. Calculations are in accordance with NZS4214:2006.

Table 10: Indicative Build-up of 140mm Concrete Block Internal Wall System

Component	Fraction (%)	Thickness (mm)	Conductivity	R-Value
Indoor air film (still air)	-	-		0.12
140mm Dense Conc Block	100	140	0.85	0.16
Kingspan K17 Insulated Plasterboard	**100**	**35**	**-**	**1.16**
Indoor air film (still air)	-	-		0.12
Total Construction Thickness		**175**		
Total System R-Value	**-**	**-**		**1.56**

*Notes:

- Thermal bridging has not been factored into the above calculation. It is assumed insulation will be laid directly over ceiling and any framing systems;

Thermal Breaks – Lightweight Steel Framed Walls

External walls that have lightweight cladding fixed to a metal frame and have a wall lining fixed directly to the same metal frame must have a thermal break equal to R0.20 installed as per J1.5(c).

3.1.6. Glazing Requirements

Glazing has been assessed using Method 2 of the NCC Façade Calculator 2019. The facade calculator and applicable inputs are contained in Appendix B. Table 11 contains a summary of the glazing performance requirements to be achieved for the development.

Table 11: Part J1.5 Total System Glazing Performance Requirements

Level	Orientation	Total System U-Value	Total System SHGC	Notes
L1, L2, L3, L5, L6	All	<6.00 (Single)	<0.49 (L. Tint)	Please see Section 3.1.5.
L4	All	<6.00 (Single)	<0.35 (M. Tint)	Please see Section 3.1.5.

Please note the above performance requirements are total system values, including the frame and glass.

All awnings and shading structures to be installed as per plans and elevations referenced. Should there be any changes to the glazing or shading configuration, the new layouts will need to be re-assessed to verify compliance with Section J.

3.1.7. J1.6 Floors

Insulation should be applied to areas highlighted in Appendix A, according to the values contained in the following table:

Table 13: Indicative Build-up of 200mm Concrete Slab to Car Park – R2.01 Total System

Component		Fraction (%)	Depth (mm)	R-Value
Indoor air film (still air)			-	0.16
200mm Dense Concrete		100	200	0.14
Insulation (assuming unbridged)	**Insulation (0.024 w/m/k)***	100	**40**	1.67
Outdoor air film (7m/s)			-	0.04
	Total Construction Thickness	**-**	**240**	
	Total System R-Value			**2.01**

It has been assumed there are no thermal bridges present in the above construction buildup. Proposed buildups to be reassessed during design development.

Removal of Insulation

In order to eliminate the requirement for insulation to be installed to the floor, a JV3 Alternate Solution assessment would be required.

3.2. J3 Building Sealing

The following requirements relating to building sealing must be achieved in design. The below requirements shall be verified, if required, by the architect or builder.

Table 14: J3 Building Sealing Requirements

J Part	Requirement
J3.2 - Chimneys & Flues	Any new exhaust fans, located within conditioned areas indicated in the project reference, must be fitted with a sealing device such as a self-closing damper or the like
J3.4 - Windows and Doors	The window supplier must provide verification that all glazing is sealed to comply with AS 2047. All doors, openable windows or the like, other than fire or smoke doors, must be sealed when forming part of the building envelope. A seal to restrict air infiltration: ▪ Must have a draft protection device for the bottom edge of a door; and ▪ A foam or rubber compression strip, fibrous seal or the like, for all other door edges. 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.
J3.5 - Exhaust Fans	Any exhaust fans located within conditioned areas must be fitted with a sealing device such as a self-closing damper or the like.
J3.6 - Roof, Walls & Floors	Construction forming elements of the envelope or external fabric must be: ▪ Enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or ▪ Sealed by caulking, skirting, architraves, cornices or the like; or ▪ Expanding foam, rubber compressible strips, caulking or the like. The above requirements do not apply to openings, grilles or the like required for smoke hazard management.

Appendix A: Insulation Mark-ups

R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:

SITE AREA 5003 m²

LEGEND

- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED UPPER LEVEL ENVEOPE
- PROPOSED BASEMENT LEVEL ENVELOPE
- EXISTING EASEMENT
- PROPOSED SEWER DIVERSION
- EXISTING 150mm VCP SEWER TO BE REMOVED
- PROPOSED PLANTING

- AMENITIES
- BEDS
- BOH
- CARPARK
- CIRCULATION
- COMMUNAL
- EXTERNAL
- MULTI-PURPOSE
- NONE
- RETAIL
- SPECIALTY
- STAFF FACILITIES

Cool Room to be insulated in accordance with contractor specifications

1 FLOOR PLAN - LEVEL 01 - BASEMENT
SCALE 1 : 200

PARKING SCHEDULE

LEVEL	PARKING COUNT
BASEMENT LEVEL	44
LEVEL 2	35
LEVEL 3	10
Grand total: 89	

1

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CLIENT
CLIENT NAME

PROJECT
LONGUEVILLE
16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 1 BASEMENT PARKING FLOOR PLAN

REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO.	2924
DRAWING NO.	DA101
REVISION	PA1
SCALE	As indicated @ A1
DRAWN	Author
PROJECT PRINCIPLE	M. RALPH
DATE	27.10.2016

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Appendix A: Insulation Mark-ups

R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:

1 FLOOR PLAN - LEVEL 02
SCALE 1 : 200

SITE AREA 5003 m²

LEGEND

- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED UPPER LEVEL ENVEOPE
- PROPOSED BASEMENT LEVEL ENVELOPE
- EXISTING EASEMENT
- PROPOSED SEWER DIVERSION
- EXISTING 150mm VCP SEWER TO BE REMOVED
- PROPOSED PLANTING

- AMENITIES
- BEDS
- BOH
- CARPARK
- CIRCULATION
- COMMUNAL
- EXTERNAL
- MULTI-PURPOSE
- NONE
- RETAIL
- SPECIALTY
- STAFF FACILITIES

2

PARKING SCHEDULE

LEVEL	PARKING COUNT
BASEMENT LEVEL	44
LEVEL 2	35
LEVEL 3	10

Grand total: 89

TOTAL BEDS

Mark	Count
BED	149

TOTAL BEDROOMS

LEVEL	CAREHOUSE	BED COUNT
LEVEL 2	BEDS	21
LEVEL 3	BEDS	15
LEVEL 5	BEDS	43
LEVEL 6	BEDS	43
TOTAL BEDROOMS		122

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PROJECT
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16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 2 FLOOR PLAN

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REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO.	2924
DRAWING NO.	DA102
REVISION	PA1
SCALE	As indicated @ A1
DRAWN	
PROJECT PRINCIPLE	M. RALPH
DATE	27.10.2016

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Appendix A: Insulation Mark-ups

R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:

1 FLOOR PLAN - LEVEL 02
SCALE 1 : 200

SITE AREA 5003 m²

LEGEND

- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED UPPER LEVEL ENVEOPE
- PROPOSED BASEMENT LEVEL ENVELOPE
- EXISTING EASEMENT
- PROPOSED SEWER DIVERSION
- EXISTING 150mm VCP SEWER TO BE REMOVED
- PROPOSED PLANTING

- AMENITIES
- BEDS
- BOH
- CARPARK
- CIRCULATION
- COMMUNAL
- EXTERNAL
- MULTI-PURPOSE
- NONE
- RETAIL
- SPECIALTY
- STAFF FACILITIES

2

PARKING SCHEDULE

LEVEL	PARKING COUNT
BASEMENT LEVEL	44
LEVEL 2	35
LEVEL 3	10

Grand total: 89

TOTAL BEDS

Mark	Count
BED	149

TOTAL BEDROOMS

LEVEL	CAREHOUSE	BED COUNT
LEVEL 2	BEDS	21
LEVEL 3	BEDS	15
LEVEL 5	BEDS	43
LEVEL 6	BEDS	43
TOTAL BEDROOMS		122

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16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 2 FLOOR PLAN

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REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO.	2924
DRAWING NO.	DA102
REVISION	PA1
SCALE	As indicated @ A1
DRAWN	
PROJECT PRINCIPLE	M. RALPH
DATE	27.10.2016

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Appendix A: Insulation Mark-ups

R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:

1 FLOOR PLAN - LEVEL 03
SCALE 1 : 200

3

TOTAL BEDS

Mark	Count
BED	149

TOTAL BEDROOMS

LEVEL	CAREHOUSE	BED COUNT
LEVEL 2	BEDS	21
LEVEL 3	BEDS	15
LEVEL 5	BEDS	43
LEVEL 6	BEDS	43
TOTAL BEDROOMS		122

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PROJECT
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16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 3 FLOOR PLAN

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REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO. 2924	DRAWING NO. DA103	REVISION PA1
SCALE	As indicated @ A1	
DRAWN	Author	
PROJECT PRINCIPLE	M. RALPH	
DATE	27.10.2016	

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Since 1969

Appendix A: Insulation Mark-ups

R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:

Cool Room to be insulated in accordance with contractor specifications

LONGUEVILLE ROAD

NORTHWOOD

SITE AREA 5003 m²

LEGEND

- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED UPPER LEVEL ENVEOPE
- PROPOSED BASEMENT LEVEL ENVELOPE
- EXISTING EASEMENT
- PROPOSED SEWER DIVERSION
- EXISTING 150mm VCP SEWER TO BE REMOVED
- PROPOSED PLANTING

- AMENITIES
- BEDS
- BOH
- CARPARK
- CIRCULATION
- COMMUNAL
- EXTERNAL
- MULTI-PURPOSE
- NONE
- RETAIL
- SPECIALTY
- STAFF FACILITIES

1 FLOOR PLAN - LEVEL 04 - GROUND FLOOR
SCALE 1 : 200

4

TOTAL BEDS

Mark	Count
BED	149

TOTAL BEDROOMS

LEVEL	CAREHOUSE	BED COUNT
LEVEL 2	BEDS	21
LEVEL 3	BEDS	15
LEVEL 5	BEDS	43
LEVEL 6	BEDS	43
TOTAL BEDROOMS		122

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PROJECT
LONGUEVILLE
16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 4 GROUND FLOOR PLAN

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REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO.	DRAWING NO.	REVISION
2924	DA104	PA1
SCALE	As indicated @ A1	
DRAWN		
PROJECT PRINCIPLE	M. RALPH	
DATE	27.10.2016	

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Appendix A: Insulation Mark-ups

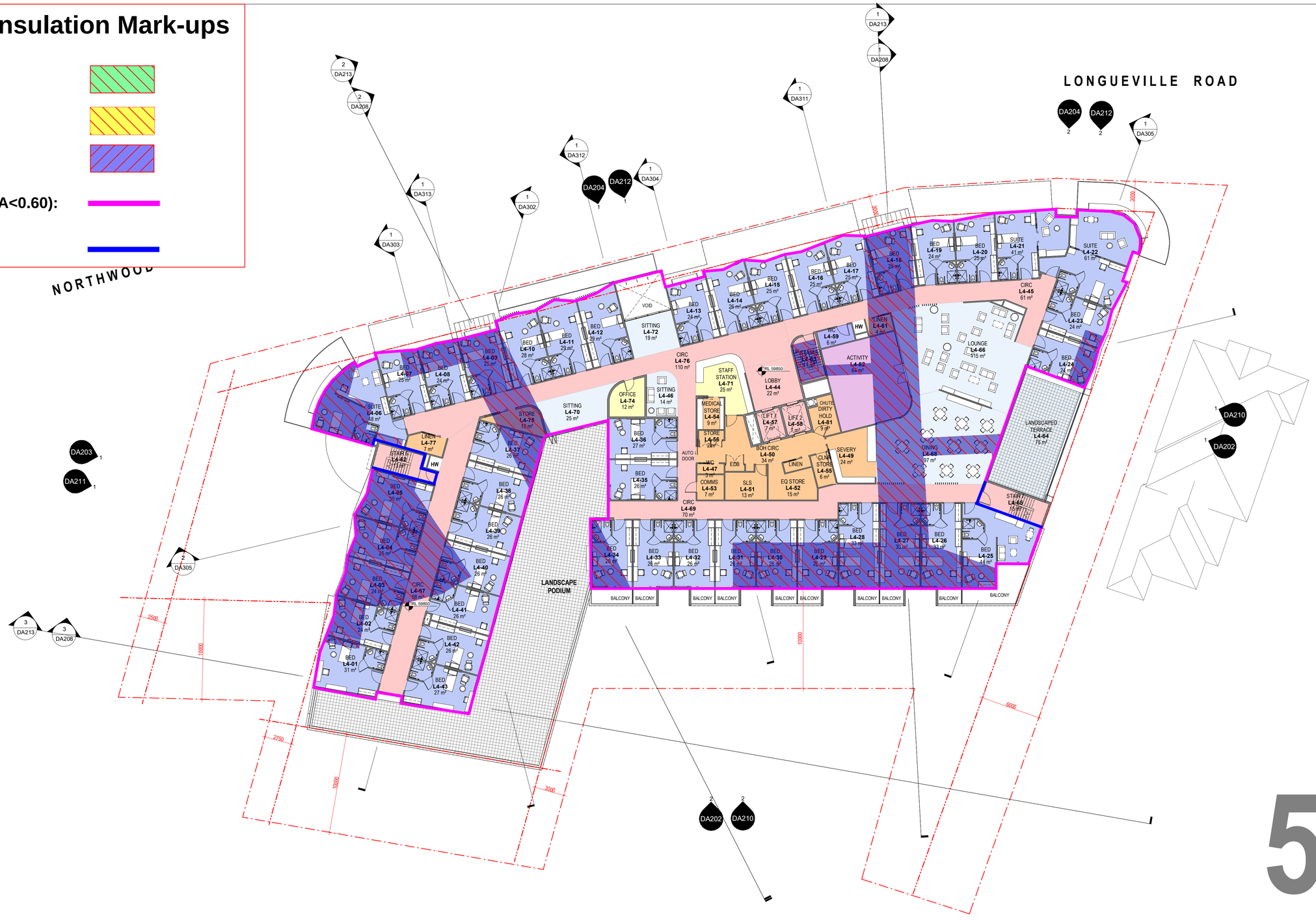
R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:



1 FLOOR PLAN - LEVEL 05
SCALE 1 : 200

SITE AREA 5003 m²

LEGEND

- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED UPPER LEVEL ENVEOPE
- PROPOSED BASEMENT LEVEL ENVELOPE
- EXISTING EASEMENT
- PROPOSED SEWER DIVERSION
- EXISTING 150mm VCP SEWER TO BE REMOVED
- PROPOSED PLANTING

- AMENITIES
- BEDS
- BOH
- CARPARK
- CIRCULATION
- COMMUNAL
- EXTERNAL
- MULTI-PURPOSE
- NONE
- RETAIL
- SPECIALTY
- STAFF FACILITIES

5

TOTAL BEDS

Mark	Count
BED	149

TOTAL BEDROOMS

LEVEL	CAREHOUSE	BED COUNT
LEVEL 2	BEDS	21
LEVEL 3	BEDS	15
LEVEL 5	BEDS	43
LEVEL 6	BEDS	43
TOTAL BEDROOMS		122

architecture
interior design
project management

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CLIENT
CLIENT NAME

PROJECT
LONGUEVILLE
16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 5 FLOOR PLAN

C:\Users\Jason\Documents\2924 - Longeville CENTRAL(V20)_jason3NHVS.rvt

REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO.	2924
DRAWING NO.	DA105
REVISION	PA1
SCALE	As indicated @ A1
DRAWN	
PROJECT PRINCIPLE	M. RALPH
DATE	27.10.2016

Morrison Design Partnership ARCHITECTS Since 1969

Appendix A: Insulation Mark-ups

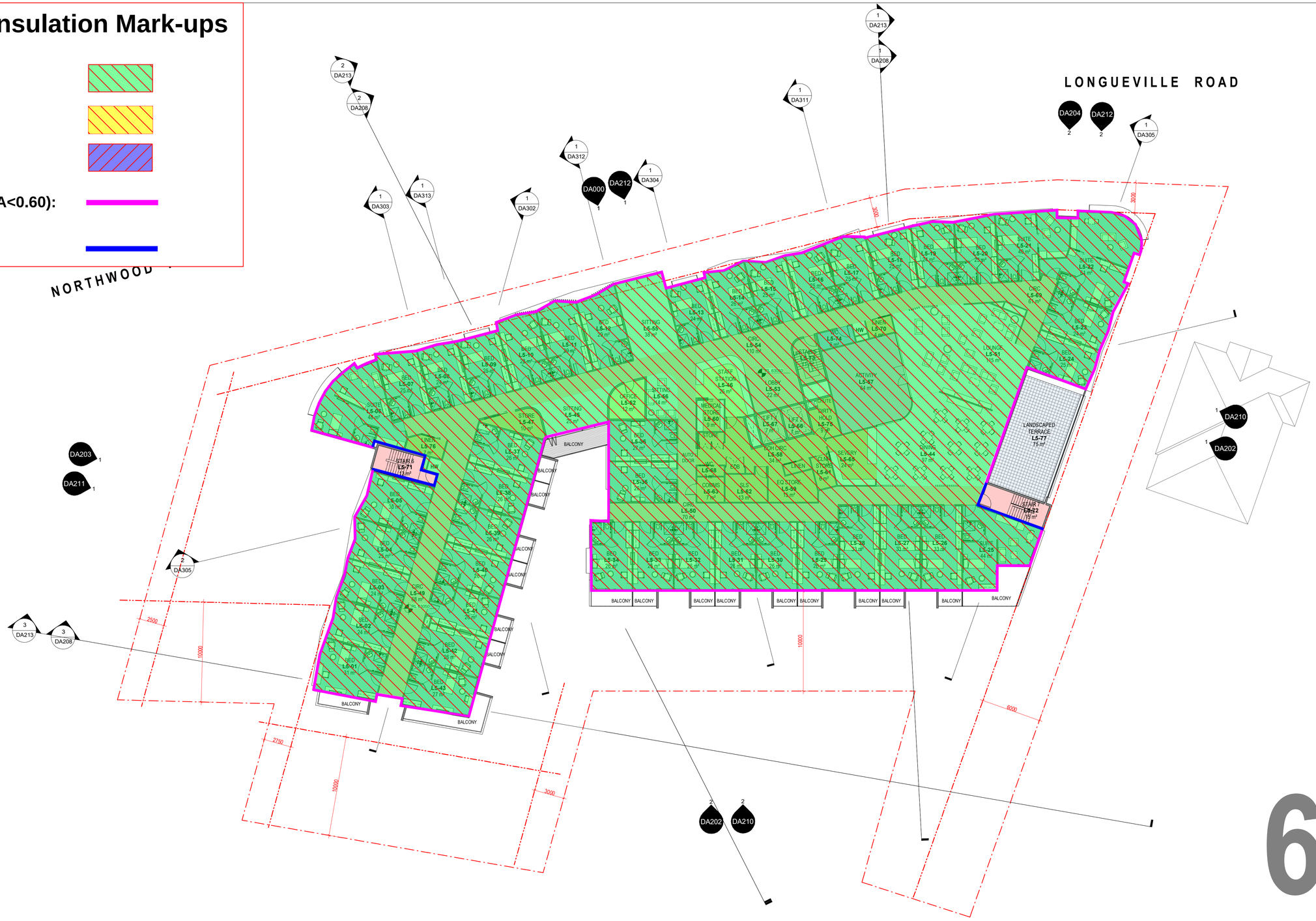
R3.70 Roof (SA <0.45):

R2.00 Ceiling:

R2.00 Floor:

External Wall >R1.5 (SA<0.60):

Internal Wall >R1.50:



1 FLOOR PLAN - LEVEL 06
SCALE 1 : 200

SITE AREA 5003 m²

LEGEND

- PROPOSED EASEMENT
- EXISTING EASEMENT
- PROPOSED UPPER LEVEL ENVEOPE
- PROPOSED BASEMENT LEVEL ENVELOPE
- EXISTING EASEMENT
- PROPOSED SEWER DIVERSION
- EXISTING 150mm VCP SEWER TO BE REMOVED
- PROPOSED PLANTING

- AMENITIES
- BEDS
- BOH
- CARPARK
- CIRCULATION
- COMMUNAL
- EXTERNAL
- MULTI-PURPOSE
- NONE
- RETAIL
- SPECIALTY
- STAFF FACILITIES

6

TOTAL BEDS

Mark	Count
BED	149

TOTAL BEDROOMS

LEVEL	CAREHOUSE	BED COUNT
LEVEL 2	BEDS	21
LEVEL 3	BEDS	15
LEVEL 5	BEDS	43
LEVEL 6	BEDS	43
TOTAL BEDROOMS		122

architecture
interior design
project management

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CLIENT
CLIENT NAME

PROJECT
LONGUEVILLE
16 NORTHWOOD ROAD
NORTHWOOD
NSW 2066

DRAWING TITLE
LEVEL 6 FLOOR PLAN

C:\Users\Jason\Documents\2924 - Longueville CENTRAL(V20)_jason3NHV5.rvt

REV	DATE	AMENDMENT	INITIALS	CHECK
PA1	20-02-04	FOR INFORMATION	AK	MM

PROJECT NO. 2924	DRAWING NO. DA106	REVISION PA1
SCALE	As indicated @ A1	
DRAWN	Author	
PROJECT PRINCIPLE	M. RALPH	
DATE	27.10.2016	

Morrison Design Partnership ARCHITECTS Since 1969

Appendix B: Façade Calculator Inputs & Results

Levels 1, 2, 3, 5 & 6

NCC 2019 Wall and Glazing Allowance Calculator v2.0

Method 2 of Specification J1.5a

Building name and description	Longueville - Levels, 1, 2, 3, 5 & 6	**Classification**	3, 9c or 9a ward
Climate Zone	5		
Calculated Area-Weighted U-Value	1.82	Calculated Representative Air-Conditioning Energy Value	532.2
Allowable Area-Weighted U-Value	2.00	Allowable Representative Air-Conditioning Energy Value	547.2
Building total U-Value allowance met	92%	**Building total SHGC allowance met**	98%
Check Values	Visible	**Wall Element Requirements**	Met
Display Glazing Element Requirements	-		

Use of this calculator does not guarantee compliance with the NCC. The disclaimer and a version update check are available at the bottom of the page.

Element Description					U-Value		SHGC and Shading				
ID	Description (optional)	Element Type	Facing Sector	Area (m^2)	U-Value	U-Value Element share of allowance used	SHGC	Glazing Height (m)	Shading Height (m)	Shading Projection (m)	SHGC Element share of allowance used
1	Internal	Wall	Internal	1961.44	0.75	13% of building total					Not counted
2	North	Wall	North	737.96	0.75	5% of building total					Not counted
3	East	Wall	East	873.29	0.75	6% of building total					Not counted
4	South	Wall	South	529.63	0.75	4% of building total					Not counted
5	West	Wall	West	704.70	0.75	5% of building total					Not counted
6	Internal	Glazing	Internal	26.74	6.00	1% of building total	0.49				Not counted
7	L1 East	Glazing	East	82.46	6.00	4% of building total	0.49				11% of building total
8	L2 East	Glazing	East	153.48	6.00	8% of building total	0.49				21% of building total
9	L2 North	Glazing	North	32.10	6.00	2% of building total	0.49	DEVICE			2% of building total
10	L2 South	Glazing	South	12.86	6.00	1% of building total	0.49				0% of building total
11	L3 East	Glazing	East	128.10	6.00	7% of building total	0.49				17% of building total
12	L3 North	Glazing	North	39.84	6.00	2% of building total	0.49	4.15	4.15	4	3% of building total
13	L3 South	Glazing	South	7.47	6.00	0% of building total	0.49				0% of building total
14	L5 East	Glazing	East	91.07	6.00	5% of building total	0.49				12% of building total
15	L5 North	Glazing	North	78.31	6.00	4% of building total	0.49				14% of building total
16	L5 West	Glazing	West	102.30	6.00	6% of building total	0.49				14% of building total
17	L5 South	Glazing	South	55.40	6.00	3% of building total	0.49				0% of building total
18	L5E Sitting	Glazing	East	18.60	6.00	1% of building total	0.49	DEVICE			1% of building total
19	L5N Terace	Glazing	North	31.20	6.00	2% of building total	0.49	DEVICE			2% of building total
20	L6 East	Glazing	East	91.07	6.00	5% of building total					0% of building total
21	L6 North	Glazing	North	78.31	6.00	4% of building total					0% of building total
22	L6 West	Glazing	West	102.30	6.00	6% of building total					0% of building total
23	L46South	Glazing	South	55.40	6.00	3% of building total					0% of building total
24	L6E Sitting	Glazing	East	18.60	6.00	1% of building total	0.49	DEVICE			1% of building total
25	L6N Terace	Glazing	North	31.20	6.00	2% of building total	0.49	DEVICE			2% of building total

Level 4

NCC 2019 Wall and Glazing Allowance Calculator v2.0

Method 2 of Specification J1.5a

Building name and description	Longueville - Level 4	**Classification**	Other
Climate Zone	5		
Calculated Area-Weighted U-Value	1.94	Calculated Representative Air-Conditioning Energy Value	276.0
Allowable Area-Weighted U-Value	2.00	Allowable Representative Air-Conditioning Energy Value	278.7
Building total U-Value allowance met	98%	**Building total SHGC allowance met**	100%
Check Values	Visible	**Wall Element Requirements**	Met
Display Glazing Element Requirements	-		

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Element Description					U-Value		SHGC and Shading				
ID	Description (optional)	Element Type	Facing Sector	Area (m^2)	U-Value	U-Value Element share of allowance used	SHGC	Glazing Height (m)	Shading Height (m)	Shading Projection (m)	SHGC Element share of allowance used
1	North Wall	Wall	North	223.02	0.75	5% of building total					Not counted
2	North Glazing	Glazing	North	42.84	4.00	5% of building total	0.35				12% of building total
3	North Glazing	Glazing	North	69.84	4.00	8% of building total	0.35	3.3	4	7	9% of building total
4	North Glazing S	Glazing	North	23.04	0.75	0% of building total	0.35	3.3	4	3.2	4% of building total
5	North Glazing S	Glazing	North	5.76	0.75	0% of building total	0.35	3.3	4	1.1	2% of building total
6	North Glazing S	Glazing	North	6.84	0.75	0% of building total	0.35	3.3	4	1.8	2% of building total
7	East Wall	Wall	East	147.21	0.75	3% of building total					Not counted
8	East Glazing	Glazing	East	133.53	4.00	15% of building total	0.35				29% of building total
9	East Glazing S	Glazing	East	3.63	4.00	0% of building total	0.35	3.3	4	3.3	0% of building total
10	East Glazing S	Glazing	East	3.63	4.00	0% of building total	0.35	3.3	4	2.7	1% of building total
11	West Wall	Wall	West	54.96	0.75	1% of building total					Not counted
12	West Glazing	Glazing	West	225.39	4.00	26% of building total	0.35	3.3	4	4	24% of building total
13	South Wall	Wall	South	132.52	0.75	3% of building total					Not counted
14	South Glazing	Glazing	South	46.53	4.00	5% of building total	0.35				6% of building total
15	South Glazing S	Glazing	South	4.62	4.00	1% of building total	0.35	3.3	4	4.7	0% of building total
16	South Glazing S	Glazing	South	4.62	4.00	1% of building total	0.35	3.3	4	3.4	0% of building total
17	South Glazing S	Glazing	South	4.62	4.00	1% of building total	0.35	3.3	4	2.1	0% of building total
18	South Glazing S	Glazing	South	4.62	4.00	1% of building total	0.35	3.3	4	0.8	1% of building total
19	South Glazing S	Glazing	South	3.96	4.00	0% of building total	0.35	3.3	4	5.5	0% of building total
20	South Glazing S	Glazing	South	3.96	4.00	0% of building total	0.35	3.3	4	4.3	0% of building total
21	South Glazing S	Glazing	South	105.60	4.00	12% of building total	0.35	3.3	4	7	9% of building total