ESD Section J Preliminary Advice

This document has been prepared for Total Project Management for the St. Louis Estate project as a preliminary advice to assess the proposed Class 3 building's compliance with **NCC 2025 Volume One, Section J**.

Thermal Performance Requirements

The minimum thermal performance requirements for building fabric elements forming the building envelope are summarised in the tables below. These requirements are indicative only and subject to confirmation following detailed coordination with the Architect and completion of Section J modelling by Summation.

Table 1: Building Fabric Thermal Performance Requirements

Location	Description	Minimum Total System R-value [m^2.K/W]	Minimum Typical Insulation [m^2.K/W]	Example Typical Insulation
Roofs[1]	Metal Deck with Ceiling	R3.7	R3.65	80mm R3.65 refl. rigid board
	Concrete Suspended Slab		R1.8 + R2.5	80mm R1.8 refl. glasswool blanket + 140mm R2.5 glasswool ceiling batts
External Walls[2]	Opt. 1: Brick Cavity Wall	R1.4	R0.83	30mm R0.83 rigid rockwool batts
	Opt. 2: Reverse Brick Veneer		R2.5	90mm R2.5 glasswool batts + unventilated cavity or R0.2 thermal break
Internal Walls	Concrete w. Internal Lining	R1.0	R0.7	25mm R0.7 over wall clips
Floor	Exposed Suspended Slab	R2.0	R1.75	40mm R1.75 soffit board (suspended slab only)

[1] Solar absorptance of the upper surface of the roofs must be less or equal to 0.35 (where air intakes, or rooftop plant is installed).
[2] Solar absorptance of the outer surface of the external walls must be less or equal to 0.60.

Table 2: Glazing Thermal Performance Requirements

Type	Total System U-value [W/m².K]	Solar Heat Gain Coefficient (SHGC)	Example Typical Glazing
Glazing[3] • 58% WWR to North • 26% WWR to East • 29% WWR to South • 40% WWR to West	2.9	0.27	High performance low-E double glazing in aluminium frame.

Note: the above glazing performance values apply to all vision glazing and are stated as whole-of-system requirements, inclusive of framing and glass, and in accordance with Australian Fenestration Rating Council (AFRC) requirement.

It is noted the above whole-of-system window performance requirements are the area-weighted average performance of all vision glazing elements within the building. It is recognised some glazing elements will be above and some will be below the stated figures.

The Window Supplier / Contractor must provide aggregated area-weighted glazing performance data and calculations to Summation for review to verify compliance with the above requirements.

[3] Window-to-wall ratio (WWR) calculation is based on the comparison between vision glazing to opaque façade areas. All non-vision areas are to be treated as external wall construction

Appendix A Example R-Value Calculations

Roof/Ceiling – Metal Deck with Ceiling				
Item	**Component**	**Thickness (mm)**	**Framing Material & Percentage**	**Effective R-value [m^2.K/W]**
1	Outdoor Air Film	N/A		0.03
2	Steel	0.5		0.00
3	**R1.8 Reflective (E≤0.05) Glasswool Blanket** (with 60 mm spacer / non-compressed)	80		1.80
4	Airspace (reflective, unventilated)	≥ 300		1.09
5	**R2.5 Glasswool Ceiling Batts**	140	Steel – 8%	1.85
6	Gypsum Plasterboard	13		0.08
7	Indoor Air Film (Still Air)	N/A		0.16
			Calculated Total System R-value	**5.01**

Roof/Ceiling – Concrete Suspended Slab				
Item	**Component**	**Thickness (mm)**	**Framing Material & Percentage**	**Effective R-value [m^2.K/W]**
1	Outdoor Air Film	N/A		0.03
2	Solid Concrete	≥ 300		0.21
3	**R3.65 Reflective (E≤0.05) Rigid Board**	80		3.65
4	Indoor Air Film (Still Air)	N/A		0.16
			Calculated Total System R-value	**4.05**

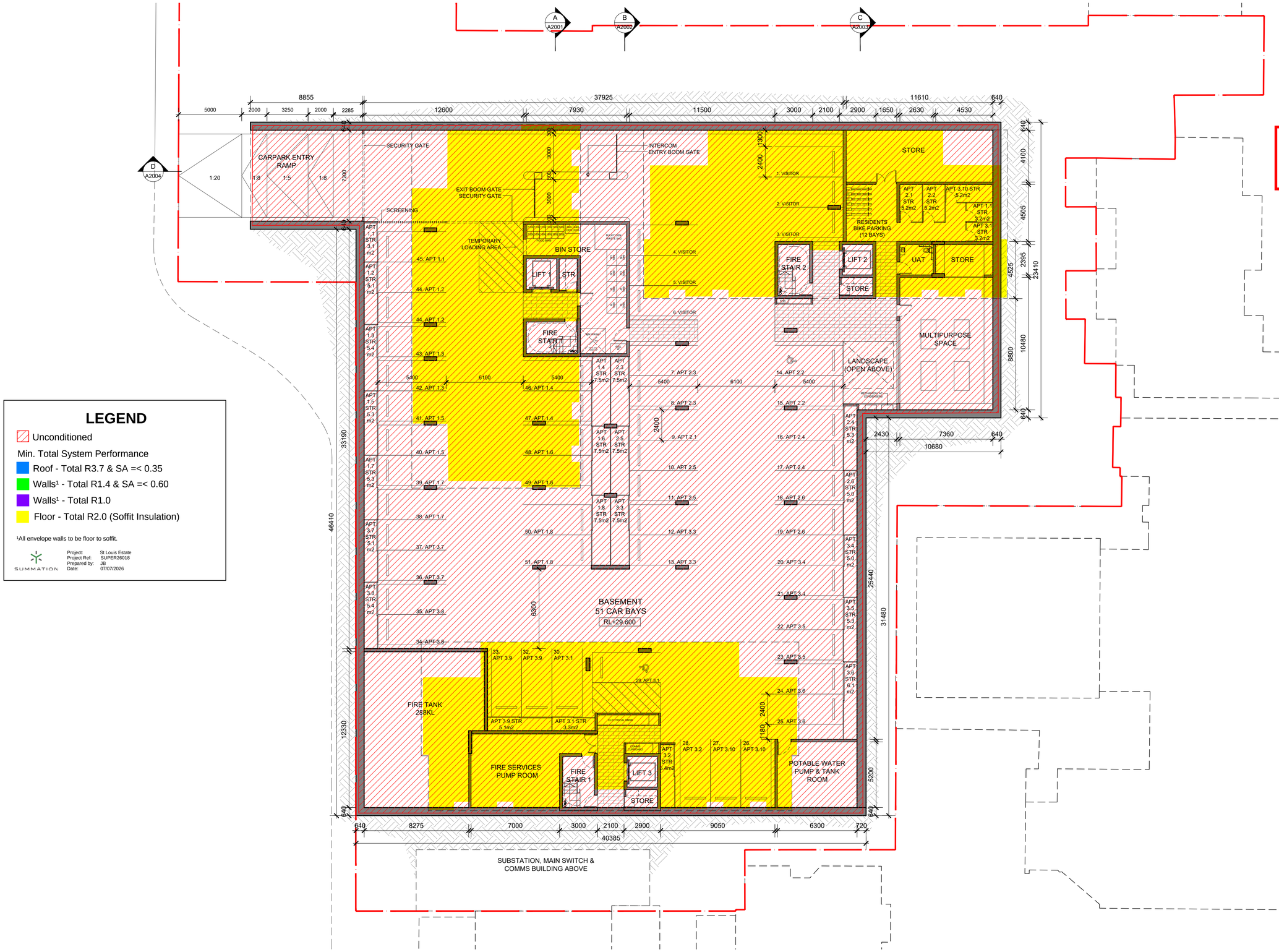
External Wall – Option 1: Brick Cavity Wall				
Item	**Component**	**Thickness [mm]**	**Framing [%]**	**Effective R-value [m^2.K/W]**
1	Outdoor Air Film	N/A		0.03
2	Clay Brick	110		0.14
3	Airspace (non-reflective, unventilated)	≥20		0.16
4	**R0.83 Rigid Rockwool Batts**	30		0.83
5	Clay Brick	110		0.14
6	Indoor Air Film (Still Air)	N/A		0.12
			Calculated Total System R-value	**1.42**

External Wall – Option 2: Reverse Brick Veneer				
Item	**Component**	**Thickness [mm]**	**Framing [%]**	**Effective R-value [m^2.K/W]**
1	Outdoor Air Film	N/A		0.03
2	Fibre Cement	6		0.00
3	Airspace (non-reflective, ventilated)	≥20		0.00
4	**R2.5 Glasswool Batts**	90	Steel – 13%	0.95
5	Airspace (non-reflective, unventilated)	≥20		0.16
6	Clay Brick	110		0.14
7	Indoor Air Film (Still Air)	N/A		0.12
			Calculated Total System R-value	**1.40**

Internal Wall – Concrete w. Internal Lining (i.e., columns, shafts, risers)				
Item	**Component**	**Thickness (mm)**	**Framing Material & Percentage**	**Effective R-value [m^2.K/W]**
1	Outdoor Air Film	N/A		0.03
2	Solid Concrete	≥350		0.24
3	**R0.7 Glasswool Batts (continous over furring channel clips)**	25	Steel – 2.5%	0.43
4	Airspace (non-reflective, unventilated)	≥20	Steel - 17%	0.13
5	Plasterboard Gypsum	13		0.08
6	Indoor Air Film (Still Air)	N/A		0.12
			Calculated Total System R-value	**1.03**

Floor – Suspended Slab				
Item	**Component**	**Thickness (mm)**	**Framing Material & Percentage**	**Effective R-value [m^2.K/W]**
1	Indoor Air Film (Still Air)	N/A		0.16
2	Solid Concrete	250		0.17
3	**R1.75 Phenolic Rigid Board Insulation**	40		1.75
4	Outdoor Air Film	N/A		0.03
			Calculated Total System R-value	**2.06**

Appendix B Insulation Markups



LEGEND

- Unconditioned

Min. Total System Performance

- Roof - Total R3.7 & SA =< 0.35
- Walls[1] - Total R1.4 & SA =< 0.60
- Walls[1] - Total R1.0
- Floor - Total R2.0 (Soffit Insulation)

[1]All envelope walls to be floor to soffit.

SUMMATION

Project: St Louis Estate
Project Ref: SUPER26018
Prepared by: JB
Date: 07/07/2026

TOWN OF CLAREMONT
RECEIVED
9/07/2026

KHA

LEGEND
PROJECT BOUNDARY

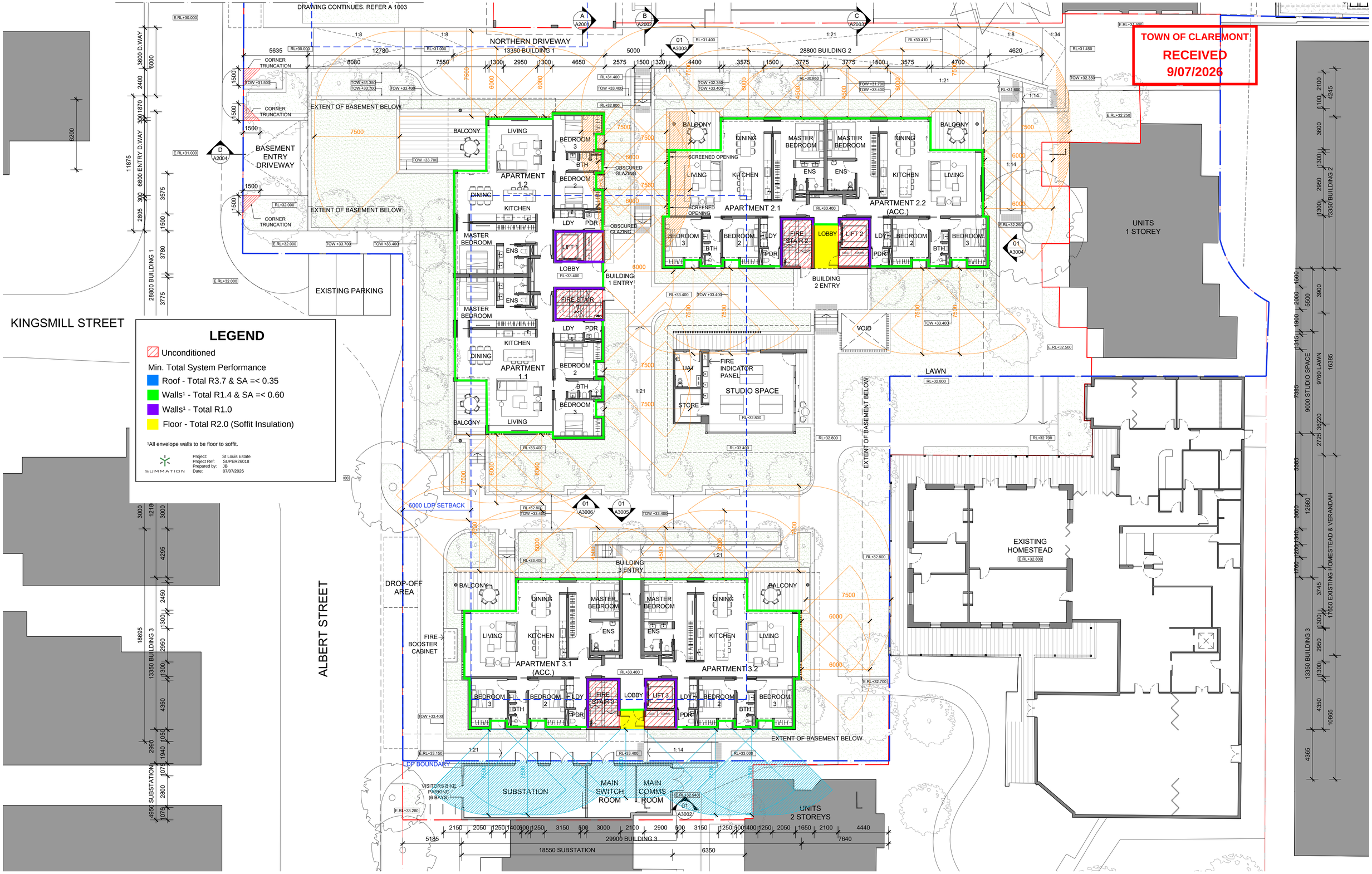
Rev.	Date	Amendment
A	29.06.26	DA SUBMISSION

Kerry Hill Architects Pty Ltd.

30 Mouat Street, Fremantle
Western Australia
T +61 (8) 9336 4545

Project: SLE - ALBERT STREET
Project No.: 660
Client: ST LOUIS ESTATE
Drawing Status: DA SUBMISSION

Drawing: BASEMENT GENERAL ARRANGEMENT PLAN
Date: 29.06.26
Scale at A1/A3: 1:150 / 1:300
Drawing No.: A 1001
Revision: A



KHA

LEGEND

- LDP BOUNDARY
- PROJECT BOUNDARY
- CONE OF VISION - INSIDE LDP BOUNDARY
- CONE OF VISION - OUTSIDE LDP BOUNDARY

Rev.	Date	Amendment
A	29.06.26	DA SUBMISSION

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Project	Project No.	Drawing	Date
SLE - ALBERT STREET	660	GROUND FLOOR GENERAL ARRANGEMENT PLAN	29.06.26
Client	Drawing Status	Scale at A1/A3	Drawing No. / Revision
ST LOUIS ESTATE	DA SUBMISSION	1:150 / 1:300	A 1002 / A

TOWN OF CLAREMONT
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KINGSMILL STREET

ALBERT STREET

CARPORT ROOF

13800 BUILDING 1

28800 BUILDING 2

30000 BUILDING 1

13800 BUILDING 3

11190 STUDIO SPACE ROOF

33100 BUILDING 3

APARTMENT 1.4
APARTMENT 1.3
APARTMENT 2.3
APARTMENT 2.4
APARTMENT 3.3
APARTMENT 3.4

RL+36.700

STUDIO ROOF

HOMESTEAD ROOF

UNITS
1 STOREY

SUBSTATION/ SWITCHROOM/ COMMS ROOF

10000 LDP SETBACK

LDP BOUNDARY

LEGEND

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- CONE OF VISION - OUTSIDE LDP BOUNDARY

Rev.	Date	Amendment
A	29.06.26	DA SUBMISSION

Kerry Hill Architects Pty Ltd.

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Project	Project No.	Drawing	Date
SLE - ALBERT STREET	660	LEVEL 01 GENERAL ARRANGEMENT PLAN	29.06.26
Client	Drawing Status	Scale at A1/A3	Drawing No. / Revision
ST LOUIS ESTATE	DA SUBMISSION	1:150 / 1:300	A 1004 / A

TOWN OF CLAREMONT
RECEIVED
9/07/2026

KINGSMILL STREET

ALBERT STREET

CARPORT ROOF

13800 BUILDING 1

28800 BUILDING 2

30000 BUILDING 1

13800 BUILDING 3

33100 BUILDING 3

11190 STUDIO SPACE ROOF

APARTMENT 1.6

APARTMENT 1.5

APARTMENT 2.5

APARTMENT 2.6

APARTMENT 3.5

APARTMENT 3.6

STUDIO ROOF

HOMESTEAD ROOF

UNITS
1 STOREY

SUBSTATION/ SWITCHROOM/ COMMS ROOF

15000 LDP SETBACK

LDP BOUNDARY

RL+40.000

RL+ 40.00

LEGEND

Unconditioned

Min. Total System Performance

- Roof - Total R3.7 & SA =< 0.35
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- Walls[1] - Total R1.0
- Floor - Total R2.0 (Soffit Insulation)

[1]All envelope walls to be floor to soffit.

SUMMATION

Project: St Louis Estate
Project Ref: SUPER26018
Prepared by: JB
Date: 07/07/2026

KHA

LEGEND

- LDP BOUNDARY
- PROJECT BOUNDARY
- CONE OF VISION - INSIDE LDP BOUNDARY
- CONE OF VISION - OUTSIDE LDP BOUNDARY

Rev.	Date	Amendment
A	29.06.26	DA SUBMISSION

Kerry Hill Architects Pty Ltd.

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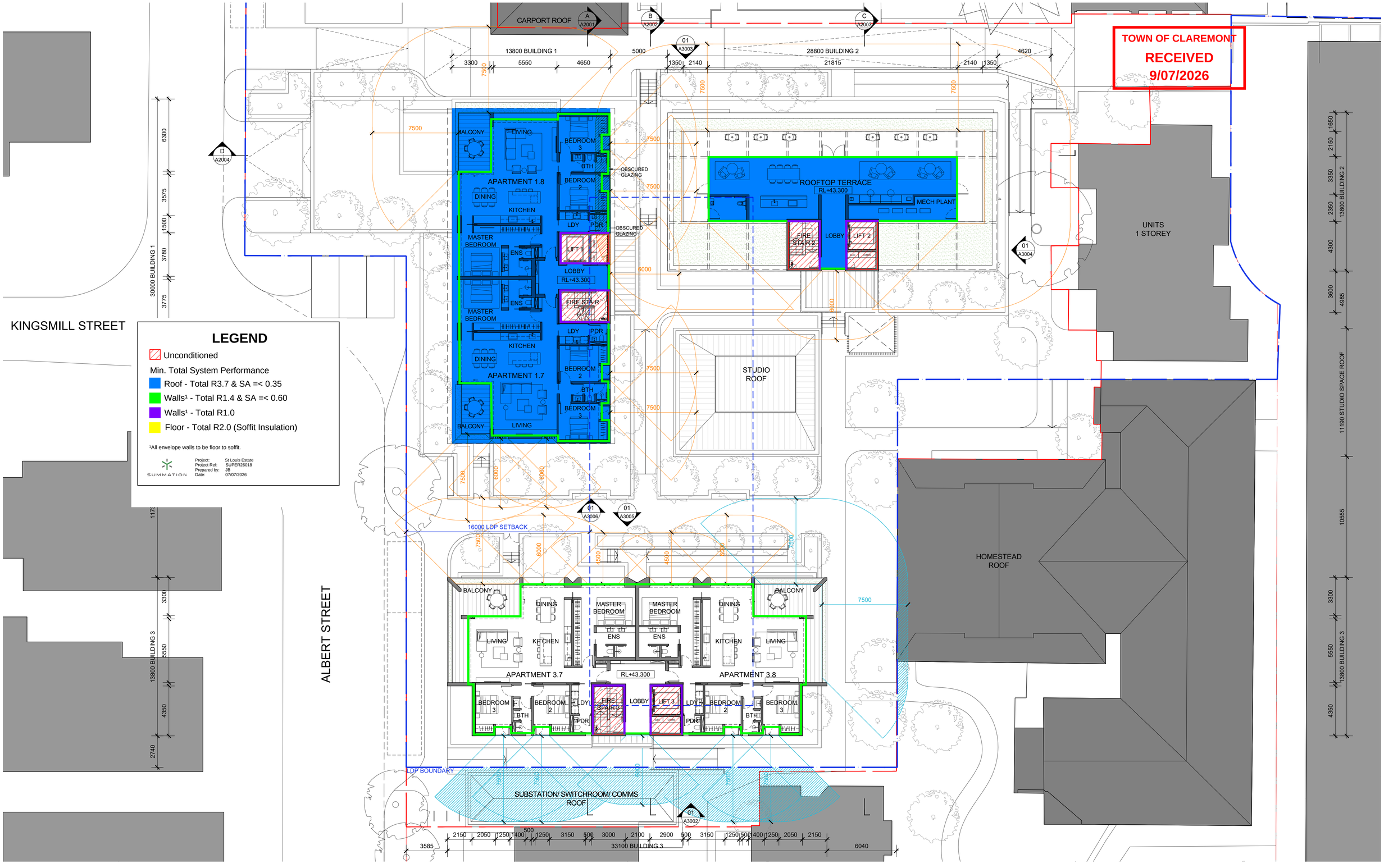
Project: SLE - ALBERT STREET
Project No.: 660
Client: ST LOUIS ESTATE
Drawing Status: DA SUBMISSION
Drawing: LEVEL 02 GENERAL ARRANGEMENT PLAN
Date: 29.06.26
Scale at A1/A3: 1:150 / 1:300
Drawing No.: A 1005
Revision: A



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9/07/2026

LEGEND

- Unconditioned

Min. Total System Performance

- Roof - Total R3.7 & SA =< 0.35
- Walls[1] - Total R1.4 & SA =< 0.60
- Walls[1] - Total R1.0
- Floor - Total R2.0 (Soffit Insulation)

[1]All envelope walls to be floor to soffit.

SUMMATION

Project:	St Louis Estate
Project Ref:	SUPER26018
Prepared by:	JB
Date:	07/07/2026

KHA

LEGEND

- LDP BOUNDARY
- EXTENT OF WORKS
- CONE OF VISION - INSIDE LDP BOUNDARY
- CONE OF VISION - OUTSIDE LDP BOUNDARY

Rev.	Date	Amendment
A	29.06.26	DA SUBMISSION

Kerry Hill Architects Pty Ltd.

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Project	SLE - ALBERT STREET	Project No.	660
Client	ST LOUIS ESTATE	Drawing Status	DA SUBMISSION
Drawing	LEVEL 03 GENERAL ARRANGEMENT PLAN	Date	29.06.26
		Scale at A1/A3	1:150 / 1:300
		Drawing No.	A 1006
		Revision	A

TOWN OF CLAREMONT
RECEIVED
9/07/2026

KINGSMILL STREET

ALBERT STREET

CARPORT ROOF

A A2001 | B A2002 | C A2003 | D A2004

01 A3003

14600 BUILDING 1

6600 | 1900 | 4600 | 3490

28800 BUILDING 2

3490 | 4620

29600 BUILDING 1

10800 | 8000

BUILDING 1 ROOF

MECHANICAL PLANT

BUILDING 2 ROOF

STUDIO ROOF

UNITS 1 STOREY

01 A3004

HOMESTEAD ROOF

11190 STUDIO SPACE ROOF

1650 | 2150 | 5700 | 13800 BUILDING 2 | 4300 | 3600 | 4985 | 10555 | 3300 | 5550 | 13800 BUILDING 3 | 4350

1133 | 3300 | 5550 | 13800 BUILDING 3 | 4350 | 2740

01 A3006 | 01 A3005

16000 LDP SETBACK

7500 | 6000 | 4500 | 4500 | 8000 | 2500 | 7500

BALCONY | DINING | MASTER BEDROOM | MASTER BEDROOM | DINING | BALCONY

LIVING | KITCHEN | ENS | ENS | KITCHEN | LIVING

APARTMENT 3.9 | RL+46.600 | APARTMENT 3.10

BEDROOM 3 | BEDROOM 2 | LDY | BTH | PDR | FIRE STAIR 3 | LOBBY | LIFT 3 | LDY | PDR | BTH | BEDROOM 2 | BEDROOM 3

LDP BOUNDARY

SUBSTATION/ SWITCHROOM/ COMMS ROOF

01 A3002

3585 | 2150 | 2050 | 1250 | 1400 | 500 | 1250 | 3150 | 500 | 3000 | 2100 | 2900 | 500 | 3150 | 1250 | 500 | 400 | 1250 | 2050 | 2150 | 6040

33100 BUILDING 3

LEGEND

- Unconditioned

Min. Total System Performance

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- Walls[1] - Total R1.0
- Floor - Total R2.0 (Soffit Insulation)

[1]All envelope walls to be floor to soffit.

SUMMATION

Project: St Louis Estate
Project Ref: SUPER26018
Prepared by: JB
Date: 07/07/2026

KHA

LEGEND

- LDP BOUNDARY
- PROJECT BOUNDARY
- CONE OF VISION - INSIDE LDP BOUNDARY
- CONE OF VISION - OUTSIDE LDP BOUNDARY

Rev.	Date	Amendment
A	29.06.26	DA SUBMISSION

Kerry Hill Architects Pty Ltd.

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Project: SLE - ALBERT STREET
Project No.: 660
Drawing: LEVEL 04 GENERAL ARRANGEMENT PLAN
Date: 29.06.26
Client: ST LOUIS ESTATE
Drawing Status: DA SUBMISSION
Scale at A1/A3: 1:150 / 1:300
Drawing No.: A 1007
Revision: A

Appendix C Better Building Façade Calculation Report

NCC 2025: The Facade Calculator Report

Dashboard export · NCC 2025 Specification 37. Generated 6/10/2026, 3:50:09 PM.

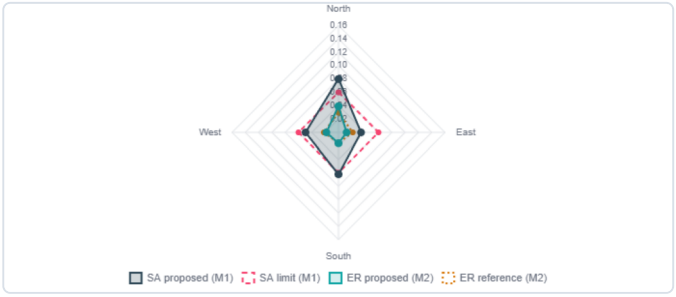
Overall compliance

COMPLIES

Wall-glazing U-value	Method 1 (per-aspect)	Method 2 (energy ratio)
1.56 PASS	2 / 4 FAIL	0.0854 PASS
Limit: 1.60 W/m²·K (CZ5 / ward)	aspects satisfy SA ≤ SA_limit individually	Reference: 0.0881

Visual summary

SA by orientation



Compliance budget used

Per-aspect breakdown

Aspect	Share	WWR	P/H	D/W	W/H	S_h	S_v	S	SA	SA limit	M1	ω	ER_p	ER_r
North	26.1%	58.3%	0.57	0.00	0.00	0.528	1.000	0.528	0.080	0.06	FAIL	1.88	0.0392	0.0294
North-East	— excluded													
East	23.9%	26.2%	0.63	0.00	0.00	0.495	1.000	0.495	0.034	0.06	PASS	1.48	0.0119	0.0213
South-East	— excluded													
South	26.1%	29.1%	0.29	0.00	0.00	0.825	1.000	0.825	0.062	0.06	FAIL	1.00	0.0162	0.0156
South-West	— excluded													
West	23.9%	40.0%	0.67	0.00	0.00	0.475	1.000	0.475	0.049	0.06	PASS	1.52	0.0180	0.0218
North-West	— excluded													

Compliance checks

```
U-value:
  U_sys ≤ UV_limit
  1.5581 ≤ 1.60    → PASS ✓

Solar Admittance — Method 1 (per-aspect):
  North       SA = 0.0800  >  0.0600   → FAIL ✗
  East        SA = 0.0337  ≤  0.0600   → PASS ✓
  South       SA = 0.0623  >  0.0600   → FAIL ✗
  West        SA = 0.0494  ≤  0.0600   → PASS ✓
  Method 1 overall → FAIL ✗ (2 of 4 aspects pass)

Solar Admittance — Method 2 (energy ratio):
  ER_proposed ≤ ER_reference
  0.0854 ≤ 0.0881    → PASS ✓

Solar-Admittance leg passes if EITHER method passes:
  Method 1 ✗ OR Method 2 ✓  →  PASS ✓

Overall (U-value AND SA leg): COMPLIES ✓
```