# Development Application Submission Form

This submission form is provided for your convenience. There is no obligation to make a submission. If you wish to make a submission, please complete this form and email to: planning@belmont.wa.gov.au or post to: City of Belmont, Locked Bag 379, Cloverdale WA 6985.

Written submissions should be lodged with the City within the required comment period. If no comments are received by the closing date, we will assume that you have no comment you wish to make and the application will be assessed and determined on its merits and without any further consultation.

Please note also that although submissions will assist the City in making a determination on the application, they should not be construed as the sole basis for the City's decision. The application will be determined on the relevant planning merits and the City may not agree with all or part of your submission.

| **DEVELOPMENT APPLICATION DETAILS** | |
|---|---|
| **DA Number:** | 314/2025 |
| **Property Address:** | 2 Hawksburn Road RIVERVALE 6103 (Lot 888 PL 69732) |
| **Proposed Development:** | 108 Multiple Dwellings |
| **Zoning:** | Special Development Precinct (The Springs) |
| **Enquiries:** | Planning Officer, Nicholas Reddy<br>08 9477 7276 |

| **DETAILS OF PERSON(S) MAKING SUBMISSION** | | | |
|---|---|---|---|
| ☐ I am an Owner and Occupier **or** ☐ I am an Owner **or** ☐ I am an Occupier | | | |
| **Name(s):** | | | |
| **Affected Address:** | | | |
| **Postal Address:** (if different to above address) | | | |
| **Telephone No:** | | **Email:** | |
| **Signature:** | | **Date:** | |

Note: submissions should be based on planning merit. A 'How to Make a Submission on a Town Planning Proposal' fact sheet is available for viewing from: www.belmont.wa.gov.au.

Submission:

*Additional lines over page. Attach additional sheets if required.*



Document Set ID: 6024720
Version: 1, Version Date: 07/08/2025

*Attach additional sheets if required.*

# LOT 888, 2 HAWKSBURN ROAD
## THE SPRINGS, RIVERVALE

CITY OF BELMONT
RECEIVED
17/07/2025
Application No: 314/2025

**Lot 888, 2 Hawksburn Road,**
**RIVERVALE. SPRINGS.**

16 STOREY RESIDENTIAL DEVELOPMENT
COMPRISING 108 APARTMENTS

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developing better lifestyles

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Level 4
181 Adelaide Tce
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WA 6004
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E: admin@changarchitects.com.au
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SK CVR
15.05.2025

| DEVELOPMENT SUMMARY | | 16 Storeys |
|---|---|---|
| Total Site Area | 2370.0 m² | |
| Zoning | Mixed Use R100 | |
| Allowable Plot Ratio | N / A | |
| Proposed Plot Ratio | 2.21 m² | |
| Proposed Total Plot Ratio Area | 5226 m² | |

## UNIT SUMMARY

| Unit Type | | Unit Area m2 | No. of Units | % | Total Plot Ratio Area m2 |
|---|---|---|---|---|---|
| STUDIO | TYPE A | 34 | 11 | 10 | 374 |
| STUDIO | TYPE B | 34 | 11 | 10 | 374 |
| STUDIO | TYPE C | 36 | 11 | 10 | 396 |
| 1 BED / 1 BATH | TYPE D | 50 | 1 | 1 | 50 |
| 1 BED / 1 BATH | TYPE E | 55 | 1 | 1 | 55 |
| 1 BED / 1 BATH | TYPE F | 51 | 12 | 11 | 612 |
| 1 BED / 1 BATH | TYPE G | 50 | 12 | 11 | 600 |
| 1 BED / 1 BATH | TYPE H | 51 | 12 | 11 | 612 |
| 1 BED / 1 BATH | TYPE J | 50 | 11 | 10 | 550 |
| 1 BED / 1 BATH | TYPE K | 51 | 11 | 10 | 561 |
| 2 BED / 1 BATH | TYPE L | 68 | 11 | 10 | 748 |
| 2 BED / 2 BATH | TYPE M | 73 | 1 | 1 | 73 |
| 2 BED / 2 BATH | TYPE N | 73 | 1 | 1 | 73 |
| 2 BED / 2 BATH | TYPE P | 73 | 1 | 1 | 73 |
| 2 BED / 2 BATH | TYPE Q | 75 | 1 | 1 | 75 |
| **TOTALS** | | | **108** | **100** | **5226** |

## CARPARKING REQUIRED

| Unit Type | Calc. | Ratio | Total Car Bays |
|---|---|---|---|
| Resident Required 1 BED / 1 BATH + STUDIO | 93 X 0.75 | | 70 |
| Resident Required 2 BED / 1 & 2 BATH | 15 X 1.0 | | 15 |
| Visitor Required | | 1 bay per 4 up to 12 dwellings | 4 |
| | | 1 bay per 8 for 13 and above | 12 |
| **TOTALS** | | | **101** |

## CARPARKING PROPOSED

| Unit Type | Calc. | Ratio | Total Car Bays |
|---|---|---|---|
| Resident Proposed STUDIO | 11 X 0.0 | | 0 |
| Resident Proposed STUDIO | 22 X 1.0 | | 22 |
| Resident Proposed 1 BED / 1 BATH | 60 X 1.0 | | 60 |
| Resident Proposed 2 BED / 1 & 2 BATH | 15 X 1.0 | | 15 |
| Visitor Proposed | | x30 scooter bays enable -6 bays concession (SPP7.3) | 10 |
| **TOTALS** | | | **107** |

## BICYCLE PARKING CALCULATIONS

| Unit Type | Calc. | Ratio | Total Bikes Required | Total Bikes Provided |
|---|---|---|---|---|
| Resident | | 4.5m² Stores Provided (allows for bicycle parking) | 108 | 108 |
| Residential Visitor | 108 /8 | 1 bike per 8 Apts | 14 | 25 |

## SCOOTER BAYS

| | |
|---|---|
| Resident Scooter Bays Proposed | 30 |

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# DEVELOPMENT TABLE

REV A

**Lot 888, 2 Hawksburn Road,**
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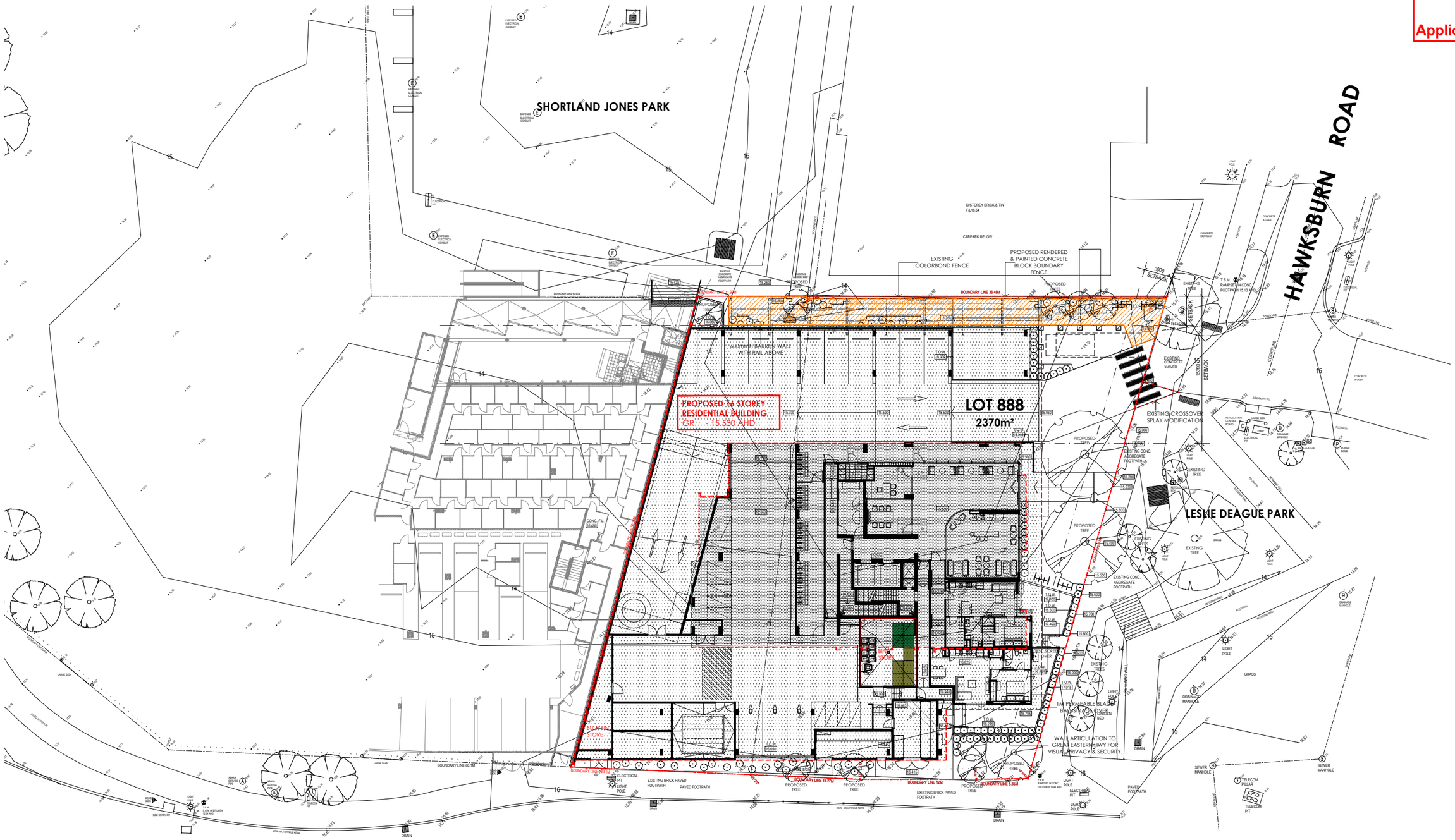


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

# SITE PLAN
REV A

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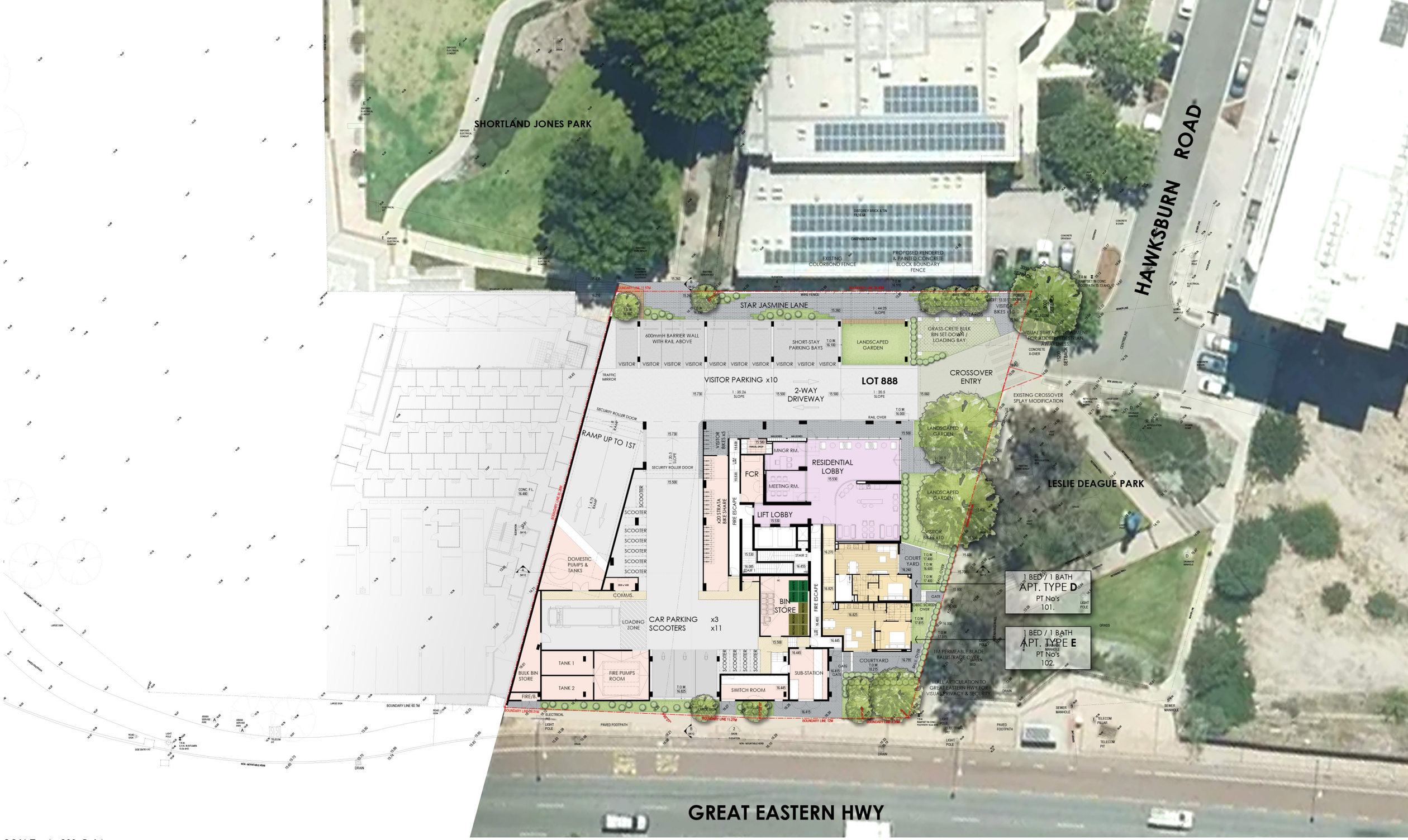


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

# GROUND FLOOR PLAN

REV A

# Lot 888, 2 Hawksburn Road, RIVERVALE. SPRINGS.

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SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

# 1ST FLOOR PLAN

REV A

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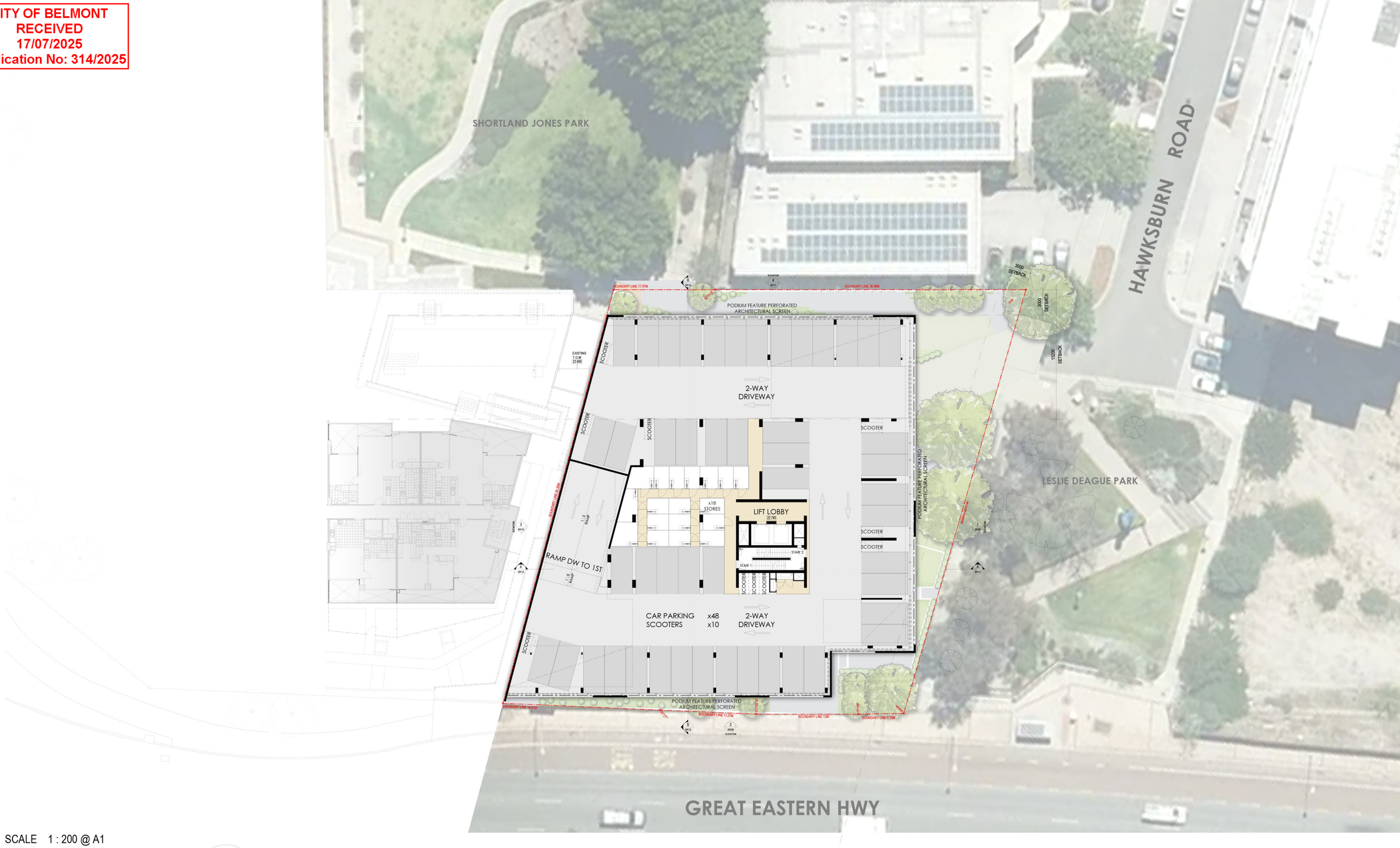


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

## 2ND FLOOR PLAN

REV A

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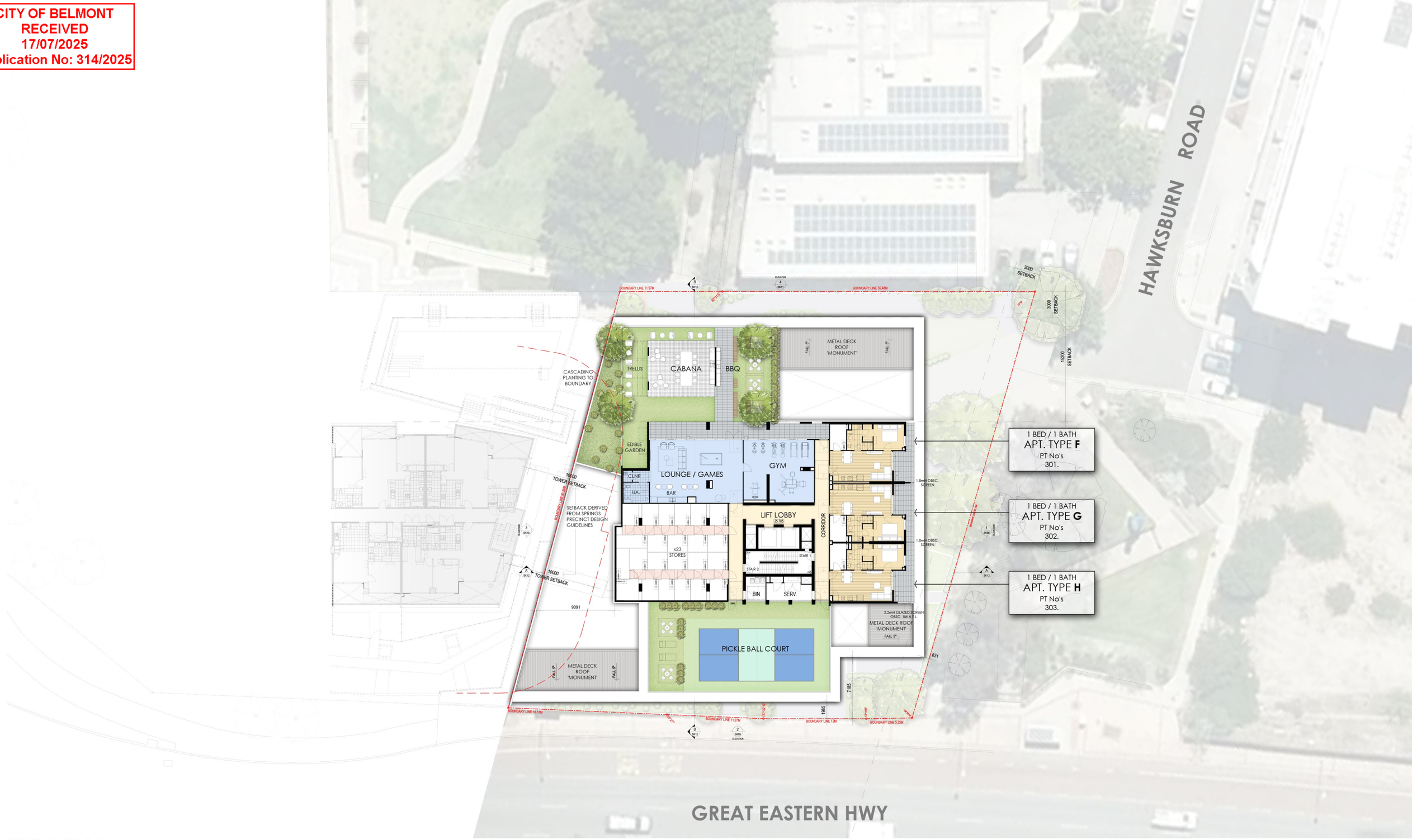


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

# 3RD FLOOR PLAN

REV A

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HAWKSBURN ROAD

2 BED / 1 BATH (LHA)
APT. TYPE **L**
PT No's
404, 504, 604, 704, 804, 904, 1004, 1104, 1204, 1304, 1404.

1 BED / 1 BATH
APT. TYPE **J**
PT No's
405, 505, 605, 705, 805, 905, 1005, 1105, 1205, 1305, 1405.

1 BED / 1 BATH
APT. TYPE **K**
PT No's
406, 506, 606, 706, 806, 906, 1006, 1106, 1206, 1306, 1406.

1 BED / 1 BATH
APT. TYPE **F**
PT No's
407, 507, 607, 707, 807, 907, 1007, 1107, 1207, 1307, 1407.

1 BED / 1 BATH
APT. TYPE **G**
PT No's
408, 508, 608, 708, 808, 908, 1008, 1108, 1208, 1308, 1408.

1 BED / 1 BATH
APT. TYPE **H**
PT No's
409, 509, 609, 709, 809, 909, 1009, 1109, 1209, 1309, 1409.

STUDIO
APT. TYPE **C**
PT No's
403, 503, 603, 703, 803, 903, 1003, 1103, 1203, 1303, 1403.

STUDIO (LHA)
APT. TYPE **B**
PT No's
402, 502, 602, 702, 802, 902, 1002, 1102, 1202, 1302, 1402.

STUDIO
APT. TYPE **A**
PT No's
401, 501, 601, 701, 801, 901, 1001, 1101, 1201, 1301, 1401.

FLOOR LEVELS:
28.665 - 4TH
31.625 - 5TH
34.585 - 6TH
37.545 - 7TH
40.505 - 8TH
43.465 - 9TH
46.425 - 10TH
49.385 - 11TH
52.345 - 12TH
55.305 - 13TH
58.265 - 14TH

CORRIDOR
LIFT LOBBY
STAIRS
BIN
SERV.
OBSC.
3000 SETBACK
15200 SETBACK
10000 TOWER SETBACK
SETBACK DERIVED FROM SPRINGS PRECINCT DESIGN GUIDELINES
9091
12M CONE OF VISION
2.2mH GLAZED SCREEN OBSC. 1M A.F.L.
3898
BOUNDARY LINE 11.57M
BOUNDARY LINE 36.48M
BOUNDARY LINE 18.91M
BOUNDARY LINE 11.27M
BOUNDARY LINE 12M
BOUNDARY LINE 5.35M

GREAT EASTERN HWY

SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

# 4TH-14TH FLOOR PLAN
REV A

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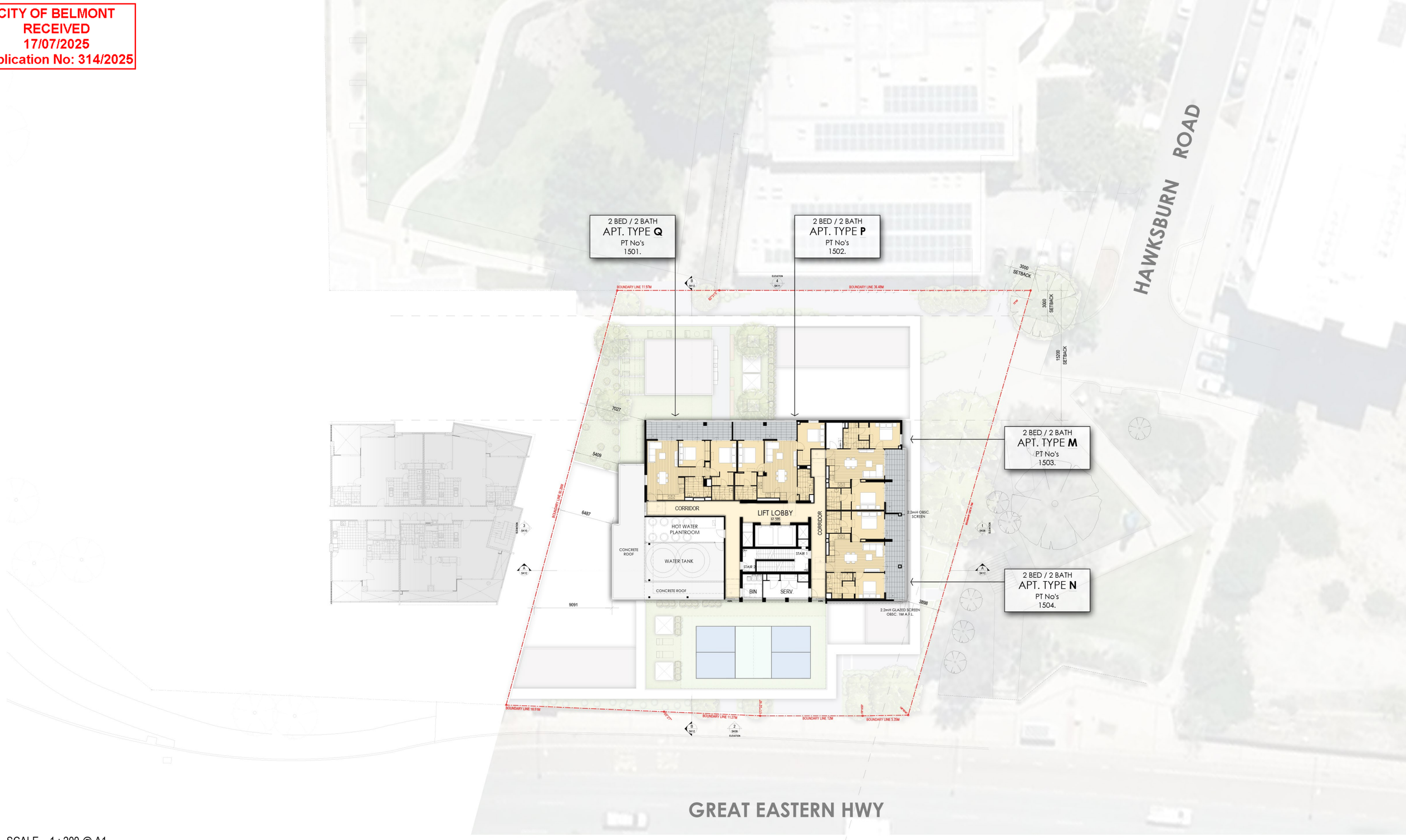


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

# 15TH FLOOR PLAN

REV A

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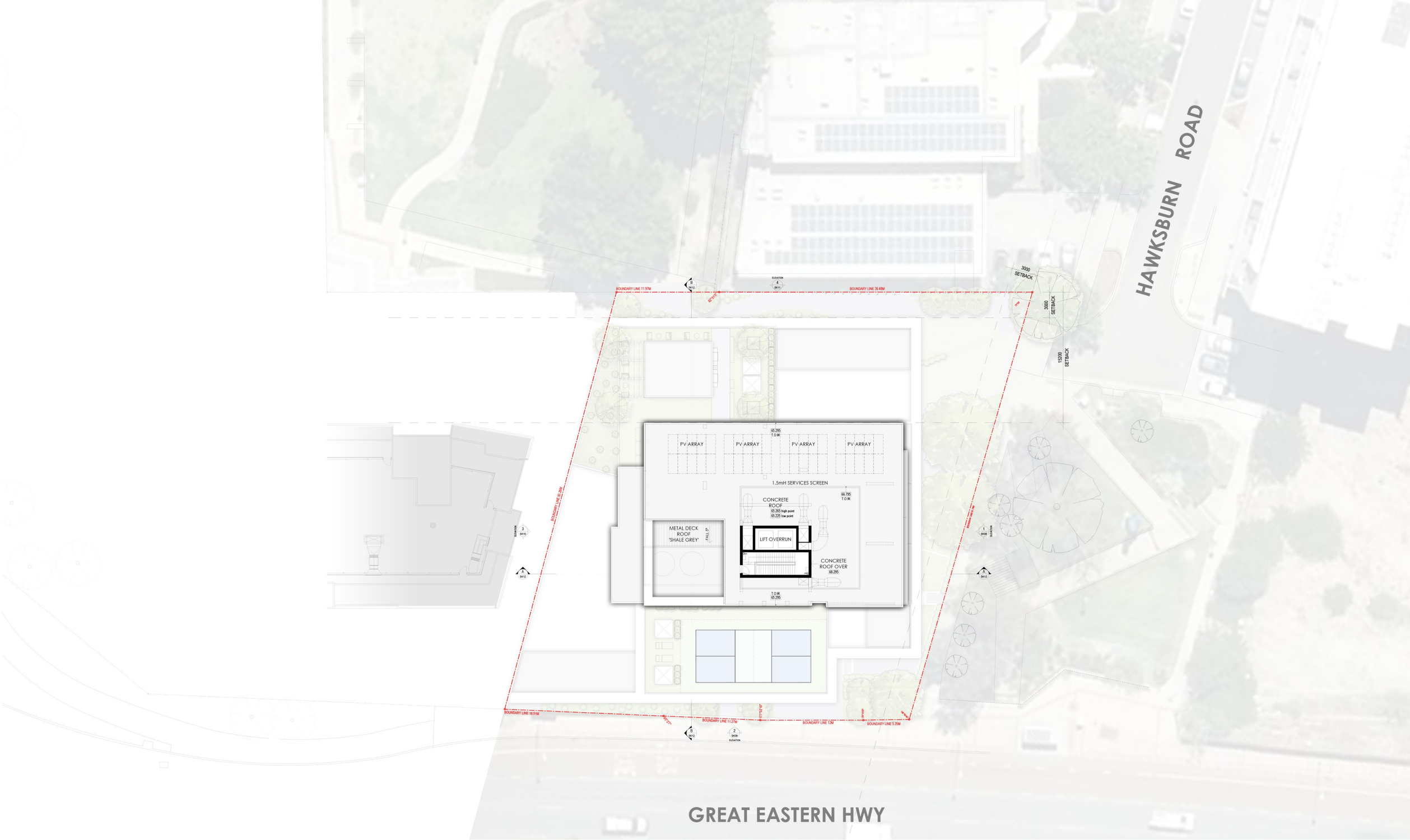


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

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# ROOF PLAN
REV A

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## EXTERNAL FINISHES LEGEND

- (A1) — PROPRIETARY ALUMINIUM VERTICAL BALUSTRADE SYSTEM. ( POWDERCOAT INTERPON D2525 ULTRIVA TITANIUM PEARL SATIN )
- (A) — PROPRIETARY ALUMINIUM & CLEAR GLAZED BALUSTRADE SYSTEM. ( POWDERCOAT INTERPON D2525 ULTRIVA TITANIUM PEARL SATIN )
- (B) — PROPRIETARY ALUMINIUM FRAMED DOOR / WINDOW SYSTEM. ( POWDERCOAT INTERPON D2525 ULTRIVA TITANIUM PEARL SATIN )
- (C) — PAINTED CONCRETE & RENDERED BLOCKWORK WALLS IN 'SELECTED' COLOUR.
- (D) — PERFORATED ALUMINIUM FEATURE SCREEN TO FUTURE DETAILS. ( POWDERCOAT INTERPON D2525 ULTRIVA ANODIC BRONZE SATIN ) ( POWDERCOAT INTERPON D2525 ULTRIVA LUXE BRONZE PEARL )
- (E) — SUSPENDED TRELLIS INTERPRETIVE INSTALLATION TO PUBLIC ARTIST DETAILS OVER PEDESTRIAN LANE.
- (F) — FEATURE SUSPENDED ENTRANCE CANOPY.
- (G) — 'SELECTED' TILE / STONE CLADDING.
- (H) — METAL DECK SHEETING FOR PLANT ROOM SCREEN LAID HORIZONTALLY. (COLORBOND 'MONUMENT')
- (J) — FEATURE TEXTURED BAS RELIEF PANEL IN 'SELECTED' PAINT FINISH. PATTERN TO FUTURE DETAILS.
- (K) — FEATURE TIMBER LOOK 'BATTERN & PLANK' WALL + SOFFIT CLADDING TO FUTURE DETAILS.

- (1) — BASE COLOUR WHITE. ( LEXICON HALF - SW1G2 )
- (2) — BASE COLOUR GREY. ( MT EDEN - PN2A7 )
- (3) — BASE COLOUR BRONZE. ( BRONZE NATURAL )

ELEVATION 1

SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

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# ELEVATIONS
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ELEVATION 2

SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

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# ELEVATIONS
REV A

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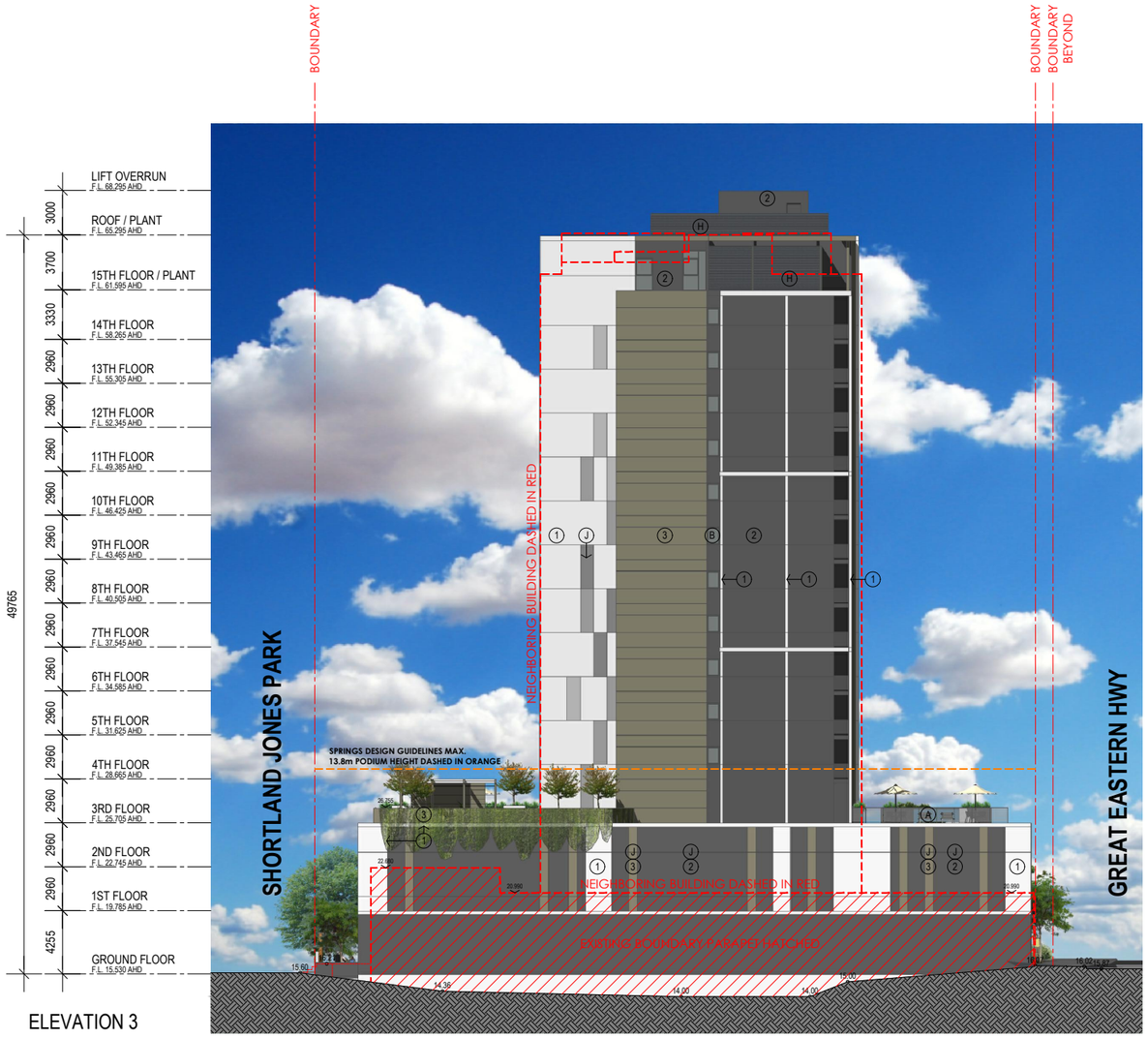


ELEVATION 3

## EXTERNAL FINISHES LEGEND

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SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

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# ELEVATIONS

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- (G) — 'SELECTED' TILE / STONE CLADDING.
- (H) — METAL DECK SHEETING FOR PLANT ROOM SCREEN LAID HORIZONTALLY. (COLORBOND 'MONUMENT')
- (J) — FEATURE TEXTURED BAS RELIEF PANEL IN 'SELECTED' PAINT FINISH. PATTERN TO FUTURE DETAILS.
- (K) — FEATURE TIMBER LOOK 'BATTERN & PLANK' WALL + SOFFIT CLADDING TO FUTURE DETAILS.

- (1) — BASE COLOUR WHITE. ( LEXICON HALF - SW1G2 )
- (2) — BASE COLOUR GREY. ( MT EDEN - PN2A7 )
- (3) — BASE COLOUR BRONZE. ( BRONZE NATURAL )

ELEVATION 4

SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

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# ELEVATIONS
REV A

# Lot 888, 2 Hawksburn Road,
## RIVERVALE. SPRINGS.

16 STOREY RESIDENTIAL DEVELOPMENT
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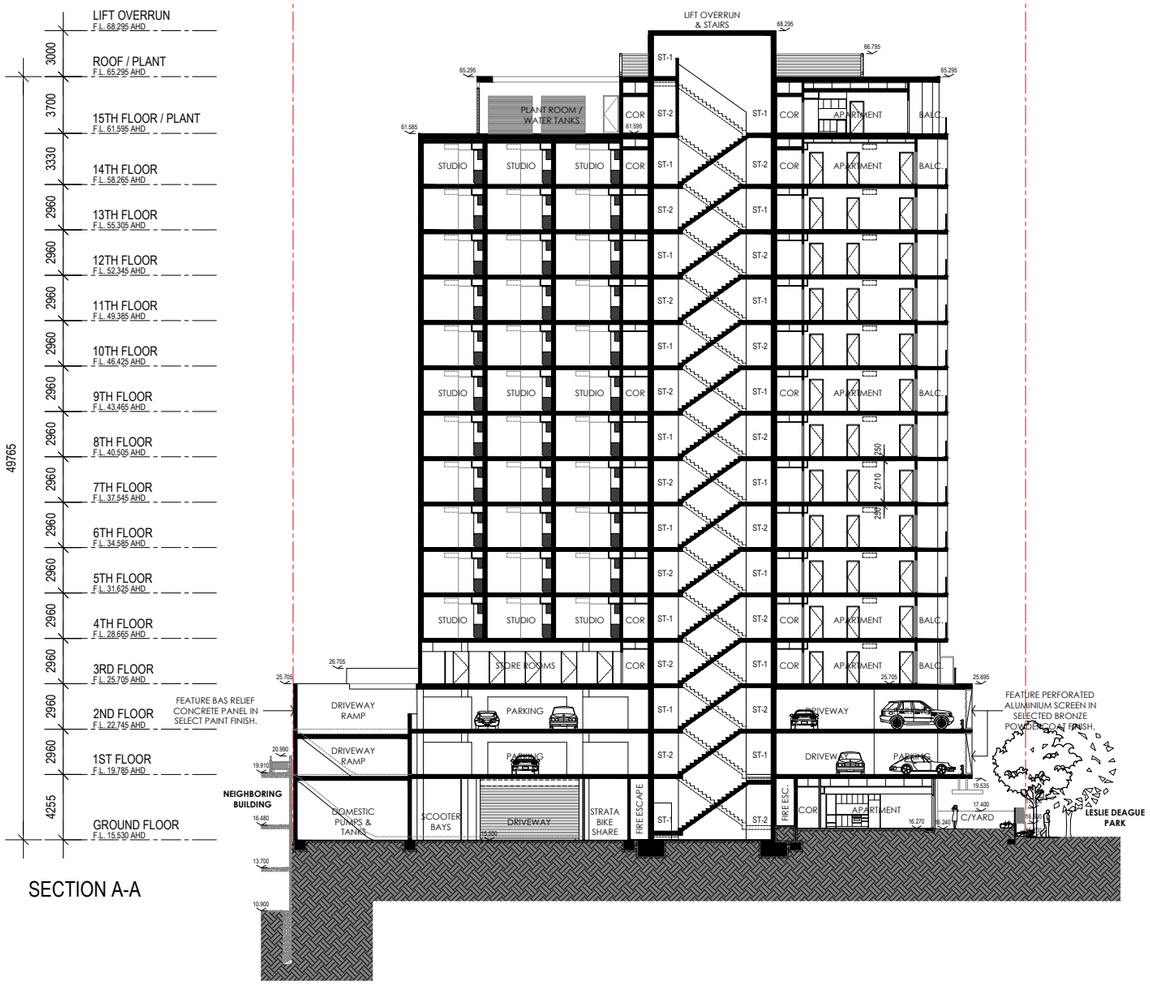
SK 11
15.05.2025




SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

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# SECTIONS
REV A

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## TYPE J

| | |
|---|---|
| 1 BED / 1 BATH | 50m² |
| APT No's | 405, 505, 605, 705, 805, 905, 1005, 1105, 1205, 1305, 1405. |
| BALC. AREA | 6m² |

## TYPE K

| | |
|---|---|
| 1 BED / 1 BATH | 51m² |
| APT No's | 406, 506, 606, 706, 806, 906, 1006, 1106, 1206, 1306, 1406. |
| BALC. AREA | 6m² |

## TYPE L

| | |
|---|---|
| 2 BED / 1 BATH | 68m² |
| APT No's | 404, 504, 604, 704, 804, 904, 1004, 1104, 1204, 1304, 1404. |
| BALC. AREA | 7m² |

## TYPE F

| | |
|---|---|
| 1 BED / 1 BATH | 51m² |
| APT No's | 301, 407, 507, 607, 707, 807, 907, 1007, 1107, 1207, 1307, 1407. |
| BALC. AREA | 6m² (3RD - 11m²) |

## TYPE G

| | |
|---|---|
| 1 BED / 1 BATH | 50m² |
| APT No's | 302, 408, 508, 608, 708, 808, 908, 1008, 1108, 1208, 1308, 1408. |
| BALC. AREA | 6m² (3RD - 11m²) |

## TYPE C

| | |
|---|---|
| STUDIO | 36m² |
| APT No's | 403, 503, 603, 703, 803, 903, 1003, 1103, 1203, 1303, 1403. |
| BALC. AREA | 7m² |

## TYPE H

| | |
|---|---|
| 1 BED / 1 BATH | 51m² |
| APT No's | 303, 409, 509, 609, 709, 809, 909, 1009, 1109, 1209, 1309, 1409. |
| BALC. AREA | 6m² (3RD - 11m²) |

## TYPE B

| | |
|---|---|
| STUDIO | 34m² |
| APT No's | 402, 502, 602, 702, 802, 902, 1002, 1102, 1202, 1302, 1402. |
| BALC. AREA | 6m² |

## TYPE A

| | |
|---|---|
| STUDIO | 34m² |
| APT No's | 401, 501, 601, 701, 801, 901, 1001, 1101, 1201, 1301, 1401. |
| BALC. AREA | 7m² |

RED HATCH INDICATES 3.6m² for SPRINGS RIVERVALE DESIGN GUIDELINES compliance.

3.3.1 BALCONIES
- For residences 90sqm or less, a minimum balcony of 3.6sqm must be provided with a minimum dimension of 1.8m.

Note: A/C placement will not impede 3.6m² balcony clear zone.

SCALE 1 : 100 @ A1
SCALE 1 : 200 @ A3

0 2.5 5 10m

NORTH

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# APARTMENT PLANS

REV A

# Lot 888, 2 Hawksburn Road,

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## TYPE D

1 BED / 1 BATH 50m²

APT No's 101.
C/YARD AREA 25m²

## TYPE E

1 BED / 1 BATH 55m²

APT No's 102.
C/YARD AREA 36m²

## TYPE Q

2 BED / 2 BATH 75m²

APT No's 1501.

BALC. AREA 20m²

## TYPE P

2 BED / 2 BATH 73m²

APT No's 1502.

BALC. AREA 15m²

## TYPE M

2 BED / 2 BATH 73m²

APT No's 1503.

BALC. AREA 16m²

## TYPE N

2 BED / 2 BATH 73m²

APT No's 1504.

BALC. AREA 22m²

RED HATCH INDICATES 3.6m² for SPRINGS RIVERVALE DESIGN GUIDELINES compliance.

3.3.1 BALCONIES
- For residences 90sqm or less, a minimum balcony of 3.6sqm must be provided with a minimum dimension of 1.8m.

Note: A/C placement will not impede 3.6m² balcony clear zone.

SCALE 1 : 100 @ A1
SCALE 1 : 200 @ A3

0 2.5 5 10m

NORTH

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# APARTMENT PLANS

REV A

# Lot 888, 2 Hawksburn Road,

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CROSS VENTILATION

SINGLE ASPECT CROSS VENTILATION

PREVAILING WINDS

## NATURAL & CROSS VENTILATION

- NATURAL VENTILATION TO EACH APARTMENT.
- DUAL ASPECT APARTMENTS ARE CROSS VENTILATED.
- SINGLE ASPECT APARTMENTS DO NOT EXCEED 3:1 DEPTH VS CEILING HEIGHT.
- FACADE ARTICULATION FOR IMPROVED PREVAILING WIND ACCEPTANCE.
- LIMIT OPENINGS TO GREAT EASTERN HWY FOR ACOUSTIC PROTECTION.

## SOLAR & DAYLIGHT ACCESS

- NATURAL DAYLIGHT TO EACH APARTMENT.
- CENTRAL CORRIDOR RECEIVES DAYLIGHT ACCESS.
- MAXIMIZED NORTHERN ASPECT APARTMENTS.
- MINIMUM 2HR SOLAR ACCESS BETWEEN 9AM & 3PM TO 74 APARTMENTS (68.5%).
- BALCONY SHADING REDUCES SOLAR GAIN DURING SUMMER MONTHS.

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SCALE 1 : 100 @ A1
SCALE 1 : 200 @ A3

0 2.5 5 10m

NORTH

# SOLAR & DAYLIGHT ACCESS + NATURAL & CROSS VENTILATION

REV A

**Lot 888, 2 Hawksburn Road,**
**RIVERVALE. SPRINGS.**

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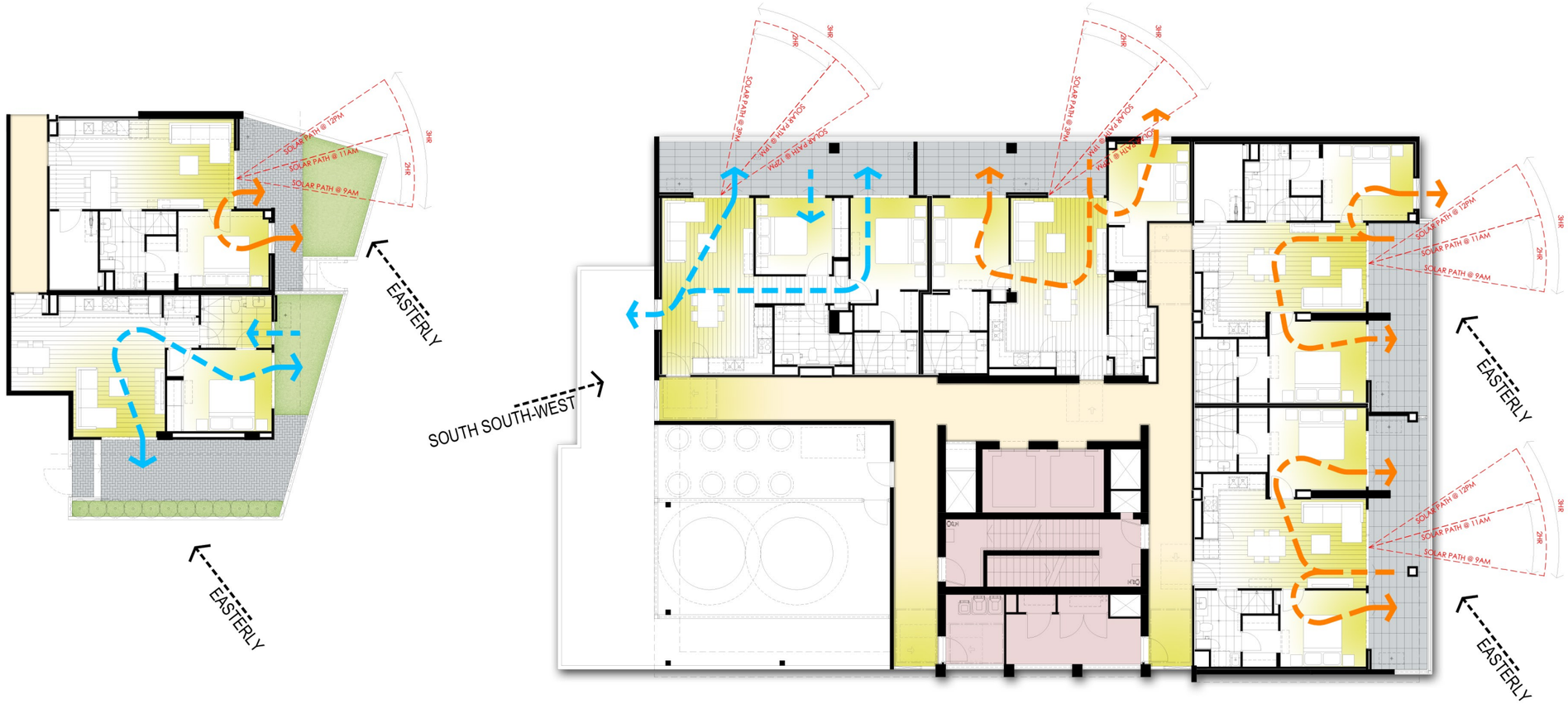


CROSS VENTILATION

SINGLE ASPECT CROSS VENTILATION

PREVAILING WINDS

SCALE 1 : 100 @ A1
SCALE 1 : 200 @ A3

0 2.5 5 10m

NORTH

## NATURAL & CROSS VENTILATION

- NATURAL VENTILATION TO EACH APARTMENT.
- DUAL ASPECT APARTMENTS ARE CROSS VENTILATED.
- SINGLE ASPECT APARTMENTS DO NOT EXCEED 3:1 DEPTH VS CEILING HEIGHT.
- FACADE ARTICULATION FOR IMPROVED PREVAILING WIND ACCEPTANCE.
- LIMIT OPENINGS TO GREAT EASTERN HWY FOR ACOUSTIC PROTECTION.

## SOLAR & DAYLIGHT ACCESS

- NATURAL DAYLIGHT TO EACH APARTMENT.
- CENTRAL CORRIDOR RECEIVES DAYLIGHT ACCESS.
- MAXIMIZED NORTHERN ASPECT APARTMENTS.
- MINIMUM 2HR SOLAR ACCESS BETWEEN 9AM & 3PM TO 74 APARTMENTS (68.5%).
- BALCONY SHADING REDUCES SOLAR GAIN DURING SUMMER MONTHS.

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# SOLAR & DAYLIGHT ACCESS + NATURAL & CROSS VENTILATION

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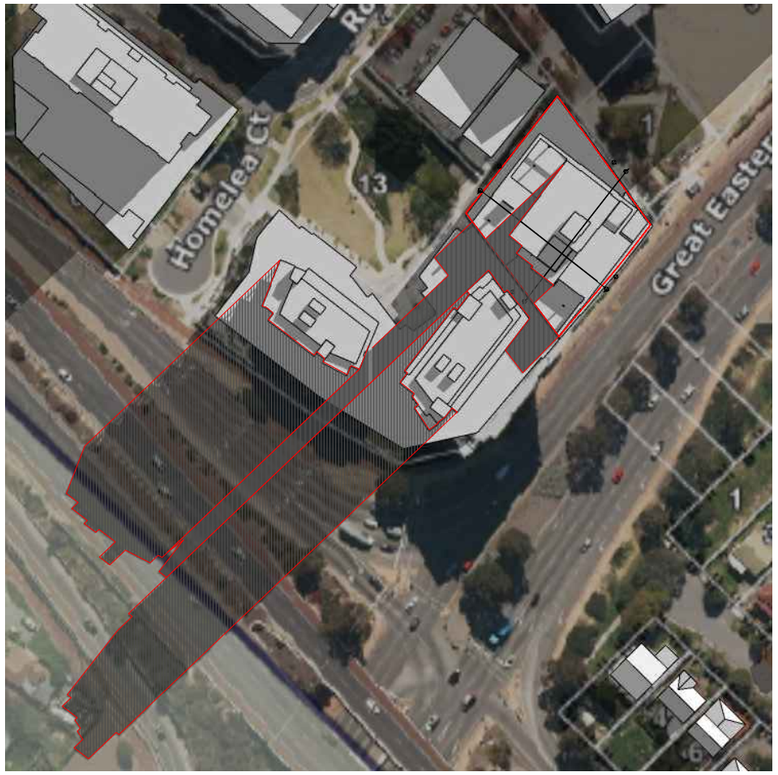
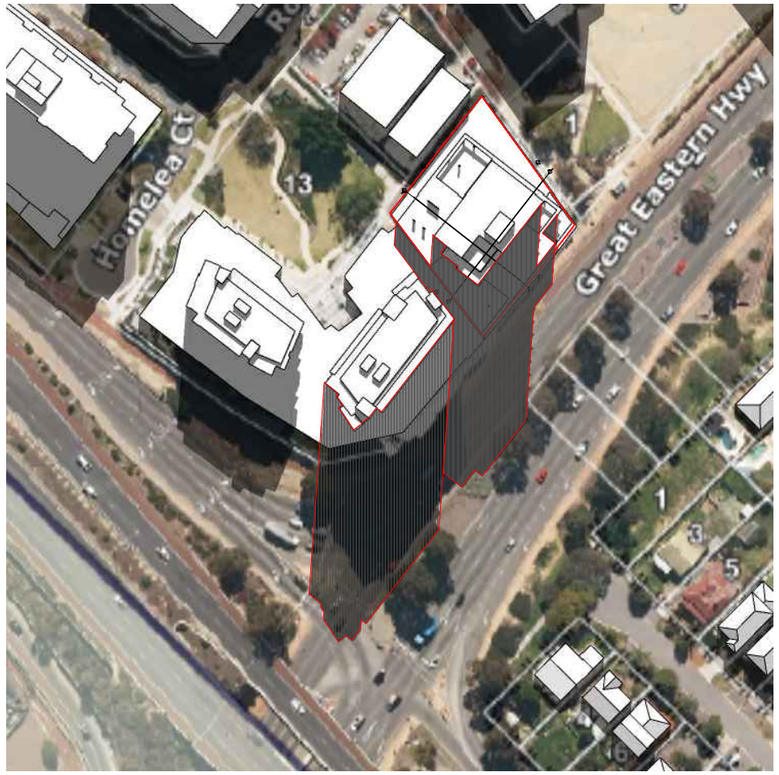



WINTER SOLSTICE
JUNE 21st @ 9AM




WINTER SOLSTICE
JUNE 21st @ 12PM

WINTER SOLSTICE
JUNE 21st @ 3PM

SCALE 1 : 1000 @ A1
SCALE 1 : 2000 @ A3

0 25 50 100m

NORTH

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# SHADOW DIAGRAMS

REV A

**Lot 888, 2 Hawksburn Road,**
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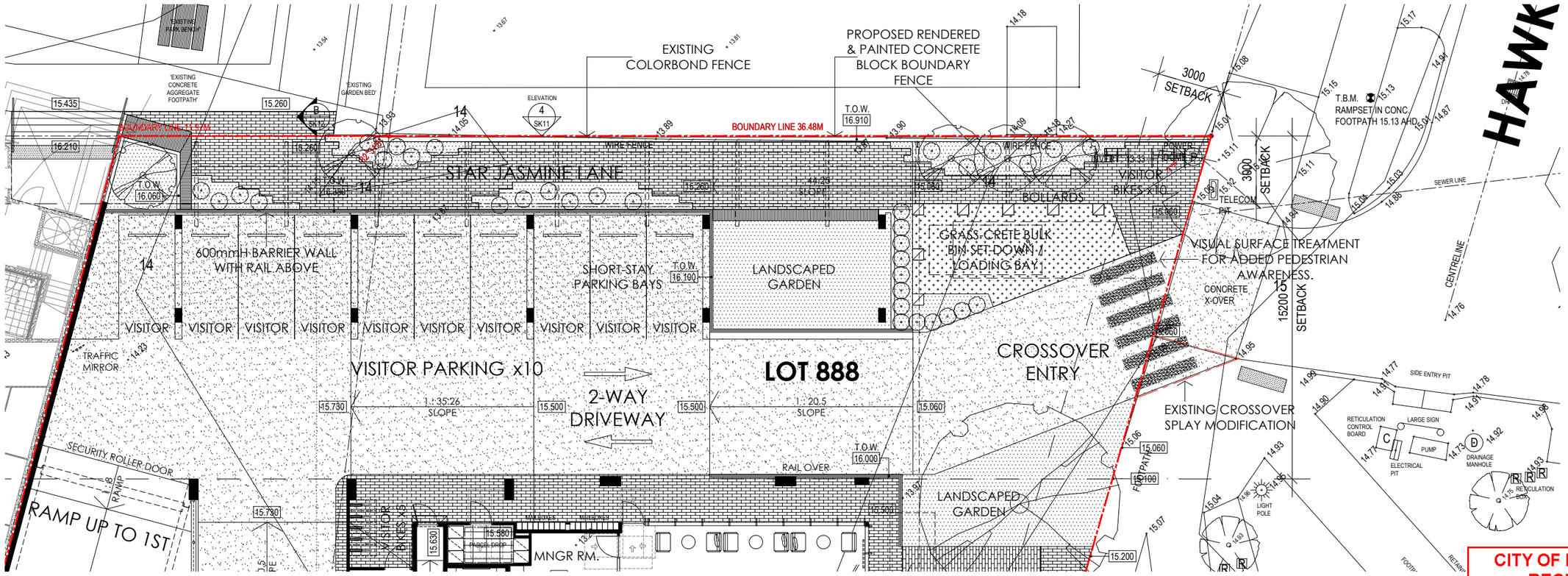


PEDESTRIAN EASEMENT - ARCHITECTURAL LEVELS

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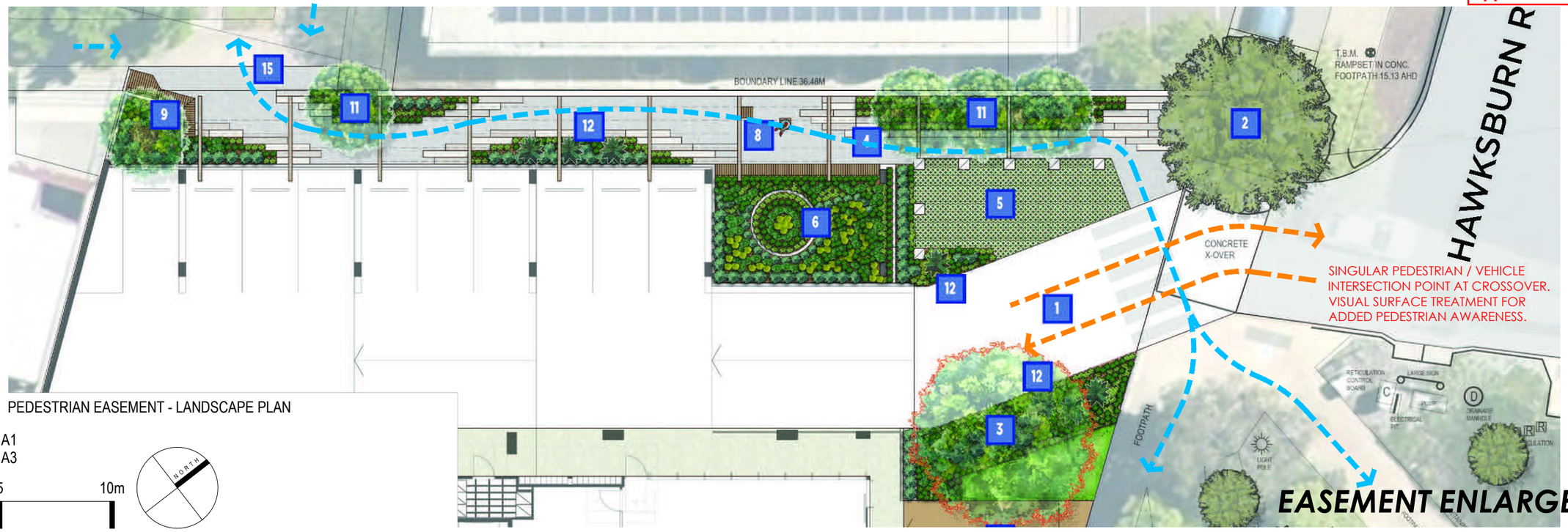


PEDESTRIAN EASEMENT - LANDSCAPE PLAN

SCALE 1 : 100 @ A1
SCALE 1 : 200 @ A3

0 2.5 5 10m

NORTH

# EASEMENT ENLARGED PLAN

REV A

**Lot 888, 2 Hawksburn Road,**
**RIVERVALE. SPRINGS.**

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**2 (LOT 888) HAWKSBURN ROAD, RIVERVALE**

**108 MULTIPLE DWELLINGS**

**19 June 2025**

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pTS TOWN PLANNING

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# Introduction

This Development Application Report has been prepared for Rowe Avenue Pty Ltd in support of an application for 108 multiple dwellings at Lot 888 (No. 2) Hawksburn Road Rivervale (the subject site).

The proposed development involves 108 residential dwellings within a 16 storey building (ground and above). The dwellings include 33 studio dwellings, 60 one-bedroom dwellings and 15 two-bedroom dwellings. The development accommodates 107 car parking bays (including 10 visitor bays), 30 motorcycle bays and 153 bicycle bays (108 resident 25 visitor bays and 20 residential shared bays) accessed from Hawksburn Road.

A 3 metre wide public pedestrian connection is proposed along the northern boundary of the site connecting Shortland Jones Park to Hawksburn Road and Leslie Deague Park.

This report will address the relevant matters pertinent to the proposal, including:

- The site details.
- The planning framework.
- The proposed development.
- An assessment under the planning framework.
- Consideration of other factors including, but not limited to acoustic, landscaping, traffic and waste.

## Planning Approvals Required

The proposed development has an estimated cost of $28.75 million and the Applicant has elected for the application to be determined by the Development Assessment Panel (DAP).

This application requires the determination of the Metro Inner Development Assessment Panel.

## Key Project Parameters

| | |
|---|---|
| Metropolitan Region Scheme | Urban |
| Local Planning Scheme No. 2 | Special Development Precinct |
| Number of Dwellings | 108 dwellings |
| Plot Ratio | 2.21:1 - 5226m² |
| Construction value | $28.75 million |

## Project Team

| Discipline | Company |
|---|---|
| Landowner | Rowe Avenue Pty Ltd |
| Development Manager | Finbar |
| Architect | Chang Architects Pty Ltd |
| Landscape Architect | EPCAD |
| Town Planning | PTS Town Planning |
| Traffic | PJA |
| Acoustic | E-Lab Consulting |
| ESD | Cundall |
| Waste Management | Dallywater Consulting |

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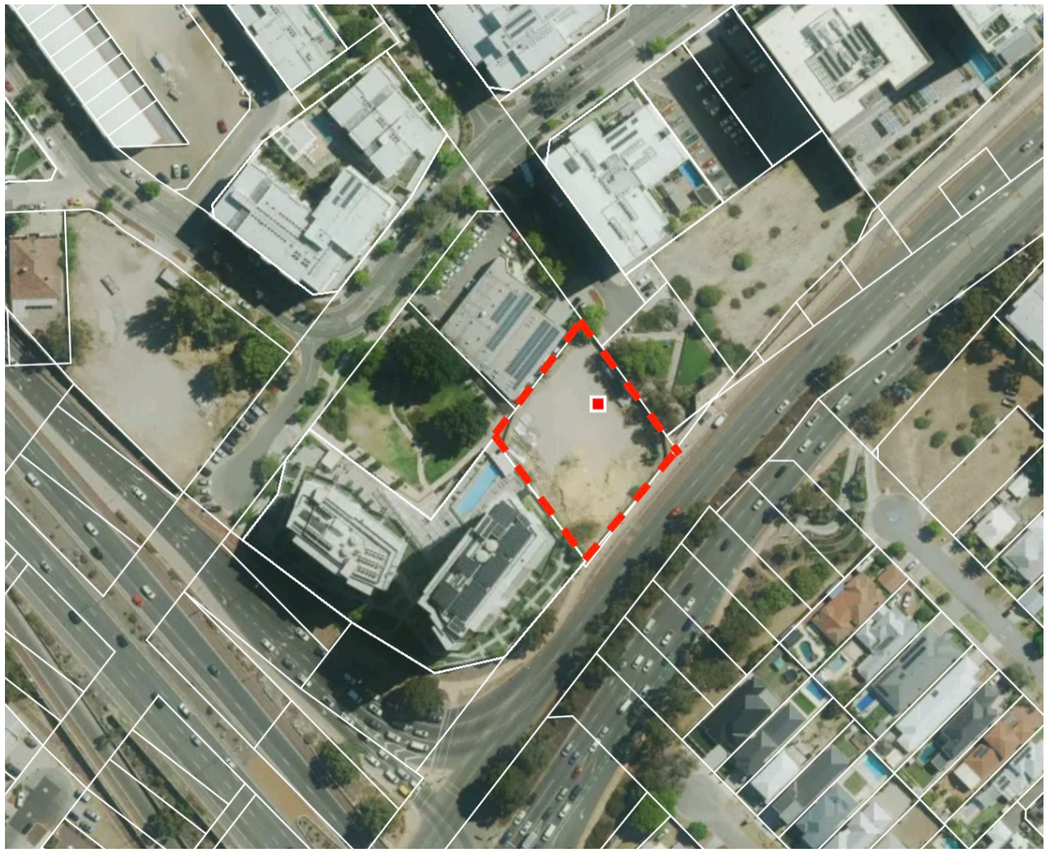
# Subject Site

## Site Location and Property Description

The subject site is described as Lot 888 (No. 2) Hawksburn Road, Rivervale contained on Certificate of Title Volume 2848 Folio 461 and Deposited Plan 69732. The site has a total land area of 2370m$^2$ and maintains a frontage to Hawksburn Road and a frontage to Great Eastern Highway.

The site is owned by Rowe Avenue Pty Ltd and is subject to the following limitations, interests, encumbrances and notifications. A copy of the current Certificate of Title is included in Appendix A.

| Number | Type | Details |
|---|---|---|
| G to F | Covenant Burden | No vehicle access from Great Eastern Highway |
| N to M | Covenant Burden | No vehicle access from Great Eastern Highway |
| L956449 | Notification | Main Roads notification that Lot affected by Transport Noise |
| L956519 | Notification | Main Roads notification that Lot affected by Transport Noise |
| L968707 | Caveat | Agreement with Western Australian Land Authority |
| M441737 | Caveat | Agreement with Western Australian Land Authority |



Aerial of site and surrounds

## Site Improvements

The subject site is vacant and does not contain any mature trees.

The site is accessed via one crossover from Hawksburn Road. Access to Great Eastern Highway is not permitted. (Covenant Burden).

## Heritage

The subject site is not listed on the State Heritage Register and is not listed as a Heritage Place under the City of Belmont Local Planning Scheme No. 15 (LPS15).

## Contamination

A search of the contaminated site database does not identify the site as a contaminated site.

## Bushfire Prone Planning

The subject site is not located within a bushfire prone area.

## Site Context

The surrounding area is characterized by mixed use development.

Hawksburn Road is a cul-de-sac from Rowe Avenue. Rowe Avenue provides a connection through the precinct. To the southeast of the site is Great Eastern Highway.

To the north-west of the site is Shortland Jones Park with a two storey commercial building to the north between Shortland Jones Park and Hawksburn Road.

To the east of the site is Leslie Deague Park with a vacant site (awaiting development further east). To the north-east of the site is an 8 storey mixed use building.

To the south-west of the site is a 16 storey residential building.

The subject site has good access to services and recreation, with service facilities located along Great Eastern Highway, within an easy walk from the site.

The site is serviced by an efficient local and district road network with the site in close proximity to the Graham Farmer Freeway and Great Eastern Highway. The site has good access to public transport with a high frequency bus route along Great Eastern Highway and access to the train network via the Burswood Station. The bus stops along Great Eastern Highway are located in close proximity to the site (adjacent Leslie Deague Park).

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# Planning Framework

## Planning and Development (Local Planning Schemes) Regulations 2015 (Regs)

Clause 67 of Schedule 2 of the Planning Regulations outlines the matters to which the determining authority is to have due regard when considering an application for development approval.

## Metropolitan Region Scheme

The subject site is zoned ‘Urban’ under the Metropolitan Region Scheme (MRS). The site adjoins a Primary Regional Road Reservation (Great Eastern Highway).

## State Planning Policy 5.4 Road and Rail Noise

SPP 5.4 seeks to minimise the adverse impact of road and rail noise on noise-sensitive land-use and/or development within the specified trigger distance of strategic freight and major traffic routes and other significant freight and traffic routes. It is noted that Graham Farmer Freeway is a Primary Freight Road.

## State Planning Policy 7.0 Design of the Built Environment

The policy identifies the principles to address design quality and built form outcomes. The principles include: Context and character, Landscape quality, Built form and scale, Functionality and build quality, Sustainability, Amenity, Legibility, Safety, Community and Aesthetics.

## State Planning Policy 7.2 Residential Design Codes Volume 2 - Apartments

State Planning Policy 7.3 – R-Codes Volume 2 Apartments (R-Codes) places an increased focus on improving design outcomes for apartments, mixed use developments and activity centres. The R-Codes is a ‘performance-based’ policy where applications for development approval are to demonstrate that the design achieves the Objectives listed for each of the policy’s element objectives.

## City of Belmont Local Planning Scheme No. 15

The subject site is zoned Special Development.  The Special Development Zone is intended to allow for the development of predominantly residential precincts which also allows for a mix of varied but compatible supporting land uses such as offices, showrooms and eating establishments which do not generate nuisances detrimental to the amenity of the precincts’ residents. Buildings should be of a very high standard of architectural design.

The site is within the ‘The Springs’ (generally bound by Graham Farmer Freeway, Great Eastern Highway, Brighton Road and the Swan River, Rivervale) Special Development Precinct.

The site is subject to Special Control Area DA 11 (SCA11) and Development Contribution Area No.1 (DCA1).  SCA11 requires an Approved Structure Plan to guide development.

The Development Contribution has been paid by Landcorp/Development WA and therefore no development contributions should be payable as a condition of approval.

## Springs Structure Plan

The Springs Structure Plan identifies the site within Precinct 2 being the Great Eastern Highway Area.

## Local Planning Policies

The key planning policies associated with the development on the subject site include:

- LPP 07 - Springs Design Guidelines.
- LPP 11 - Public Art Contribution.

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# Proposed Development

This application seeks approval for 108 residential dwellings within a 16 storey building (ground and above). The dwellings include 33 studio dwellings, 60 one bedroom dwellings and 15 two-bedroom dwellings. The development accommodates 107 car parking bays (including 10 visitor bays), 30 motorcycle bays and 153 bicycle bays (108 resident 25 visitor bays and 20 residential shared bays).

The development particulars for the proposed development are summarised in the following table.

| Level | Description |
|---|---|
| Ground | • A 3 metre wide public pedestrian connection (Star Jasmine Lane) along the northern boundary of the site connecting Shortland Jones Park to Hawksburn Road and Leslie Deague Park. The public pedestrian connection will be subject to an easement<br>• 2 one-bedroom dwellings (including 1 with a storeroom)<br>• Residential lobby and meeting rooms<br>• Vehicle access from Hawksburn Road<br>• 10 residential car parking visitor bays<br>• 11 motorcycle (scooter) bays<br>• 20 residential share bicycle bays<br>• 25 bicycle visitor bays (10 adjacent the vehicle entrance, 10 located to the south-east of the residential lobby and 5 located near the visitor parking)<br>• Loading zone<br>• 3 residential car parking bays<br>• Bin store and plant<br>• Deep soil zone 324m$^2$ |
| First Floor | • 46 car parking bays<br>• 9 motorcycle (scooter) bays<br>• 18 residential storerooms |
| Second Floor | • 48 car parking bays<br>• 10 motorcycle (scooter) bays<br>• 18 residential storerooms |
| Third Floor | • 3 one bedroom dwellings (includes storerooms in each dwelling)<br>• Residential amenities including gym, lounge, pickle ball court, cabana and BBQ area<br>• 23 residential storerooms |
| Fourth to Fourteenth Floor | • 3 studio dwellings on each level<br>• 5 one bedroom dwellings on each level<br>• 1 two bedroom dwelling on each level<br>• 4 residential storerooms on each level within dwellings |
| Fifteenth Floor | • 4 two bedroom dwellings<br>• 1 residential storeroom within a dwelling<br>• Plant |
| Roof | • Plant<br>• Lift overrun<br>• PV cells |

The development plans are included in Appendix B.

## Landscape Design

The Landscape Design is included in Appendix C.

## Design Review

The design was presented to the City of Belmont Design Review Panel (DRP) on 27 February 2025.

The Panel identified that whilst in principle the Panel supports the 16-storey height of the building, members expressed concern about the lack of information provided for this first design review. Further information on the pedestrian easement and flow through the site, considering safety with vehicle movement, is required. Engagement of a landscape architect, the presentation of the building to Great Eastern Highway, reconsideration of the ground floor apartments and clearer documentation of the site/ground floor planning are all items requiring attention.

The following table provides the DRP's recommendations and the Applicant's response.

| | DRP Recommendations | Development Response |
|---|---|---|
| Context and Character | • The Panel appreciated the local area analysis that provided a clear understanding of the broader context and character of the location.<br>• The Panel requested more information on the context on how this building and the adjacent Spring View Towers relate to one another by providing appropriate elevations and plans.<br>• The Panel expressed their support for the incorporation of a pedestrian easement to provide public access. The Panel requested further information on how the building connects to Leslie Deague Park to the north and Shortland Jones Park to the west by providing more information on larger scale plans, along with associated levels and the anticipated management expectations. The Panel also requested the location of the pedestrian easement be reconsidered in the context of that information. | • Noted<br>• The plans include the context of the building relative to the adjoining site in plans SK01 to SK07 and SK10.<br>• SKD01 provides a detail of the pedestrian connection. The pedestrian connection will be an easement and therefore managed as part of the strata scheme. The easement has been amended to provide a direct connection to Hawksburn Road. |

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| | DRP Recommendations | Development Response |
|---|---|---|
| Context and Character | • The Panel is concerned about the poor presentation to Great Eastern Highway (GEH) along with the associated safety considerations, especially from the pedestrian point of view, and considers that significant improvements need to be made to this interface with GEH.<br>• The Panel noted that the solely residential nature of the development has potential design implications in the context of the broader mixed use precinct requirements, and there would potentially be benefits in better activating the ground floor through the incorporation of alternative ground floor uses such as a gym or café (instead of two proposed small residential apartments). This would also potentially improve the amount of passive surveillance in the context of the adjacent park. | • The buildings along Great Eastern Highway generally provide a podium facade along Great Eastern Highway, which is required for both car parking and to address noise mitigation. The proposed development continues this built form and therefore consistent with the streetscape.<br>• The development is a residential development and it is not considered that commercial tenancies would be an attractive commercial proposition for the site. It is considered a better outcome for two residential dwellings rather than commercial tenancy which may have limited commercial appeal. The limited commercial appeal is likely to see any tenancy vacant for extended periods of time. The residential dwellings as well as the dwellings on the upper floors provide passive surveillance of the adjacent park. |
| Landscape Quality | • The Panel requires more information on landscaping, including a suitably detailed landscape plan, plus more details in relation to deep soil areas and communal open space including locations and square meterage and they recommend engaging a landscape architect.<br>• The Panel noted the opportunity for the verge landscaping and pedestrian paths to better align and relate to the existing strong geometry in Leslie Deague Park. | • The landscape designs are included in Appendix C. EPCAD has been appointed to the proposed development. The landscape plans indicate the 10% deep soil zones as well as the tree planting, which meets the requirements of the R-Codes.<br>• The pedestrian connection and entrances align with the footpaths on Leslie Deague Park including the footpath along the south-western side of the park. |

| | DRP Recommendations | Development Response |
|---|---|---|
| Built Form and Scale | • The Panel noted that the studio apartments seem below R-Codes Volume 2 minimum requirements and suggested considering raising the ceiling heights of apartments generally to provide more generous volumes (apart from ground floor and level 15).<br>• The Panel expressed concerns about the potential impact of heavy shading over the park to the east of the building and requested shade diagrams in relation to public realm spaces as well as comparative shading plans relative to the approved DA and a compliant scheme.<br>• The Panel expressed concern about the 4.25 metre ground floor, floor to floor height due to proposed use by service vehicles. This was stated in the context that medium size service trucks have been shown on the plans and the Australian Standards require a height clearance of 4.5 metres for access to service areas by any vehicles larger than a small truck.<br>• The Panel requested further information on the relationship and distance between this building and the Spring View Tower.<br>• The Panel supports the 16-storey height of the building in principle, subject to this not having a negative impact on adjoining properties, including the public open space, and that there was an expectation that the extent of any discretion being sought would be balanced by a proportionate improvement to the design quality of the building. They also requested further information and documentation to better understand these implications. | • The studio apartments provide a further residential product adding to the residential opportunities on the site. The studio apartments are 34-36m$^2$ in area (37m$^2$ under the R-Codes). The plans provide the furniture layout which is functional for what would generally be a single person residence. SK089-Sk11 indicated the floor to soffit height of 2710mm (section SK12).<br>• SK17 indicates the shadow at 9am, 12 noon and 3pm on 21 June which shows the proposed development not overshadowing Leslie Deague Park.<br>• The ground floor heights enable the City's Waste truck access as noted in the TIA.<br>• The plans include further information of the relationship of the proposed development to the adjoining property.<br>• Noted. The 16 storeys is consistent with the built form established along Great Eastern Highway and being a southern located building will have the least impact on adjoining properties as a result of shadow. The built form is an appropriate response to the site and will provide much needed residential development with a variety of dwelling types. |

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| Functionality and Build Quality | • The Panel requested reconsideration of sheet metal roofing over car bays to improve views down from the apartments and communal open space, possibly incorporating landscaping.<br>• The Panel requested further information on the swept paths and how they will work in detail for the service trucks, primarily at the corners.<br>• The Panel requested further information on bike parking, specifically whether public and private bike parking, including rental bikes, is shared or in separate areas, noting that the Panel do not support the former.<br>• The Panel requested further information on the three points of pedestrian entry, expressing concern about the Northern entry being through the driveway and safety implications to do with conflicts between pedestrian and car movements and their associated swept paths, noting that there does not appear to be any specific provision for, or denotation of, pedestrian pathways within the driveway zone. | • Noted. The podium provides landscaping and the metal roof is an appropriate building material. The dwellings generally look over the landscape podium rather than the metal roof.<br>• Provided in the Transport Impact Assessment.<br>• Residential bicycle bays are provided within each of the storerooms. 25 residential visitor bays are provided at ground level and 20 residential shared bays.<br>• The residential lobby is accessed from Leslie Deague Park, which is an appropriate response given the very limited street frontage in which to gain access. |
| Sustainability | • The Panel noted the absence of any ESD report and expressed their concern, considering that sustainability should be hardwired into the design of all buildings from the earliest concept stage.<br>• The Panel suggested incorporating LED lighting, all electric power, EV charging, PV cells on the roof, appropriate shading systems, and provision for communal battery backup systems.<br>• The Panel requested further information on materiality including the use of low carbon materials to reduce the carbon footprint.<br>• The Panel recommended considering the addition of naturally ventilated corridors. The provision of ventilation diagrams would also be helpful. | • An ESD consultant is part of the design team and a Sustainability Report is included in Appendix G.<br>• All lighting will be LED or low energy, flicker-free and with no glare, 15kW PV system and provisions that facilitate for future installation with an additional 20% capacity to the substation above standard modelled load requirements for the development, a demand load management system, and pre-laid proximate conduits to carbays.<br>• Materiality - refer to Sustainability report.<br>• Ventilation diagrams included. |

| | DRP Recommendations | Development Response |
|---|---|---|
| Amenity | • The Panel requested further details on the connection through to Shortland JonesPark and cross-traffic from east to west.<br>• The Panel suggested reconsidering the location of the skip bin to move it away from such a prominent location and separate it from the main pedestrian connection through the site.<br>• The Panel suggested reconsidering the ground floor apartments as shown, including considering their replacement with alternative more active mixed uses such as a gym or cafe. But if not, the Panel suggests considering additional amenities, safety and privacy considerations for the ground floor apartments situated under the car parks. Such measures should include consideration of the finished floor levels on these apartments as compared to the adjacent park.<br>• The Panel suggested relocating the air-conditioners from the balconies to a more suitable location.<br>• The Panel suggested increasing storage for apartments as they are currently below R-Codes Volume 2 standards.<br>• The Panel suggested more consideration of the location of the letter boxes. | • The plans indicate the 3 metre wide access which will be landscaped and will include public art.<br>• The bulk bin setdown area will be used infrequently and there is limited locations where it can be placed given the very small street frontage to hawksburn Road.<br>• The development is a residential development and it is not considered that commercial tenancies would be an attractive commercial proposition for the site. It is considered a better outcome for two residential dwellings rather than commercial tenancies which may have limited commercial appeal. The residential dwellings have a floor level generally about 1 metre above the levels of the park.<br>• Noted, however, the provision of condensers on the balconies is an appropriate design and cost consideration.<br>• The store rooms are 4.5m$^2$ in area, which is above the R-Codes.<br>• The mail boxes are appropriately located to service the development. |
| Legibility | • The Panel requested further information on how pedestrians enter the building from any of the three main points of entry.<br>• The Panel requested more information and further consideration be given to the location of pedestrian facilities and the flow of pedestrians through the site and cross-traffic from east to west.<br>• The Panel looks forward to seeing how signage (if any) and lighting is incorporated into the design to enhance wayfinding and legibility, particularly associated with the public easement. | • A pedestrian path is located on the boundary of the park with the subject site and therefore will provide pedestrian access to the site.<br>• The plans have been amended so that pedestrians exit the pedestrian connection at the Hawksburn Road verge rather than across the driveway.<br>• The lighting will be addressed as part of the public art response. |

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| | DRP Recommendations | Development Response |
|---|---|---|
| Safety | • The Panel suggested that greater consideration needs to be given to passive surveillance to create a safer environment as applicable to the whole of the ground floor. Consideration should be given to alternative uses that may provide better activation and safety. | • Noted, however, commercial tenancies are not being considered. |
| | • The Panel emphasized the need for appropriate swept paths for trucks. This includes careful consideration of how service trucks interact with other vehicles at the interface with the vehicular ramp where sight distance is constrained. | • Noted refer to transport Impact Assessment. The site has a very limited street frontage in which to provide access for all users. |
| | • The Panel requested further information regarding the pedestrian pathway through the site, noting that its current diagonal alignment contains blind corners, which the Panel does not support. It also traverses an area with multiple conflicting activities where light glare in the mornings and shadow in the evenings may impact on safety outcomes. | • A detail is contained in SKD01. |
| | • The Panel suggested incorporating co-working spaces and potentially a gym or café on the ground floor to better activate the ground floor frontages. | • Noted, however, commercial tenancies are not being considered. It is not in the DRP's remit to require different land uses. |
| | • The Panel requested moving the visitor parking away from the vehicle entrance to facilitate improved pedestrian access and safety and to reduce vehicular conflicts. | • The residential parking is located away from the entrance at ground level. |

| | DRP Recommendations | Development Response |
|---|---|---|
| Community | • The Panel supports the lower price point apartments. | • Noted. |
| | • The Panel looks forward to receiving more information about the public art proposal. | • The public art proposal will be developed post approval and will be focused on the pedestrian connection. |
| | • The Panel supported the communal area on the podium roof. However, further information was requested regarding the metrics. Comment was also made that there appeared to be a lack of soft landscape and any considered program for this space. | • Refer to landscape plans. |
| | • Comment was also made that if the communal open space was extended around to the GEH frontage that this would significantly increase the breadth of this offering, addressing variety of different diurnal (solar and wind) conditions, at the same time as providing at least some degree of passive surveillance over this frontage. | • The podium communal area includes a communal area to Great Eastern Highway. |
| | • The Panel generally does not support façade treatments as public art contributions and requests that the public benefits derived from the artistic treatment of the façade be illustrated or that a public art feature be considered adjacent to the public thoroughfare and park and potentially visible from GEH. | • The public art proposal will be developed post approval and will be focused on the pedestrian connection. |
| Aesthetics | • The Panel expressed concerns regarding the uncertainty of outcomes from an aesthetic point of view due to the lack of information provided, including 3-D renders and more detailed material and colour palettes. | • SK08 to SK11 provide the elevation detail which includes articulation and a range of materials and finishes. |
| | • The Panel requested consideration of improving the façade to enhance the streetscape of Great Eastern Highway, aligning with the Great Eastern Highway Corridor draft strategy. | • SK09 provides the elevation to Great Eastern Highway which includes articulation and a range of materials and finishes. |

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# Planning Assessment

## Metropolitan Region Scheme (MRS)

The subject site is appropriately zoned Urban under the MRS for the proposed residential development. The proposed development does not impact or provide access from the Primary Regional Road reservation (Great Eastern Highway).

## State Planning Policy 5.4 Road and Rail Noise

Appendix F provides an Acoustic Assessment that considers the provisions of SPP5.4.

## State Planning Policy 7.0 Design of the Built Environment (SPP7.0)

| Principle | Design Response |
|---|---|
| Context and Character | • The area including the Springs, Burswood Station Precinct and Burswood Peninsula and Belmont Park include high density residential development at scales including 20 to 30 storeys.<br>• The locality includes a 9 to 16 storey residential building to the west and an approved 48.9 metre building to the east. To the north are lower built form. The 16 storeys fits within the context along Great Eastern Highway.<br>• The site has good access to public transport including high frequency bus routes and is within walking distance to the Burswood Station.<br>• The site has good access to open space within the precinct including the proposed provision of a pedestrian connection on the site linking Shortland Jones Park to Hawksburn Road and Leslie Deague Park.<br>• Service provision is located within the precinct and along Great Eastern Highway.<br>• The proposed development considers its context in terms of the built form on adjoining sites and the connection to the local open space. |
| Landscape Quality | • Landscaping is a key component of the proposed development with the introduction of the public pedestrian connection linking Shortland Jones Park to Hawksburn Road and Leslie Deague Park.<br>• The proposed development meets the deep soil requirements of the planning framework.<br>• Landscaping is provided throughout the development to soften the car parking adjacent the new public connection and to connect with Leslie Deague Park.<br>• The landscaping includes both soft and hard landscaping, 2 large trees, one medium tree and 14 small trees.<br>• The communal areas on site are provided with varying functions, the third floor level is provided with a residents lounge, courtyard and BBQ area and pickle ball court. The communal area is provided with good solar access given the northern orientation. |
| Built Form and Scale | • The 16 storeys responds to the site and surrounds with a 9-16 storey residential building to the south-west (49.4 metres in height) and an approved development at 3 Hawksburn Road of 48.9 metres and existing development further east along Great Eastern Highway of 16 and 20 storeys. This creates a consistent built form along Great Eastern Highway.<br>• The building adopts the podium and tower approach providing articulation of the lower levels from the upper levels through the design and materials.<br>• The setbacks provide an appropriate interface to both streets.<br>• The car parking is located within the podium away from the public domain.<br>• The design maximise the northern aspect with minimal south facing apartments.<br>• The street interfaces are well landscaped providing a pleasant public interface.<br>• Building design is simple, articulated and provided with high quality materials. |
| Functionality and Build Quality | • The proposed design provides a simple construction outcome with car parking in the podium and at ground level to the rear of the site.<br>• The number of vehicle access points has been limited to one crossover.<br>• Cohesive apartment layouts with good access to northern light and a width enabling appropriate levels of ventilation.<br>• Communal areas provided as a place to meet at locations appropriate to the site with the northern landscaped communal area provided with good access to northern light.<br>• The servicing and access has been well considered to minimise impacts to the public domain.<br>• The design includes Silver Level Livable Housing Design.<br>• The external materials provide a robust, low maintenance selection consistent with the surrounding locality. |
| Sustainability | • As ESD consultant is part of the design team and a Sustainability Report is included in Appendix G.<br>• The sustainability strategy includes energy efficiency, limiting fossil fuels, renewable energy, water efficiency and a reduced carbon footprint. |
| Amenity | • The proposed development provides 108 multiple dwellings which will be included in the residential market providing a response to the housing crisis.<br>• The proposed public pedestrian link between Shortland Jones Park to Hawksburn Road and Leslie Deague Park is a significant outcome for the site and locality.<br>• The residents are provided with a number of amenities including the formal resident amenities on level 3 and the more natural communal area at ground level.<br>• The street interface is provided with significant landscaping providing an attractive public domain for pedestrians.<br>• The dwellings are provided at an appropriate size and design to respond to the product and the need for housing.<br>• The dwellings have good access to natural light and ventilation.<br>• The dwellings are well insulated from the acoustic impacts of the site adjacent Great Eastern Highway. |
| Legibility | • There is a clear main pedestrian access to the site from Hawksburn Road and the vehicle access has been separated from the pedestrian access.<br>• The ground level dwellings and residential lobby fronting Leslie Deague Park provide a level of passive surveillance. |

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|---|---|
| Safety | • The number of dwellings will increase the number of people in the area.<br>• The design provides passive surveillance to the public domain.<br>• The residents amenity enables passive surveillance with the public parks. |
| Community | • The proposed development provides 108 multiple dwellings which will be included in the residential market providing a response to the housing crisis.<br>• The proposed development provides a high level landscape outcome providing a positive addition to the public domain, including the proposed public pedestrian connection. |
| Aesthetics | • The external materials provide a robust, low maintenance selection consistent with the surrounding locality.<br>• The building is well articulated and positively responds to the locality. |

## State Planning Policy 7.2 – Residential Design Codes Volume 2 - Apartments

An assessment of the proposed development under State Planning Policy 7.3 – R-Codes Volume 2 Apartments (R-Codes) is included in Appendix D.

## City of Belmont Local Planning Scheme No. 15

Special Development Precinct Zone

The proposed development meets the objective of the Special Development Precinct Zone in that the proposed development is residential multiple dwellings of a high standard of architectural design.

Land Use

Under LPS15 multiple dwellings are a 'D' discretionary land use. Multiple dwellings are identified as an appropriate use within the Special Development Precinct.

Special Development Precincts

LPS15 identifies that the provisions of the R Codes relating to front and rear setbacks, car parking and open space may be varied in the Special Development Precincts provided Local Planning Policies are adopted for each of the Precincts.

The provisions of the R Codes relating to plot ratio may also be varied at the discretion of the local government on land within the The Springs Special Development Precinct where the local government considers the development to be in accordance with the character and intent of the The Springs locality respectively.

The local government in exercising any such discretion, and in consideration of any application for Development Approval, shall make its decision having regard to relevant Structure Plans and local government Policies adopted under this Scheme.

These matters are further discussed under Local Planning Policy No.07 The Springs Design Guidelines.

Variations to Site and Development Standards and Requirements

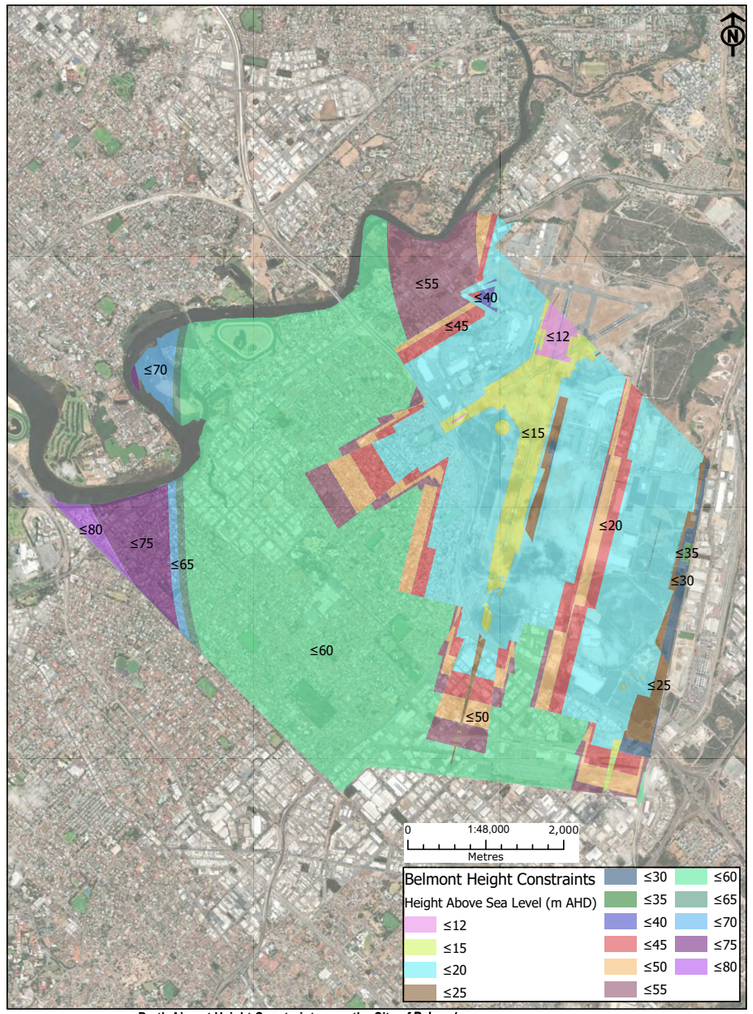
Clause 4.5 of LPS15 provides the enabling clause to approve variations to the site and development standards of LPS15.

Special Development Precincts (SDP)

All development requires approval and are subject to compliance with the performance-based criteria contained in the relevant local planning policy.

Structures Height Control Contours Map

Appendix 8 identifies a maximum height of 50 metres. The proposed development is 68.295 metres AHD to the top of the lift overun. Appendix 8 is outdated and has been superseded by the Perth Airport's height constraints identified below. The site is within the 75 to 80 metres AHD area and therefore the proposed height is below the height constraints.




Perth Airport

**Perth Airport Height Constraints over the City of Belmont**

Height shown is in metres above Australian Height Datum (sea level). These constraints consider airspace that protects visual and instrument operations for aircraft operating out of Perth Airport as well as the radio and other signals used for Communications, Navigations and Surveillance.

Note: Drawing is not an official document WORKING PLAN ONLY

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## The Springs Structure Plan

It is noted that the Structure Plan includes the site in the Great Eastern Highway Precinct, however, the Design Guidelines include the site in the Highway Peninsula Precinct.

| Development Provision | Standard | Proposed | Comments |
|---|---|---|---|
| R-Code | Mixed Use R100 - The RCode densities are to be read as numerically proportional to dwellings and not floor space. | 108 dwellings and 2.2:1 (5226m$^2$) plot ratio. | The provision in the structure plan relating to numerically proportional to dwellings and not floor space is unclear in its application.<br><br>The Springs Structure Plan was prepared in November 2009 and as a result is outdated to contemporary planning practice, including through the adoption of the Residential Design Codes Volume 2. A limitation based on density being numerically proportional to dwellings rather than plot ratio is no longer relevant and imposes a limitation on the ability to provide dwellings to respond to the current housing market. Furthermore it does not respond to the different residential products being delivered in the precinct including this development. The provision also does not respond the density being delivered in the Precinct.<br><br>The development needs to be considered on its built form rather than an outdated numerically proportional density. |
| Minimum Height | 6 metres or 2 storeys | • 9.465 -10.435 metres - 3 storeys | The proposed development provides a traditional podium and tower approach where the podium forms a base to the tower. The podium is 9.465 -10.435 metres and 3 storeys in height and the tower is 53.235 metres in height to the top of the lift overrun and therefore exceeds the minimum height. |
| Maximum Height | 27 metres and 6 storeys | • 50.235 metres and 53.235 metres to top of lift overrun metres<br>• 16 Storeys | As indicated above, the Springs Structure Plan is outdated and not reflective of the development that has been approved in the area. The 16 storeys responds to the site and surrounds with a 9-16 storey residential building to the south-west (49.4 metres in height) and an approved development at 3 Hawksburn Road of 48.9 metres and existing development further east along Great Eastern Highway of 16 and 20 storeys. This creates a consistent built form along Great Eastern Highway.<br><br>The building adopts the podium and tower approach providing articulation of the lower levels from the upper levels through the design and materials.<br><br>The additional height does not have an impact from overshadowing as shadow at 12 noon on 21 June falls over Great Eastern Highway. The additional levels will not impact the public domain along Great Eastern Highway, Hawksburn Road or Leslie Deague Park.<br><br>The height and the number of dwellings will provide an important response to the current housing market. |
| Minimum Side Setback | R-Codes/BCA | Podium nil to west and 3 metres to north.<br><br>Tower is 5 metres to west and 15.2 metres to the north. | The requirement is ambiguous as it is either the R-Codes or BCA. As the Design Guidelines provide more specific setbacks, the side setbacks have been addressed under the Design Guidelines. |
| Minimum Front Setback<br>• Podium<br>• Tower | <br>• Nil<br>• 4 metres | Podium to Great Eastern Highway - less than 1 metre to 2 metres.<br><br>Podium to Hawksburn Road - 9 to 11 metres.<br><br>Tower to Great Eastern Highway - 12 metres.<br><br>Tower to Hawksburn Road - 10 metres. | It is not clearly evident which frontage would be considered the front as the site has its largest street frontage to Great Eastern Highway and a limited frontage to Hawksburn Road, however, the address and access is from Hawksburn Road.<br><br>The proposed development has a minimal podium setback to Great Eastern Highway (less than 1 metre to 2 metres) and a 9 to 11 metre setback to Hawksburn Road and therefore meets the minimum podium setback.<br><br>The tower is setback more than 12 metres to Great Eastern Highway and more than 10 metres to Hawksburn Road which exceeds the minimum. |
| Proportion of maximum 60m$^2$ | Minimum 15% | 93 dwellings - 86% | Meets the requirement |
| Proportion of maximum 90m$^2$ | Minimum 15% | 108 dwellings - 100% | Meets the requirement |

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## Local Planning Policy No.7 - The Springs Design Guidelines

It is noted that the Structure Plan includes the site in the Great Eastern Highway Precinct, however, the Design Guidelines include the site in the Highway Peninsula Precinct.

| Development Provision | Standard | Proposed | Comments |
|---|---|---|---|
| Plot Ratio | 1.3:1 (3081m$^2$) under the R-Codes<br><br>The detailed area plan does not provide a maximum plot ratio. | 2.2:1 (5226m$^2$) | The plot ratio is not identified in the Design Guidelines but defers to the Residential Design Codes. LPS15 identifies that plot ratio can be varied where it is considered that the development is in accordance with the character and intent of the Springs locality.<br><br>The built form is discussed below. The proposed development is consistent with the character and intent of the Springs Precinct in that the development proposes multiple dwellings, which is the objective for the area, and the proposed development is consistent with the existing built form (and approved built form) along Great Eastern Highway<br><br>We also note that the proposed development will assist with the current housing market through the provision of additional product for the residential rental market.<br><br>It is considered that the additional plot ratio maintains the character and intent of the Springs locality and provides much needed housing for the locality and Perth Metropolitan region.<br><br>The additional plot ratio has no amenity impact on the adjoining properties or the public domain. |
| Building Depth | Maximum 18 metres | 18 metres for the north south dwellings (glass line to glass line) and larger for the eastern dwellings as a result of providing dwellings facing three sides. | It is noted that the R-Codes provides for a building depth of 20 metres.<br><br>Variations can be considered under the Design Objectives which identify that the bulk of the development is in scale with the desired future context, to provide adequate amenity for building occupants in terms of sun access and natural ventilation and to provide for dual aspect apartments where possible. The R-Codes identify optimising solar access and natural ventilation, building articulation and room depths to ceiling heights.<br><br>The plans indicate the solar access and ventilation which is consistent with the requirements of the R-Codes. Only 3 of the 9 dwellings on a standard floor are south-east facing with the other 6 orientated to the east, north or corner dwellings.<br><br>The proposed development provides dwellings facing three directions with a southern core which means by its orientation is not going to meet the depth requirements. The three different orientations provide for solar access while also providing passive surveillance of the park and public domains.<br><br>The built form has been articulated and is consistent with the desired context of the area. |
| Minimum Height | Design Guidelines - 30 metres<br>Detailed Area Plan - Podium 7.4 metres | The podium is 9.465 -10.435 metres and 3 storeys in height and the tower is 53.235 metres in height to the top of the lift overrun. | The proposed development meets the minimum height requirements. |

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| Development Provision | Standard | Proposed | Comments |
|---|---|---|---|
| Maximum Height | Design Guidelines<br>Podium - 15 metres<br>Tower - Perth Airport Structures Height Control Contours Map<br><br>Detailed Area Plan<br>Podium - 12 metres<br>Tower -27 metres | The podium is 9.465 -10.435 metres and 3 storeys in height and the tower is 53.235 metres in height to the top of the lift overrun. | The 16 storeys responds to the site and surrounds with a 9-16 storey residential building to the south-west (49.4 metres in height) and an approved development at 3 Hawksburn Road of 48.9 metres and existing development further east along Great Eastern Highway of 16 and 20 storeys. This creates a consistent built form along Great Eastern Highway.<br><br>The podium height of 10.43 metres complies with the maximum height of 12 metres.<br><br>The development does not significantly overshadow adjoining sites or the public domain (other than the Graham Farmer Freeway) at 12 noon on 21 June. |
| Building Separation | Less than 12 metres - 12, 9 and 6 metres<br>Between 12 metres and 25 metres - 18, 13 and 9 metres<br>Greater than 25 metres- 24, 18 and 12 metres | The proposed development is provided the ability to have a nil setback to the west for both the podium and tower. The podium has a nil setback and the tower is setback 5.4-9 metres to the west.<br><br>To the north the podium is setback 3 metres and tower has a 15.2 metre setback. | The building separation relates to the building to the north and the building to the west.<br><br>To the north, the podium is setback 3 metres and the tower is setback 15.2 metres. Assuming similar setbacks for any redevelopment of the building to the north, the separation will be achieved. The adjoining property is a commercial development. The 3 and 15.2 metre separation is an appropriate design response for the proposed development and is consistent with the separation of buildings under the planning framework.<br><br>In relation to the building to the west, the development to the west was required to be setback 10 metres from the boundary. It was approved with a lesser setback. The proposed development, while provided with the ability to have a nil setback to the tower has been setback, providing for the 10 metre separation between the two towers. While the 10 metres is less than the separation requirements, it responds to the detailed area plan providing an appropriate separation between the 2 towers.<br><br>If the building to the west was setback 10 metres, the separation would have been 16-19 metres and therefore the approved reduced setback has impacted the development on this site. To achieve the required separation would mean limited development ability on the subject site.<br><br>It is also noted that the proposed development does not provide balconies facing the site to the west. |
| Minimum Setback Podium | Nil to all boundaries with a maximum of 3 metres to the north-western and south-eastern boundaries. | Podium nil to west and 3 metres to north.<br><br>Podium to Leslie Deague Park - Nil to 10 metres<br><br>Podium to Great Eastern Highway - less than 1 metre to 2 metres.<br><br>Podium to Hawksburn Road - 9 to 11 metres. | Generally the podium is consistent with the planning requirements with a nil setback to the west and a 3 metres setback to the north. The podium setback to Great Eastern Highway and to Leslie Deague Park varies primarily as a result of the shape of the lot. The podium setback also enables landscaping and tree planting at ground level in deep soil areas.<br><br>The podium setbacks responds to the site and the adjoining properties including a landscape interface to Leslie Deague Park. |
| Minimum Northern Setback Tower | 15 metres | 15.2 metres | Meets the setback provision. |
| Minimum Western Setback Tower | Nil | 6-9 metres | Meets the setback provision. |
| Minimum Great Eastern Highway Setback Tower | 5 metres | 12 metres | Meets the setback provision. |
| Minimum Leslie Deague Park Setback Tower | 3 metres | 3.8 metres | Meets the setback provision. |

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| Development Provision | Standard | Proposed | Comments |
|---|---|---|---|
| Floor Levels | 1 metre maximum step up<br><br>Balustrades of raised ground level 60% visually permeable | The courtyards to the ground level dwellings are less than 0.9 metres above the footpath on Leslie Deague Park and the ground floor level is only 0.03 metres above the courtyard level.<br><br>Vertical blade balustrade Glazed 1050mm high aluminium and glass balustrade. | The step up is less than 1 metre to Leslie Deague Park.<br><br>The fence above the step up meets the visually permeable acceptable development control with due consideration taken for privacy via solid balustrades for visual privacy/articulation. |
| Building Facades | Street facades to be well articulated<br><br>No openings less than 1m$^2$<br><br>Balconies mandatory to street facing facades | The street facing facades are well articulated<br><br>No openings less than 1m$^2$<br><br>Balconies to all street facing facades | Meets acceptable development controls. |
| Building Corners | Must address both street frontages<br><br>Strong architectural expression | Not a street corner, however, addresses both streets and Leslie Deague Park.<br><br>The building includes a strong architectural response both at ground level, through the residential amenities, and the built form above. | Meets acceptable development controls. |
| Roof Forms | Plant, service equipment and lift overruns not visible from the public domain<br><br>Not extend beyond maximum building envelope and general height guidelines | Roof plant not visible from public domain.<br><br>Building exceeds height. | Meets acceptable development controls.<br><br>Refer to above in relation to building height. |
| Building Entrances | Pedestrian and vehicle entry points separate and defined | Vehicle Access is from Hawksburn Road.<br><br>Pedestrian access is from the footpath on Leslie Deague Park | Meets acceptable development controls. |
| Awnings and Shade | N/A | N/A | N/A |
| Street Fencing | 1.2 metres above retaining wall and visually permeable | Solid balustrade to Great Eastern Highway<br><br>No street fencing to Hawksburn Road. | The solid balustrade is required for acoustic amelioration and visual privacy. |
| Balconies | Minimum 3.6m$^2$ with minimum dimension of 1.8 metres.<br><br>Projecting balconies minimum 2 metres from side boundaries | Greater than 3.6m$^2$ and 1.8 metres (6-7m$^2$).<br><br>Not within 2 metres of side boundary. | Meets acceptable development controls. |
| Terraces/Private Gardens | Provided for ground level dwellings.<br><br>Accessed from main living area with covered of minimum 2.4 metres. | Provided for ground level dwellings.<br><br>Accessed from main living and covered by podium above. Type E dwellings to provide solar pergola. | Meets acceptable development controls. |
| Acoustic Separation | Tables 1 of AS2107:2000<br>Comply with SPP5.4 | Refer to acoustic report complies with SPP5.4 | Meets acceptable development controls. |
| Building for Safety and Surveillance | Casual surveillance of public domain<br>Entrance orientated to street<br>Buildings secured from unwanted visitors<br>CPTED | Ground level and balconies above provide passive surveillance of public domain<br>Entry clearly defined and safe<br>Site secured | Meets acceptable development controls. |

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| Development Provision | Standard | Proposed | Comments |
|---|---|---|---|
| AC, Plant and Services | AC not visible from street or located on balconies<br>Services not visible from the street<br>Services located on site and screened<br>Acoustic treatments | AC located on balconies and screened from public view<br>Services not visible from street<br>Services screened other than substation and booster<br>Acoustic treatments refer Acoustic report | The AC condensers are located on the balconies, however, are screened from the public domain. The AC does not impact the functional area of the balconies . The design meets the objective as the screening of the AC means that it has no impact on the character or amenity of the area. |
| Storage | Lockable storage for each dwelling and external to dwelling<br>Size as per R-Codes | Lockable storage provided for each dwelling, external to the dwelling. Stores 4.5m$^2$ with a minimum dimension of 1.5 metres (exceeds R-Codes). Includes bicycle bay within storeroom. | Meets acceptable development controls. |
| Waste Collection | Waste Management Plan<br>Engagement with City of Belmont<br>Rubbish to be located away from front of development and screened<br>Screen overlooking<br>Bulk waste included<br>Waste cupboard in dwellings | Waste Management Plan prepared in accordance with City's requirements.<br>Bin store located within building and screened from view both from sides and above.<br>Bulk waste room included<br>Kitchen bins will be installed which includes waste and recycling. | Meets acceptable development controls. |
| Car Parking | As per R-Codes<br>Car Parking to be sleeved or screened<br>Car Parking higher than 2 storeys to be covered (roof or roof garden)<br>Crossover from Hawksburn Road | 162 car parking bays and 30 scooter bays<br>Car Parking located in podium and screened.<br>Car parking covered by metal roof and podium communal area.<br>Access from Hawksburn Road | Location A - 70 required for studio 1 bedrooms dwellings, 15 for the two-bedroom dwellings and 16 residential visitors - Can be reduced by 5 bays for the provision of scooter bays - 97 residential bays and 10 residential visitors bays.<br><br>The number of residential bays complies, however, the residential visitor bays provides 10 where 15 required. This is off-set by the additional 20 scooter bays and the additional 9 visitor bicycle parking bays. This provides alternate transport options for visitor. It is also noted that the bus stops directly adjacent to the subject site on Great Eastern Highway. |
| End of Trip Facilities | 1 private secure bay per dwelling - 108<br>1 secure visitor bay for each 8 dwellings - 14 bays | Each store room provided with bike allowance<br>25 resident visitor bays<br>20 shared bike bays | Meets acceptable development controls and provides more bays and the shared bike bays to off-set the reduction in residential visitor car parking bays. |
| Signage | N/A | N/A | N/A |
| Dwelling Diversity | 15% less than 60m$^2$<br>15% less than 90m$^2$ | 93 dwellings - 86%<br>108 dwellings - 100% | Meets acceptable development controls. |
| Energy Efficiency | On site renewable power 1kW per apartment | 15kW PV system | Refer to Sustainability Report |
| Passive Solar Design | 70% 3 hours direct sunlight<br>Less than 10% south facing<br>North facing openings 80% shade at noon summer solstice | 69% receive 3 hours direct sunlight<br>No direct south facing - studio apartments face south-east (30%).<br>Shading provided by building design and balcony orientation. | Design Guidelines higher than R-Codes, refer to R-Codes assessment in Appendix E.<br><br>The solar orientation is generally consistent with the DGs noting minor variations in terms of the minimum solar access (1%). The studio apartments face south-east and provide a different residential product. |
| Cross Ventilation | Design Objectives to enhance natural ventilation | The plans include natural and cross ventilation diagrams with generally multiple openings in the facades and corner dwellings cross ventilated. | Refer to R-Codes assessment in Appendix E. |
| Water Management | Main water consumption reduced by fixtures which exceed BCA by 1 star<br>Stormwater to be contained on site. | Refer to Sustainability report<br>Stormwater to be retained on site | Refer to Sustainability report |
| Vegetation and Green Roof Design | Waterwise development<br>60% native flora<br>No weeds of national significance | Waterwise principles<br>More than 60% native<br>No weeds | Refer to Landscape Plans |

## LPP No.11 Public Art Contribution

The City of Belmont requires all development proposals within the Policy Area of a value greater than $4.5 million to provide one percent of the value of the development.

The intent is to include public art within the pedestrian connection.

We note that a condition of approval will be imposed to develop the public art to meet the City's requirements.

## Transport Impact Assessment

PJA were commissioned to provide traffic engineering advice in relation to the proposed redevelopment and have prepared a Transport Impact Assessment which is contained in Appendix E.

## Waste Management

Dallywater Consulting were commissioned to prepare a waste management plan, which is contained in Appendix H.

## Planning and Development (Local Planning Schemes) Regulations 2015 (Regs)

Clause 67 of Schedule 2 of the Planning Regulations outlines the matters to which the determining authority is to have due regard when considering an application for development approval.

(a) The proposed development has considered the objectives of the Special Development zone in which the site is located and is consistent with the objectives to provide a residential development with a density to support the precinct.

(b) The requirements of orderly and proper planning including built form, access and amenity of surrounding properties has been considered in the assessment which concludes that the proposed development will not impact the surrounding properties.

(c) The application has considered the relevant State Planning Policies including SPP 5.4, 7.0 and 7.2.

(g) An assessment has been undertaken of the local planning policies.

(h) The proposed development considers the requirements of the Springs Rivervale Structure Plan.

(m) The assessment considers the compatibility the compatibility of the development with its setting, including the desired character and locality.

(n) The assessment considered the amenity of the locality.

(p) The provision of landscaping on site has been extensively considered including the provision of a pedestrian connection linking two public parks.

(s) The traffic assessment considers the impact of the development on traffic access and servicing.

(t) The Traffic assessment consider the impact of the amount of traffic likely to be generated by the development.

(u) The site is located on a high frequency bus route, the site can be adequately serviced and good bicycle and pedestrian access is provided to the site.

(x) The proposed development will provide a high density development within a Special Development Precinct and will provide dwelling diversity and activity within the Precinct.

In giving due regard to the matters under Clause 67 of Schedule 2 of the Planning Regulations the proposed development warrants approval.

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# Conclusion

The proposed development involves 108 residential dwellings within a 16 storey building (ground and above). The dwellings include 33 studio dwellings, 60 one bedroom dwellings and 15 two-bedroom dwellings. The development accommodates 107 car parking bays (including 10 visitor bays), 30 motorcycle bays and 133 bicycle bays (108 resident 25 visitor bays and 20 shared bays).

The proposed density and scale of the development is consistent with the established and approved built form in the area and along Great Eastern Highway. While the height exceeds the planning framework is it consistent in scale with other developments along Great Eastern Highway. The development will facilitate a high density development in a planned growth area to respond to the growing demand for high quality multiple dwellings in well serviced areas.

The proposed development will provide 108 dwellings to the Perth residential market which is desperately required to alleviate the housing shortage.

The proposed development has been well designed and combined with the proposed landscaping will be a positive outcome for the site and public domain.

This application requires the determination of the Metro Inner Development Assessment Panel and we respectfully seek approval for the proposed development.

Appendix A - Certificate of Title

Appendix B - Development Plans

Appendix C - Landscape Plans

Appendix D - SPP7.3 R-Codes Assessment

Appendix E - Transport Impact Assessment

Appendix F - Acoustic Report

Appendix G - Sustainability Report

Appendix H - Waste Management Plan

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# SPP7.3 R-CODES VOLUME 2 - APARTMENTS

## ASSESSMENT TEMPLATE

**2 (Lot 888) Hawksburn Road, Rivervale**

16 Storey residential development

Prepared By:

PTS TOWN PLANNING

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| ELEMENT 2.2 | BUILDING HEIGHT | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT**<br>*Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | **ASSESSOR COMMENT** |
| **O2.2.1** – The height of development responds to the desired future scale and character of the street and local area, including existing buildings that are unlikely to change. | The site is located within the Springs Special Development Zone which under the Design Guidelines identifies a height of 27 metres.<br><br>The development has a height of 53.235 metres to the top of the lift overrun and is 16 storeys in height.<br><br>The Springs Structure Plan is outdated and not reflective of the development that has been approved in the area. The 16 storeys responds to the site and surrounds with a 9-16 storey residential building to the south-west (49.4 metres in height) and an approved development at 3 Hawksburn Road of 48.9 metres and existing development further east along Great Eastern Highway of 16 and 20 storeys. This creates a consistent built form along Great Eastern Highway.<br><br>The additional levels will not impact the public domain along Great Eastern Highway, Hawksburn Road or Leslie Deague Park.<br><br>The height and the number of dwellings will provide an important response to the current housing market. | |
| **O2.2.2** – The height of buildings within a development responds to changes in topography. | The site has a fall of 2.55 metres from the southern corner to the northern corner.<br><br>The podium height and design responds to the interfaces to Great Eastern Highway, Hawksburn Road, Leslie Deague Park and Shortland Jones Park. | |
| **O2.2.3** – Development incorporates articulated roof design and/or roof top communal open space where appropriate. | The building adopts the podium and tower approach providing articulation of the lower levels from the upper levels through the design and materials.<br><br>Communal open space is located on the top of the podium. | |

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| | | |
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| | The upper level of the building provides a different architectural design providing articulation of the building and roof element. | |
| **O2.2.4** – The height of development recognises the need for daylight and solar access to adjoining and nearby residential development, communal open space and in some cases, public spaces. | The additional height does not have an impact from overshadowing as shadow at 12 noon on 21 June generally falls over Great Eastern Highway.<br><br>There is minor overshadowing of the interface with the adjoining property to the south-west. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A2.2.1** – Development complies with the building height limit (storeys) set out in Table 2.1, except where modified by the local planning framework, in which case development complies with the building height limit set out in the applicable local planning instrument.

*(Excerpt from table 2.1)*

| Streetscape contexts and character *refer A2* | Low-rise | | Medium-rise | | Higher density residential | | Neighbourhood centre | Mid-rise urban centres | High density urban centres | | Planned areas |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Site R-Coding | R40 | R50 | R60 | R80 | R100 | R160 | R-AC4 | R-AC3 | R-AC2 | R-AC1 | R-AC0 |
| Building height (storeys) *refer 2.2* | 2 | 3 | 3 | 4 | 4 | 5 | 3 | 6 | 7 | 9 | |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • The Springs Local Structure Plan and LPP No.07 The Springs Design Guidelines<br>• SP identifies height of 27 metres and LPP No.07 identifies a height of 27 metres. |

## ELEMENT 2.3 STREET SETBACKS

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O2.3.1** – The setback of the development from the street reinforces and/or complements the existing or proposed landscape character of the street. | The building adopts the podium and tower approach.<br><br>The podium setback is consistent with the planning framework which includes a minimum setback to Great Eastern Highway. The setback to Hawksburn Road is greater resulting from the angled shape of the site. The setback to Hawksburn Road also provides a setback separation to Leslie Deague Park. | |

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| | | |
|---|---|---|
| | The tower setback to Great Eastern Highway of 15.2 metres exceeds the minimum of 15 metres and the tower setback to Hawksburn Road exceeds the minimum setback of 3 metres. | |
| **O2.3.2** – The street setback provides a clear transition between the public and private realm. | The street setback to Great Eastern Highway provides a clear transition between public and private.<br><br>The Hawksburn Road frontage is limited in size and therefore vehicle access is provided from Hawksburn Road and pedestrian access from Leslie Deague Park. | |
| **O2.3.3** – The street setback assists in achieving visual privacy to apartments from the street. | The apartments at ground level have frontage to Leslie Deague Park and are raised above the park level to provide privacy to the outdoor spaces while also providing a relationship to the public domain. | |
| **O2.3.4** – The setback of the development enables passive surveillance and outlook to the street. | The development has balconies to both Great Eastern Highway and Hawksburn Road to provide passive surveillance to the public domain. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A3.2.1** – Development complies with the street setback set out in Table 2.1, except where modified by the local planning framework, in which case development complies with the street setback set out in the applicable local planning instrument

*(Excerpt from table 2.1)*

| Streetscape contexts and character *refer A2* | Low-rise | | Medium-rise | | Higher density residential | | Neighbourhood centre | Mid-rise urban centres | High density urban centres | | Planned areas |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Site R-Coding | R40 | R50 | R60 | R80 | R100 | R160 | R-AC4 | R-AC3 | R-AC2 | R-AC1 | R-AC0 |
| Minimum primary and secondary street setbacks *refer 2.3* | 4m [4] | 2m | 2m | | 2m | | 2m or Nil [5] | 2m or Nil [5] | 2m or Nil [5] | | |

(4) Minimum secondary street setback 1.5m
(5) Nil setback applicable if commercial use at ground floor

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • The Springs Local Structure Plan and LPP No.07 The Springs Design Guidelines.<br>• LPP No.07 identifies a podium street setback of nil to a maximum of metres and a tower setback of 5 metre to Great Eastern Highway and 3 metres to Hawksburn Road. |

| ELEMENT 2.4 | SIDE AND REAR SETBACKS | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT**<br>*Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | **ASSESSOR COMMENT** |
| **O2.4.1** – Building boundary setbacks provide for adequate separation between neighbouring properties. | The setback to the building to the north-west is 3 metres at the podium level and 15.2 metre at the tower level. This meets the Design Guidelines which allows a nil podium setback and 15 metre tower setback.<br><br>The setback to the building to the south-west is nil at the podium level and ranges from 5.4 to 9 metres at the tower level. This meets the Design Guidelines which allows a nil setback to the tower and podium.<br><br>The building design provides a 15.2 metre separation to the boundary to the north-west and a 10 metre separation to the adjoining building to the south-west, which is consistent with the DGs. | |
| **O2.4.2** – Building boundary setbacks are consistent with the existing streetscape pattern or the desired streetscape character**.** | The setbacks are generally consistent with the streetscape pattern noting the irregular shaped lot boundary. The podium and tower approach maintains the similar built form along Great Eastern Highway. | |
| **O2.4.3** – The setback of development from side and rear boundaries enables retention of existing trees and provision of deep soil areas that reinforce the landscape character of the area, support tree canopy and assist with stormwater management. | There are no trees worthy of retention on the site.<br><br>The podium enables a setback to the north-west through the pedestrian link and a setback to Leslie Deague Park enables deep soil planting along the interface with the public park. | |
| **O2.4.4** –The setback of development from side and rear boundaries provides a transition between sites with different land uses or intensity of development. | The adjoining sites along Greate Eastern Highway have similar land uses and intensity of development. The 15.2 metres separation to the north-west enables the redevelopment of site with minimal impact. | |

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**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A2.4.1** - Development complies with the side and rear setbacks set out in Table 2.1, except where:

**a)** modified by the local planning framework, in which case development complies with the side and rear setbacks set out in the applicable local planning instrument
**AND /OR**

**b)** a greater setback is required to address *3.5 Visual privacy*.

*(Excerpt from table 2.1)*

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| Streetscape contexts and character *refer A2* | Low-rise | | Medium-rise | | Higher density residential | | Neighbourhood centre | Mid-rise urban centres | High density urban centres | | Planned areas |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Site R-Coding** | R40 | R50 | R60 | R80 | R100 | R160 | R-AC4 | R-AC3 | R-AC2 | R-AC1 | R-AC0 |
| **Boundary wall height (storeys)[1,2]** *refer 2.4* | 1 [3] | | 1 [3] | 2 [3] | 2 [3] | | 2 | 3 | 4 | | |
| **Minimum side setbacks[6]** *refer 2.4* | 2m | 3m | 3m | | 3m | | Nil | | | | |
| **Minimum rear setback** *refer 2.4* | 3m | | 3m | | 6m | | 6m | Nil | Nil | | |
| **Average side setback where building length exceeds 16m** *refer 2.4* | 2.4m | 3.5m | 3.5m | 3.5m | 3.5m | 4.0m | NA | NA | NA | | |

(1) Wall may be built up to a lot boundary, where it abuts an existing or simultaneously constructed wall of equal or greater proportions

(2) Where the subject site and an affected adjoining site are subject to different density codes, the length and height of any boundary wall on the boundary between them is determined by reference to the lower density code

(3) Boundary wall only permitted on one boundary, and shall not exceed 2/3 length.

(6) Boundary setbacks will also be determined by provisions for building separation and visual privacy within this SPP and building separation provisions of the NCC.

**A2.4.2** – Development is setback from the boundary in order to achieve the Objectives outlined in *2.7 Building separation*, *3.3 Tree canopy and deep soil areas*, *3.5 Visual privacy* and *4.1 Solar and daylight access*.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • The Springs Local Structure Plan and LPP No.07 The Springs Design Guidelines.<br>• LPP No.07 identifies a side and rear setback of nil to podium with the tower setback 15 metres from the north-west and potential for nil to the south-west. |

## ELEMENT 2.5 PLOT RATIO

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O2.5.1** – The overall bulk and scale of development is appropriate for the existing or planned character of the area. | The detailed area plan for the site states that there is no maximum plot ratio. | |

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| | The built form is discussed above, and the proposed development is consistent with the character and intent of the Springs Precinct in that the development proposes multiple dwellings, which is the objective for the area, and the proposed development is consistent with the built form established along Great Eastern Highway.<br><br>We also note that the proposed development will assist with the current housing market through the provision of additional product for the residential market. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A2.5.1** – Development complies with the plot ratio requirements set out in Table 2.1, except where modified by the local planning framework, in which case development complies with the plot ratio set out in the applicable local planning instrument.

*(Excerpt from table 2.1)*

| Streetscape contexts and character *refer A2* | Low-rise | | Medium-rise | | Higher density residential | | Neighbourhood centre | Mid-rise urban centres | High density urban centres | | Planned areas |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Site R-Coding | R40 | R50 | R60 | R80 | R100 | R160 | R-AC4 | R-AC3 | R-AC2 | R-AC1 | R-AC0 |
| Plot ratio [7] *refer 2.5* | 0.6 | 0.7 | 0.8 | 1.0 | 1.3 | 2.0 | 1.2 | 2.0 | 2.5 | 3.0 | |

(6) Refer to Definitions for calculation of plot ratio

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • LPP No.07 The Springs Design Guidelines provides that there is no maximum plot ratio. |

## ELEMENT 2.6 BUILDING DEPTH

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O2.6.1** – Building depth supports apartment layouts that optimise daylight and solar access and natural ventilation. | The building depth 18 metres for the north south dwellings (glass line to glass line) and larger for the eastern dwellings as a result of providing dwellings facing three sides. | |

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| | Given that the development has three main frontages to Great Eastern Highway, Leslie Deague Park and to the north, the building depth naturally exceeds the requirements.<br><br>The plans indicate the solar access and ventilation which is generally consistent with the requirements of the R-Codes. The built form has been articulated and is consistent with the desired context of the area. | |
| **O2.6.2** – Articulation of building form to allow adequate access to daylight and natural ventilation where greater building depths are proposed. | The plans indicate the solar access and ventilation which is generally consistent with the requirements of the R-Codes. | |
| **O2.6.3** – Room depths and / or ceiling heights optimise daylight and solar access and natural ventilation. | Diagrams are included in the Architectural Plans to demonstrate the daylight, solar access and natural ventilation. The depth to ceiling height and width of the apartments support ventilation. | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A2.6.1** – Developments that comprise single aspect apartments on each side of a central circulation corridor shall have a maximum building depth of 20m. All other proposals will be assessed on their merits with particular consideration to *4.1 Solar and daylight access* and *4.2 Natural ventilation*. | | |
| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** | |
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • LPP No.07 The Springs Design Guidelines.<br>• LPP No.07 identifies a depth of 18 metres. | |

| **ELEMENT 2.7** | **BUILDING SEPARATION** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O2.7.1** – New development supports the desired future streetscape character with spaces between buildings. | The building separation to the north west exceeds the acceptable outcomes.<br><br>The building separation to the north-west is based on the 10 metre separation identified in the DGs | |
| **O2.7.2** – Building separation is in proportion to building height. | The orientation of the building means that the narrowest portion of the building is adjacent the property to the south-west in alignment with the adjoining building, with the majority of the site open to the property. | |

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| | | |
|---|---|---|
| **O2.7.3** – Buildings are separated sufficiently to provide for residential amenity including visual and acoustic privacy, natural ventilation, sunlight and daylight access and outlook. | The overshadowing from the proposed development at 12 noon, largely falls on Great Eastern Highway given the orientation of the lot. While there is shadowing in the morning from noon onwards the adjoining site is not impacted.<br><br>The 10 metre separation enables visual, acoustic privacy and natural ventilation between the buildings. | |
| **O2.7.4** – Suitable areas are provided for communal and private open space, deep soil areas and landscaping between buildings | The deep soil zone is generally orientated to the public parks and on structure planting orientated to the property to the south-west.<br><br>The separation of the buildings 10 metres to the south-west and 15 metres to the north-west ensure adequate separation for communal and private open space. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A2.7.1** – Development complies with the separation requirements set out in Table 2.7.

**Table 2.7** Building separation

| | Separation between: | Building height | | |
|---|---|---|---|---|
| | | ≤ 4 storeys (up to 15m) | 5-8 storeys (up to 28m) | ≥ 9 storeys (over 28m) |
| Within site boundary | Habitable rooms/balconies | 12m | 18m | 24m |
| | Habitable and non-habitable rooms | 7.5m | 12m | 18m |
| | Non-habitable rooms | 4.5m | 6m | 9m |
| To adjoining property boundaries | Habitable rooms/balconies and boundary | Refer *2.4 Side and rear setbacks* (Table 2.1) and *3.5 Visual privacy* (Table 3.5) | 9m | 12m |

Distances apply from major openings of rooms, or the inside of balustrading of balconies.
Average dimensions may be applied subject to major openings meeting other requirements for privacy, daylight and the like.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • LPP No.07 The Springs Design Guidelines.<br>• LPP No.07 identifies separation as the height increases. |

## ELEMENT 3.2 ORIENTATION

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|

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|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.2.1** – Building layouts respond to the streetscape, topography and site attributes while optimising solar and daylight access within the development. | The building design responds to the location by providing dwellings facing the public domain (Leslie Deague Park) at ground level and at the upper levels facing all directions (other than to the adjoining property to the south-west).<br><br>The orientation maximises solar access to the dwellings with minimal solely south facing apartments. On a typical floor 6 of the 9 dwellings have either a north, east or west aspect with only 3 (being the studio apartments) facing south-east. | |
| **O3.2.2** – Building form and orientation minimises overshadowing of the habitable rooms, open space and solar collectors of neighbouring properties during mid-winter. | As the building is to the north of Great Eastern Highway shadow largely falls over the highway at 12 noon. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A3.2.1** – Buildings on street or public realm frontages are oriented to face the public realm and incorporate direct access from the street.

**A3.2.2** – Buildings that do not have frontages to streets or public realm are oriented to maximise northern solar access to living areas.

**A3.2.3** – Development in climate zones 4, 5 and 6 shall be designed such that the shadow cast at midday on 21st June onto any adjoining property does not exceed:

- adjoining properties coded R25 and lower – 25% of the site area[1]
- adjoining properties coded R30 – R40 - 35% of the site area[1]
- adjoining properties coded R50 – R60 – 50% of the site area[1]
- adjoining properties coded R80 or higher – Nil requirements.

(1) Where a development site shares its southern boundary with a lot, and that lot is bound to the north by other lot(s), the limit of shading at A3.2.3 shall be reduced proportionally to the percentage of the affected properties northern boundary that abuts the development site. (Refer to Figure A7.2 in Appendix 7)

**A3.2.4**– Where adjoining sites are coded R40 or less, buildings are oriented to maintain 4 hours per day solar access on 21 June for existing solar collectors on neighbouring sites.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

## ELEMENT 3.3 TREE CANOPY AND DEEP SOIL AREAS

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|

| | | |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.3.1** – Site planning maximises retention of existing healthy and appropriate and protects the viability of adjoining trees. | There are no trees located on site worthy of retention.<br><br>The proposed development has been setback from Leslie Deague Park to protect the trees within the public park. | |
| **O3.3.2** – Adequate measures are taken to improve tree canopy (long term) or to offset reduction of tree canopy from pre-development condition. | The site is 2370m$^2$ and requires 10% (237m$^2$) DSA and 2 large trees and small trees to suit.<br><br>The development includes 2 large trees, 1 medium tree and 14 small trees to suit (9 at ground level and 5 on podium). | |
| **O3.3.3** – Development includes deep soil areas, or other infrastructure to support planting on structures, with sufficient area and volume to sustain healthy plant and tree growth. | The proposed development includes 13.7% (324m$^2$) deep soil area at ground level (planting and turf areas) and additional on structure planters of 73m$^2$. The development exceeds the AO. | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A3.3.1** – Retention of existing trees on the site that meet the following criteria:<br>– healthy specimens with ongoing viability **AND**<br>– species is not included on a State or local area weed register **AND**<br>– height of at least 4m **AND/OR**<br>– trunk diameter of at least 160mm, measured 1m from the ground **AND/OR**<br>– average canopy diameter of at least 4m. | | |
| **A3.3.2** – The removal of existing trees that meet any of the criteria at A3.3.1 is supported by an arboriculture report. | | |
| **A3.3.3** – The development is sited and planned to have no detrimental impacts on, and to minimise canopy loss of adjoining trees. | | |
| **A3.3.4** – Deep soil areas are provided in accordance with Table 3.3a. Deep soil areas are to be co-located with existing trees for retention and/or adjoining trees, or alternatively provided in a location that is conducive to tree growth and suitable for communal open space. | | |

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**Table 3.3a** Minimum deep soil area and tree provision requirements

| Site Area | Minimum deep soil area | Minimum requirement for trees [1] |
|---|---|---|
| Less than 700m² | 10%<br>**OR**<br>7% if existing tree(s) retained on site<br>(% site area) | 1 medium tree and small trees to suit area |
| 700 – 1,000m² | | 2 medium trees<br>**OR**<br>1 large tree and small trees to suit area |
| › 1,000m² | | 1 large tree and 1 medium tree for each additional 400m² in excess of 1000m²<br>**OR**<br>1 large tree for each additional 900m² in excess of 1000m² and small trees to suit area |

[1] Minimum requirement for trees includes retained or new trees
Refer Table 3.3b for tree sizes

**A3.3.5** – Landscaping includes existing and new trees with shade producing canopies in accordance with Tables 3.3a and 3.3b.

**Table 3.3b** Tree sizes

| Tree size | Indicative canopy diameter at maturity | Nominal height at maturity | Required DSA per tree | Recommended minimum DSA width | Minimum DSA width where additional rootable soil zone (RSZ) width provided[1] (min 1m depth) | Indicative pot size at planting |
|---|---|---|---|---|---|---|
| Small | 4-6m | 4-8m | 9m² | 2m | 1m (DSA) + 1m (RSZ) | 100L |
| Medium | 6-9m | 8-12m | 36m² | 3m | 2m (DSA) + 1m (RSZ) | 200L |
| Large | ›9m | ›12m | 64m² | 6m | 4.5m (DSA) + 1.5m (RSZ) | 500L |

[1] Rootable areas are for the purposes of determining minimum width only and do not have the effect of reducing the required DSA.

**A3.3.6** – The extent of permeable paving or decking within a deep soil area does not exceed 20 per cent of its area and does not inhibit the planting and growth of trees.

**A3.3.7** – Where the required deep soil areas cannot be provided due to site restrictions, planting on structure with an area equivalent to two times the shortfall in deep soil area provision is provided.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

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| ELEMENT 3.4 | COMMUNAL OPEN SPACE | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.4.1** – Provision of quality communal open space that enhances resident amenity and provides opportunities for landscaping, tree retention and deep soil areas. | The development requires 300m$^2$ of communal open space. The development provides more than 400m$^2$ of communal area at podium level in addition to the Gym and lounge. The provision of communal open space exceeds the AO.<br><br>The communal open space is provided with on-structure planting. | |
| **O3.4.2** – Communal open space is safe, universally accessible and provides a high level of amenity for residents. | As the communal open space is located on the podium, the open space is safe and universally accessible while also being secure. | |
| **O3.4.3** – Communal open space is designed and oriented to minimise impacts on the habitable rooms and private open space within the site and of neighbouring properties. | The communal open space is orientated away from the private open space of the dwellings on the podium level.<br><br>The communal open space is adjacent the building to the south-west, however, is separated from the adjoining property by a landscaped area minimising impacts on the adjoining property, while maintaining solar access. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A3.4.1** – Developments include communal open space in accordance with Table 3.4

**Table 3.4** Provision of communal open space

| Development size | Overall communal open space requirement | Minimum accessible / hard landscape area (included in overall area requirement) | Minimum open space dimension |
|---|---|---|---|
| Up to 10 dwellings | Informal seating associated with deep soil or other landscaped areas | NA | NA |
| More than 10 dwellings | Total: 6m² per dwelling up to maximum 300m² | At least 2m² per dwelling up to 100m² | 4m |

**A3.4.2** – Communal open space located on the ground floor or on floors serviced by lifts must be accessible from the primary street entry of the development.

**A3.4.3** – There is 50 per cent direct sunlight to at least one communal open space area for a minimum of two hours between 9am and 3pm on 21 June.

**A3.4.4**– Communal open space is co-located with deep soil areas and/or planting on structure areas and/ or co-indoor communal spaces.

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| |
|---|
| **A3.4.5** – Communal open space is separated or screened from adverse amenity impacts such as bins, vents, condenser units, noise sources and vehicle circulation areas. |
| **A3.4.6** – Communal open space is well-lit, minimises places for concealment and is open to passive surveillance from adjoining dwellings and/or the public realm. |
| **A3.4.7** – Communal open space is designed and oriented to minimise the impacts of noise, odour, light-spill and overlooking on the habitable rooms and private open spaces within the site and of neighbouring properties. |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

## ELEMENT 3.5 VISUAL PRIVACY

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.5.1** – The orientation and design of buildings, windows and balconies minimises direct overlooking of habitable rooms and private outdoor living areas within the site and of neighbouring properties, while maintaining daylight and solar access, ventilation and the external outlook of habitable rooms. | The site has streets and parks on two sides and the dwellings are orientated to provide passive surveillance.<br><br>The adjoining northern property is not a residential property, however, the setback is 15.2 metres and will therefore no impact any future development of the site.<br><br>There dwellings facing to the south-west have been designed to not have major openings or private open space orientated to the adjoining site. The only major opening is to the southern balcony which provides solar access while still being separated by more than 12 metres. | |

| ACCEPTABLE OUTCOMES<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A3.5.1** – Visual privacy setbacks to side and rear boundaries are provided in accordance with Table 3.5. |

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**Table 3.5** Required privacy setback to adjoining sites

| Cone of vision from unscreened: | First 4 storeys | | 5th storey and above |
|---|---|---|---|
| | Adjoining sites coded R50 or lower | Adjoining sites coded higher than R50 | |
| Major opening to bedroom, study and open access walkways | 4.5m | 3m | Refer Table 2.7 |
| Major openings to habitable rooms other than bedrooms and studies | 6m | 4.5m | |
| Unenclosed private outdoor spaces | 7.5m | 6m | |

**A3.5.2** – Balconies are unscreened for at least 25 per cent of their perimeter (including edges abutting a building).

**A3.5.3** - Living rooms have an external outlook from at least one major opening that is not obscured by a screen.

**A3.5.4** – Windows and balconies are sited, oriented, offset or articulated to restrict direct overlooking, without excessive reliance on high sill levels or permanent screening of windows and balconies.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

## ELEMENT 3.6 PUBLIC DOMAIN INTERFACE

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.6.1** – The transition between the private and public domain enhances the privacy and safety of residents. | The ground level dwellings are provided with direct access from the courtyards to either Great Eastern Highway or Leslie Deague Park. The courtyards have been raised providing privacy and the fencing provides safety between the public and private domain. The ground floor residential lobby and communal amenity area also provides passive surveillance.<br><br>The upper-level balconies face the public domain and provide passive surveillance.<br><br>Car parking is located within the podium.<br><br>Services are provided to Great Eastern Highway. | |

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| | | |
|---|---|---|
| **O3.6.2** – Street facing development and landscape design retains and enhances the amenity and safety of the adjoining public domain, including the provision of shade. | The development provides landscaping along the street frontages improving the amenity, safety and presentation of the public domain. | |

| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A3.6.1** – The majority of ground floor dwellings fronting onto a street or public open space have direct access by way of a private terrace, balcony or courtyard. |
| **A3.6.2** – Car-parking is not located within the primary street setback; and where car parking is located at ground level behind the street setback it is designed to integrate with landscaping and the building façade (where part of the building). |
| **A3.6.3** – Upper level balconies and/or windows overlook the street and public domain areas. |
| **A3.6.4** – Balustrading includes a mix of visually opaque and visually permeable materials to provide residents with privacy while maintaining casual surveillance of adjoining public domain areas. |
| **A3.6.5** – Changes in level between private terraces, front gardens and the ground floor level of the building and the street level average less than 1m and do not exceed 1.2m. |
| **A3.6.6** – Front fencing includes visually permeable materials above 1.2m and the average height of solid walls or fences to the street does not exceed 1.2m. |
| **A3.6.7** – Fencing, landscaping and other elements on the frontage are designed to eliminate opportunities for concealment. |
| **A3.6.8** – Bins are not located within the primary street setback or in locations visible from the primary street. |
| **A3.6.9** – Services and utilities that are located in the primary street setback are integrated into the design of the development and do not detract from the amenity and visual appearance of the street frontage.[1]<br>(1) Firefighting and access to services such as power and water meters require careful consideration in the design of the front façade. Consult early with relevant authorities to resolve functional requirements in an integrated design solution. |

| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • LPP No.07 The Springs Design Guidelines.<br>• 1 metres high up stand and permeable fencing above. |

| **ELEMENT 3.7** | **PEDESTRIAN ACCESS AND ENTRIES** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.7.1** – Entries and pathways are universally accessible, easy to identify and safe for residents and visitors. | The main pedestrian entry is accessed at grade from the footpath that runs along the southern boundary of Leslie Deague Park which links Great Eastern Highway and Hawksburn Road. | |

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| | | |
|---|---|---|
| | The entry is clearly defined, and weather protection is provided by the building above. The entry will be well lit.<br><br>The main entry is separate from the vehicle entry and the services are provided away from the main entry. | |
| **O3.7.2** – Entries to the development connect to and address the public domain with an attractive street presence. | The main pedestrian entry is from Leslie Deague Park which links Great Eastern Highway and Hawksburn Road. The entry includes deep soil areas to provide an appropriate interface to the Park. | |

| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A3.7.1** – Pedestrian entries are connected via a legible, well-defined, continuous path of travel to building access areas such as lift lobbies, stairs, accessways and individual dwelling entries. |
| **A3.7.**2 – Pedestrian entries are protected from the weather. |
| **A3.7.3** – Pedestrian entries are well-lit for safety and amenity, visible from the public domain without opportunity for concealment, and designed to enable casual surveillance of the entry from within the site. |
| **A3.7.4** – Where pedestrian access is via a shared zone with vehicles, the pedestrian path is clearly delineated and/or measures are incorporated to prioritise the pedestrian and constrain vehicle speed. |
| **A3.7.5** – Services and utilities that are located at the pedestrian entry are integrated into the design and do not detract from the amenity of the entry. |
| **A3.7.6** – Bins are not located at the primary pedestrian entry. |

| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

| **ELEMENT 3.8** | **VEHICLE ACCESS** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.8.1** – Vehicle access points are designed and located to provide safe access and egress for vehicles and to avoid conflict with pedestrians, cyclists and other vehicles. | The proposed development has only one access option from the small street frontage on Hawksburn Road.<br><br>The vehicle access is separate from the main pedestrian access from the Park. | |

| | | |
|---|---|---|
| **O3.8.2** – Vehicle access points are designed and located to reduce visual impact on the streetscape. | The proposed development has only one access option from the small street frontage on Hawksburn Road. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A3.8.1** – Vehicle access is limited to one opening per 20m street frontage that is visible from the street.

**A3.8.2** – Vehicle entries are identifiable from the street, while being integrated with the overall façade design and/ or located behind the primary building line.

**A3.8.3** – Vehicle entries have adequate separation from street intersections.

**A3.8.4** – Vehicle circulation areas avoid headlights shining into habitable rooms within the development and adjoining properties.

**A3.8.5** – Driveway width is kept to a functional minimum, relative to the traffic volumes and entry/egress requirements.

**A3.8.6** – Driveways designed for two way access to allow for vehicles to enter the street in forward gear where:

- the driveway serves more than 10 dwellings
- the distance from an on-site car parking to the street is 15m or more **OR**
- the public street to which it connects is designated as a primary distributor, district distributor or integrated arterial road.

**A3.8.7** – Walls, fences and other structures truncated or reduced to no higher than 0.75m within 1.5m of where walls, fences, other structures adjoin vehicle access points where a driveway meets a public street and where two streets intersect (refer Figure 3.8a).

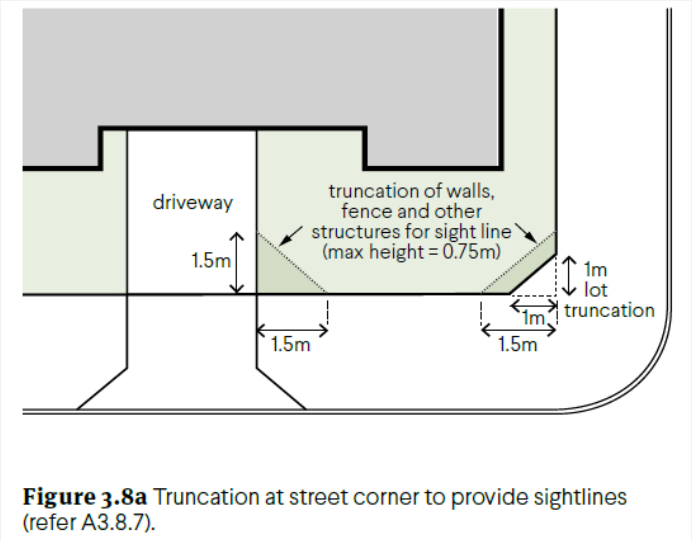


**Figure 3.8a** Truncation at street corner to provide sightlines (refer A3.8.7).

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • LPP No.07 The Springs Design Guidelines. |

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| ELEMENT 3.9 | CAR AND BICYCLE PARKING | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O3.9.1** – Parking and facilities are provided for cyclists and other modes of transport. | The proposed development includes a residential bike rack in every store, 25 visitor bicycle bays and an additional 20 shared resident bicycle bays.<br><br>The R-Codes requires 0.5 space per dwelling while the DGs require 1 bay per dwelling.<br><br>The R-Codes requires 1 per 10 for visitors while the DGs require 1 per 8 dwellings.<br><br>The development includes 30 scooter parking bays.<br><br>The development includes a bike rack in each storeroom to meet the DG requirement and 25 visitor bays which is 14 more than the R-Codes. In addition, 20 shared bicycle bays area also provided. | |
| **O3.9.2** – Car parking provision is appropriate to the location, with reduced provision possible in areas that are highly walkable and/or have good public transport or cycle networks and/or are close to employment centres. | The 108 dwellings include 93 1 bed and 15 2 bed and located within Location A. This requires 70 bays for the 1 bed and 15 for the 2 bed (Total 85 bays). The development provides 97 bays.<br><br>The development requires 16 visitor bays and 10 have been provided. The reduction in visitor bays is offset by the additional bicycle parking bays to encourage alternative forms of transport.<br><br>The site is located on a high frequency bus route, is in proximity to a train station and the site and location has good visitor bicycle access and facilities. | |
| **O3.9.3** – Car parking is designed to be safe and accessible. | The car parking is safe and accessible as it is located at ground and podium and is secured. | |
| **O3.9.4** – The design and location of car parking minimises negative visual and environmental impacts on amenity and the streetscape. | The car parking is located in the podium and at the rear of the proposed development. | |

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*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A3.9.1** – Secure, undercover bicycle parking is provided in accordance with Table 3.9 and accessed via a continuous path of travel from the vehicle or cycle entry point.

**Table 3.9** Parking ratio

| Parking types | | Location A | Location B |
|---|---|---|---|
| Car parking[1] | 1 bedroom dwellings | 0.75 bay per dwelling | 1 bay per dwelling |
| | 2+ bedroom dwellings | 1 bay per dwelling | 1.25 bays per dwelling |
| | Visitor | 1 bay per four dwellings up to 12 dwellings<br>1 bay per eight dwellings for the 13th dwelling and above | |
| Bicycle parking[1] | Resident | 0.5 space per dwelling | |
| | Visitor | 1 space per 10 dwellings | |
| Motorcycle/ Scooter parking[2] | Developments exceeding 20 dwellings provide 1 motorcycle/scooter space for every 10 car bays | | |

[1] Calculations of parking ratios shall be rounded up to the next whole number.
[2] For each five motorcycle/scooter parking bays provided in accordance with Table 3.9, car parking bays may be reduced by one bay.

Definitions:
**Location A**: within 800m walkable catchment of a train station and/or 250m of a transit stop (bus or light rail) of a high-frequency route and/or within the defined boundaries of an activity centre.
**Location B**: not within Location A.

**A3.9.2** – Parking is provided for cars and motorcycles in accordance with Table 3.9.

**A3.9.3** – Maximum parking provision does not exceed double the minimum number of bays specified in Table 3.9

**A3.9.4** – Car parking and vehicle circulation areas are designed in accordance with AS2890.1 (as amended) or the requirements of applicable local planning instruments.

**A3.9.5** – Car parking areas are not located within the street setback and are not visually prominent from the street.

**A3.9.6** – Car parking is designed, landscaped or screened to mitigate visual impacts when viewed from dwellings and private outdoor spaces.

**A3.9.7** – Visitor parking is clearly visible from the driveway, is signed 'Visitor Parking' and is accessible from the primary entry or entries.

**A3.9.8** – Parking shade structures, where used, integrate with and complement the overall building design and site aesthetics and have a low reflectance to avoid glare into apartments.

**A3.9.9** – Uncovered at-grade parking is planted with trees at a minimum rate of one tree per four bays.

**A3.9.10** – Basement parking does not protrude more than 1m above ground, and where it protrudes above ground is designed or screened to prevent negative visual impact on the streetscape.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | • LPP No.07 The Springs Design Guidelines. |

# ELEMENT 4.1 SOLAR AND DAYLIGHT ACCESS

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| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.1.1** – In climate zones 4, 5 and 6: the development is sited and designed to optimise the number of dwellings receiving winter sunlight to private open space and via windows to habitable rooms. | The development includes 69% of dwellings having 2+ hours between 9am and 3pm on 21 June.<br><br>Only the southeastern corner dwelling will not receive direct solar access.<br><br>Plans of the solar access are provided in the Architectural Plans. | |
| **O4.1.2** – Windows are designed and positioned to optimise daylight access for habitable rooms. | All habitable rooms have access have windows to either a balcony or external façade.<br><br>Plans of the solar access are provided in the Architectural Design Report. | |
| **O4.1.3** – The development incorporates shading and glare control to minimise heat gain and glare:<br>– from mid-spring to autumn in climate zones 4, 5 and 6 **AND**<br>– year-round in climate zones 1 and 3. | The balcony inset and design reduces solar gain during the summer months. | |

| ACCEPTABLE OUTCOMES<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A4.1.1** – In climate zones 4, 5 and 6 only:<br>**a)** Dwellings with a northern aspect are maximised, with a minimum of 70 per cent of dwellings having living rooms and private open space that obtain at least 2 hours direct sunlight between 9am and 3pm on 21 June **AND**<br>**b)** A maximum of 15 per cent of dwellings in a building receiving no direct sunlight between 9am and 3pm on 21 June. |
| **A4.1.2** – Every habitable room has at least one window in an external wall, visible from all parts of the room, with a glazed area not less than 10 per cent of the floor area and comprising a minimum of 50 per cent of clear glazing. |
| **A4.1.3** – Lightwells and/or skylights do not form the primary source of daylight to any habitable room. |
| **A4.1.4** – The building is oriented and incorporates external shading devices in order to:<br>– minimise direct sunlight to habitable rooms:<br>▪ between late September and early March in climate zones 4, 5 and 6 only **AND**<br>▪ in all seasons in climate zones 1 and 3<br>– permit winter sun to habitable rooms in accordance with A 4.1.1 (a). |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|

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| | |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. |

| **ELEMENT 4.2** | **NATURAL VENTILATION** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.2.1** – Development maximises the number of apartments with natural ventilation. | 10% are cross ventilated. The cross ventilation is limited given the need to acoustically control noise from Great Eastern Highway<br><br>The balance are provided with natural ventilation based on the apartment's width, the access to prevailing cooler winds and the depth not exceeding 3 times the ceiling height.<br><br>Plans of the cross ventilation are provided in the Architectural Plans. | |
| **O4.2.2** – Individual dwellings are designed to optimise natural ventilation of habitable rooms. | The development optimises natural ventilation to habitable rooms with all habitable rooms towards the external extent of the dwellings. | |
| **O4.2.3** – Single aspect apartments are designed to maximise and benefit from natural ventilation. | The single aspect apartments are provided with natural ventilation based on the apartments width, the access to prevailing cooler winds and the depth not exceeding 3 times the ceiling height. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A4.2.1** – Habitable rooms have openings on at least two walls with a straight line distance between the centre of the openings of at least 2.1m.

**A4.2.2 –**

**(a)** A minimum 60 per cent of dwellings are, or are capable of, being naturally cross ventilated in the first nine storeys of the building

**(b)** Single aspect apartments included within the 60 per cent minimum at (a) above must have:

- ventilation openings oriented between 45° – 90° of the prevailing cooling wind direction **AND**
- room depth no greater than 3 × ceiling height

**(c)** For dwellings located at the 10th storey or above, balconies incorporate high and low level ventilation openings.

**A4.2.3** – The depth of cross-over and cross-through apartments with openings at either end and no openings on side walls does not exceed 20m.

**A4.2.4** – No habitable room relies on lightwells as the primary source of fresh-air.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. |

| ELEMENT 4.3 | SIZE AND LAYOUT OF DWELLINGS | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT**<br>*Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | **ASSESSOR COMMENT** |
| **O4.3.1** – The internal size and layout of dwellings is functional with the ability to flexibly accommodate furniture settings and personal goods, appropriate to the expected household size. | The one and two bedroom apartments meet the AO minimum internal floor area. The studio apartments are 3 metres below the minimum.<br><br>The master bedrooms meet the AO in terms of size and dimension and the secondary bedrooms meet the size and dimensions.<br><br>The majority of habitable rooms meet the minimum internal dimension with the exception of the south-eastern studio, the ground level single bedroom and the two bedroom dwellings.<br><br>The design includes the furniture layout which provides a functional layout of the studio dwellings. | |
| **O4.3.2** – Ceiling heights and room dimensions provide for well-proportioned spaces that facilitate good natural ventilation and daylight access. | The floor to soffit height is 2710mm metres.<br><br>The single aspect apartments contain open plan living areas which do not exceed the height to depth provisions. | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A4.3.1** – Dwellings have a minimum internal floor area in accordance with Table 4.3a. | | |

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**Table 4.3a Minimum floor areas for dwelling types**

| Dwelling type | Minimum internal floor area |
|---|---|
| Studio | 37m² |
| 1 bed | 47m² |
| 2 bed × 1 bath[1] | 67m² |
| 3 bed × 1 bath[1] | 90m² |
| [1]An additional 3m² shall be provided for designs that include a second or separate toilet, and 5m² for designs that include a second bathroom. | |

**A4.3.2** – Habitable rooms have minimum floor areas and dimensions in accordance with Table 4.3b.

**Table 4.3b Minimum floor areas and dimensions for habitable rooms**

| Habitable room type | Minimum internal floor area | Minimum internal dimension |
|---|---|---|
| Master bedroom | 10m² | [1]3m |
| Other bedrooms | 9m² | [1]3m |
| Living room – studio and 1 bed apartments | N/A | 3.6m |
| Living room – other dwelling types | N/A | 4m |
| [1]Excluding robes | | |

**A4.3.3** – Measured from the finished floor level to finished ceiling level, minimum ceiling heights are:

- Habitable rooms – 2.7m
- Non-habitable rooms – 2.4m
- All other ceilings meet or exceed the requirements of the NCC.

**A4.3.4** – The length of a single aspect open plan living area is equal to or less than 3 x the ceiling height. An additional 1.8m length may be provided for a kitchen, where the kitchen is the furthest point from the window in an open plan living area provided that the maximum length does not exceed 9m.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. |

| ELEMENT 4.4 | PRIVATE OPEN SPACE AND BALCONIES | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |

| | | |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.4.1** – Dwellings have good access to appropriately sized private open space that enhances residential amenity. | All dwellings have private open space that meets the area requirement of the DGs. It is noted that the DG areas are below the R-Codes requirements, however, the DGs are the more specific planning document. | |
| **O4.4.2** – Private open space is sited, oriented and designed to enhance liveability for residents. | The development maximises balconies to achieve solar access. | |
| **O4.4.3** – Private open space and balconies are integrated into the overall architectural form and detail of the building. | The balconies are integrated into the overall built form and servicing is screened from the public domain. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A4.4.1** – Each dwelling has private open space accessed directly from a habitable room with dimensions in accordance with Table 4.4.

**Table 4.4** Private open space requirements

| Dwelling type | Minimum Area[1] | Minimum Dimension[1] |
|---|---|---|
| Studio apartment + 1 bedroom | 8m² | 2.0m |
| 2 bedroom | 10m² | 2.4m |
| 3 bedroom | 12m² | 2.4m |
| Ground floor / apartment with a terrace | 15m² | 3m |

[1] Services and fixtures located within private open space, including but not limited to air-conditioner units and clothes drying, are not visible from the street and/or are integrated into the building design.

**A4.4.2** – Where private open space requires screening to achieve visual privacy requirements, the entire open space is not screened and any screening is designed such that it does not obscure the outlook from adjacent living rooms.

**A4.4.3** – Design detailing, materiality and landscaping of the private open space is integrated with or complements the overall building design.

**A4.4.4** – Services and fixtures located within private open space, including but not limited to air-conditioner units and clothes drying, are not visible from the street and/or are integrated into the building design.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. Minimum 3.6m² and 1.8 metres. |

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## ELEMENT 4.5 CIRCULATION AND COMMON SPACES

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.5.1** – Circulation spaces have adequate size and capacity to provide safe and convenient access for all residents and visitors. | The circulation spaces are a minimum of 1.5 metres and are designed for universal access. The circulation areas are universally accessible.<br><br>The corridors have access to natural light at the end of each corridor near the lift lobby.<br><br>The lift lobby has a greater width. | |
| **O4.5.2** – Circulation and common spaces are attractive, have good amenity and support opportunities for social interaction between residents. | The corridors have access to natural light at the end of each corridor near the lift lobby.<br><br>There are no major openings onto the corridor. | |

| ACCEPTABLE OUTCOMES<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A4.5.1** – Circulation corridors are a minimum 1.5m in width. |
| **A4.5.2** – Circulation and common spaces are designed for universal access. |
| **A4.5.3** – Circulation and common spaces are capable of passive surveillance, include good sightlines and avoid opportunities for concealment. |
| **A4.5.4** – Circulation and common spaces can be illuminated at night without creating light spill into the habitable rooms of adjacent dwellings. |
| **A4.5.5** – Bedroom windows and major openings to living rooms do not open directly onto circulation or common spaces and are designed to ensure visual privacy and manage noise intrusion. |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

## ELEMENT 4.6 STORAGE

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.6.1** – Well-designed, functional and conveniently located storage is provided for each dwelling. | Weatherproof storerooms are provided for each dwelling in the carparking level, podium level and on the residential levels. | |

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|---|---|---|
| | All dwellings are provided with a storeroom of a minimum of 4.5m$^2$ and 1.5 metres.<br><br>The storerooms are provided with the minimum width and height, which reflects the floor to ceiling heights. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A4.6.1** – Each dwelling has exclusive use of a separate, ventilated, weatherproof, bulky goods storage area. This can be located either internally or externally to the dwelling with dimensions in accordance with Table 4.6.

**Table 4.6** Storage requirements

| Dwelling type | Storage area[1] | Minimum dimension[1] | Minimum height[1] |
|---|---|---|---|
| Studio dwelling | 3m$^2$ | 1.5m | 2.1m |
| 1 bedroom dwelling | 3m$^2$ | | |
| 2 bedroom dwellings | 4m$^2$ | | |
| 3 bedroom dwellings | 5m$^2$ | | |
| [1] Dimensions exclusive of services and plant. | | | |

**A4.6.2** – Bulky good stores that are not directly accessible from the dwelling/private open space are located in areas that are convenient, safe, well-lit, secure and subject to passive surveillance.

**A4.6.3** – Storage provided separately from dwellings or within or adjacent to private open space[1], is integrated into the design of the building or open space and is not readily visible from the public domain.

(1) Storage on/adjacent to private open space is additional to required open space area and dimensions.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines – 4.5m2 where including bicycle bay. |

## ELEMENT 4.7 MANAGING THE IMPACT OF NOISE

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |

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|---|---|---|
| **O4.7.1** – The siting and layout of development minimises the impact of external noise sources and provides appropriate acoustic privacy to dwellings and on-site open space. | An acoustic report has been prepared for the proposed development that considers the impacts of external noise. | |
| **O4.7.2** – Acoustic treatments are used to reduce sound transfer within and between dwellings and to reduce noise transmission from external noise sources. | An acoustic report has been prepared for the proposed development that considers the impacts of internal noise. | |

| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A4.7.1** – Dwellings exceed the minimum requirements of the NCC, such as a rating under the AAAC Guideline for Apartment and Townhouse Acoustic Rating (or equivalent). |
| **A4.7.2** – Potential noise sources such as garage doors, driveways, service areas, plant rooms, building services, mechanical equipment, active communal open space and refuse bins are not located adjacent to the external wall of habitable rooms or within 3m of a window to a bedroom. |
| **A4.7.3** – Major openings to habitable rooms are oriented away or shielded from external noise sources. |

| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | SPP5.4 |

## ELEMENT 4.8 DWELLING MIX

| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT**<br>*Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | **ASSESSOR COMMENT** |
|---|---|---|
| **O4.8.1** – A range of dwelling types, sizes and configurations is provided that caters for diverse household types and changing community demographics. | The development contains:<br>30.5% studio dwellings<br>55.5% one bedroom dwellings<br>14% two bedroom dwellings<br><br>Each floor has a mix of dwelling types.<br><br>Dwelling mix meets the LPP minimum dwellings sizes | |

| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A4.8.1** –<br>**a)** Dwelling mix is provided in accordance with the objectives, proportions or targets specified in a local housing strategy or relevant local planning instrument **OR** |

| | |
|---|---|
| **b)** Where there is no local housing strategy, developments of greater than 10 dwellings include at least 20 per cent of apartments of differing bedroom numbers. | |
| **A4.8.2** – Different dwelling types are well distributed throughout the development, including a mix of dwelling types on each floor. | |
| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** |
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. 15% less than 60m2 and 15% less than 90m2. |

## ELEMENT 4.9 UNIVERSAL DESIGN

| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.9.1** – Development includes dwellings with universal design features providing dwelling options for people living with disabilities or limited mobility and/or to facilitate ageing in place. | A minimum of 20% of the number of dwellings will be designed to meet Silver level requirements (condition of approval). | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A4.9.1 –**

- **a)** 20 per cent of all dwellings, across a range of dwelling sizes, meet Silver Level requirements as defined in the Liveable Housing Design Guidelines (Liveable Housing Australia) **OR**
- **b)** 5 per cent of dwellings are designed to Platinum Level as defined in the Liveable Housing Design Guidelines (Liveable Housing Australia).

| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

## ELEMENT 4.10 FAÇADE DESIGN

| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.10.1** – Building façades incorporate proportions, materials and design elements that respect and reference the character of the local area. | The façade incorporates a range of materials finishes, and design elements and has taken references from the adjoining developments to respond to the locality. | |

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| **O4.10.2** – Building façades express internal functions and provide visual interest when viewed from the public realm. | The proposed development clearly expresses the residential natural of the development.<br><br>The proposed design is an attractive addition to the Springs and will provide a recognisable architectural outcome on this corner site. | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A4.10.1** – Façade design includes:<br>– scaling, articulation, materiality and detailing at lower levels that reflect the scale, character and function of the public realm<br>– rhythm and visual interest achieved by a combination of building articulation, the composition of different elements and changes in texture, material and colour. | | |
| **A4.10.2** – In buildings with height greater than four storeys, façades include a defined base, middle and top for the building. | | |
| **A4.10.3** – The façade includes design elements that relate to key datum lines of adjacent buildings through upper level setbacks, parapets, cornices, awnings or colonnade heights. | | |
| **A4.10.4** – Building services fixtures are integrated in the design of the façade and are not visually intrusive from the public realm. | | |
| **A4.10.5** – Development with a primary setback of 1m or less to the street includes awnings that:<br>– define and provide weather protection to entries<br>– are integrated into the façade design<br>– are consistent with the streetscape character. | | |
| **A4.10.6** – Where provided, signage is integrated into the façade design and is consistent with the desired streetscape character. | | |
| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** | |
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. | |

| **ELEMENT 4.11** | **ROOF DESIGN** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.11.1** – Roof forms are well integrated into the building design and respond positively to the street. | The roof form is a flat roof which is integrated into the overall design. | |

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|---|---|---|
| **O4.11.2** – Where possible, roof spaces are utilised to add open space, amenity, solar energy generation or other benefits to the development. | The roof provides for services, plant, and solar collectors. | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A4.11.1** – The roof form or top of building complements the façade design and desired streetscape character. | | |
| **A4.11.2** – Building services located on the roof are not visually obtrusive when viewed from the street. | | |
| **A4.11.3** – Useable roof space is safe for users and minimises overlooking and noise impacts on private open space and habitable rooms within the development and on adjoining sites. | | |
| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** | |
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. | |

| **ELEMENT 4.12** | **LANDSCAPE DESIGN** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT** | **ASSESSOR COMMENT** |
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.12.1** – Landscape design enhances streetscape and pedestrian amenity; improves the visual appeal and comfort of open space areas; and provides an attractive outlook for habitable rooms. | The proposed development provides a significant landscape outcome on the site, along the street frontages and through the deep soil areas, which provides an enhanced pedestrian amenity and outlook from the dwellings. | |
| **O4.12.2** – Plant selection is appropriate to the orientation, exposure and site conditions and is suitable for the adjoining uses. | Refer to landscape plans. | |
| **O4.12.3** – Landscape design includes water efficient irrigation systems and where appropriate incorporates water harvesting or water re-use technologies. | Refer to landscape plans. There are opportunities with the deep soil areas and on structure planting to re-use water collected from the building. | |
| **O4.12.4** – Landscape design is integrated with the design intent of the architecture including its built form, materiality, key functional areas and sustainability strategies. | The landscape design and architectural design has been comprehensively integrated responding to the built form. The landscape is provided at several levels providing a green interface to the adjoining properties. | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |

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**A4.12.1** – Submission of a landscape plan prepared by a competent landscape designer. This is to include a species list and irrigation plan demonstrating achievement of Waterwise design principles.

**A4.12.2** – Landscaped areas are located and designed to support mature, shade-providing trees to open space and the public realm, and to improve the outlook and amenity to habitable rooms and open space areas.

**A4.12.3** – Planting on building structures meets the requirements of Table 4.12.

**Table 4.12** Planting on structure: minimum soil standards for plant types and sizes

| Plant type | Definition | Soil volume | Soil depth | Soil area |
|---|---|---|---|---|
| Large tree | Over 12m high, crown spread at maturity | 76.8m³ | 1,200mm | 64m² with minimum dimension 7m |
| Medium tree | 8–12m high, crown spread at maturity | 36m³ | 1,000mm | 36m² with minimum dimension 5m |
| Small tree | 4–8m high, crown spread at maturity | 7.2m³ | 800mm | 3m × 3m |
| Small ornamentals | 3–4m high, crown spread at maturity | 3.2m³ | 800mm | 2m × 2m |
| Shrubs | -- | -- | 500–600mm | -- |
| Ground cover | -- | -- | 300–450mm | -- |
| Turf | -- | -- | 200mm | -- |

**A4.12.4** – Building services fixtures are integrated in the design of the landscaping and are not visually intrusive.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | **No** |

## ELEMENT 4.13 ADAPTIVE REUSE

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.13.1** – New additions to existing buildings are contemporary and complementary and do not detract from the character and scale of the existing building. | N/A | |
| **O4.13.2** – Residential dwellings within an adapted building provide good amenity for residents, | N/A | |

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| generally in accordance with the requirements of this policy. | | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A4.13.1** – New additions to buildings that have heritage value do not mimic the existing form and are clearly identifiable from the original building. | | |
| **A4.13.2** – New additions complement the existing building by referencing and interpreting the scale, rhythm and materiality of the building. | | |
| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** | |
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | N/A | |

| **ELEMENT 4.14** | **MIXED USE** | |
|---|---|---|
| **ELEMENT OBJECTIVES**<br>*Development is to achieve the following Element Objectives* | **APPLICANT COMMENT**<br>*Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | **ASSESSOR COMMENT** |
| **O4.14.1** – Mixed use development enhances the streetscape and activates the street. | N/A | |
| **O4.14.2** – A safe and secure living environment for residents is maintained through the design and management of the impacts of non-residential uses such as noise, light, odour, traffic and waste. | N/A | |
| **ACCEPTABLE OUTCOMES**<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* | | |
| **A4.14.1** – Where development is located within a mixed use area designated within the local planning framework, ground floor units are designed for future adaption to non-residential uses. | | |
| **A4.14.2** – Ground floor uses including non-commercial uses, such as communal open space, habitable rooms, verandahs and courtyards associated with ground floor dwellings, address, enhance and activate the street. | | |
| **A4.14.3** – Non-residential space in mixed use development is accessed via the street frontage and/or primary entry as applicable. | | |
| **A4.14.4** – Non-residential floor areas provided in mixed use development has sufficient provision for parking, waste management, and amenities to accommodate a range of retail and commercial uses in accordance with the requirements | | |
| **A4.14.5** – Mixed use development is designed to mitigate the impacts of non-residential uses on residential dwellings, and to maintain a secure environment for residents. | | |
| **LOCAL PLANNING FRAMEWORK** | **REQUIREMENT** | |
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No | |

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## ELEMENT 4.15 ENERGY EFFICIENCY

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.15.1** – Reduce energy consumption and greenhouse gas emissions from the development. | Refer to ESD report. | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

**A4.15.1 –**

**a)** Incorporate at least one significant energy efficiency initiative within the development that exceeds minimum practice (refer Design Guidance) **OR**

**b)** All dwellings exceed the minimum NATHERS requirement for apartments by 0.5 stars.[1]

Compliance with the NCC requires that development shall achieve an average star-rating across all dwellings that meets or exceeds a nominated benchmark, and that each unit meets or exceeds a slightly lower benchmark. Compliance with this Acceptable Outcome requires that each unit exceeds that lower benchmark by at least half a star.

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. |

## ELEMENT 4.16 WATER MANAGEMENT AND CONSERVATION

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.16.1** – Minimise potable water consumption throughout the development. | Refer to ESD report. | |
| **O4.16.2** – Stormwater runoff from small rainfall events is managed on-site, wherever practical. | There are opportunities with the deep soil areas and on-structure planting to re-use water collected from the building. | |
| **O4.16.3** – Reduce the risk of flooding so that the likely impacts of major rainfall events will be minimal. | Stormwater management will be in accordance with the City of Belmont's requirements | |

**ACCEPTABLE OUTCOMES**
*Acceptable Outcome pathway may not be applicable where a performance solution is provided*

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|---|
| **A4.16.1** – Dwellings are individually metered for water usage. |
| **A4.16.2** – Stormwater runoff generated from small rainfall events is managed on-site. |
| **A4.16.3** – Provision of an overland flow path for safe conveyance of runoff from major rainfall events to the local stormwater drainage system. |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. |

## ELEMENT 4.17 WASTE MANAGEMENT

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.17.1** – Waste storage facilities minimise negative impacts on the streetscape, building entries and the amenity of residents. | The waste rooms are located at ground level to the rear of the building and accessed from the secondary street site. The waste room is not visible from the street, from the main entry or from any dwelling.<br><br>Provision is made for a bulk bin set-down from Hawksburn Road<br><br>A waste management plan has been prepared for the site. | |
| **O4.17.2** – Waste to landfill is minimised by providing safe and convenient bins and information for the separation and recycling of waste. | The waste management room includes both standard and recycling and information will be provided to the residents regarding the separation of waste. | |

| ACCEPTABLE OUTCOMES<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A4.17.1** – Waste storage facilities are provided in accordance with the Better Practice considerations of the *WALGA Multiple Dwelling Waste Management Plan Guidelines* (or local government requirements where applicable). |
| **A4.17.2** – A Level 1 Waste Management Plan (Design Phase) is provided in accordance with the *WALGA Multiple Dwelling Waste Management Plan Guidelines* - Appendix 4A (or equivalent local government requirements). |
| **A4.17.3** – Sufficient area is provided to accommodate the required number of bins for the separate storage of green waste, recycling and general waste in accordance with the *WALGA Multiple Dwelling Waste Management Plan Guidelines* - Level 1 Waste Management Plan (Design Phase) (or local government requirements where applicable). |
| **A4.17.4** – Communal waste storage is sited and designed to be screened from view from the street, open space and private dwellings. |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|

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| | |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | LPP No.07 The Springs Design Guidelines. |

## ELEMENT 4.18 UTILITIES

| ELEMENT OBJECTIVES<br>*Development is to achieve the following Element Objectives* | APPLICANT COMMENT | ASSESSOR COMMENT |
|---|---|---|
| | *Outline the rationale demonstrating that the proposal has met the Element Objectives, through either a performance based solution or using the Acceptable Outcomes. The Design Guidance provided in the policy may be of assistance.* | |
| **O4.18.1** –The site is serviced with power, water, gas (where available), wastewater, fire services and telecommunications/broadband services that are fit for purpose and meet current performance and access requirements of service providers. | The site is appropriately serviced. | |
| **O4.18.2** – All utilities are located such that they are accessible for maintenance and do not restrict safe movement of vehicles or pedestrians. | Utilities are generally located within the car parking ground level and do not impact safe movement of pedestrians and vehicles. | |
| **O4.18.3** – Utilities, such as distribution boxes, power and water meters are integrated into design of buildings and landscape so that they are not visually obtrusive from the street or open space within the development. | The utilities are integrated into the design and accessible. The booster cabinet is located along Great Eastern Highway and integrated into the landscape outcome on the site. | |
| **O4.18.4** – Utilities within individual dwellings are of a functional size and layout and located to minimise noise or air quality impacts on habitable rooms and balconies. | AC condensers are located on the balconies and screened. | |

| ACCEPTABLE OUTCOMES<br>*Acceptable Outcome pathway may not be applicable where a performance solution is provided* |
|---|
| **A4.18.1** – Utilities that must be located within the front setback, adjacent to the building entry or on visible parts of the roof are integrated into the design of the building, landscape and/or fencing such that they are accessible for servicing requirements but not visually obtrusive. |
| **A4.18.2** – Developments are fibre-to-premises ready, including provision for installation of fibre throughout the site and to every dwelling. |
| **A4.18.3** – Hot water units, air-conditioning condenser units and clotheslines are located such that they can be safely maintained, are not visually obtrusive from the street and do not impact on functionality of outdoor living areas or internal storage. |
| **A4.18.4** – Laundries are designed and located to be convenient to use, secure, weather-protected and well-vented; and are of an overall size and dimension that is appropriate to the size of the dwelling. |

| LOCAL PLANNING FRAMEWORK | REQUIREMENT |
|---|---|
| *Does the local planning framework amend or replace the above stated controls? If yes, state the applicable requirement:* | No |

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# 2 Hawksburn Road

## Sustainability Report

## Finbar Group

| | |
|---|---|
| Job No: | 1046440 |
| Doc ref: | 1046440-RPT-SY-001 |
| Revision: | A |
| Revision date: | 03 June 2025 |

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| Project title | 2 Hawksburn Road | Job number |
|---|---|---|
| Report title | Sustainability Report | 1046440 |

## Document revision history

| Revision ref | Issue date | Purpose of issue / description of revision |
|---|---|---|
| - | 03 June 2025 | Issued to Client for Review |
| A | 03 June 2025 | Issued to Development Application |
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## Document validation (latest issue)

6/3/2025

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Principal author

Signed by: p.talmale

3/06/2025

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Checked by

Signed by: KERRY HE

3/06/2025

X

Verified by

Signed by: Jordan Kirrane

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# Executive summary

This report outlines the Sustainability Strategy for the proposed 16 storey residential development comprising 108 apartments on Lot 888 at 2 Hawksburn Road, Rivervale, Western Australia. The site is situated approximately 5 kilometres from the Perth CBD and falls within a 'Special Development Precinct' zone, as designated under Clause 4.3 of the City of Belmont Local Planning Scheme No. 15.

The report outlines how the proposed development aligns with the sustainability credentials of the City of Belmont, Local Planning Scheme No. 15 and State Planning Policy 7.0. **Overall, the proposed development is considered to meet all the objectives relevant to sustainability included in the City of Belmont local planning requirements.**

Table 1-1 below confirms that the proposed development responds to each of the Local Planning Scheme requirements and outlines which sections of this report are relevant for each requirement.

*Table 1-1 City of Belmont Local Planning Scheme requirements*

| Development must demonstrate that: | Requirement will be met | Comments |
|---|---|---|
| **City of Belmont, Local Planning Scheme No. 15, Section 1.6 (c)**<br>To provide for housing choice and variety in neighbourhoods with a community identity and high levels of amenity. | ✓ | The development is designed to provide an increased variety of housing choice to grow a larger community within the neighbourhood. The development has a combination of Studio, 1 Bed and 2 Bed units of varying sizes.<br><br>Refer to Section 3.0 |
| **City of Belmont, Local Planning Scheme No. 15, Section 1.6 (e)**<br>Protect and enhance the environmental values and natural resources of the local government and to promote ecologically sustainable land use and development. | ✓ | The development demonstrates a commitment to limit fossil fuels and natural resources to reduce greenhouse gas emissions. The development will be fully electric with no gas connection.<br><br>Refer to Section 3.0. |
| **City of Belmont, Local Planning Scheme No. 15, Section 1.6 (f)**<br>To safeguard and enhance the character and amenity of the build and natural environment of the local government. | ✓ | The development is designed to improve the environmental character and built environment through the following:<br>▪ Double glazing will be used for thermal comfort and daylight penetration.<br>▪ Insulation will be fitted to provide high performance thermal comfort.<br>▪ Sufficient air movement will allow air to circulate throughout each dwelling for comfortable thermal conditions and air quality.<br>▪ Materials and appliances have been specifically selected to reduce Green House Gas (GHG) emissions.<br>▪ The development has included external landscape areas to enhance the natural environment of the local area.<br><br>Refer to Section 4.0, 5.0 and 6.0. |
| **City of Belmont, Local Planning Scheme No. 15, Section 1.6 (i)**<br>To protect and maximise efficacy of existing and future community infrastructure needs. | ✓ | The development is designed to reduce greenhouse gas emissions through energy, water, embodied carbon and waste minimisation measures.<br>Refer to Section 4.0. |

Table 1-2 below confirms that the proposed development responds to each of the Local Planning Scheme requirements and outlines which sections of this report are relevant for each requirement.

*Table 1-2 State Planning Policy principles*

| Good design principles | Principle will be met | Comments |
|---|---|---|
| Sustainable landscape and urban design adhere to established water-sensitive urban design principles, minimises negative impacts on existing natural features and ecological processes and facilitates green infrastructure at all project scales. | ✓ | The use of water-wise landscaping has been incorporated into the landscape plan of the project. Drip feed irrigation and moisture sensors will be investigated for the project.<br><br>Refer to Section 4.2. |
| Sustainable built environments use passive environmental design measures at various scales, responding to local climate and site conditions by providing optimal orientation, shading, thermal performance and natural ventilation. Reducing reliance on technology for heating and cooling minimises energy use, resource consumption and operating costs over the life cycle of the project. | ✓ | Residential openings take advantage of cooling summer breezes through single sided natural ventilation.<br>Large trees to be planted and located to reduce solar exposure during the warmer months of the year.<br>Double glazing and insulation will be used to reduce reliance on technology for heating and cooling.<br><br>Refer to Section 4.0 and 5.0. |
| Sustainable design also includes the use of sustainable construction materials, recycling, good waste management practices, re-use of materials and existing structures, harnessing of renewable energy sources, and total water cycle management. | ✓ | The development will aim to reduce the total embodied carbon in construction and aims to maximise the operational efficiency and water efficiency through well designed and efficient buildings services. The development also proposes provision of PV system to support the common property power requirements.<br><br>Refer to Section 4.0. |

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# 1.0 Introduction

This report outlines the Sustainability Strategy for the proposed 16 storey residential development comprising 108 apartments on Lot 888 at 2 Hawksburn Road, Rivervale, Western Australia. The site is situated approximately 5 kilometres from the Perth CBD and falls within a 'Special Development Precinct' zone, as designated under Clause 4.3 of the City of Belmont Local Planning Scheme No. 15.

The report outlines how the propose d development aligns with the sustainability credentials of the City of Belmont, Local Planning Scheme No. 15 and State Planning Policy 7.0.

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# 2.0 Policy

## 2.1 City of Belmont Local Planning Scheme No.15

The Belmont Local Planning Scheme sets out the City's aim and intentions for the development of land and includes a number of sustainability requirements for all future built developments as follows:

- To provide for housing choice and variety in neighbourhoods with a community identity and high levels of amenity;
- To protect and enhance the environmental values and natural resources of the local government and to promote ecologically sustainable land use and development;
- To safeguard and enhance the character and amenity of the built and natural environment of the local government;
- To maximise the built-in safety of the local government;
- To protect and maximise efficacy of the existing and future community infrastructure needs.

## 2.2 State Planning Policy 7.0 – Design of the Built Environment

The State Planning Policy 7.0 provides a broad framework for design of the built environment across Western Australia. This policy seeks to deliver positive environmental, social and economic outcomes that derive from good design outcomes. The good design principles for sustainability are:

- Sustainable landscape and urban design adhere to established water-sensitive urban design principles, minimises negative impacts on existing natural features and ecological processes and facilitates green infrastructure at all project scales.
- Sustainable built environments use passive environmental design measures at various scales, responding to local climate and site conditions by providing optimal orientation, shading, thermal performance and natural ventilation. Reducing reliance on technology for heating and cooling minimises energy use, resource consumption and operating costs over the life cycle of the project.
- Sustainable design also includes the use of sustainable construction materials, recycling, good waste management practices, re-use of materials and existing structures, harnessing of renewable energy sources, and total water cycle management.

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# 3.0 Net Zero Carbon

The construction industry is responsible for around 20% of Australia's carbon footprint. These emissions include embodied carbon emissions, energy and water consumption that goes into the building during construction as well as operational energy and water usage of the completed building, maintenance during the life span and the demolition at the end of the building's life.

The Government of Western Australia outlines their aspirations to achieve net zero greenhouse gas emissions by 2050 in their Climate Policy published in November 2020.

The project is investigating targeting net zero carbon for Scope 1 and 2 emissions in its operations.

The following table summarises the specific initiatives being investigated for the development included in the design in relation to achieving Net zero carbon.

*Table 3-1 Net zero carbon initiatives*

| Item | Proposed design initiatives |
|---|---|
| **Energy efficiency** | The development will target compliance with the NCC 2022 energy efficiency requirements by obtaining a NatHERS rating, with a minimum of 6.0 stars for each dwelling and an overall project average of 7.0 stars. |
| **Limit fossil fuels** | The development will be fully electric with all-electric systems for space heating and central hot water system with electric heat pump boost are proposed. There is no gas connection to the development. |
| **Renewable energy** | Solar panels are proposed for the roof.<br>A minimum 15 kW photovoltaic (PV) system will be designed to support the power requirements of the development's common property areas. |
| **Emissions from refrigerants** | Development will benefit from natural cross ventilation. In addition, proposed trees around the site provide shading reducing the need for comfort cooling. |

## 3.1 Emissions from refrigerants

Synthetic refrigerants are made up of chemicals that have a high global warming potential (GWP). GWP is the relative amount of degradation the refrigerant can cause to global warming. Because of this, refrigerants must be safely disposed at the end of their life at great cost. In the future building owners may be impacted by future requirements for safe disposal which may include increases in penalties that should be considered today[1].

The elimination of high-GWP refrigerants is being investigated for the development, to minimise the environmental and climate impacts of these refrigerants. This will involve the residential areas being cooled through good passive design, cross ventilation and a high thermally performing building envelope. The implementation of these key design solutions would omit the need for using active air conditioning units and reduce the use of climate harming refrigerants significantly.

[1] GBCA: Green Star Buildings v1

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# 4.0 Resource consumption

The following sections set out design strategies to reduce the building's energy, water demand and waste.

## 4.1 Energy efficiency

The following table summarises the specific initiatives targeted for inclusion in the design in relation to energy efficiency:

*Table 4-1 Energy efficiency initiatives*

| Item | Proposed design initiatives |
|---|---|
| **Building fabric enhanced over NCC requirements** | High-performance fabric and insulation are proposed.<br>In accordance with NCC 2022 requirements, each dwelling will achieve a minimum NatHERS rating of 6.0 stars, with the development targeting an overall average of 7.0 stars across the project. |
| **Lighting efficiency** | All lighting will be LED, low energy lighting.<br>Target lighting power density reduction by at least 10% against Part J7 Artificial lighting and power of NCC 2022. |
| **Ventilation and air-conditioning** | Air conditioning equipment will be a minimum of 3-star as per AS 3823.2-2011. |
| **Appliances and equipment** | All appliances installed will be energy and water efficient.<br>All WELS fixtures installed will be water efficient.<br>Central Hot Water System with electric heat pump boost. |
| **Orientation** | The landscaped gardens, awnings offer shading and natural ventilation opportunities. |
| **Solar Panels** | A minimum of 15kW PV system are to be designed to support the development's common property power requirements. |
| **EV Charging** | Provisions that facilitate for future installation with an additional 20% capacity to the substation above standard modelled load requirements for the development, a demand load management system, and pre-laid proximate conduits to carbays. |

### 4.1.1 NatHERS

The Nationwide House Energy Rating Scheme (NatHERS) is a tool to assess the energy usage of residential dwellings. For a multi-residential development, every residential unit is investigated as a separate unit with its own rating before an overall average rating is calculated. The NatHERS tool considers a wide range of parameters like orientation, glazing, insulation, size of rooms and door openings, shading and awnings and ceiling fans.

The NCC 2022 requires a minimum of a 6-star NatHERS rating for the worst-performing residential unit in the complex and an overall average of 7-star. The proposed development is targeting to achieve a minimum of a 6.0-star NatHERS rating for the worst-performing unit in the complex and an overall average of 7-star is targeted.

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### 4.1.2 Double glazing

Double glazing units are to be used on all external facades providing good solar control to prevent summer heating while allowing useful passive solar heating in winter.

The low U-Value would minimize the conductive loss or gain. These result in an improved energy rating of units as well as a reduced overall carbon footprint of the development.

### 4.1.3 Natural ventilation

All living rooms and bedrooms of the residential units are designed to have operable glazing elements. These façade elements promote natural ventilation and allow for purging warm air at night.

When closed during the day, cool air can be stored within the residential unit to reduce or eliminate the need for air conditioning. The openings to all living spaces also enable occupants to make use of the favourable outdoor conditions which prevail in the Perth region for 20% of the time, again reducing the need for mechanical heating or cooling during these times. The inclusion of various landscaped gardens and balconies surrounding the built form will enhance the natural ventilation of the residential units and help reduce the need for air conditioning.

### 4.1.4 Thermal bridging

Similar to airtightness, thermal bridging is the transference of heat through a wall at a point through which it can bypass the insulating layers of the structure. It is through these points in a building's envelope that they can experience unwanted heat gains and/or losses and as such will be considered when designing for sustainability and energy efficiency.

The architectural and structural detailing on the project will consider the issue of thermal bridging and will apply design principles to avoid unwanted heat losses or gains wherever possible through thermal breaks and other measures.

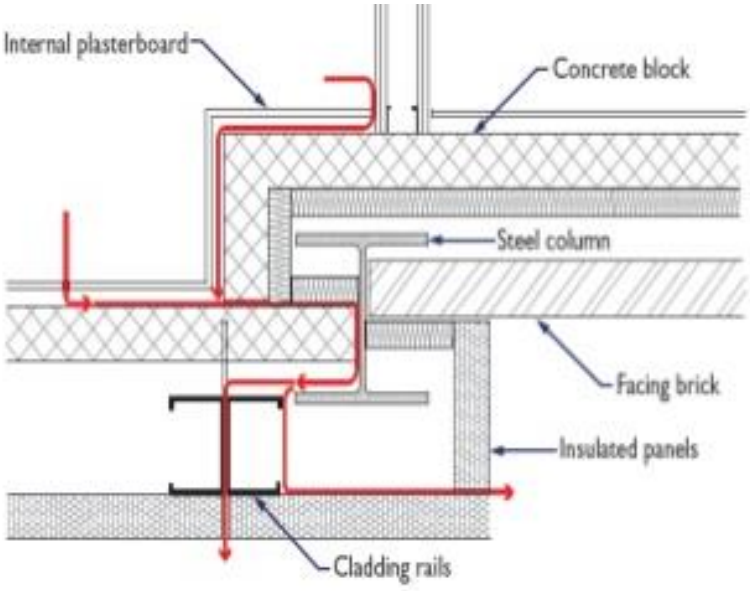


*Figure 4-1 Exemplar continuous airtightness line of building details*

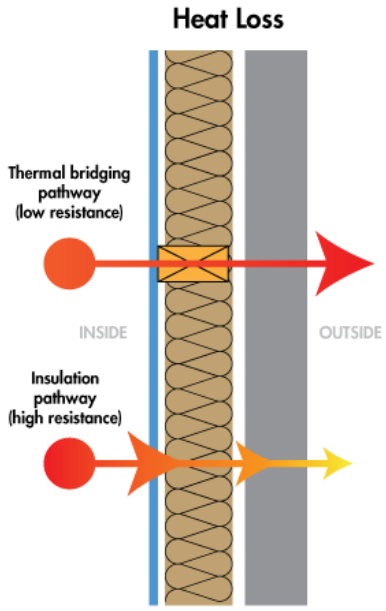


*Figure 4-2 Thermal bridging principle*

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### 4.1.5 Light fittings

All light fittings to be specified as LED, including lighting in the garage and external lighting. Carparks and common area lighting will incorporate light sensing such as occupancy sensing (PIRs) to reduce lighting consumption when lighting is not required.

Additionally, downward facing fittings will be considered for the external landscaped areas to reduce the negative effects of light pollution.

### 4.1.6 Transparent consumption

Advanced metering for the energy usage recording is available through Synergy as part of the WA Government's "Energy Transformation Strategy" program. The meters provide access to the half hourly energy consumption from the previous day to help residents pinpoint how power is being used as well as engage them in a sustainable lifestyle. Additionally, the development will have $CO^2$ monitors on the ground floor to monitor and reduce energy usage.

### 4.1.7 Solar photovoltaic (PV) panels

Solar photovoltaic is being used as an alternate energy source, to supply power for the dwellings. The project will follow the requirements set out in the NCC2022, section J9D5 Facilities for solar photovoltaic and battery systems. The proposed rooftop will incorporate a minimum of 15kW PV system to support the development's common property power requirement.

*Figure 4-3 Rooftop PV system*

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## 4.2 Water efficiency

The water consumption of Western Australia is the second highest in Australia with an average of 241,000 litres per household per annum, well above the Australian average of 190,000 litres (Statistics, 4610.0 - Water Account, Australia 2015-16, 2017).

A reduction of water usage does not only alleviate pressure from the local water supply but also means reduced costs of living in WA.

The following table summarises the specific initiatives to be investigated for inclusion in the design in relation to water efficiency:

*Table 4-2 Water efficiency initiatives*

| Item | Proposed design initiatives |
|---|---|
| **Potable water consumption** | All water fittings and fixtures to be water efficient. The considered WELS rating are outlined in Table 5-3. |
| **Landscape irrigation** | Drip irrigation with moisture sensing will be investigated for all landscape areas. |

### 4.2.1 Water fixtures & fittings

Occupant consumption is a major contributor to potable water usage. The following water fixture WELS ratings will be considered to ensure the efficient use of potable water by building occupants.

*Table 4-3 Proposed water fittings WELS rating*

| Fixture / Fitting Type | WELS Rating |
|---|---|
| Taps | 6-star |
| Showers | 3-star |
| Toilets | 4-star |
| Clothes Washing Machine | To be installed by tenants |
| Dishwasher | To be installed by tenants |

### 4.2.2 Water-wise landscaping

The use of water-wise landscaping has been incorporated into the landscape plan of the project. This includes the use of hardy natives and other low-water vegetation.

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*Figure 4-4 Use of hardy natives and drip irrigation system for landscaping*

## 4.3 Building materials

Buildings consume considerable natural resources in their construction, operation, and demolition. This section of the report will provide details about the potential impacts caused by the building and how these impacts have been reduced when compared to typical buildings of this nature. The development will aim to reduce the total embodied energy and carbon considered in the construction and then aim to maximise the operational efficiency of the buildings services to provide and enhance tenant provisions for the minimum amount of energy and water. Furthermore, methods for maintaining operational efficiency over the life of the building will be investigated to ensure that the benefits are maximised over the life of the building.

The following table summarises the specific initiatives to be investigated for inclusion in the design in relation to building materials:

*Table 4-4 Building materials initiatives:*

| Item | Proposed design initiatives |
|---|---|
| **Embodied carbon in the building materials** | Low embodied carbon construction techniques and materials selection will be considered throughout the design development. |
| **Concrete** | Concrete in the building is aimed to have reduced Portland cement.<br>BubbleDeck is proposed for flooring system. This is will significantly decrease the amount of concrete used onsite by one third, and is expected to save 475t of $CO^2$ emissions, 1760 cubic metres of site concrete, 2990t of foundation load, 280 ready mix truck trips and over 2990 GJ of energy in production and haulage. |
| **Sustainable timber** | Timber selections used in the building and construction will be procured from a sustainable source. |
| **Permanent formwork, pipes, ducts, cables** | PVC products will meet Best Practice eGuidelines for PVC. |
| **Carpets and engineered wood products** | All the paints, adhesives, sealants, and carpets will have low levels of Volatile Organic Compounds. Engineered wood will be low formaldehyde. There will be no lead, asbestos, and PCBs in the building. |

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The design team will actively target a reduced carbon footprint during construction and embodied energy within building materials.Timber used for construction works is targeted to be either certified as responsibly sourced or recycled material.

### 4.3.1 Embodied carbon

The construction industry contributes to greenhouse gas emissions in multiple ways beyond just the operational phase of buildings. The entire lifecycle of construction materials, from extraction and manufacturing to transportation and installation, involves the release of carbon and other greenhouse gases.

For instance, the production of materials like cement, steel, and aluminium—essential components in construction—requires significant energy and emits CO2 during manufacturing. Transportation of these materials to construction sites adds to the emissions. Even the demolition and disposal of buildings at the end of their life cycle contribute to greenhouse gas emissions.

The following measures will be considered throughout the design development to reduce the amount of embodied carbon:

- Sub-structure
  - Maximise recycled content of materials in structural components.
- Super-Structure
  - Maximise recycled content formwork;
  - Use of lightweight and reusable materials where possible.
- Envelope
  - Adopt a low-carbon, lightweight approach;
  - Consider necessity of massing elements;
  - Consider composite materials or dual function elements;
  - Considering the use of recycled materials.
- Internal Walls
  - Consider necessity of internal walls;
  - Consider recycled content or reused materials;
  - Consider low carbon steel framing;
  - Designing for flexibility and futureproofing to reduce renovation efforts.
- Internal Finishes
  - Consider setting a recycled content target for all finishes;
  - Consider long life and highly durable finished is areas of high foot traffic;
  - Considering Carbon Neutral certified products.

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### 4.3.2 Low VOCs

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors than outdoors. VOCs are emitted by a wide array of products numbering in the thousands (typically paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers).

The development will aim to specify materials with a low emissions content including low-VOC paints.

## 4.4 Waste

The main objectives for the waste management strategies for construction and operational waste are to ensure that waste is avoided and recycled during design, construction, and operation.

Waste within a building construction context can be avoided by encouraging the selection of lower-impact and long-term materials. Operational waste to landfill can be reduced by providing relevant and easily accessible facilities for recyclable waste and other waste that can be diverted from landfill such as organic waste, batteries, or e-waste.

Waste streams – will be separated into refuse waste (landfill), organics, commingled recycling. The central bin store has been sized to suit the number of residents and common areas.

The following table summarises the specific initiatives that will be investigated for inclusion in the design in relation to waste management:

*Table 4-5 Waste initiatives*

| Item | Proposed design initiatives |
|---|---|
| **Construction and demolition waste** | Waste from construction is to be diverted from landfill through active on-site waste management and waste separation. |
| **Operational waste** | Adequate facilities will be provided to store separate waste streams. Good external and internal access to the storeroom will be provided. |

### 4.4.1 Construction and demolition waste

The team will investigate the following:

- Specifying SSA produced reinforcing bar and mesh.
- Use of low carbon construction concretes.
- Sustainably sourced timber.

Additionally, ‘Designing out Waste’ principles should be applied where possible. These principles are:

- Design for reuse and recovery
- Design for off-site construction
- Design for materials optimisation
- Design for waste efficient procurement, and
- Design for deconstruction and flexibility.

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### 4.4.2 Operational waste

A dedicated waste storage area will be provided for the separation and storage of recyclable waste during operation, allowing for the different waste streams to be separated to match the local recycling scheme. At least three streams will be covered including landfill, recycling and a third stream for organic/food waste.

Throughout project design, operation and construction, principles of resource recovery will be applied, so that materials and products are recovered and reused where possible, reducing landfill and saving money. Some strategies that will be investigated include:

- Innovative waste separation and collection strategies to allow materials to be isolated for reuse;
- A purchasing policy which aims to minimise waste from products and packaging, encourages the use of products which have minimum environmental impact; and
- Manufacturers and suppliers will be encouraged to take full responsibility for the life cycle impact of products including ownership at end of life.

### 4.4.3 Organic waste strategy

The Western Australia's Waste Strategy published by the Waste Authority in 2019, requires all Local Governments to implement the Food Organics and Garden Organics (FOGO) system by 2025. The City of Belmont has implemented FOGO and provided a consistent three bin kerbside collection systems that includes separation of FOGO from other waste categories. The development will integrate an organic and food waste separation stream to the design to accommodate the FOGO system, in line with the Waste Authority's Better Practice FOGO Kerbside Collection Guidelines.

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# 5.0 Indoor environmental quality

The Indoor Environment Quality of a building aims to achieve sustainability performance improvements in a manner that also improves occupants' experience of the space. Sustainable buildings are designed for people and reductions in energy use should never be made at the expense of the occupants' health and wellbeing.

A holistic approach to sustainability will result in multiple benefits both in energy efficiency and encouraging occupant wellbeing. This can be achieved by improvements to air quality through appropriate ventilation, the provision of high levels of thermal, visual, and acoustic comfort, reduction to occupant stress and the creation of a low-toxicity environment through the reduction of pollutants.

The following table summarises the specific initiatives to be investigated for inclusion in the design in relation to Indoor Environment Quality:

*Table 5-1 Indoor Environment Quality initiatives*

| Item | Proposed design initiatives |
|---|---|
| **Thermal comfort** | Double glazing to all external glazed facades.<br>In line with NCC 2022, a minimum of a 6.0-star NatHERS rating for the worst-performing unit in the complex and an overall average of 7-star is targeted. |
| **Fresh Air** | All residential units are naturally ventilated.<br>Level 1 & 2 carpkar will be naturally ventilated.<br>$CO^2$ monitors are proposed to be installed on the ground floor. |
| **Daylight** | Large windows with moderate Visual Light Transmittance (VLT) optimised for sufficient natural daylight. |
| **External Views** | Good orientation with views to the on-site landscaped gardens/vegetation.<br>Large windows with moderate Visual Light Transmittance (VLT). |
| **Exposure to toxins** | Specification of low VOCs paints, adhesives and sealants where feasible.<br>Specification of low formaldehyde in engineered woods where feasible. |
| **Internal lighting levels** | All lighting will be LED or low energy, flicker-free and with no glare. |
| **Acoustics** | Acoustic separation between residential units.<br>Compliance with acoustic requirements for external and internal noise levels.<br>Acoustic separation and internal noise levels complying with Table 1 of AS/NZS2107:2016. |

## 5.1 Amenity and comfort

The human body regulates its core temperature via the hypothalamus within a narrow range of 36 to 38 degrees. An indoor environment that is too hot or too cold can affect mood, performance, and productivity. However, at which temperature a resident feels comfortable varies significantly from person to person. To control internal comfort and minimise excessive heat loss in winter and heat gains in summer, several strategies will be investigated for the proposed development:

- All habitable rooms in all buildings need to maximise natural daylight and views to the outside.
- Façade design and glass selection are very important; heat gains and losses must be moderated, and thermal bridging should be avoided. Double glazing systems are to be incorporated for this development to improve the thermal performance of the building envelope.
- The high-performance glazing will additionally help to manage acoustic aspects of the building. Separated party walls between residential units will also reduce noise impacts from neighbouring flats.
- The façade will be well sealed to avoid draughts and air leakage.

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- External shading and shading screens prevent excessive heat gains in summer.

Additionally, further amenities are proposed for the development including at least 20 shared bicycle service where the parking facilities are protected from external elements and other vehicles. This service will be owned, managed and maintained onsite for the use of residents to encourage transport modal shift. These bikes can be booked via a app or website, which is to be monitored and mainted by the building owner onsite.

The development will also be provide 25 residential visitor bicycle parking bays, representing a 66% increase above the minimum requirement.

## 5.2 Natural lighting

Appropriate daylight is essential for users' wellbeing and connection to the outdoors, and for energy efficiency. However, excessive daylight can cause glare which is a major IEQ concern and must be avoided.

The development is designed such that every living space is designed to have large sliding doors to the balconies in addition to large windows to maximise daylight levels.

The following design opportunities are considered throughout the detailed design process to maximise the daylighting potential:

- Large glazed areas to all living areas and bedrooms.
- glass with a moderate visual light transmittance (VLT) allows sufficient daylight to penetrate the space.
- Light internal colours improve indoor lighting levels.

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# 6.0 Urban ecology

With continuously growing cities, urban ecology plays a large role in conserving biodiversity and improving life quality for urban residents. Well planned buildings and landscape architecture protects and enhances biodiversity, provides sustainable landscaping such as low water use, low fertiliser requirements and local native and indigenous plant species selection. If possible, remnant endemic plant communities should be managed and protected.

The following table summarises the specific initiatives included in the design in relation to urban ecology:

*Table 6-1 Urban ecology initiatives*

| Item | Proposed design initiatives |
|---|---|
| **Connection to nature** | Extensive landscaping views will ensure a close connection to nature for all occupants. |
| **Mitigation of Light Pollution** | 95% of all external light fittings pointing downwards to mitigate the effect of urban light pollution. |
| **Heat Island Effect Reduction** | Use of vegetation, green spaces and SRI approved roofing will actively reduce the heat island effect. |

## 6.1 Connection to nature

Connection to nature is a key design element for the project and will ensure that occupants can interact with nature either inside the building or externally through landscaping across the outdoor areas.

## 6.2 Light pollution

Light pollution is an environmental issue that is becoming more of a problem every year as cities continue to grow in size and density. Excessive amounts of light being projected upwards is not only a waste of energy and resources but has also been proven to make a negative impact on the local wildlife by affecting various species' vision, mating, nesting, and built-in migration instincts.

Similar effects have been found in humans, with some people struggling to sleep and relax with prolonged exposure to artificial daylight and glare from poorly fitted external lights. The idea of reducing light pollution through sensible light fittings can save the site owners financially by reducing wasted energy and increasing lighting efficiency whilst simultaneously contributing positively to the health and wellbeing of the surrounding natural environment.

The project will investigate the use of all external light fittings pointing downwards, mitigating the effects of light pollution.

*Figure 6-1 Light and energy usage of external lighting*

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## 6.3 Minimising heat island effect

The heat island effect describes the condition where urban areas have a higher average temperature than its rural surroundings owing to the make-up of the built environment. The use of light roof materials combined with shaded and landscaped areas can reduce the heat island effect significantly and contributes to further energy savings.

The development includes extensive landscaped areas across the external areas of the development, minimising the effects of the heat island effect. The use of light-coloured materials with a Solar Reflectance Index (SRI) value of a minimum of 64 will be investigated.

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ZERO CARBON DESIGN 2030

# WASTE MANAGEMENT PLAN

| | |
|---|---|
| **Project Type:** | **108 Apartments** |
| **Client:** | **Finbar Group Ltd** |
| **Project Address:** | **2 Hawksburn Road, Rivervale** |
| **Date:** | **May 2025** |

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This Version 2: 26 May 2025
Previous Version 1: 22 May 2025

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# 1 EXECUTIVE SUMMARY

Finbar is applying to the City of Belmont (the "City") to develop a property known as 2 (Lot 888) Hawksburn Road, Rivervale. The development consists of 108 studio, one and two-bedroom residential apartments.

As part of the Development Approval process, the proponent is required to submit a Waste Management Plan (WMP) for the development to the City. Finbar employed the services of waste specialists Dallywater Consulting to investigate the City's requirements in this regard and to develop this WMP.

Based on the use of contemporary waste generation rates, it is proposed that the following initiatives will be implemented for the solid waste servicing at Lot 888 Hawksburn Road, Rivervale:

- Residents will have access to 140 or 240 litre general waste, FOGO and recycling wheelie bins provided in bin rooms on each floor of the development;
- Those bins will be serviced as required and material consolidated in the main bin stores by dedicated facility staff;
- Use of 240 litre bins for consolidation of the FOGO material; and
- Use of 1100 litre bins for consolidation of the general waste and recycling material; and
- Twice weekly collection of the general waste material and weekly collection of the recycling and FOGO material.

This will result in the following requirement for bins:

- FOGO - Eight 240 litre bins serviced weekly;
- General waste – Four 1100 litre bins serviced two times per week; and
- Recycling – Five 1100 litre bins serviced weekly.

Therefore, room will be required in the bin store and washdown area to accommodate eight 240 litre bins and nine 1100 litre bins.

**Review**

The above-mentioned waste servicing arrangements will be reviewed as a matter of course on an ongoing basis to ensure that the most efficient arrangements to manage the FOGO, general waste and recycling material generated by all aspects of the facility are in place and are maintained.

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## DEFINITIONS

***140:*** A 140 litre FOGO, general waste or recycling receptacle used by domestic residences within a local government municipality to deposit materials to be removed by the local government or a collection contractor.

***240:*** A 240 litre FOGO, general waste or recycling receptacle used by domestic residences within a local government municipality to deposit materials to be removed by the local government or a collection contractor.

***1100:*** An 1100 litre general waste or recycling receptacle used by domestic residences and commercial premises within a local government municipality to deposit materials to be removed by the local government or a collection contractor.

***FOGO (service):*** Food Organics and Garden Organics - a local government collection service for food and garden organic material.

***General waste:*** Any recyclable and non-recyclable discarded solid, semi-solid, liquid or contained gaseous materials not accepted by the local government's FOGO and recycling collection services.

***Recycling:*** Any material accepted by the local government's recycling collection service.

***Strata Council:*** A council comprising lot owners in the strata company, with the responsibility to exercise the duties and powers of the strata company for the benefit of all proprietors.

***Strata Management:*** For the purposes of this document, the selected legal entity charged with responsibility for the soft services of the built structure (i.e. waste management, cleaning, landscaping, security and other similar human-sourced services) on behalf of the Strata Council and residents of the building.

***Waste:*** Any recyclable and non-recyclable discarded solid, semi-solid, liquid or contained gaseous materials not accepted by the local government's FOGO and recycling collection services.

***Waste Minimisation:*** A process to minimise the amount of waste requiring disposal via hierarchical activities such as behaviour and product modification, waste avoidance, reduction, reuse and recycling.

***Total Waste Stream:*** The combined FOGO, general waste and recyclables generated.

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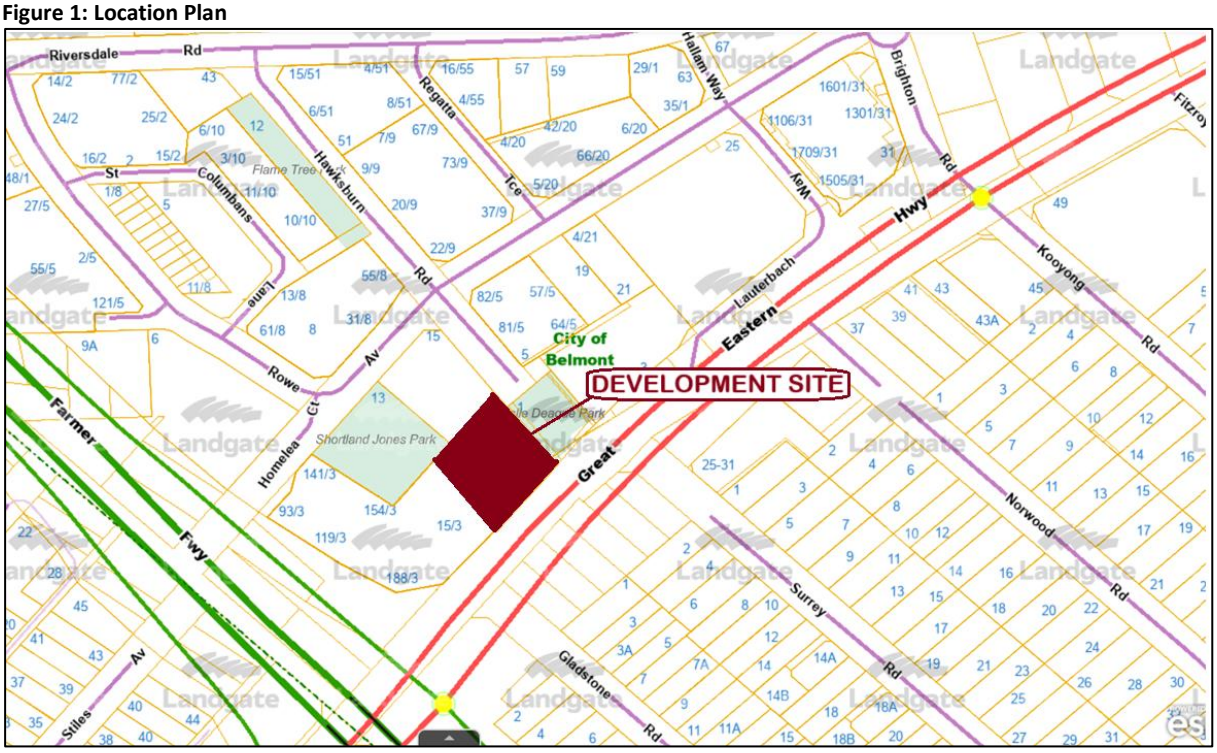
# 2 INTRODUCTION

## 2.1 The Development

Finbar is applying to the City of Belmont (the "City") to develop a property known as 2 (Lot 888) Hawksburn Road, Rivervale. The development consists of 108 studio, one and two-bedroom residential apartments.

As part of the Development Approval process, the proponent is required to submit a Waste Management Plan (WMP) for the development to the City. Finbar employed the services of waste specialists Dallywater Consulting to investigate the City's requirements in this regard and to develop this WMP.

**Figure 1: Location Plan**




Source: www.landgate.wa.gov.au 2025

**Table 1: Number and Size of Residential Apartments**

| UNIT TYPE | Number |
|---|---|
| **Residential Apartments** | |
| 1 Bed | 93 |
| 2 Bed | 15 |
| **Total Residential Apartments** | **108** |

A site plan of the development is included on the following page.

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## 2.2 Onsite Waste Management

The following provisions have been made for FOGO, general waste and recycling on the site:

- **Residential Apartments**
  - The residents will have access on each floor to a Bin Room in which they can deposit separated FOGO, recycling and general waste materials into 140 or 240 litre bins provided for those materials.
  - Full bins will be removed and replaced with empty bins as required and contents of the collected bins will be emptied into bins in the main residential bin store by Building Management staff or contractors.
  - Residents will not have access to the main bin store or washdown area.
- **Bin Store**
  - The main bin store is located on the ground floor adjacent to the substation and opposite the service bay.

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- Bins from the bin rooms will be brought to this store and emptied by staff into 240 litre bins for the FOGO material or larger (e.g. 1100 litre) receptacles for the general waste and recycling.

- **Hardwaste/Bulky Items**
  - A hard/bulky waste store has been provided for the temporary storage of items too large to be placed in the general waste or recycling bins and for material destined for the hardwaste cleanup service. This store is sited immediately adjacent to the service vehicle bay on the ground level.
  - Tenants will be required to organise their own immediate disposal of large or bulky items not suitable for disposal to this store.
  - Material will only be able to be placed in this area with the cognisance of the Strata Management.
- **Waste Collection**
  - If practical, the proponent will use the City's rear load general waste and recycling collection services. FOGO may be collected by a rear load service or those bins could be presented to the kerbside for collection by the City's sideload service.

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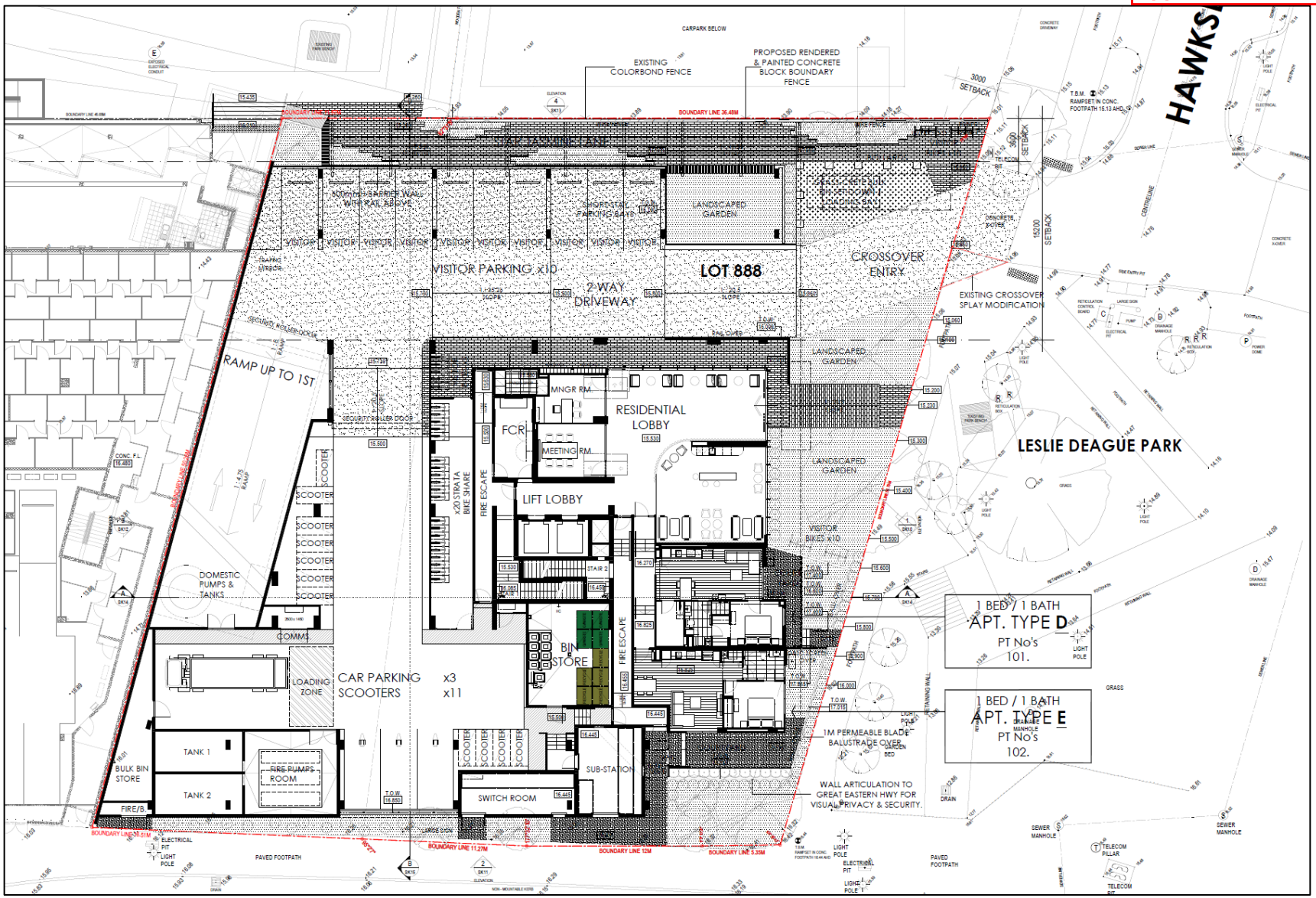
**Figure 2: Site Plan**

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# 3 LOCAL GOVERNMENT WASTE MANAGEMENT REQUIREMENTS

## 3.1 Waste Management Guidelines

For this project, the City provided the criteria for solid waste management for these types of multi-unit developments.

## 3.2 Waste Generation

The City requirements for the provision of waste storage for this MUD are as follows:

- 240 litre receptacles are the preferred option for the storage and collection of FOGO material.
- General waste and recycling can be collected in 1100 litre receptacles;
- Council's current waste collection arrangements will allow one recycling and FOGO collection per week, and up to two general waste collections per week; and
- FOGO, general waste and recycling receptacles are to be provided in sufficient numbers to cater for the waste generation requirements detailed in the following tables.

Based on the number of residential units in the development, the City's waste generation rates are detailed below.

Considering the separation of FOGO material from general waste, the following table demonstrates the weekly volumes of FOGO, general waste and recycling per unit for the development.

**Table 2: Waste Generation Rates**

| Apartment Size | No. of Apartments | FOGO /unit/week | General waste /unit/week | Recycling /unit/week |
|---|---|---|---|---|
| | | $m^3$ | $m^3$ | $m^3$ |
| **1-bed** | 93 | 0.015 | 0.06 | 0.04 |
| **2-bed** | 15 | 0.025 | 0.10 | 0.06 |
| **TOTAL** | **108** | | | |

## 3.3 Bin Store Requirements

The City's requirements for bin storage are as follows:

- Should be adequate to house all bins with sufficient area to manoeuvre the bins.
- Be provided with a permanent water supply and drainage to sewer with washdown facilities.
- Out of sight and well screened from public areas.
- Design is to be consistent with the development.
- Be easily accessible to allow for the removal of the receptacles.
- The bin store should be fitted with a bin lifter to assist staff with emptying of smaller bins into the larger bins.

## 3.4 Bin Presentation

- For the FOGO 240 litre bins, whether they are serviced internally via a rear-load service or are presented to the kerb for side-lift servicing is to be negotiated with the City;
- Larger bins are to be retrieved and returned to the stores by collection operators as soon as is practicable after they have been serviced; and
- Bins are to be accessible such that there is unobstructed access for the collection vehicle and the vehicles' operators at the time of servicing.

## 3.5 Waste Capacity

Based on the above requirements, the weekly storage capacities required for FOGO, general waste and recycling from the proposed development are detailed in the following table.

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**Table 3: Estimated Weekly Material Volumes**

| Apartment Size | No. of Apartments | FOGO | General waste | Recycling | FOGO | General waste | Recycling |
|---|---|---|---|---|---|---|---|
| | | $m^3$/unit/week | $m^3$/unit/week | $m^3$/unit/week | $m^3$ | $m^3$ | $m^3$ |
| **1-bed** | 93 | 0.015 | 0.06 | 0.04 | 1.40 | 5.58 | 3.72 |
| **2-bed** | 15 | 0.025 | 0.10 | 0.06 | 0.38 | 1.50 | 0.90 |
| **TOTAL** | **108** | | | | **1.77** | **7.08** | **4.62** |

## 3.6 Number of Bins

Based on the estimated volumes of materials, the number of 240 litre FOGO bins and larger 1100 litre general waste and recycling receptacles required to cater for the weekly volumes for this development are detailed in the following table. Note that the bin figures have been rounded up.

**Table 4: Required Bin Capacity**

| | FOGO | General waste | Recycling |
|---|---|---|---|
| **Weekly Generation** | **1.77$m^3$/week** | **7.08$m^3$/week** | **4.62$m^3$/week** |
| **Bins/Week** | | | |
| No. of uncompacted 240 litre receptacles/week | 7.38 | n/a | n/a |
| No. of uncompacted 1100 litre receptacles/week | n/a | 6.44 | 4.20 |
| **TOTAL BINS** | **8 x 240s** | **7 x 1100s** | **5 x 1100s** |

## 3.7 Summary

Based on the calculated generation rates, with weekly FOGO, general waste and recycling collections, eight 240 litre FOGO bins, seven 1100 litre general waste bins and five 1100 litre recycling bins will be required.

Thus, the bin store would be required to be able to house eight 240s and twleve 1100s.

However, the City has advised that its current waste servicing arrangements will allow up to two general waste collections per week.

Therefore, it is proposed that the following initiatives will be implemented for the solid waste servicing at 2 Hawksburn Road, Rivervale:

- FOGO - Eight 240 litre bins serviced weekly;
- General waste – Four 1100 litre bins serviced two times per week; and
- Recycling – Five 1100 litre bins serviced weekly.

This will require room in the bin store and washdown area to accommodate eight 240 litre bins and nine 1100 litre bins.

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# 4 BIN STORAGE AND MANAGEMENT

## 4.1 Bin Store and Washdown Area

The main bin store is located on the ground floor of the development, adjacent to the service area which is accessible from the main entrance driveway, and immediately opposite the Service Bay/Loading Zone.

A Bulk Store has also been provided on the Ground Floor for the placement of hard and bulky waste prior to its removal. Use of this store will require the approval of and coordination by the Building Management.

The locations of the various areas are depicted in Figure 3 on the following page.

## 4.2 Bin Store Specifications

The main bin store has been designed to meet the City's specifications as follows;

- Is of sufficient size to be able accommodate receptacles and a bin lifter;
- Self-closing gates or doors are to be fitted;
- Construction is to be of brick, concrete, corrugated compressed fibre cement sheet or other suitable impervious material;
- Includes a tap connected to an adequate supply of water and a floor waste connected to the public sewer;
- The floor is to be smooth and impervious and evenly graded to the floor waste; and
- All accesses/corridors will be of sufficient width (and ramps of suitable fall) to allow for easy and safe access for the removal of all receptacles and, in the case of the Hard/Bulky Waste Store, larger items.

## 4.3 Amenity

The main store has been designed so that it;

- is well ventilated to prevent escape of smells;
- can be kept thoroughly clean and disinfected; and
- is consistent with the overall aesthetics of the development.

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## 4.4 Bin Management

Strata Management staff or other nominated personnel/contractors will manage waste throughout the facility and as such, will be aware of the expectations regarding use of the bins and store.

Those staff will be responsible for ensuring that the bins on the apartment levels are monitored daily and full bins are serviced as required. A plan of a typical floor bin room is included at Figure 4.

Those staff will also monitor the usage of the bins to ensure residents are disposing of material correctly.

## 4.5 Bin Presentation and Collection

Collection of bins will be as per the following arrangements:

- Subject to discussion with the City's waste personnel, FOGO bins will either be serviced onsite from the bin store via rear-load collection vehicle or be brought to the kerbside for servicing by the City's side-load vehicle (see Figure 5).
- Once emptied, all bins would be returned to the store and cleaned as required.
- Bins serviced at the kerbside would be presented to the street and returned to the store by Strata Management staff.
- Other than where the arrangements result in the FOGO bins being serviced at the kerbside, all servicing (emptying) of the bins will occur from within the development, with bins being serviced directly from the internal bin store.
- Collection vehicle operators will retrieve the bins from the store, transfer them to the collection vehicle, empty them and then return them to the store. Assistance with this arrangement may be provided by facility staff upon negotiation with the Strata Management.

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Strata Management waste management staff will ensure that;

- bins are accessible such that they can be emptied without obstruction by the City (or its contractor) or commercial collection contractors;
- if negotiated between the collection contractor and Strata Management, personnel are made available to assist with the movement of the residential bins to the collection vehicle.

## 4.6 Signage

Best practice facility bin management and material separation signage will be installed to the bin store area.

**Figure 3: Bin Storage, Washdown Area and Bulk Store**

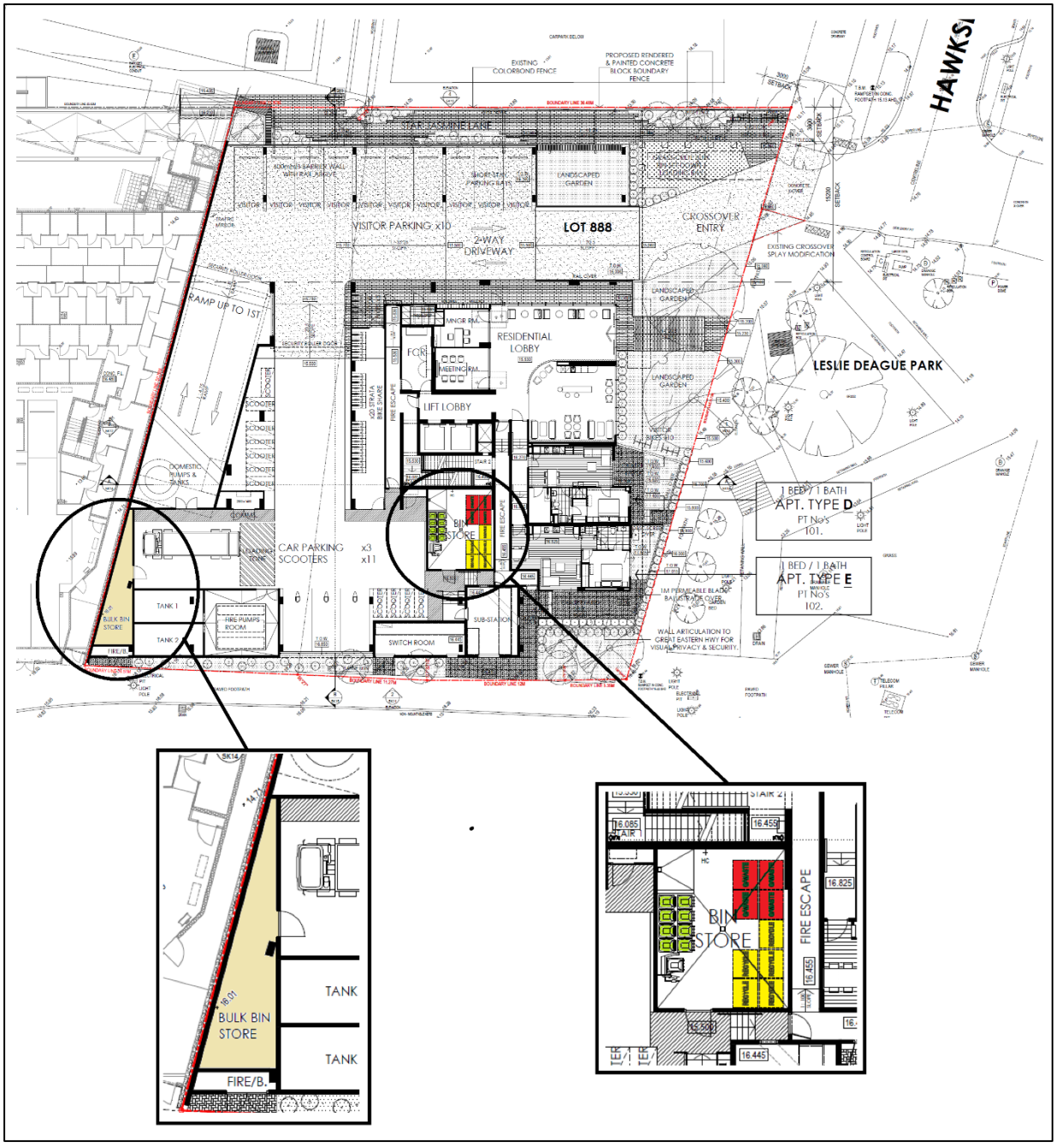


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**Figure 4: Bin Rooms - Residential Floors**

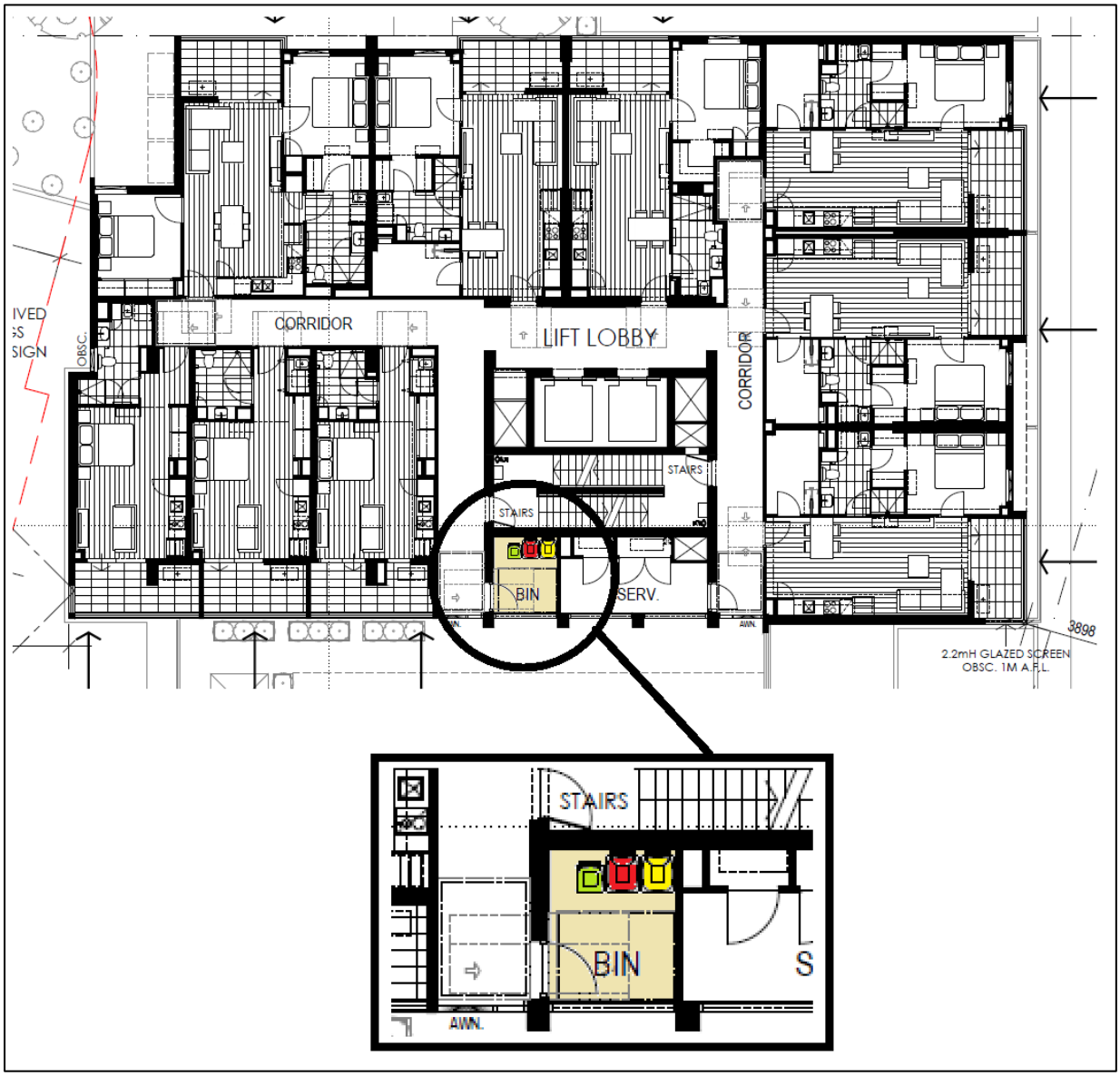


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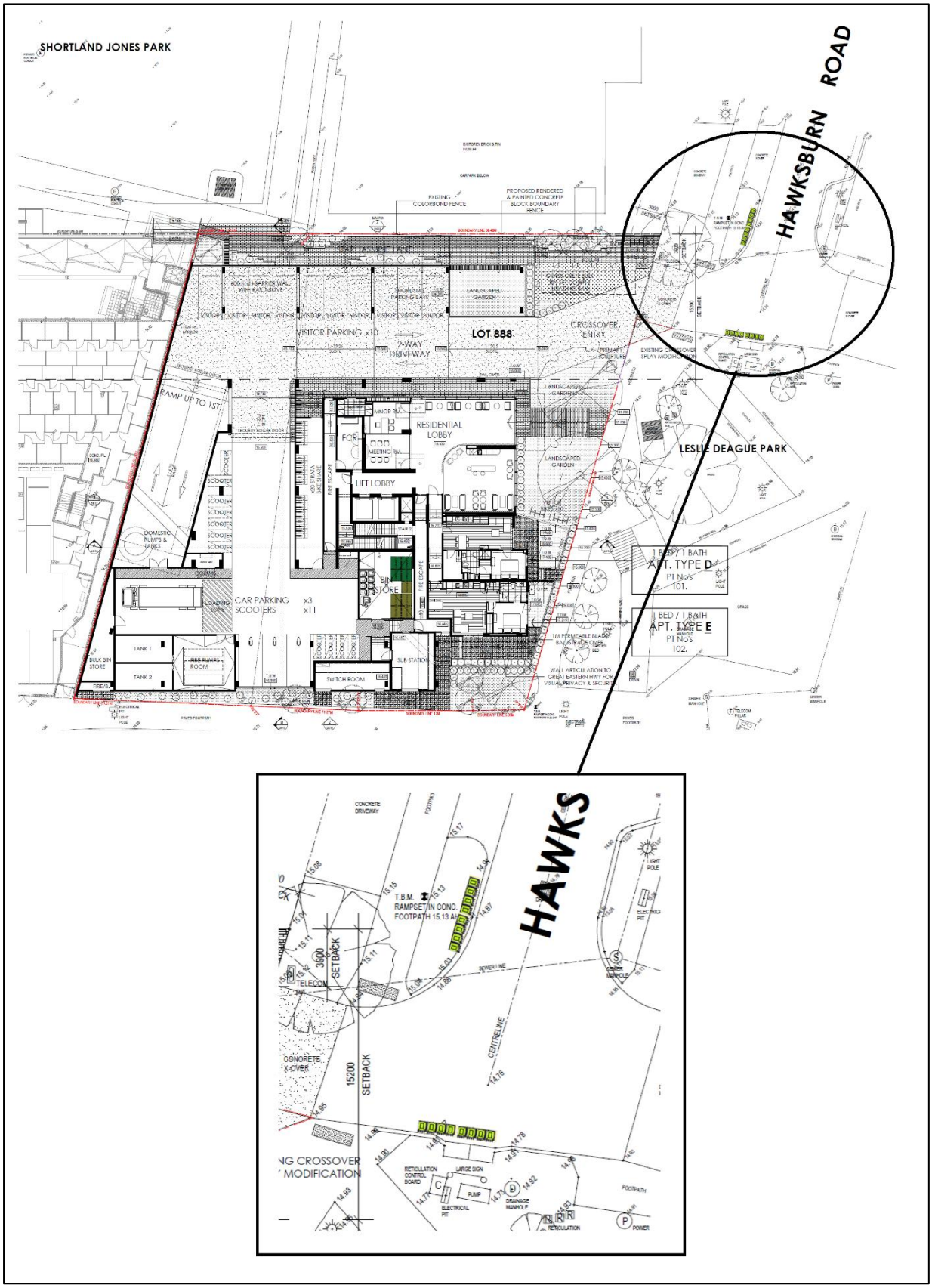
**Figure 5: Potential Street Presentation of FOGO Bins if Required**

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# 5 WASTE MANAGEMENT RESPONSIBILITIES

## 5.1 Building Owners/Management

The Strata Council (Owners) and Strata Management will have responsibility for ensuring that the residential waste management activities are appropriately conducted and that residents meet their waste management responsibilities.

The Strata Management will allocate responsibility for all waste management activities to a Grounds person, Building Caretaker or Cleaner (Waste Person). This position will be responsible for the management of waste throughout the complex and they will be trained in all facets of the role.

## 5.2 Waste Management Staff

At a minimum, the waste personnel will undertake the following bin servicing and waste management functions;

- Regular inspection and replacement of full bins to all residential floors;
- Transfer of material in smaller bins to the larger 1100s using the bin lifter as required;
- Regular cleaning of bins, bin rooms and the bin and bulk stores;
- Ensuring access to all bins on collection days;
- Supervising timely return of bins to bin stores after collection; and
- Assistance with bin movement for operators (if required and negotiated).
- If required, presenting bins to the street on collection days, and returning the bins to the store after collection has occurred.

In addition, the education of incoming residents will be a priority for these staff.

In the future, with the initial assistance of waste management experts, training of staff to implement Waste Minimisation Plans for the residential components of the development may be explored. The plans could provide recommendations on, and include specific actions for;

- the segregation of specific recycling materials from the comingled stream; and
- implementation of waste reduction initiatives such as eWaste recycling and clothing recycling.

## 5.3 Residents

All residents would be instructed via the Strata Management of the various waste requirements. This would include direction on the use of the bin facilities and expectations of the managing body with regards to any recycling or waste diversion.

In the absence of any other individual arrangement with the waste personnel (or Strata Management), residents (and their contractors) would be responsible for the immediate removal and disposal off-site of any waste unsuitable for placement in the bins. This would include large bulky waste and electronic items and waste from any building maintenance activities.

It is envisaged that the development of a Waste Minimisation Plan mentioned above would include the production of educational literature suitable for residents (including for inductions) and recommendations for signage relevant to the internal function of the bin rooms and other waste management facilities.

It is suggested that the Strata Management or tenancy management entity include specific tenant/resident responsibilities for management and separation of the waste streams in any occupancy (e.g. rent or lease) agreements.

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# 6 REFERENCES


- WALGA - *Multiple Dwelling Waste Management Plan Guidelines*



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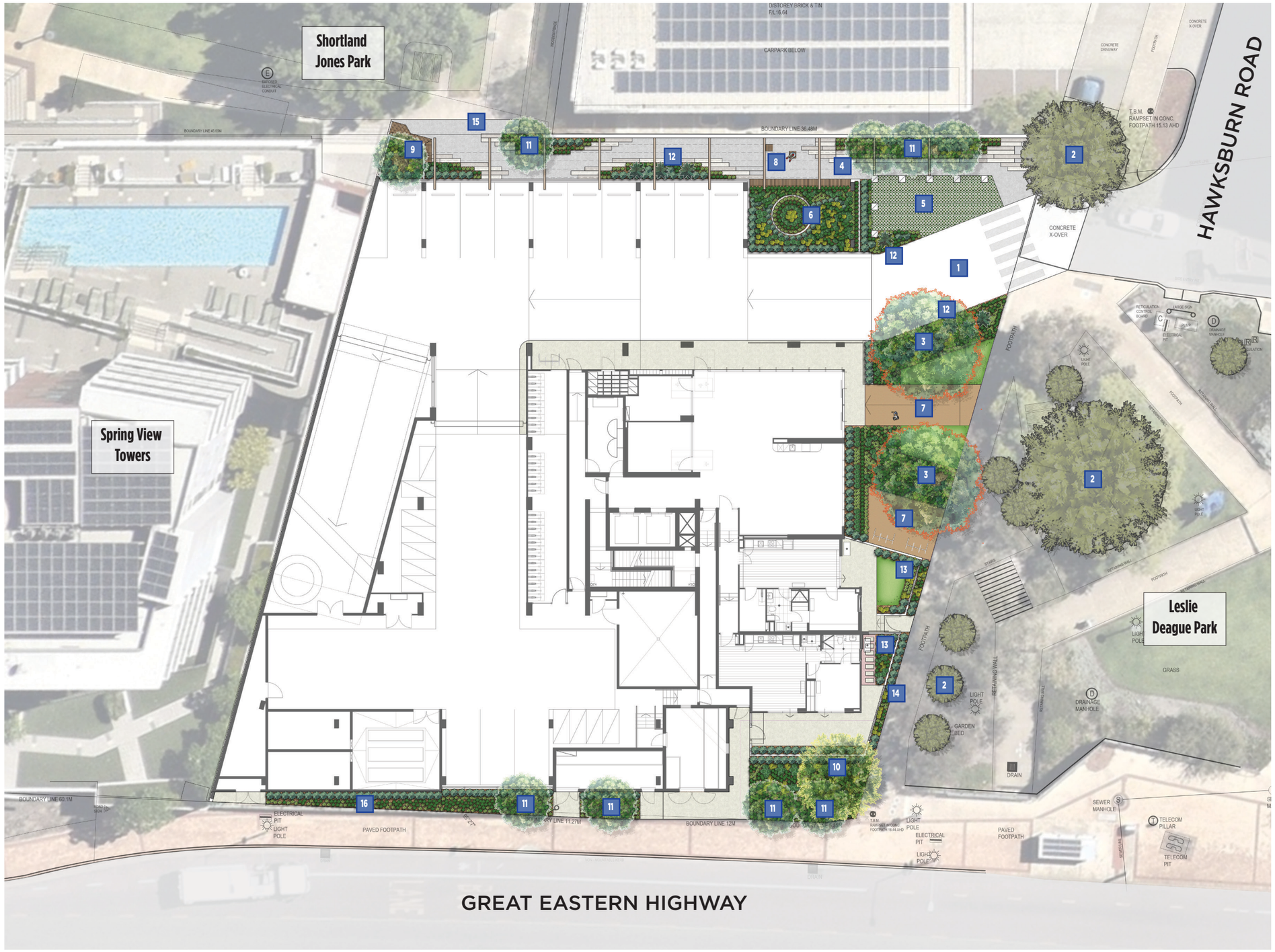


Ground Floor Plan

## Legend

- Existing Tree
- Proposed Trees
  - Large
  - Medium
  - Small
- Proposed Feature Shrub
  Cycad revoluta
- Turf (Irrigated)

1. Driveway with additional visual surface treatment to pedestrian crossing from main footpath towards Star Jasmine Laneway
2. Existing trees
3. Large tree within deep soil area
4. Star Jasmine Laneway with feature banded exposed aggregate paving and shrub planting
5. Grasscrete pavers to bin set down and loading bay
6. Large low vase on raised concrete plinth with overhanging plants. Raised planter area with assorted shrubs.
7. Permeable feature Stoneset and exposed aggregate paver to the pedestrian entrance and bicycle parking
8. Feature Landscape trellis above Star Jasmine Laneway by others
9. Integrated day bed and seating to planter with small tree in deep soil area
10. Medium Tree with deep root zone garden bed and hedging plants for privacy
11. Small Trees within deep soil area and hedging shrubs for privacy
12. Garden bed with feature Cycad revoluta and banded exposed concrete paving
13. Hedging shrub to the edge of fence for privacy
14. Verge planting to streetscape
15. Pedestrian entryway from Spring View Towers
16. Vertical Ronstan cables pinned to wall with climbing plants

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**LOT 888 - Hawksburn Road** Landscape Concept Plan

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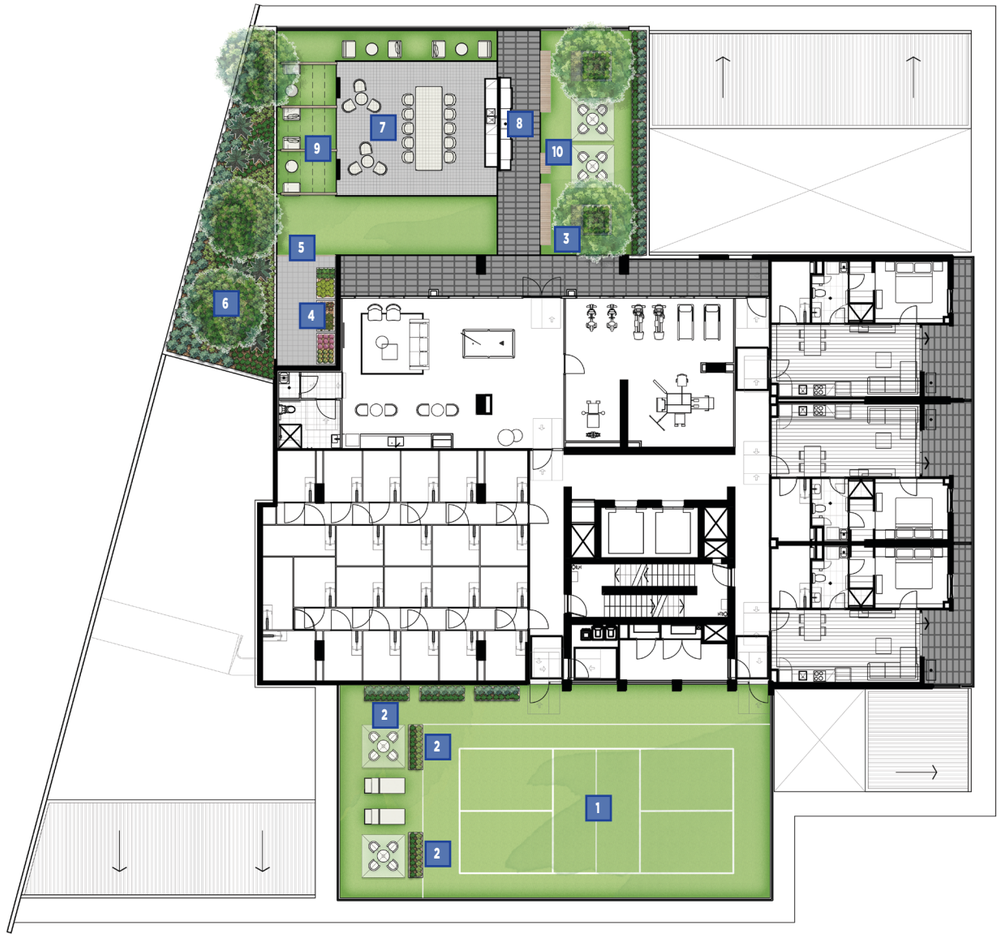


## Legend

- Existing Tree
- Proposed Tree
  - Large
  - Medium
  - Small
- Proposed Feature Shrub
  Cycad revoluta
- Artificial Turf

1. Pickle ball court
2. Raised planter box with shrub planting
3. Raised planter box with integrated seating and small tree
4. Edible garden with vegetables and herbs
5. Tiled paving to edible garden
6. Small trees to the raised planter bed
7. Cabana
8. BBQ Area
9. Feature Trellis with climbing plants
10. Slatted bench seats

Third Floor Plan

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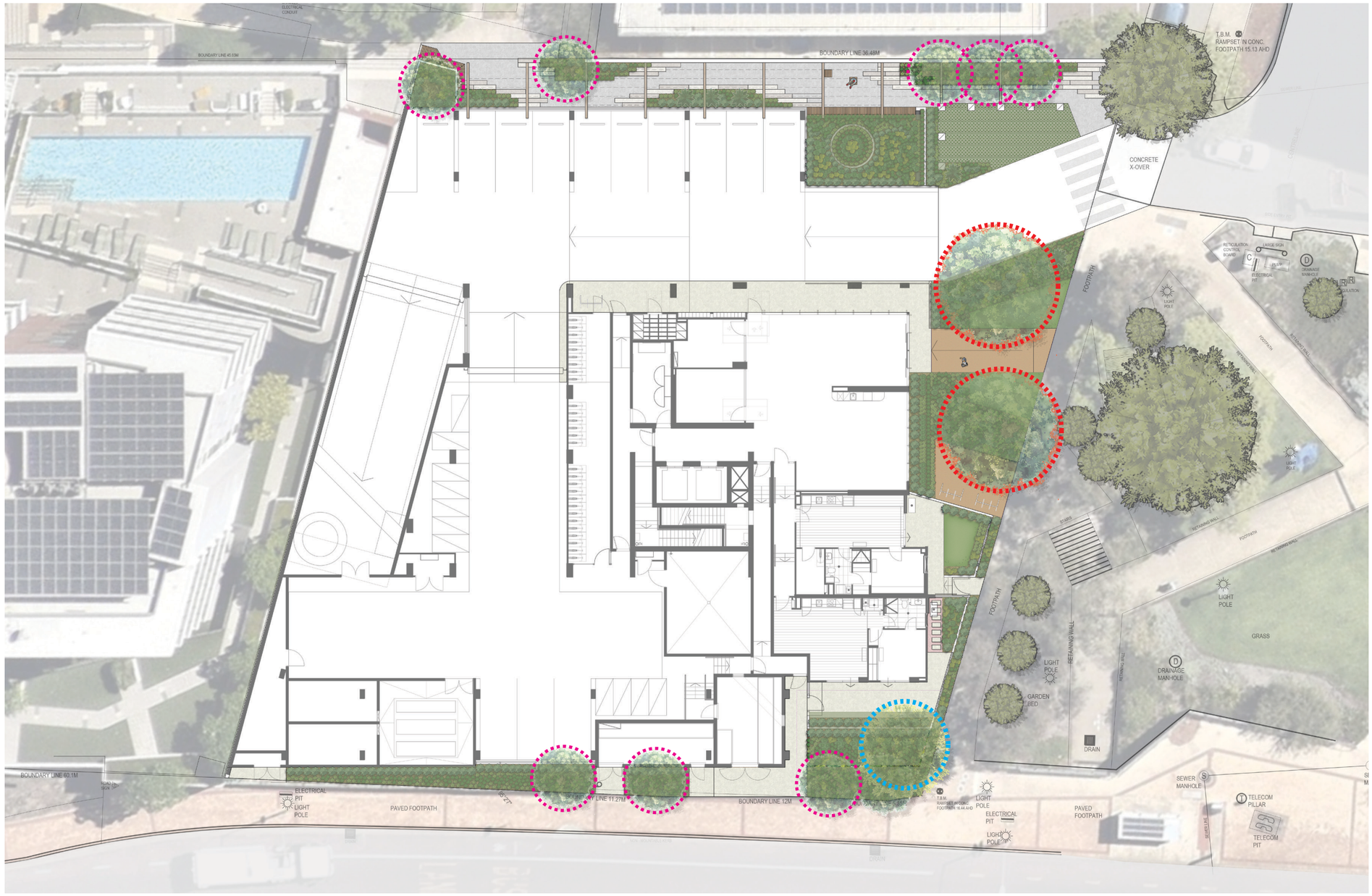


## Legend

- Deep soil area
- Large Tree
- Medium Tree
- Small Tree

**DEEP SOIL ZONE COMPUTATION**

| Site Area | Total Landscape Areas | Deep Soil Area as per SPP 7.3 | Minimum Requirement of Trees as per SPP 7.3 | Tree requirements based on SPP 7.3 | Proposed Trees |
|---|---|---|---|---|---|
| 2370 sqm | **GROUND FLOOR**<br>259.50 sqm - shrub bed DSA<br>64.82 sqm - turf area<br>**THIRD FLOOR**<br>73 sqm - shrub bed on 3rd floor | 324.30 sqm on GF | 1 large tree and 1 medium tree for each additional 400m2 in excess of 1000m2 **or** 1 large tree for each additional 900m2 in excess of 1000m2 and small trees to suit area | 2 Large trees<br>3-4 Small trees | 2 Large trees - GF<br>1 Medium trees - GF<br>9 Small trees - GF<br>5 Small trees - 3rd Floor |

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# LOT 888 - Hawksburn Road Deep root Zone

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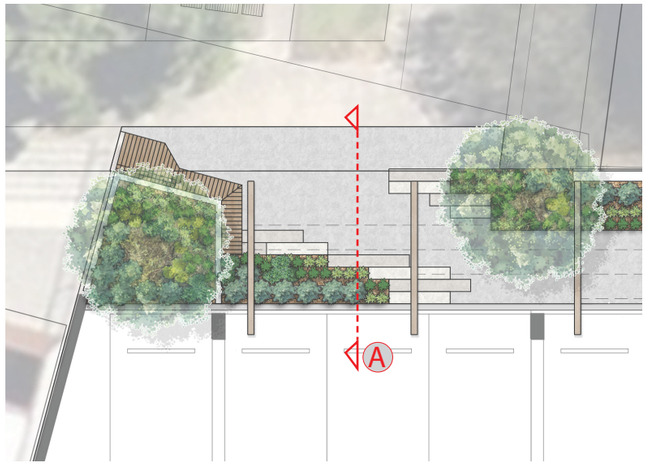


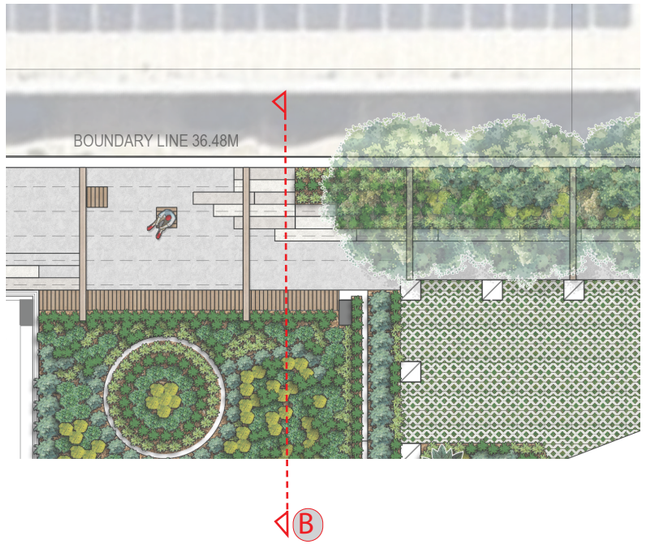


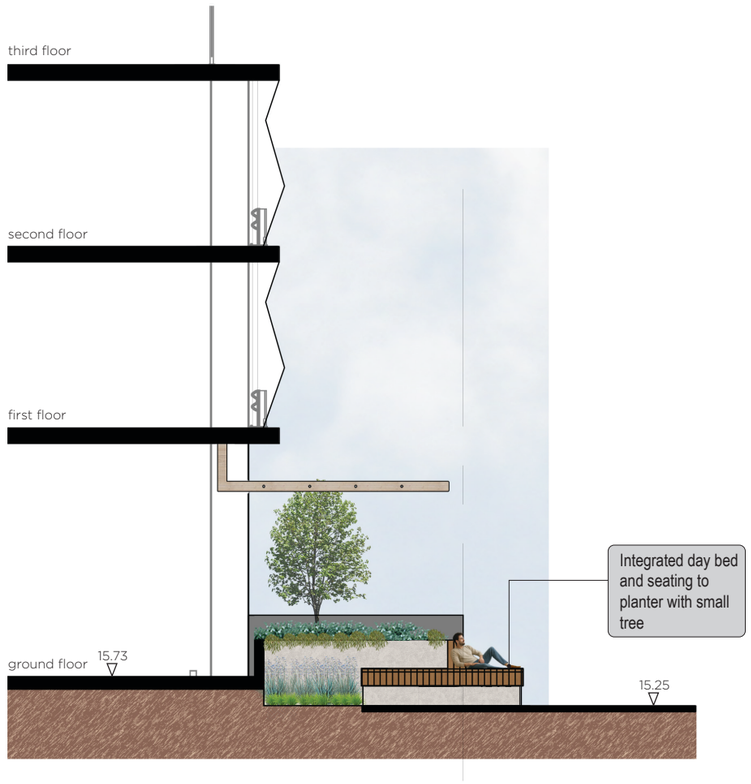


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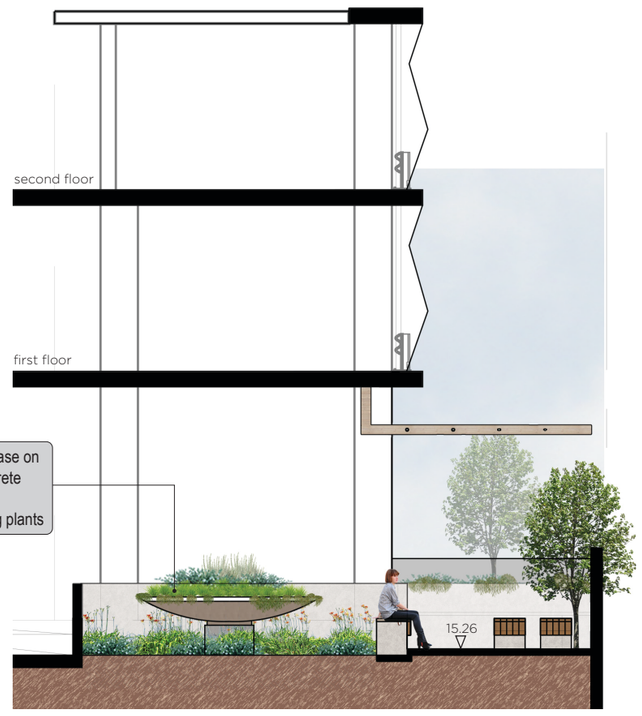


SECTION B

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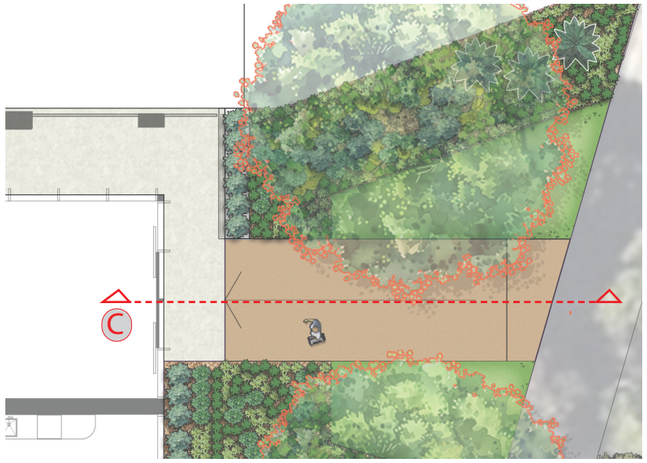


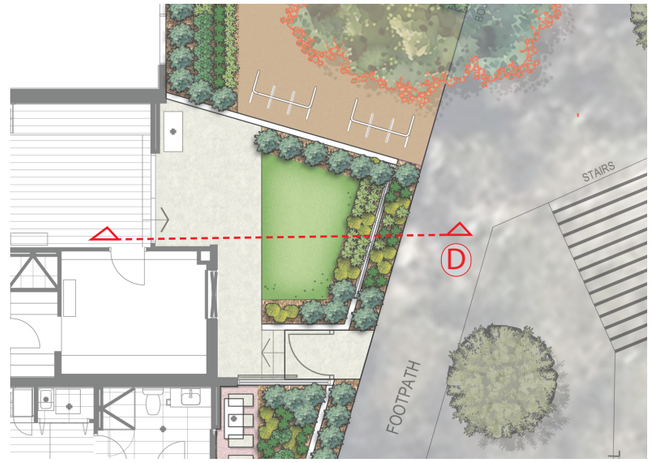

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SECTION D

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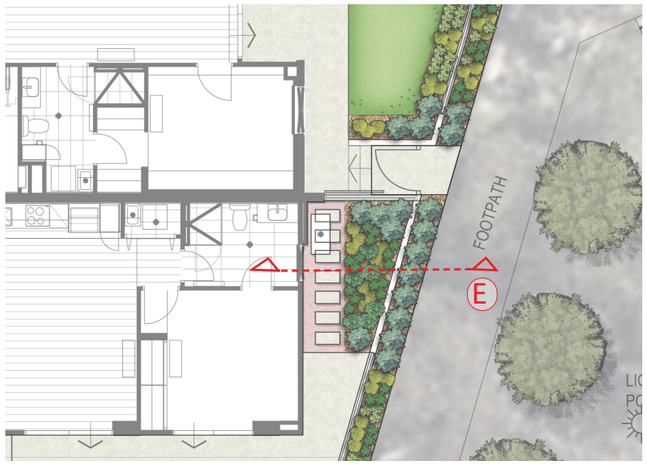


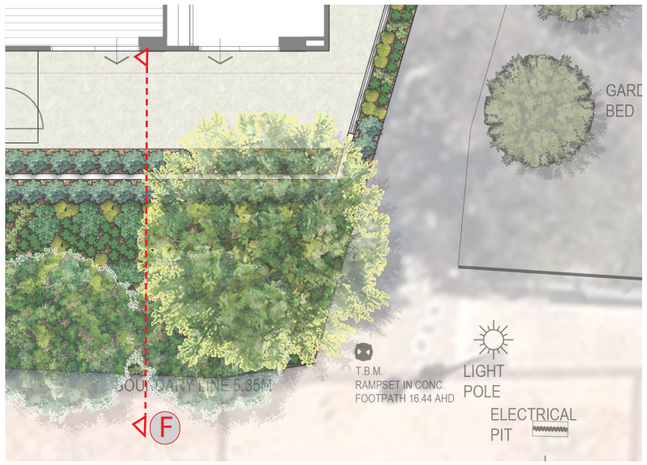


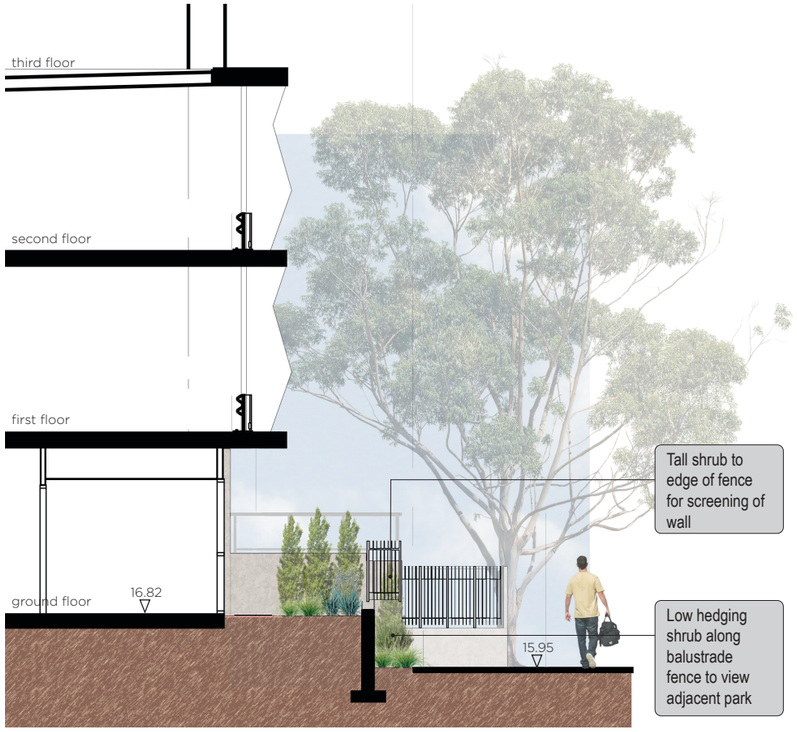


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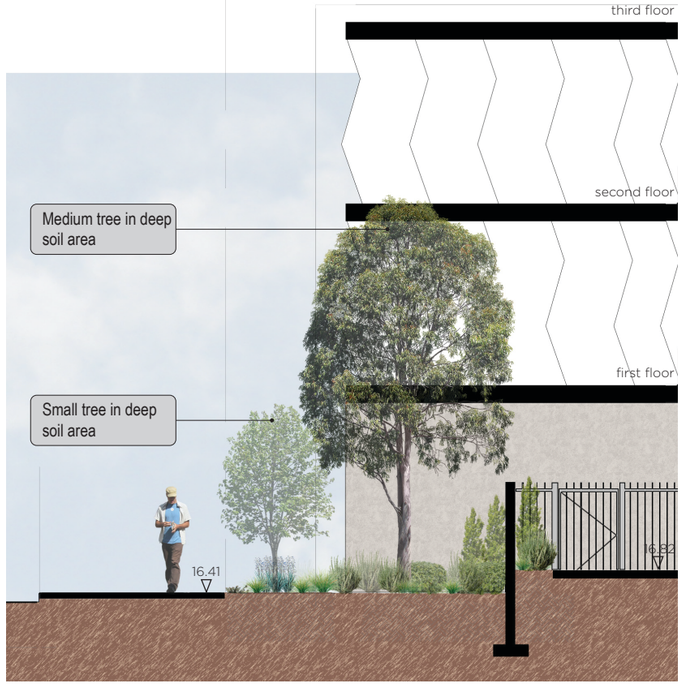


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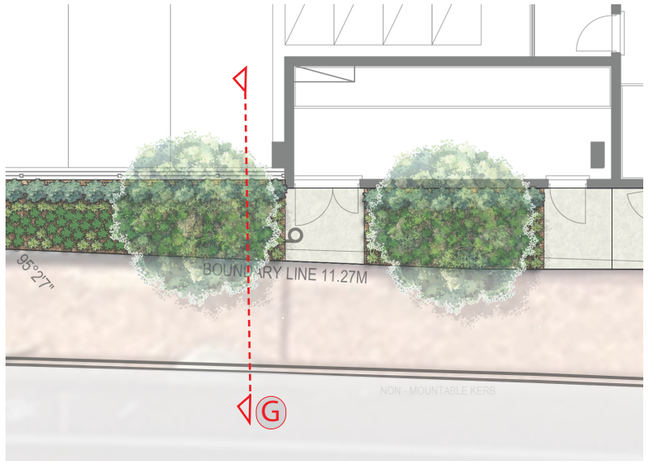


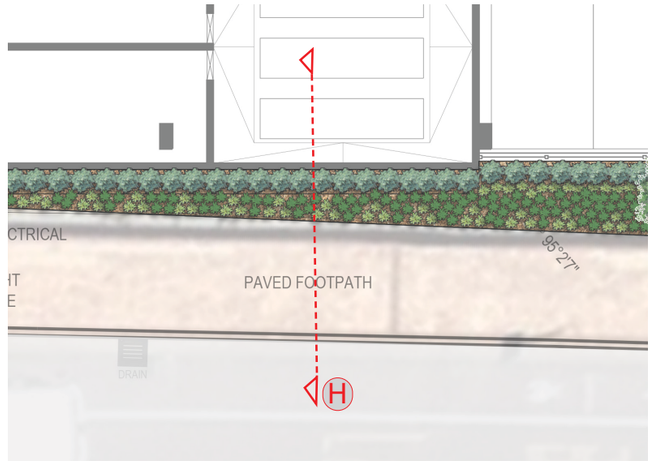


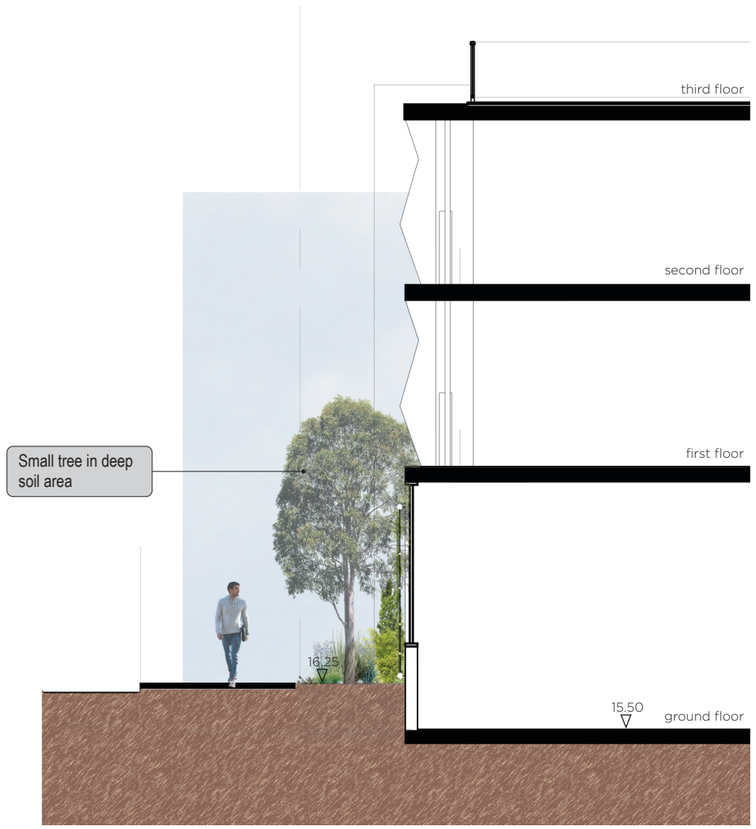


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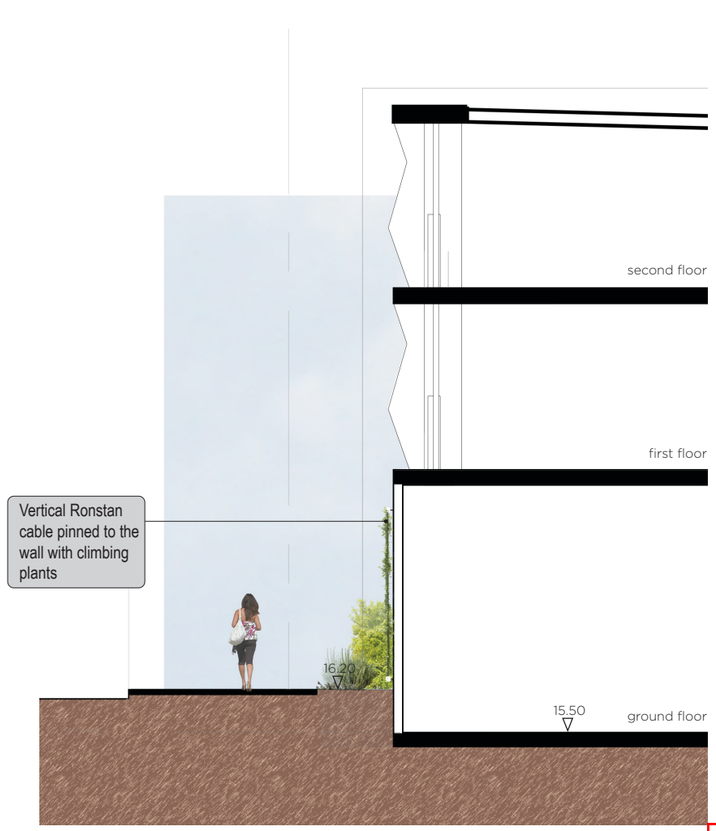


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NOTE : Garden beds will be sub surface drip irrigation from main lines.

Water Corporation Guidelines - Waterwise species
Source: https://www.watercorporation.com.au/Waterwise

## TREES

Cycas revolute
'Sago Palm'
3m x 2m (H x W)

Corymbia maculata
'Spotted gum'
15-30m x 12-15m (H x W)

Hymenosporum flavum
'Native Frangipani'
4-10m x 2-6m (H x W)

Magnolia grandiflora 'Teddy Bear'
'Teddy Bear Magnolia'
3m x 1.8m (H x W)

Plumeria rubra 'Lulu'
'Temple tree or White frangipani'
9m x 4m (H x W)

## SHRUBS

Acacia cognata Limelight
'Bower of Beauty Wattle'
0.5-1m x 1m (H x W)

Callistemon Little John
'Bottlebrush'
1m x 1m (H x W)

Carissa macrocarpa
'Desert Star'
1-2m x 1-2m (H x W)

Liriope muscari 'Just Right'
'Just right'
0.5m x 0.5m (H x W)

Philodendron Xanadu
'Xanadu'
0.9m x 0.7m (H x W)

Strelitzia reginae 'Dwarf'
'Birds of Paradise'
2m x 1-1.5m (H x W)

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## GROUNDCOVER

Agapanthus praecox
'Snow Storm'
0.4m x 0.4m (H x W)

Damperia linearis
'Cobolt Mound'
0.3m x 0.5m (H x W)

Dianella revoluta
'Petite Marie'
1m x 1.5m (H x W)

Myoporum parvifolium
'Creeping Boobialla'
1.1m x 1.5m (H x W)

Viola hederacea
'Native voilet'
0.1m x 1m (H x W)

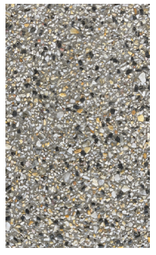
Senecio Blue Chalk Sticks
'Blue Chalk Sticks'
0.6m x 0.9m (H x W)

Limonium platyphyllum
'Sea Lavender'
0.6m x 0.4m (H x W)

## MATERIALS

Grasscrete

Artificial turf



Exposed aggregate

Vertical Ronstan Cables pinned to wall with creeper plants

Tiled pattern to edible garden bed

## GROUNDCOVER

Curio rowleyanus
'String of Pearls'
0.9m x 1m (H x W)

Dichondra repens
'Kidneyweed'
1.5m x 2m (H x W)

Casuarina glauca
'Cousin It'
0.4m x 1m (H x W)

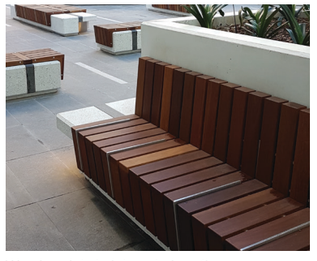
## STYLE

Low rendered wall with overhanging plants

Large low vase pot with overhanging plants

Feature banded aggregate to garden beds

Stepped pavers on gravel bed



Wooden slats to integrated seating

## CLIMBERS

Mandevilla
'Crimson Fantasy'
2m x 1m (H x W)

Trachelospermum jasminoides
'Star Jasmine'
2m x 3m (H x W)

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# LOT 888 - Hawksburn Road Plant & Material Palette

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**Finbar Group Ltd**

# Proposed Apartment Development
# Transport Impact Statement

**Lot 888, Hawksburn Road, Rivervale**

May 2025

Project Code: 09025

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17/07/2025
Application No: 314/2025

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# 1 Introduction

## 1.1 Executive Summary of Traffic Impact Statement

In accordance with WAPC *'Guidelines for Transport Impact Assessment (TIA) Guidelines: Volume 4 – Individual Developments'*, this report sets out the details of the proposed residential development of 108 apartments located off Hawksburn Road (Lot 888), in Rivervale, WA. The proposal will also be referred to in this report as *Lot 888*.

This Traffic Impact Statement (TIS) includes the key transport issues and impacts related to the development of the residential site including the current level of accessibility by road, public transport, cycle and on foot and sets recommendations and considerations to improve these where required and practical.

Summary:

- The proposed development incorporates 108 apartments and is located within 150m (walking distance) away from available bus stops on Great Eastern Highway. Burswood train station is located approximately 720m (walking distance) from the site and it can be accessed beneath the Great Eastern Highway bridge then Griffiths Street. The proximity of these facilities is likely to have an influence on reducing the typical level of vehicular traffic expected to be generated by a development such as this. However, for a conservative, analysis of the road network, no such reductions have been applied under the assessment of generated traffic contained in this report.
- Based on the estimation of development generated traffic from the site (i.e. 55 vehicles per peak hour, two-way), traffic flows on Hawksburn Road and surrounding roads are expected to increase by approximately one additional vehicle every minute during the morning and evening peak hour periods, which is considered an insignificant increase and will not be discernible to motorists on the wider road network, nor is it expected to have any deleterious effects on the traffic flows, road or intersection performance near the proposed development.
- The development will provide a total of 97 car parking bays on site for residents, plus ten visitor bays provided on site. 30 scooter bays and resident bike parking will be provided within the 4.5m$^2$ stores on-site. Visitor bike parking will be provided in the order of 25 bike spaces. The development will also provide a strata bicycle share scheme inclusive of 20 bicycles which can be booked by residents through an app. The above parking provision meet and exceeds to the required provisions for vehicle and bike parking set under the WAPC's State Planning Policy 7.3 – Residential Design Codes Volume 2. It is concluded that 97 car parking bays will be more than adequate to serve the expected parking demand at this development, particularly given the proximity of the high frequency bus services on Great Eastern Highway and the nearby Burswood Train Station which will undoubtedly encourage trips to/from the development by sustainable modes i.e. other than the private car.
- One of the ongoing KPIs that the Public Transport Authority (PTA) has in its Annual Report measures "the proportion of street address within the Perth public transport area which are within 500m of a Transperth stop providing acceptable level of service". It is a recommendation of PTA that a figure of at least 90 percent of all street address should be within 500m of a Transperth bus stop. The proposed development supports and complies with this specific KPI of PTA for access to public transport services with 100% of the development falling within 500m of a bus stop.

Upon consideration of all findings within this TIS, the proposed residential development has minimal transport-related impacts on the surrounding area and therefore the development should not be considered unacceptable to proceed on transport grounds. This TIS demonstrates that the movement network to support active transport and the existing road network is capable of satisfactorily supporting the additional vehicular traffic expected to be generated by the proposed residential development.

## 1.2 Background

PJA Australia has been commissioned by Finbar Group Ltd to prepare this TIS for the proposed residential development of 108 apartments with various supporting facilities such as a lounge, games room, and outdoor BBQ area/garden) across 16 stories on a 2,370m$^2$ lot

The site is located on Hawksburn Road (Lot 888), in Rivervale, WA, which is part of The Springs Structure Plan endorsed on 18th December 2009. The location of the site in relation to the wider road network is shown in **Figure 1-1.**

The proposed site is located approximately 6km west of Perth city centre and 900m north-east of Burswood Station. The primary vehicle access route to the site is currently from the cul-de-sac end of Hawksburn Road. The site is currently vacant land.

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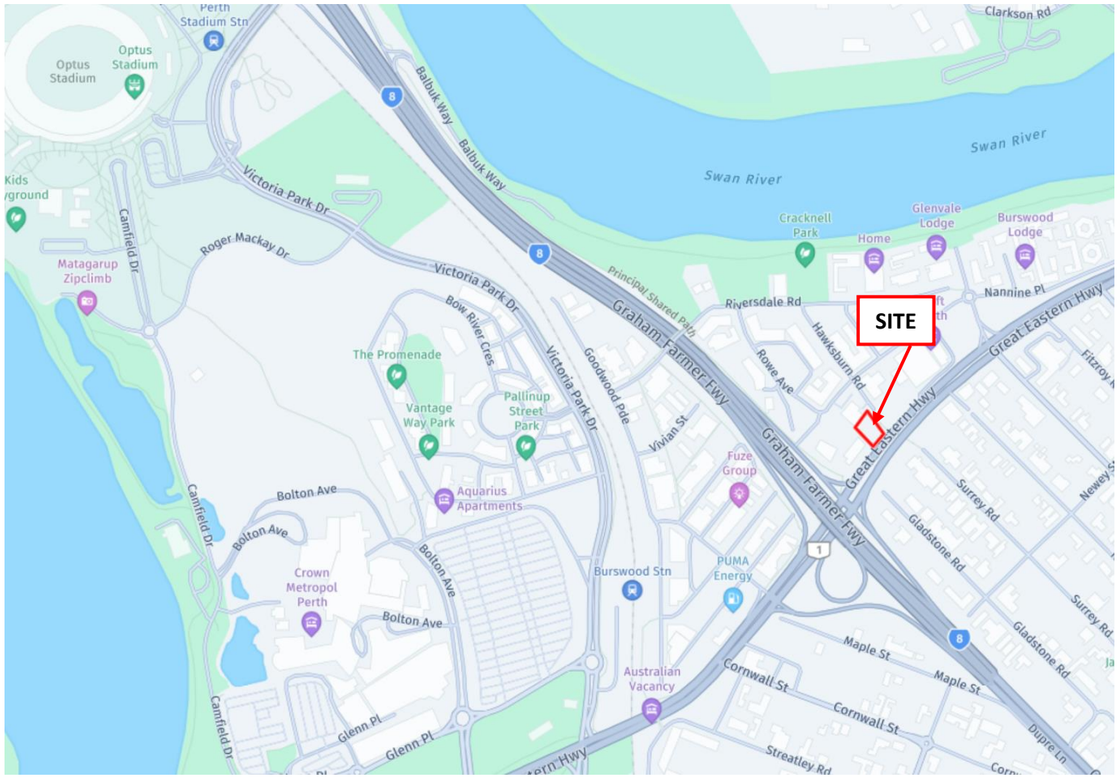
**Figure 1-1: Site Location**



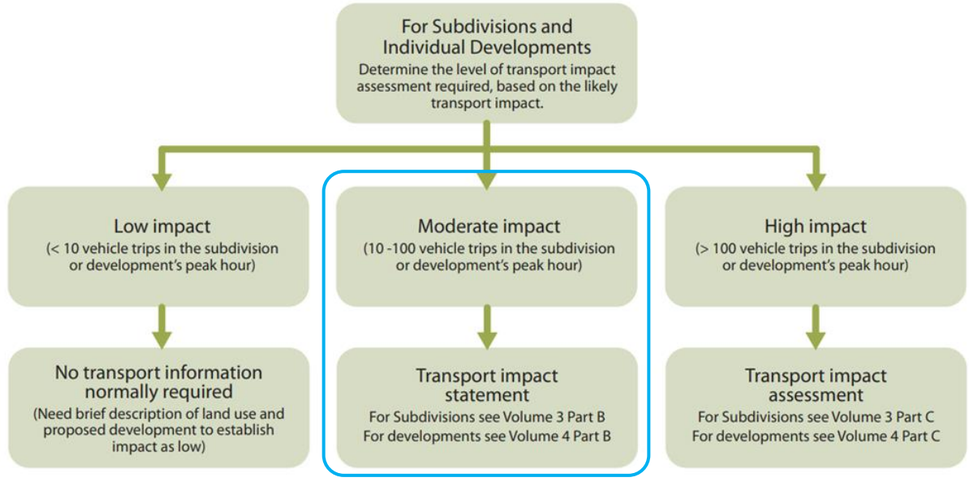

## 1.3 Purpose of a Transport Impact Statement

The planning system in Western Australia stipulates that all developments go through a process of stages to ensure that the statutory planning is consistent with the strategic planning. A more detailed assessment of the transport networks for developments is required within the land use planning stages. The Western Australian Planning Commission (WAPC) guidelines for a Transport Impact Assessment (TIA) shows the level of detail required at each stage as shown in **Figure 1-2.**

The WAPC guidelines recommend the level of assessment which is necessary to be carried out dependent on the likely traffic impact of a development proposal. Typically, any development which is expected to have a 'high' traffic impact which generates over 100 trips in the peak hour, is satisfied by a TIA. Any development which is expected to generate less than 100 trips in the peak hour requires a TIS to be undertaken. Both types of assessment consider the operation and layout of the site, but they differ in their assessment of external traffic impact.

To determine the level of detail and content required, the impact of a development is separated into three groups, dependent upon the forecast vehicle trips generated by the proposed development as shown in **Figure 1-2**.

**Figure 1-2: Level of Transport Impact Assessment Required**




*Source: Western Australian Planning Commission (WAPC)*

As detailed in Section 4 of this report, the site is anticipated to generate less than 100 two-way vehicle trips within both the AM and PM peak hours. Therefore, the level of assessment required for this proposal is aligned with a 'moderate impact' and as such a Transport Impact Statement (TIS) is required in accordance with Part B of the *WAPC TIA Guidelines Volume 4*.

The intent of a TIS, as per the WAPC Guidelines, is to provide the approving authority with sufficient transport information to confirm that the applicant has adequately considered the transport aspects of the proposed development and that it would not have an adverse transport impact on the surrounding area.

In accordance with the WAPC Guidelines, this TIS outlines:

- Existing transport conditions proximate to the site.
- Suitability of the proposed parking provision within the site.
- The adequacy of the proposed site layout.
- The traffic generating characteristics of the proposed development.
- The anticipated impact of the proposed development on the surrounding movement network.



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# 2 Traffic Management on the Frontage Street

## 2.1 General

The subject site is located on Hawksburn Road, Rivervale approximately 6km west of Perth city centre and 900m north-east of Burswood Station. The primary vehicle access route to the site is currently from the cul-de-sac end of Hawksburn Road.

The site is located within The Springs Special Development Precinct (Based on The Springs Structure Plan, Rivervale) with mostly residential zoning and some parks/recreations and mixed-use zonings nearby as shown in **Figure 2-2.**

Under The Springs Special Development Precinct Lane Use, the subject site is zoned as R100 Mixed-Use zoning as per shown in **Figure 2-3.**

The subject site and its environs are shown in **Figure 2-1.**

**Figure 2-1: Site and its Environs**

(source: Nearmap)

**Figure 2-2: Land Zoning Map (City of Belmont LPS15)**

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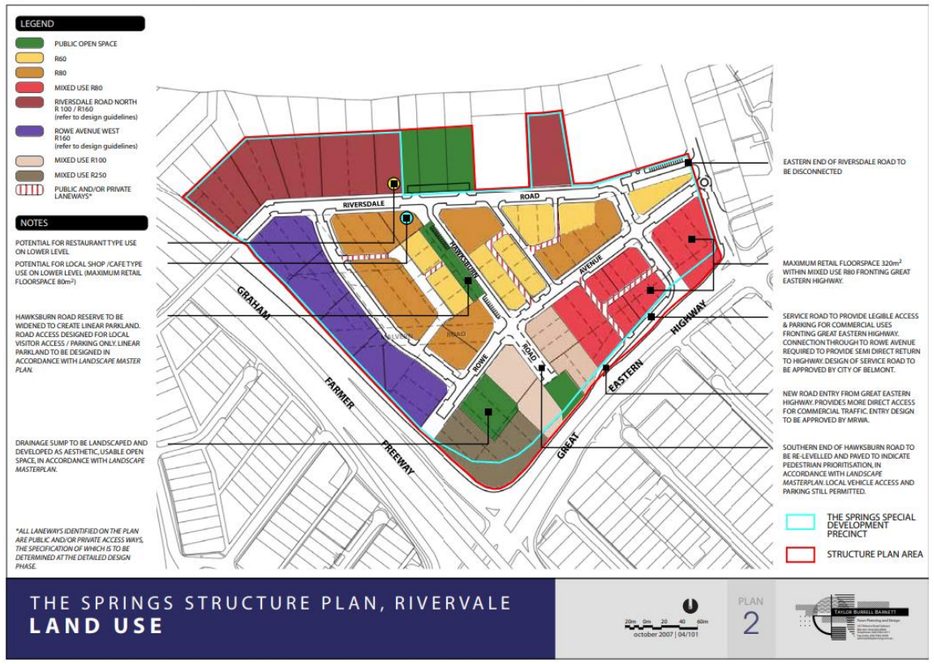
**Figure 2-3: The Springs Special Development Precinct (The Springs Structure Plan)**




## 2.2 Surrounding Development

The proposed development site lies within the Springs Structure Plan area which has been specifically developed to become a self-sufficient urban village close to the Perth CBD. The proposed development is within a walkable catchment of many amenities the residents of The Springs would want to access on a regular basis. This walkable catchment includes (or will shortly include) such attractions as:

- The Point, Lot 1014, with ground floor commercial tenancies located less than 300m from site;
- cafes, restaurants and bars at the Aloft Hotel and neighbouring office development, located less than 100m from site;
- Proposed café tenancy at 48 Riversdale Road, Parallel, 350m from site;
- Proposed café/restaurant tenancy at 60 Riversdale Road, Vantage, 350m from site (not yet operational);
- Burswood peninsula cafes within the Mirvac developed towers located 650m from site;
- Crown located 1.7km from site;
- Blasta Brewery 850m from site;
- Darringtons café 400m from site;

Eastgate shopping centre including an IGA, cafes and health services located 500m from site and accessible via a pedestrian underpass under Great Eastern Highway.

### 2.2.1 Great Eastern Highway

Great Eastern Highway is a State Road under the care and control of Main Roads WA and is classified as a Primary Distributor under Main Roads WA Functional Road Hierarchy and Primary regional roads under Metropolitan Region Scheme. The road consists of two 12m wide carriageways with a 5.5m wide median, within a 40m wide road reserve.

At the intersection at Brighton Road / Kooyong Road, there are bus lane and dedicated bicycle lane on both sides of Great Eastern Highway. There is approximately 3m wide footpath on both sides of Great Eastern Highway, situated next to the carriageway. Great Eastern Highway has a posted speed limit of 60km/h.

Great Eastern Highway is currently carrying approximately 69,900[1] vehicles per day (vpd) west of Brighton Road.

### 2.2.2 Rowe Avenue

Rowe Avenue is under the care and control of the City of Belmont and is classified as an Access Road under Main Roads WA Functional Road Hierarchy. The road consists of two approximately 4m wide carriageways with a 2.4m wide median and 1.2m wide bicycle lanes, embayed parking on both sides of the road within a 20m wide road reserve. There is approximately 2m wide footpath on both sides of Rowe Avenue, situated at the boundary of the road reserve.

Rowe Avenue has a default speed limit of 50km/h as applicable in built up areas and is currently carrying approximately 3,360vpd[2].

[1] Based on SCATS data from the intersection of Great Eastern Highway and Brighton Road from June 2023

[2] Based on Matrix Traffic & Transport Data traffic survey undertook on the roundabout intersection at Brighton Road / Rowe Avenue / Nannine Place. Daily volume is assumed to be 10 times of the averaged AM & PM peak flows.



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### 2.2.3 Brighton Road

Brighton Road is under the care and control of the City of Belmont and is classified as an Access Road under Main Roads WA Functional Road Hierarchy. The road consists of two approximately 4m wide carriageways with 2.5m wide footpath on both sides of Brighton Road, situated next to the carriageway. Brighton Road has a default speed limit of 50km/h in built up areas.

Brighton Road is currently carrying approximately 8,900vpd[3].

### 2.2.4 Hawksburn Road

Hawksburn Road is under the care and control of the City of Belmont and is classified as an Access Road under Main Roads WA Functional Road Hierarchy. The road consists of a single two-way carriageway of approximately 6.2m width with a cul-de-sac head at its southern end. It has footpaths on both sides and also has embayed parking on both sides for vehicle. Hawksburn Road has a default speed limit of 50km/h in built up areas and it intersects Rowe Avenue at a four-way priority controlled intersection under Give Way control.

Hawksburn Road is estimated to carry less than 300vpd.

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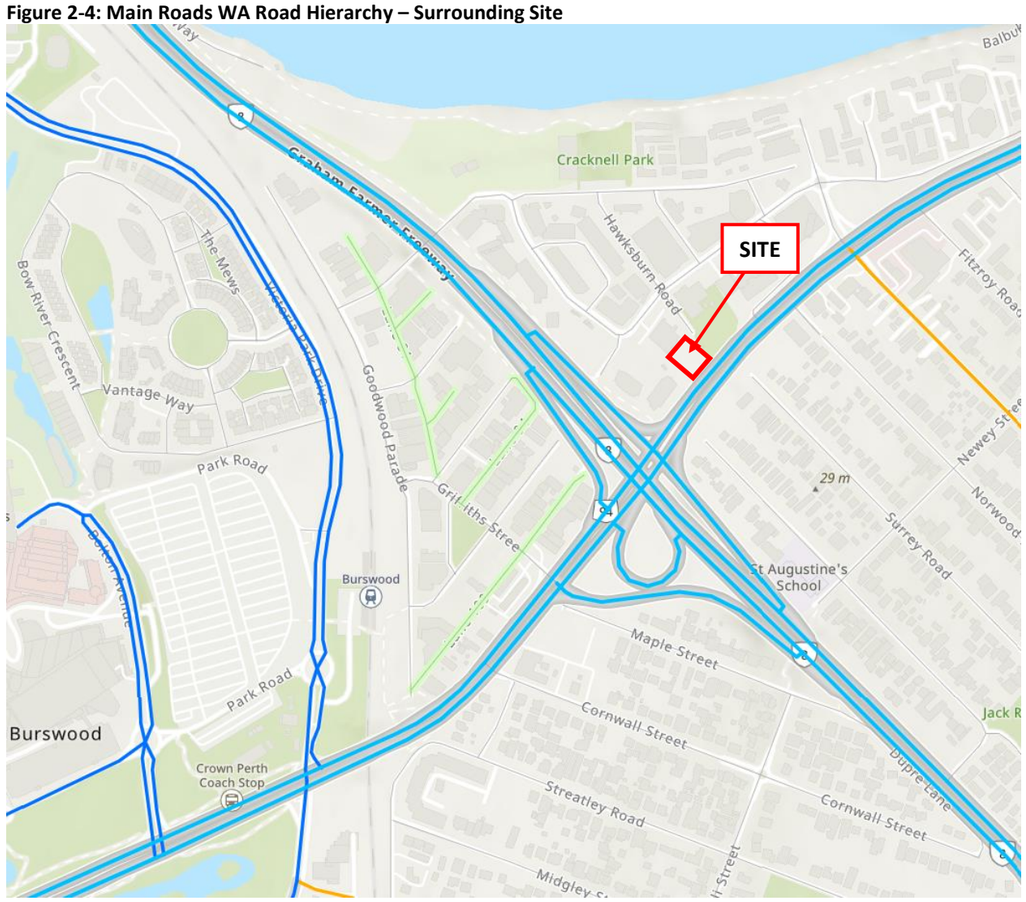
[3] Based on SCATS data from the intersection of Great Eastern Highway and Brighton Road from June 2023

## 2.3 Existing Road Network

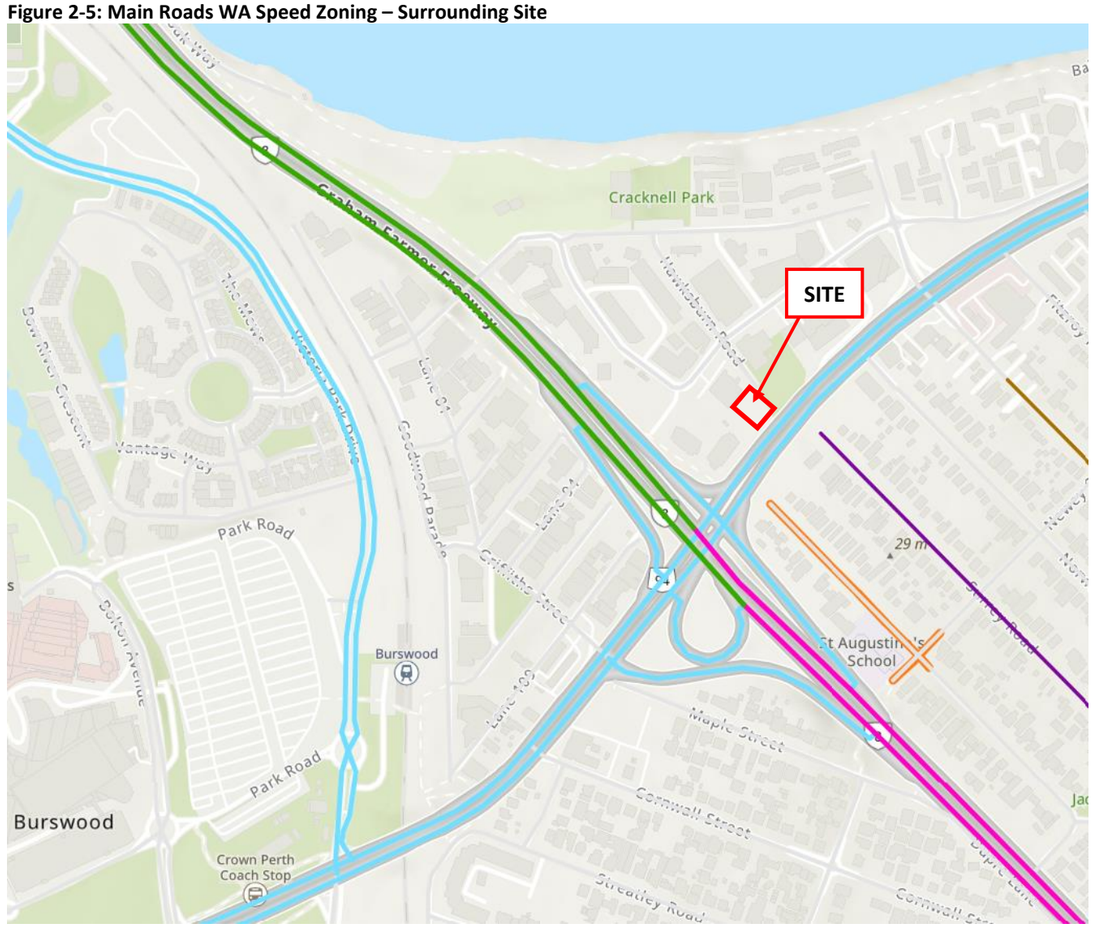
## 2.4 Road Hierarchy

**Figure 2-4: Main Roads WA Road Hierarchy – Surrounding Site**




## 2.5 Speed Zoning

**Figure 2-5: Main Roads WA Speed Zoning – Surrounding Site**



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# 3 Proposed Residential Development

## 3.1 Existing Site Context and Land Uses

The proposal is for 108 residential apartments of varying size from 35m$^2$ studio apartments, 50m$^2$ one-bedroom apartments to 75m$^2$ two-bedroom units. There are proposed to be 33 studio apartments, 60 one-bedroom units and 15 two-bedroom units within the development. The development is also proposed to have a lounge and games rooms for residents use with an outdoor area with BBQ facilities.

Vehicular access off the cul-de-sac end of Hawksburn Road and pedestrian access will be provided from the existing footpath on Hawksburn Road and from Great Eastern Highway.

The proposed site is located approximately 6km west of Perth city centre and 900m north-east of Burswood Station. The site is currently vacant land.

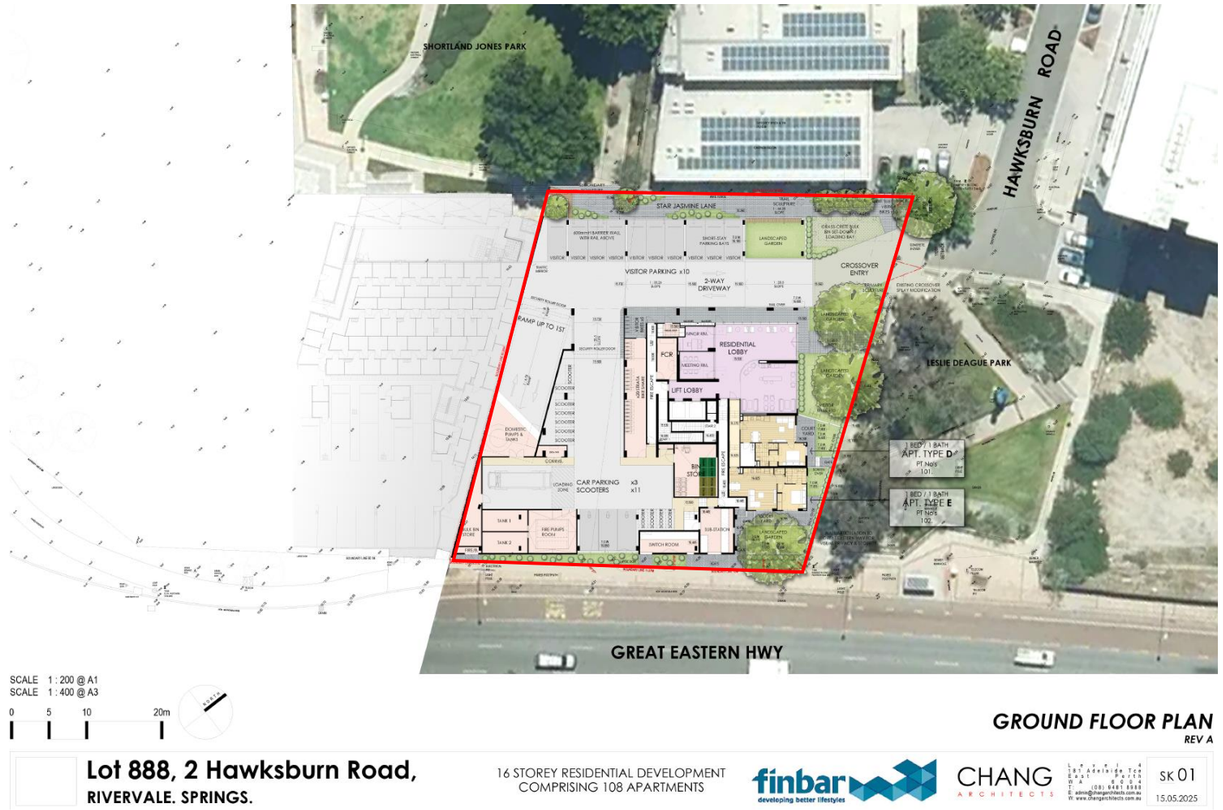
## 3.2 Proposed Development Yield

**Table 3-1: Proposed Land Use and Yields**

| Development Type | Yield |
|---|---|
| Residential | 108 Apartments |
| Vehicle Access | Via Hawksburn Road |

A copy of the proposed development plan is provided in **Figure 3-1** and a full copy is attached at Appendix A.

**Figure 3-1: Plan of Proposed Residential Development (Ground Floor)**




Source: Chang Architects, May 2025.

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## 3.3 Peak Hour Traffic Volumes

In relation to the proposed development at Lot 888, traffic generation rates have been applied to the 108 apartment yield using trip rates derived from the NSW 'RTA Guide to Traffic Generating Developments'.

This document advises that trip rates for medium density residential apartments of up to 2 bedrooms, would generate weekday peak hour vehicle trips of 0.4 - 0.5 per dwelling. For larger apartments with 3 or more bedrooms are likely to generate weekday peak hour vehicle trips of 0.5 - 0.65 per dwelling, of which this development does not propose any 3 bedroom apartments.

**Table 3-5** below shows the resulting traffic generation of the expected 108 apartments on the development land. The trip rates used for 1 & 2 bedroom apartments is the higher 0.5 rate. It should be noted that the generation will likely be less than this generation rate as the number of parking bays within the site will ultimately restrict the traffic generation to and from the site.

**Table 3-2: Proposed Development Traffic Generation – 108 Apartments.**

| Land Use | Apartments | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | IN | OUT | 2-WAY | IN | OUT | 2-WAY |
| **Studio, 1 & 2 Bed Apartments** | 108 | 22 | 33 | 55 | 33 | 22 | 55 |

The development is expected to generate up to 55 two-way vehicle movements (rounded up) in either of the AM and PM peak hour periods. In terms of this predicted number of increased vehicles generated by the residential development, this equates to approximately one additional vehicle every minute during the morning and evening peak hour periods traveling to/from the development. Over an entire day approximately 550 vehicles are expected to be generated by the development.

Given the status of Hawksburn Road as an Access Road (up to 300 vehicles per day two way) and its configuration as a cul-de-sac, this increase in vehicle numbers as result of the development is considered to be acceptable, nor is it expected to have any deleterious effects on the traffic flows, road or intersection performance near the proposed development.

Therefore, this proposed development and its relatively **moderate**-level of traffic generation can be accommodated on the surrounding exiting road network and intersections.

## 3.4 Vehicular Access & Parking

**Vehicle Access:**

Vehicular access is to be provided by way of a new site access crossover at the cul-de-sac end of Hawksburn Road. A 6.0m wide crossover will be provided to facilitate all vehicle movements into and out of the site, including on-site refuse collection.

Refuse collection will take place internally within the proposed site, using the services of City of Belmont with their designated rear loading vehicle. Bulk bin refuse collection will take place adjacent to the driveway entry off Hawksburn Road from a designated set-down zone within the site, as shown on **Figure 3-1.**

Refer to **Section 3.7** for further details on provisions for service vehicles including swept path analysis.

**Parking Layout:**

90% of 108 apartment dwellings in the development are proposed to have their own private car parking space (1 space) equating to a total of 97 resident car bay provided on site. This meets the requirement of WAPC's State Planning Policy 7.3 (SPP7.3) – Residential Design Codes Volume 2, for resident car parking.

There are also 10 visitor car parking bays proposed on the ground floor of the development, of which a concession of 6 bays has been applied due to the provision of 30 motorcycle/scooter bays provided on site. This meets the requirements of SPP7.3. A summary of the parking provisions proposed on site are as follows:

- 97 resident car bays
- 10 visitor bays (concession due to scooter bays).
- 30 scooter bays
- Resident Bike Parking = 108 bays (within the 4.5m$^2$ stores provided)
- Visitor Bike Parking = 25 bike spaces
- Strata Bike Share Scheme = 20 bicycles

The proposed number of visitor bike parking bays (25) exceeds the required provisions of SPP7.3

The proposed car parking also aligns with the non-traditional 'Build to Rent' demographic where affordability aspirations include offering apartments without a parking space at a cheaper rental price point.



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Access to/from the on-site car park is proposed from Hawksburn Road with an internal multi-storey car park provided across the first and second floors.

The proposed two-way circulating roads within the multi-storey car park are 6.0m wide with 2.5m wide parking bays and accord with the requirements of Australian Standard 2890.1-2004 Off Street Car Parking. Swept paths of a B99 (large SUV equivalent) car circulating the car park is provided at **Figure 3-2 and Figure 3-3.** The swept paths show there is sufficient space for a car to circulate the car park on both the first and second levels, with adequate space for a second vehicle to wait heading in the opposite direction. A 300mm clearance envelope is provided as per Australian Standards The low traffic volume nature of the development and the tidal nature of movements to/from the site in the morning and evening peaks makes the chances of two vehicles meeting low, however as mentioned if two vehicles heading in opposite direction do meet, there is sufficient space for vehicles to give-way / wait to allow passing. The internal car park will also include convex mirrors on all corners to assist with driver visibility.

A copy of the ground floor, first floor and second floor concept plans prepared by Chang Architects are shown at Appendix A.

**Figure 3-2: First Floor – Passenger Vehicle Circulation Swept Path**

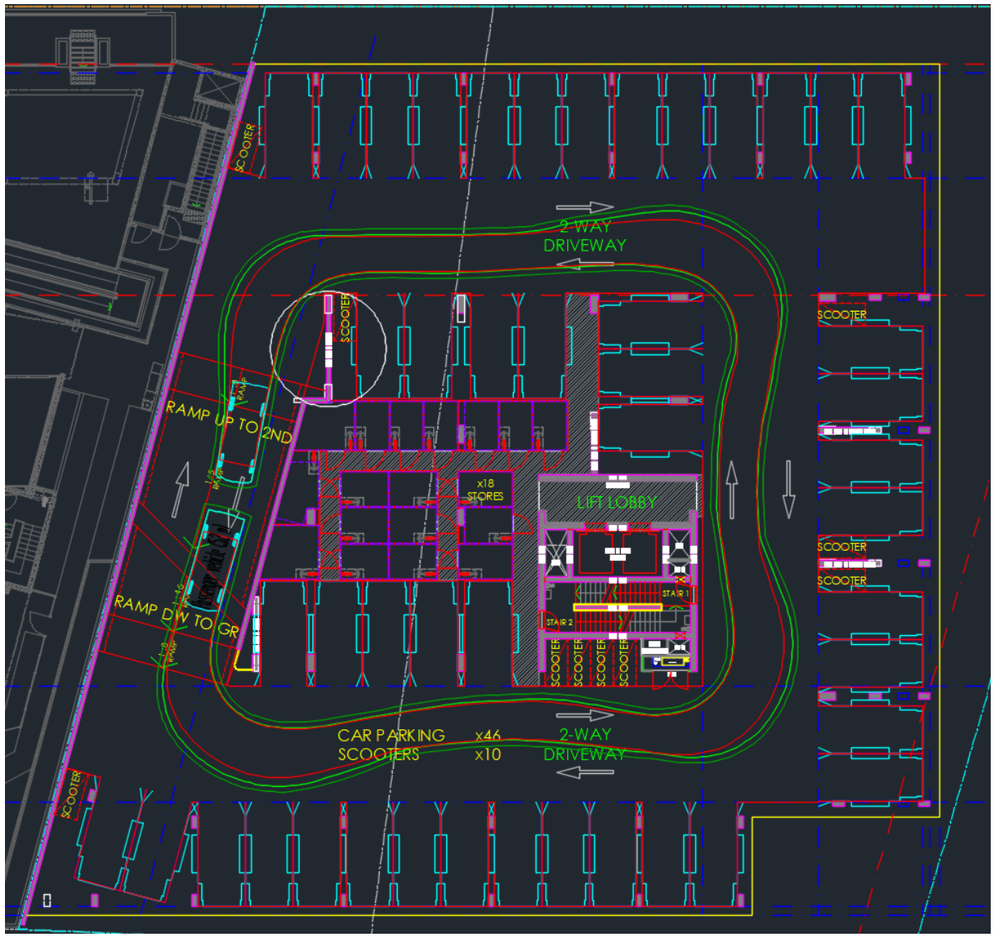


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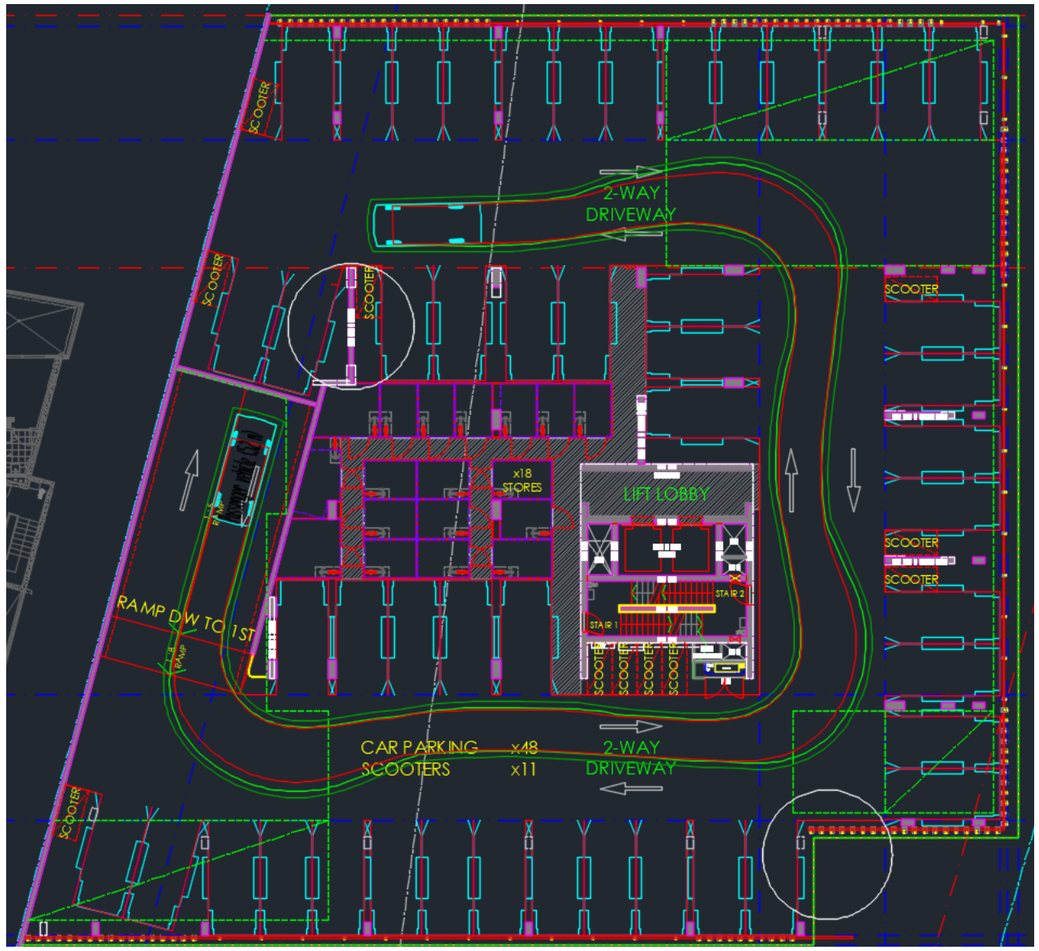
**Figure 3-3: Second Floor – Passenger Vehicle Circulation Swept Path**




## 3.5 Pedestrian Facilities

Pedestrian access to the development will be via Hawksburn Road and Great Eastern Highway with residential lobby and lift lobby access taken directly from the existing footpath running through Leslie Deague Park adjacent to the site. Two ground level residential units and the manager's room will have their own exclusive access through gated entries.

## 3.6 Cycling Facilities

Cycle access to the site will be via the new vehicle access off Hawksburn Road leading to the ground level parking area for visitors' bike parking adjacent to the access with additional visitor provided near the lobby access directly off the footpath running through Leslie Deague Park. Residents can access their secure bike parking within their allocated storerooms, alternatively the secure strata bike share bays can be accessed from the ground floor access driveway.

## 3.7 Other Development Proposals

In addition to the standard parking proposed to be provide for private motor vehicles for residents of the development, the development also proposes the following to reduce the use of cars:

- Support alternate transport modes through a strata bike share facility hub. This has been implemented in one of Finbar's other recent development at Civic Heart in South Perth. This will promote non-car use and will be owned by the building and managed for residents to book through an app.
- A higher number of bike parking facilities has been provided to encourage the use of bikes to and from the development site.
- A higher number of scooter parking facilities has been provided to encourage the use of scooters/e-mobility to and from the development site.
- Onsite wayfinding signage to encourage walkable/cycling amenities, especially to and from the adjacent PSP.

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# 4 Provision for Service Vehicles

## 4.1 Internal Site Waste Collection & Swept Paths

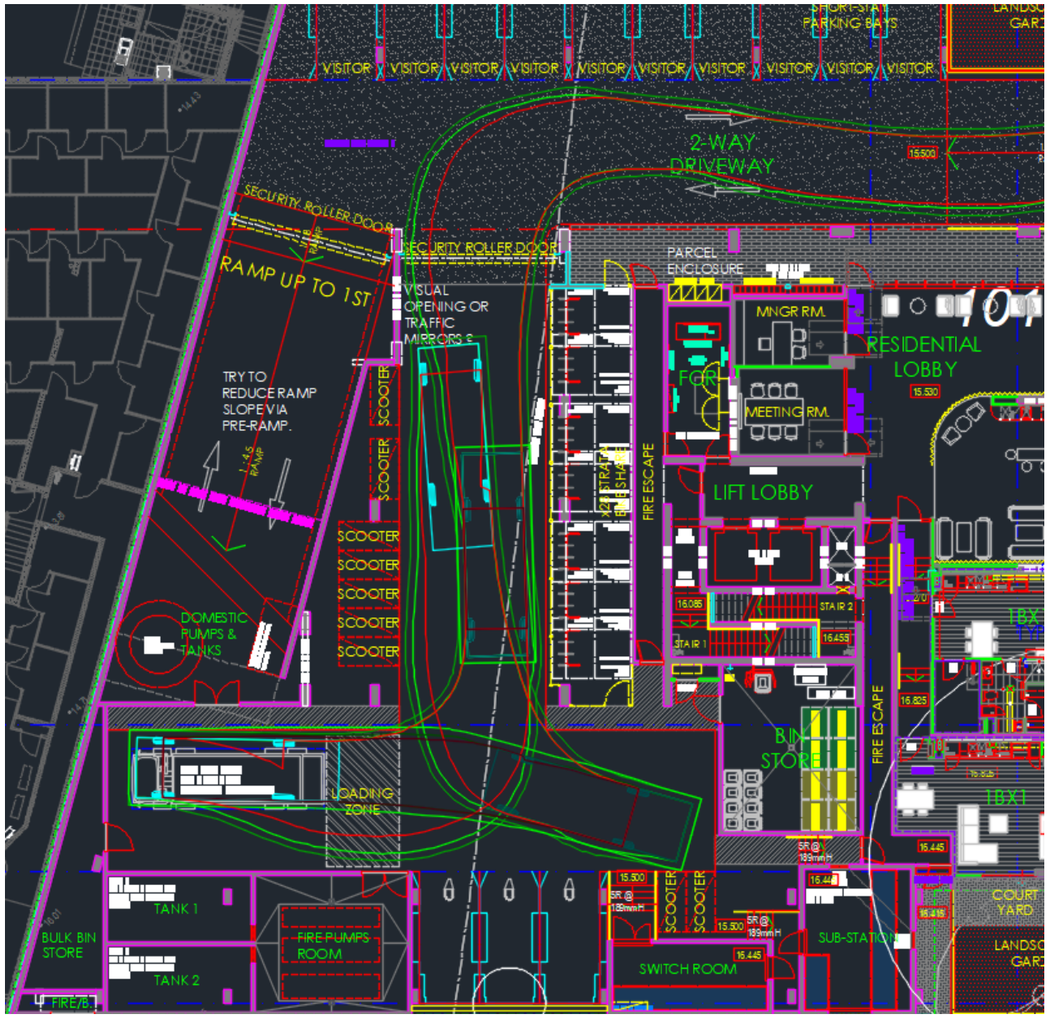
Waste collection at the site will likely be undertaken by the City of Belmont through their contractor in accordance with the proposed waste management plan. These vehicles will access the service bay area from the new driveway access off Hawksburn Road entering the site in forward gear, undertaking a 3-point turn and then exit the site in forward gear. **Figure 4-1** shows the swept path assessment which is acceptable and possible within the internal site access road. A 300mm clearance envelope is provided as per Australian Standards

The vehicle used to perform the above swept path movement is the City of Belmont's Rear Lift refuse Vehicle, which is relatively small at 8.4m long. Vehicle specification is provided in **Table 4-1.** This size vehicle has been assessed recently for other residential unit developments within the City of Belmont, in the most recent case, at Redcliffe. The City of Belmont and their waster contractor have confirmed the vehicle specification below is correct for use in determining swept path requirements.

**Table 4-1: City of Belmont's Rear Lift Refuse Vehicle – Mitsubishi Fuso, 8.4m Long**

| Vehicle Type | Height | Length | Width | Max Loaded Weight | Turning Circle |
|---|---|---|---|---|---|
| **Rear Lift** ***(General Waste & Recycle 240L – 1100L bins)***<br>**Chassis -** Mitsubishi Fuso<br>**Body –** Bucher 14m | 2,900mm | 8,400mm | 2,500mm | 15,000kgs | 14,300mm |

**Figure 4-1: Refuse Vehicle Swept Path with Internal Site Access Road**

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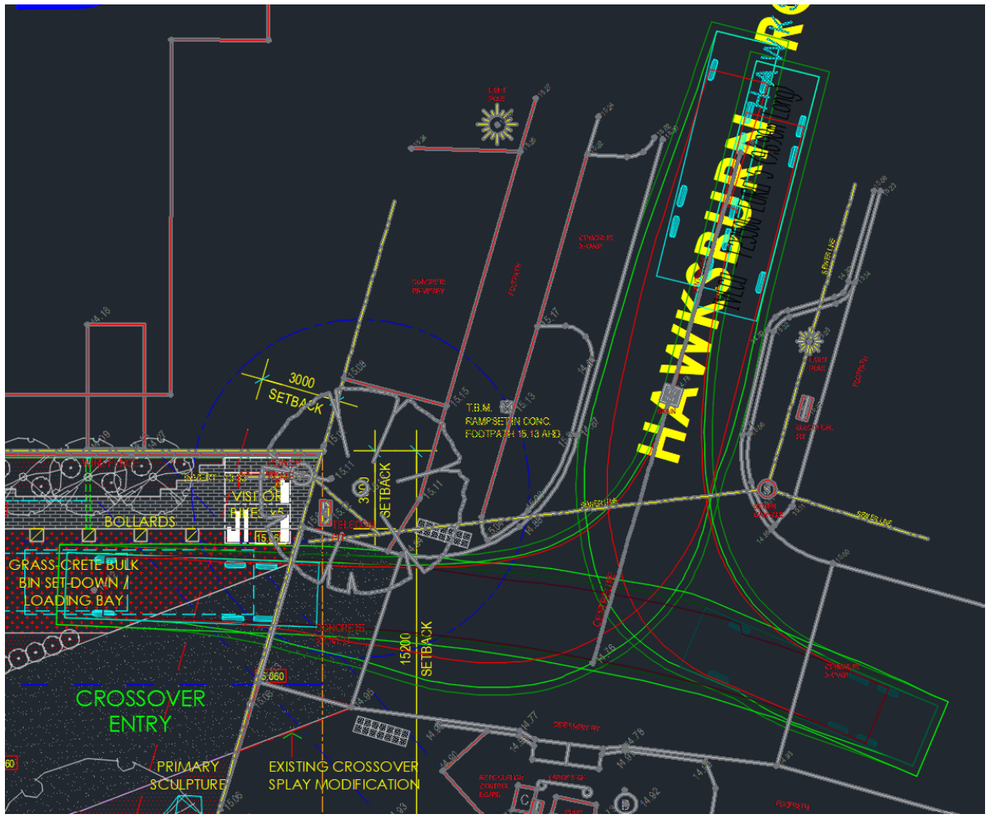
## 4.2 Servicing by Large Trucks

Immediately to the north of the proposed vehicle access to the site, there is proposed to be a bulk bin storage area / loading bay. Large trucks will be able to access this location from the cul-de-sac head at the end of Hawksburn Road. A front loading vehicle will be easily able to access the bulk bin storage area. The bulk-bin lay down space is utilised for bulk bins only for a short period each year (approximately two weeks) when the bulk bin service is provided by the City of Belmont. Refer to **Figure 4-2** below for the likely swept path for this movement.

**Figure 4-2: Large Truck Entry onto Bulk Bin / Loading Bay Area**




## 4.3 Furniture Removals

Up to 10m long trucks will be able to access the service bay area and this can be used by larger furniture trucks expected to be used to move to and from the units. For a 2-bed room unit, the capacity of the vehicle would likely be no more than a size of a small moving van such as a 6.4m long small rigid vehicle (SRV). These sized vehicles will easily access the bulk bin set-down / loading bay area.

## 4.4 Emergency Vehicles

The current layout of the development provides adequate access for emergency vehicle to conveniently access the site from Hawksburn Road. If required, the site access can support entry for emergency vehicles.

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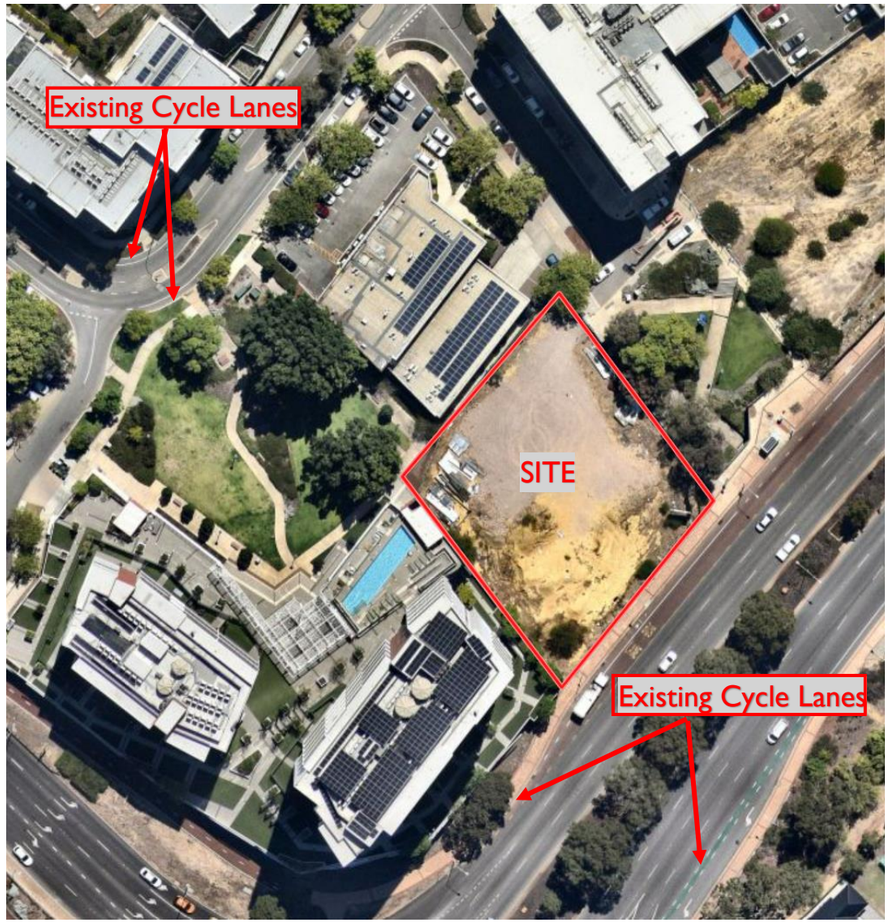
# 5 Sustainable Access

## 5.1 Cycling

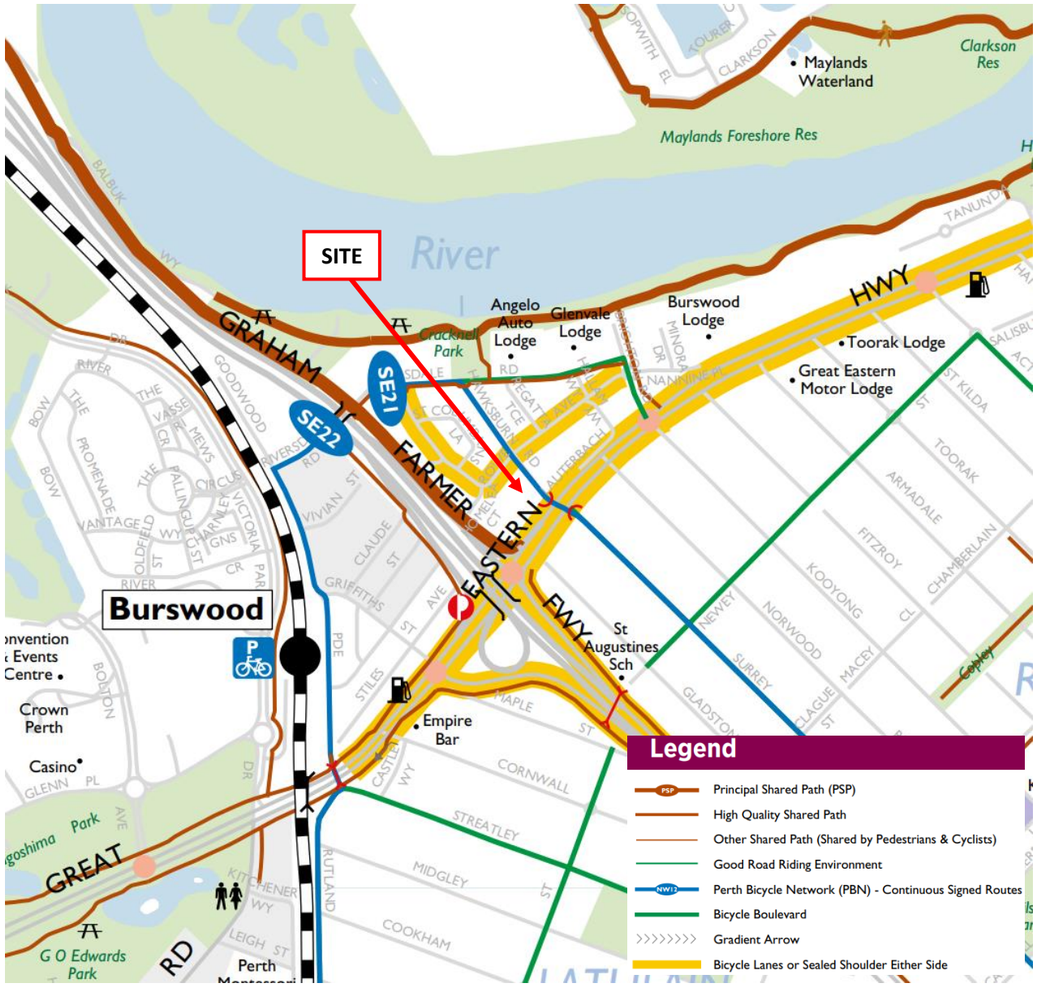
On-road cycle lanes are currently provided in both directions on Rowe Avenue and Great Eastern Highway in an un-protected format (white line separation) leading to / from the existing 'off-road' Principal Shared Path (PSP) cycling network along Graham Farmer Freeway and the southern bank of the Swan River. The local streets such as Hawksburn Road do not provide any further specific cycle infrastructure; however the low-traffic volume/speed nature of these residential access streets would provide confident cyclists with a relatively low level of exposure to vehicular traffic and less confident cyclists could legally use the available footpaths immediately surrounding the site.

**Figure 5-1: Existing 'On-Road' Cyle Lane Infrastructure**




The Department of Transport's 'Perth, Fremantle and Stirling Bike Map' shows that the surrounding roads of Rowe Avenue and Great Eastern Highway have on road cycle lanes (unprotected). The existing Principal Shared Path is identified along the Graham Farmer Freeway and along the southern bank of the Swan River. Cycle Route SE21 is identified along Surrey Road, via the Great Eastern Highway underpass and along Hawksburn Road to Riversdale Road. There are various cycle routes and facilities in the area with different options to access the wider cycling infrastructure and Burswood Station to the south-west.

**Figure 5-2: Department of Transport's 'Perth, Fremantle and Stirling Bike Map'**



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## 5.2 Walking

The development site is located 50m (walking distance) away from the nearest north-eastbound bus stop on the northern side of Great Eastern Highway and 150m walking distance (via an underpass) from the bus stop on the southern side of Great Eastern Highway, which is a 2–3-minute walkable distance to public transport for able bodied pedestrians. Bus Routes 270, 654, 935 and 940 run along Great Eastern Highway, with a bus stop in close proximity to the site in both directions.

One of the ongoing KPIs that the Public Transport Authority (PTA) has in its Annual Report measures "the proportion of street address within the Perth public transport area which are within 500m of a Transperth stop providing acceptable level of service". It is a recommendation of PTA that a figure of at least 90 percent of all street address should be within 500m of a Transperth bus stop. The proposed development therefore complies with this specific KPI of PTA for access to public transport services with 100% of the development within 500m of a stop.

## 5.3 Public Transport

Burswood train station on the Perth to Armadale line is located approximately 720m (walking distance) from the site and it can be accessed beneath the Great Eastern Highway bridge then Griffiths Street/Stiles Avenue. The train station distance from the site is conducive and attractive for cycling access. Liveable Neighbourhoods notes that typically, most people will consider walking up to 400m (five minutes) to daily activities, or 800m (10 minutes) to a train station or town centre.

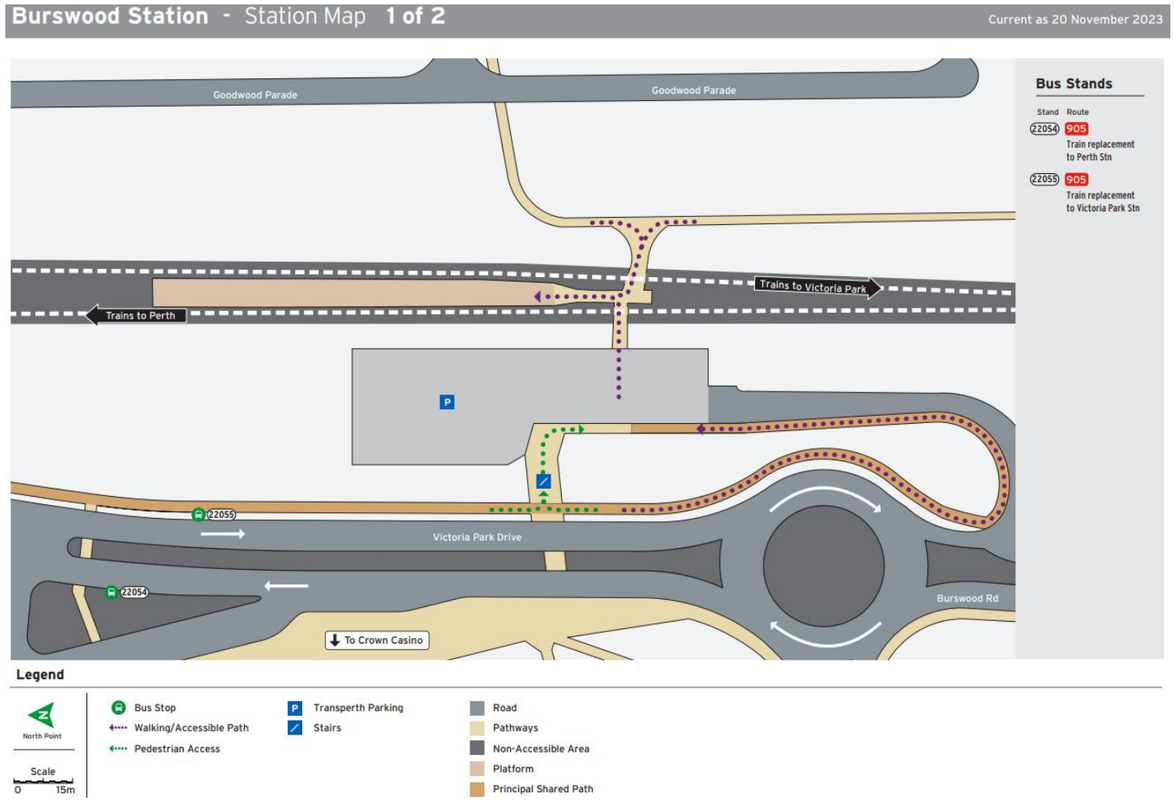
Great Eastern Highway supports a high frequency bus route (with two 900 series high frequency bus routes), and also with the Burswood train station nearby. With reference to WAPC's State Planning Policy 7.3 – Residential Design Codes Volume 1, Great Eastern Highway is a high frequency bus route with buses running at least every 15 minutes during weekday peak period.

Refer to **Table 5-1** on the following page summarising the above.

**Table 5-1: Public Transport Provision**

| Service | Route | Route Description | Distance to Nearest Stop | Frequency |
|---|---|---|---|---|
| Bus | 270 | Elizabeth Quay Bus Station to High Wycombe Station | 50m (NE bound)<br>150m (SE bound) | Every 25 minutes |
| Bus | 940 | Elizabeth Quay Bus Station to Redcliffe Station | 50m (NE bound)<br>150m (SE bound) | Every 10 minutes |
| Bus | 935 | Kings park to Redcliffe Station | 50m (NE bound)<br>150m (SE bound) | Every 10 minutes |
| Train | Armadale/Thornlie Line | Perth Station to Armadale/Thornlie Stations | 720m (walking distance) | 15 minutes |

**Figure 5-3: Burswood Station – Overview of Facilities**



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**STATION FACILITIES**

**Accessibility:** Assisted

### Platform Accessibility

- ✗ Lifts
- ✗ Escalators
- ✓ Accessible Toilet
- ✓ Hearing Loops
- ✓ Tactile Paving on Platform

### General

- ✗ Toilets
- ✗ Public Telephones
- ✓ Security cameras
- ✓ Transit Officer booth

### Tickets and Fares

- ✗ SmartRider Add Value Machine
- ✓ Ticket Vending Machine
- ✗ Change Machine

**Reason:**

- There is a steep ramp to access the platform
- Access to the station utilises a pedestrian crossing which contains gaps of up to 75mm.
- The platform 'from Perth' has a gap between the platform and the train that may not be accessible.
  - The gap is 77mm wide
  - The platform is 8mm higher than the train.

### Parking

- ✓ Parking bays - 50
- ✗ Short-term parking bays
- ✗ Motorcycle Bays
- ✓ ACROD Bays - 2
- ✓ SmartParker
- ✓ Pay by Plate

### Taxi

- ✗ Taxi Rank

### Bicycles

- ✗ Bike Shelter
- ✗ U-Rail

**Figure 5-4: Express Service – Route 935 to/from Perth City**

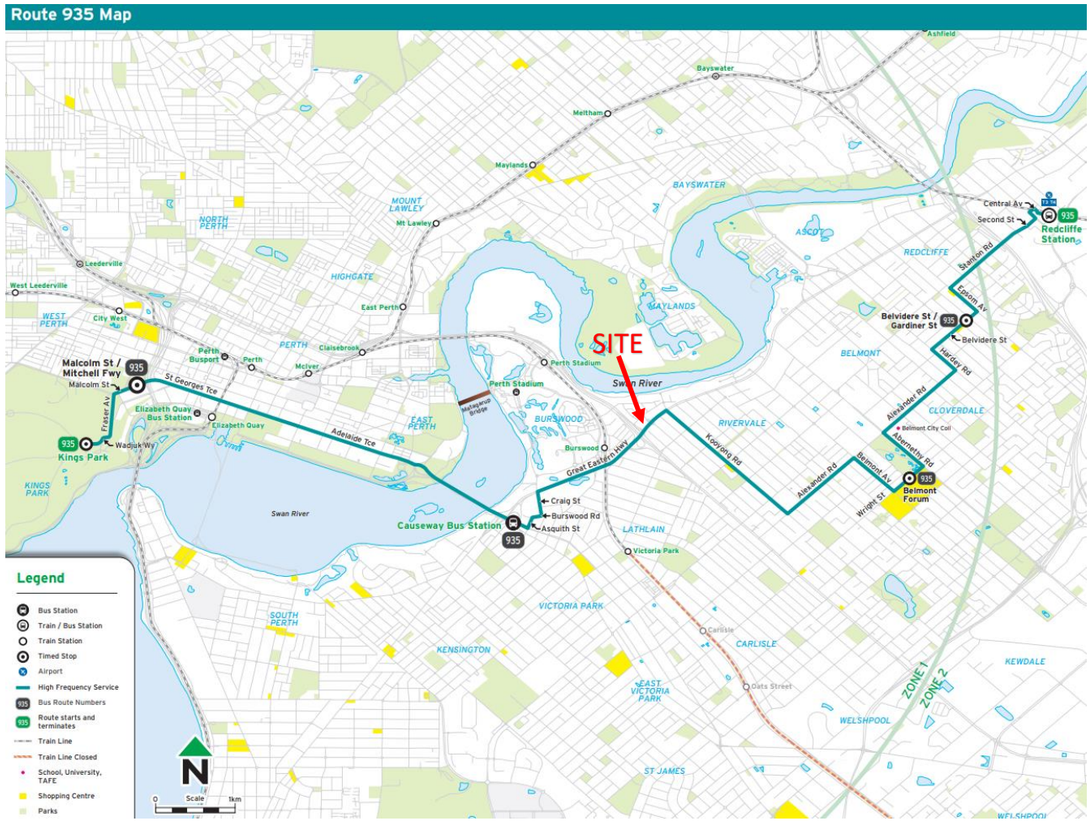


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**Figure 5-5: Example 935 Frequency – To Perth City**

**Route 935 - To Kings Park**

| Timed Stops | | | | | | |
|---|---|---|---|---|---|---|
| Stop No. | 28540 / Stand 6 | 14325 | 11670 | 10070 / Stand 6 | 10093 | 17384 |
| Route No. | Redcliffe Stn | Belvidere St / Gardiner St | Belmont Forum / Wright St | Causeway Bus Stn | Malcolm St / Mitchell Fwy | Wadjuk Way (Kings Park) |
| **Monday to Friday** | | | | | | |
| am 935 | 4:25 | 4:28 | 4:33 | 4:44 | 4:53 | 4:58 |
| 935 | 4:54 | 4:58 | 5:03 | 5:14 | 5:24 | 5:30 |
| 935 | 5:17 | 5:21 | 5:26 | 5:38 | 5:48 | 5:55 |
| 935 | 5:31 | 5:35 | 5:40 | 5:53 | 6:04 | 6:11 |
| 935 | 5:43 | 5:47 | 5:52 | 6:05 | 6:16 | 6:23 |
| 935 | 5:55 | 5:59 | 6:04 | 6:17 | 6:29 | 6:36 |
| 935 | 6:05 | 6:09 | 6:14 | 6:28 | 6:41 | 6:48 |
| 935 | 6:15 | 6:19 | 6:24 | 6:38 | 6:51 | 6:58 |
| 935 | 6:25 | 6:29 | 6:34 | 6:48 | 7:02 | 7:09 |
| 935 | 6:35 | 6:39 | 6:44 | 6:59 | 7:13 | 7:20 |
| 935 | 6:42 | 6:47 | 6:53 | 7:08 | 7:22 | 7:29 |
| 935 | 6:49 | 6:54 | 7:00 | 7:15 | 7:30 | 7:37 |
| 935 D | - | 6:59 | 7:05 | 7:21 | 7:41 | - |
| 935 | 6:59 | 7:04 | 7:10 | 7:26 | 7:42 | 7:49 |
| 935 D | - | 7:09 | 7:15 | 7:31 | 7:51 | - |
| 935 | 7:09 | 7:14 | 7:20 | 7:36 | 7:52 | 8:00 |
| 935 D | - | 7:19 | 7:25 | 7:42 | 8:02 | - |
| 935 | 7:18 | 7:23 | 7:30 | 7:47 | 8:03 | 8:11 |
| 935 D | - | 7:28 | 7:35 | 7:53 | 8:14 | - |
| 935 | 7:28 | 7:33 | 7:40 | 7:58 | 8:15 | 8:23 |
| 935 D | - | 7:38 | 7:45 | 8:03 | 8:24 | - |
| 935 | 7:37 | 7:42 | 7:50 | 8:08 | 8:25 | 8:33 |
| 935 D | - | 7:47 | 7:55 | 8:13 | 8:33 | - |
| 935 | 7:47 | 7:52 | 8:00 | 8:18 | 8:36 | 8:44 |
| 935 | 7:52 | 7:57 | 8:05 | 8:23 | 8:41 | 8:49 |
| 935 | 7:57 | 8:02 | 8:10 | 8:28 | 8:45 | 8:53 |
| 935 | 8:02 | 8:07 | 8:15 | 8:32 | 8:49 | 8:57 |
| 935 | 8:08 | 8:13 | 8:21 | 8:38 | 8:54 | 9:02 |
| 935 | 8:15 | 8:20 | 8:28 | 8:44 | 9:00 | 9:08 |
| 935 | 8:22 | 8:27 | 8:35 | 8:51 | 9:07 | 9:15 |
| 935 | 8:29 | 8:34 | 8:42 | 8:58 | 9:13 | 9:21 |
| 935 | 8:36 | 8:41 | 8:49 | 9:05 | 9:20 | 9:28 |
| 935 | 8:44 | 8:49 | 8:57 | 9:13 | 9:28 | 9:36 |
| 935 | 8:53 | 8:58 | 9:05 | 9:20 | 9:34 | 9:42 |
| 935 | 9:03 | 9:08 | 9:15 | 9:30 | 9:44 | 9:52 |
| 935 | 9:13 | 9:18 | 9:25 | 9:40 | 9:54 | 10:02 |
| 935 | 9:23 | 9:28 | 9:35 | 9:49 | 10:03 | 10:11 |
| 935 | 9:33 | 9:38 | 9:45 | 9:59 | 10:13 | 10:21 |
| 935 | 9:43 | 9:48 | 9:55 | 10:09 | 10:23 | 10:31 |
| 935 | 9:53 | 9:58 | 10:05 | 10:19 | 10:33 | 10:41 |
| 935 | 10:03 | 10:08 | 10:15 | 10:29 | 10:43 | 10:51 |
| 935 | 10:13 | 10:18 | 10:25 | 10:39 | 10:53 | 11:01 |
| 935 | 10:23 | 10:28 | 10:35 | 10:49 | 11:03 | 11:11 |
| 935 | 10:33 | 10:38 | 10:45 | 10:59 | 11:13 | 11:21 |
| 935 | 10:43 | 10:48 | 10:55 | 11:09 | 11:23 | 11:31 |
| 935 | 10:53 | 10:58 | 11:05 | 11:19 | 11:33 | 11:41 |
| 935 | 11:03 | 11:08 | 11:15 | 11:29 | 11:43 | 11:51 |
| 935 | 11:13 | 11:18 | 11:25 | 11:39 | 11:53 | **12:01** |
| 935 | 11:23 | 11:28 | 11:35 | 11:49 | **12:03** | **12:11** |
| 935 | 11:33 | 11:38 | 11:45 | 11:59 | **12:13** | **12:21** |
| 935 | 11:43 | 11:48 | 11:55 | **12:09** | **12:23** | **12:31** |
| 935 | 11:53 | 11:58 | **12:05** | **12:19** | **12:33** | **12:41** |

## 5.4 DoT's Perth and Peel Long-Term Cycle Network

The Department of Transport's Long Term Cycle Network (LTCN) is a long-term vision for the metropolitan bicycle network, designating routes by function according to the WA Cycling Network Hierarchy.

Within the vicinity of development site, the following routes are identified within the LTCN as either Local Routes, Secondary Routes or Primary Routes.

- Graham Farmer Freeway Shared Path – Primary Route
- Great Eastern Highway – Primary Route (future upgrade)
- Surrey Road / Hawksburn Road / Rowe Avenue / Homelea Court – Secondary Route
- Riversdale Road and Brighton Road – Local Route

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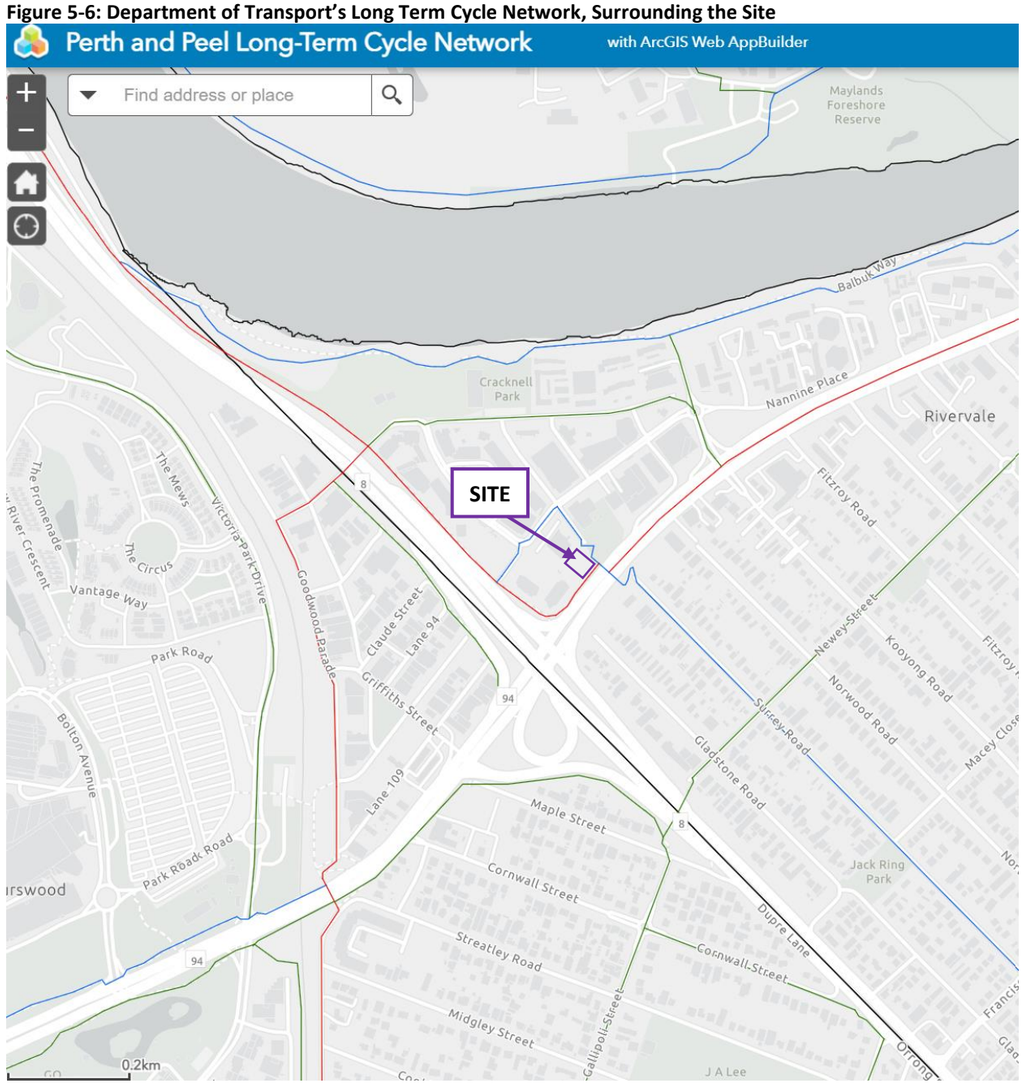
**Figure 5-6: Department of Transport's Long Term Cycle Network, Surrounding the Site**




The Western Australian Cycling Network Hierarchy designates routes by their function, rather than built form. Function considers the type of activities that take place along a route, and the level of demand (existing and potential). The built form of a route is based on the characteristics of the environment, including space availability, topography, traffic conditions (speed, volumes), primary users, and so on. When considering appropriate built forms for primary, secondary and local routes, an all ages and abilities design philosophy should be adopted.

The proposed residential development is well located to take advantage of the existing and future proposed cycling and walking infrastructure as part of the LTCN aspirations.

WESTERN AUSTRALIAN

## CYCLING NETWORK HIERARCHY

| | 1. PRIMARY ROUTE | 2. SECONDARY ROUTE | 3. LOCAL ROUTE |
|---|---|---|---|
| **Function** | Primary routes are high demand corridors that connect major destinations of regional importance. They form the spine of the cycle network and are often located adjacent to major roads, rail corridors, rivers and ocean foreshores. Primary routes are vital to all sorts of bike riding, including medium or long-distance commuting / utility, recreational, training and tourism trips. | Secondary routes have a moderate level of demand, providing connectivity between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities.<br>Secondary routes support a large proportion of commuting and utility type trips, but are used by all types of bike riders, including children and novice riders. | Local routes experience a lower level of demand than primary and secondary routes, but provide critical access to higher order routes, local amenities and recreational spaces. Predominantly located in local residential areas, local routes often support the start or end of each trip, and as such need to cater for the needs of users of all ages and abilities. |
| **Design Philosophy** | An all ages and abilities design philosophy is about creating places and facilities that are safe, comfortable and convenient for as many people as possible.<br>By planning for and designing infrastructure that caters for the youngest and most vulnerable users, we create a walking and bike riding network that everyone can use.<br>At the heart of this approach is fairness and enabling all people to use the network regardless of age, physical ability or the wheels they use. | | |
| **Form** | All routes can take a number of different forms and are designed to suit the environment in which they are located.<br>These forms include:<br>• Bicycle only, shared and/or separated paths;<br>• Protected bicycle lanes (uni or bi-directional, depending on the environment); and<br>• Safe active streets<br>Principal Shared Paths (PSPs) are often built along primary routes. A PSP is a high quality shared path built to MRWA PSP standard which generally means the path will be 4m wide, have adequate lighting and be grade separated at intersections (where possible).<br>In some locations, quiet residential streets incorporating signage and wayfinding may be appropriate for local routes. | | |



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# 6 Changes to the External Transport Network

## 6.1 Upcoming Road Projects

In consultation with City of Belmont it is confirmed that there are number of projects and studies currently being undertaken by City of Belmont and stakeholders, which are likely to result in positive effects for the proposed residential development.

The proposed residential development is well positioned to benefit from the positive outcomes of the following future road projects and studies.

## 6.2 The Springs Parking Review

**Improving parking in The Springs:**

Starting in 2024, the City of Belmont conducted a parking review to improve street parking in The Springs.

The parking review considered community feedback relating to localised parking concerns, including:

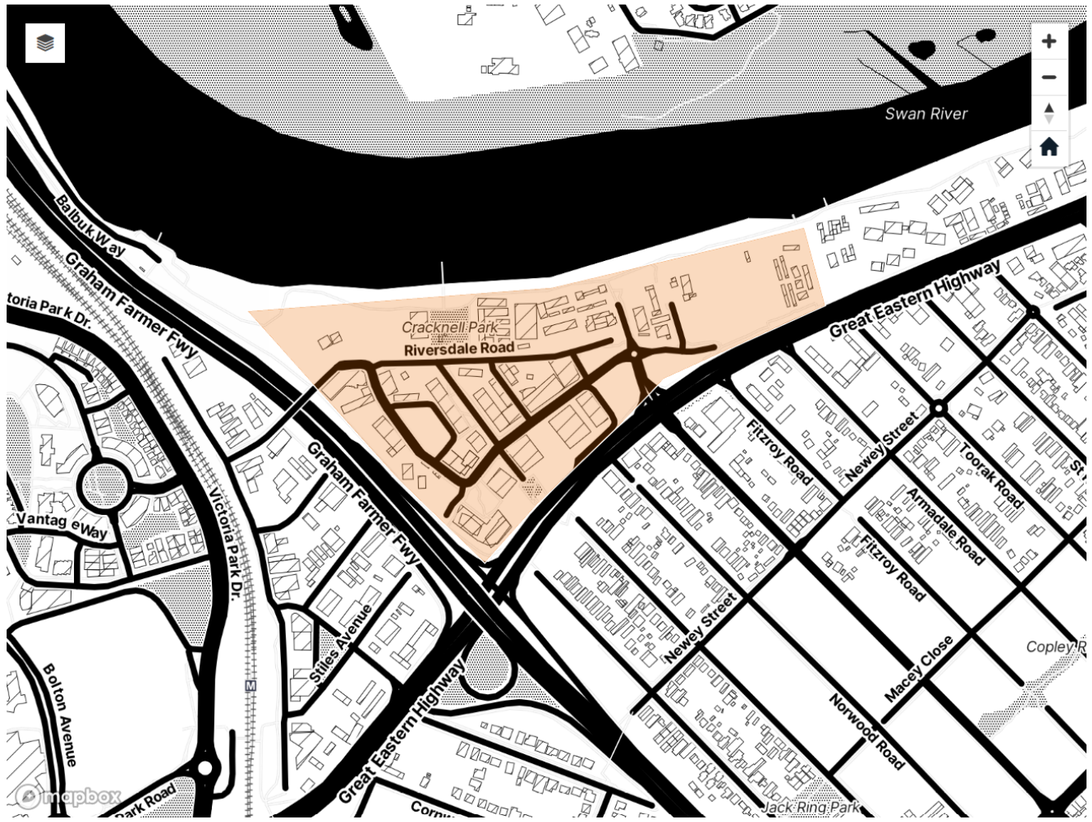
- Use of street parking as long-term residential overflow parking
- Turnover of street parking bays
- Turnover in Cracknell Park carpark
- Illegal verge parking, causing damage and loss of amenity
- Unauthorised parking on vacant land.

The aim of the parking review was to understand parking issues and concerns in The Springs, and find ways to address them.

The consultation area spanned the streets identified in Orange at **Figure 5-1.**

**Figure 6-1: The Springs Parking Review Area**

The orange section on the map below shows the approximate area to which our parking review relates.




Source: City of Belmont

**Next Steps:**

Following on from the feedback City of Belmont received from the community, and the review of parking in The Springs, City of Belmont determined that action is needed to improve turnover of public parking bays and prevent unauthorised verge parking.

Public parking in The Springs is a shared resource, and different users have different needs. City of Belmont's goal is to balance these needs fairly and ensure that public parking remains available for residents, visitors, and businesses while protecting the streetscape and preventing extended long-term private use of public parking bays.



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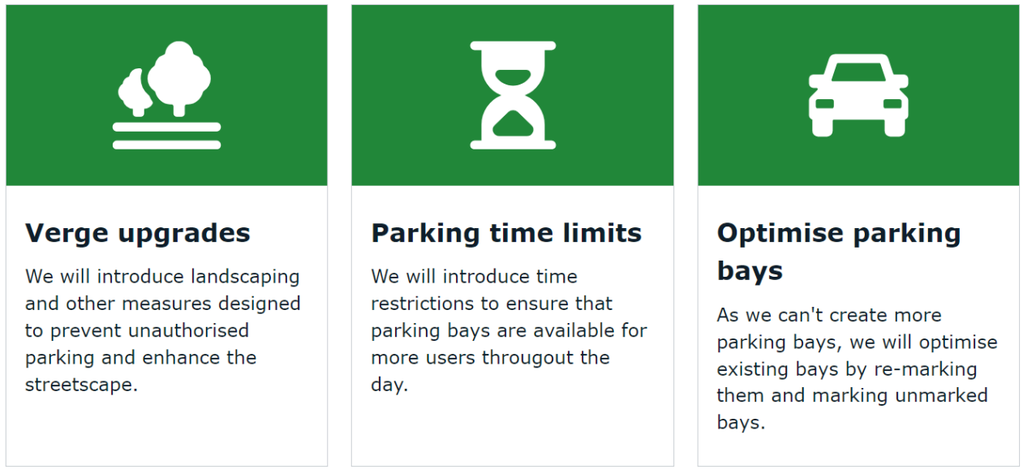
To achieve this City of Belmont will be implementing the following measures:




Source: City of Belmont

## 6.3 A Long-Term Vision for Great Eastern Highway

Great Eastern Highway connects Perth to regional WA and the rest of the world through Perth Airport. The City of Belmont has developed a clear vision for the future development of the area.

The City of Belmont has prepared the *"Great Eastern Highway Urban Corridor Strategy."*

The Strategy outlines a long-term vision for town planning and development along part of Great Eastern Highway, addressing matters of land use, vehicle and pedestrian access, buildings, and public spaces.

**Precinct One** is closest to the development site and spans the section of Great Eastern Highway, between Graham Farmer Freeway to Belmont Avenue.

Building upon the WAPC's Network City and Directions 2031 and Beyond (2010), together with Perth and Peel@3.5 million and State Planning Policy 4.2 (SPP 4.2), the Great Eastern Highway (Corridor) is recognised as a Strategically Important Activity Corridor where the synergies of the movement economy, high frequency public transport, employment land, Swan River amenity and proximity to the Perth Central Business District (CBD) align to form a strong and successful Urban Corridor framework.

**Figure 6-2: Precinct One to Four - Great Eastern Highway Urban Corridor Strategy**

Source: City of Belmont

The movement network will be supplemented with the provision of an off-street cycle lane in the form of a principal shared path on the northern side of the Corridor and a pedestrian path on the southern side of the Corridor. The movement network surrounding the Corridor includes a network of shared pedestrian/cycle paths which provide connections to/from the Corridor into the residential areas to the north. A shared/pedestrian path is also located along the edge of the Swan River.

This project will positively impact the subject site by prioritising the movement economy, high frequency public transport, employment land, Swan River amenity and connections to the Perth Central Business District (CBD).

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# 7 Road Safety Assessment

## 7.1 Existing Crash Records

In the five-year period up to 31/12/2024 there had been twelve (12) recorded crashes on Rowe Avenue between Homelea Court and Brighton Road. One of these occurred at the intersection of Rowe Avenue and Homelea Court where a car turning from Homelea Court struck a cyclist travelling west on Rowe Avenue resulting in the cyclist requiring medical attention. There has been another crash resulting in medical attention at the intersection of Rowe Avenue and Hallam Way, a 4-way intersection (non roundabout or traffic signals). There have been seven crashes at this intersection.

Apart from these crashes all other crashes have been property damage only.

The number of crashes at Hallam Way suggest that safety could be improved with further assessment of the crashes. Possible options to address crashes could be the installation of a safety platform, now becoming more mainstream for 4-way uncontrolled intersection in urban street environments.

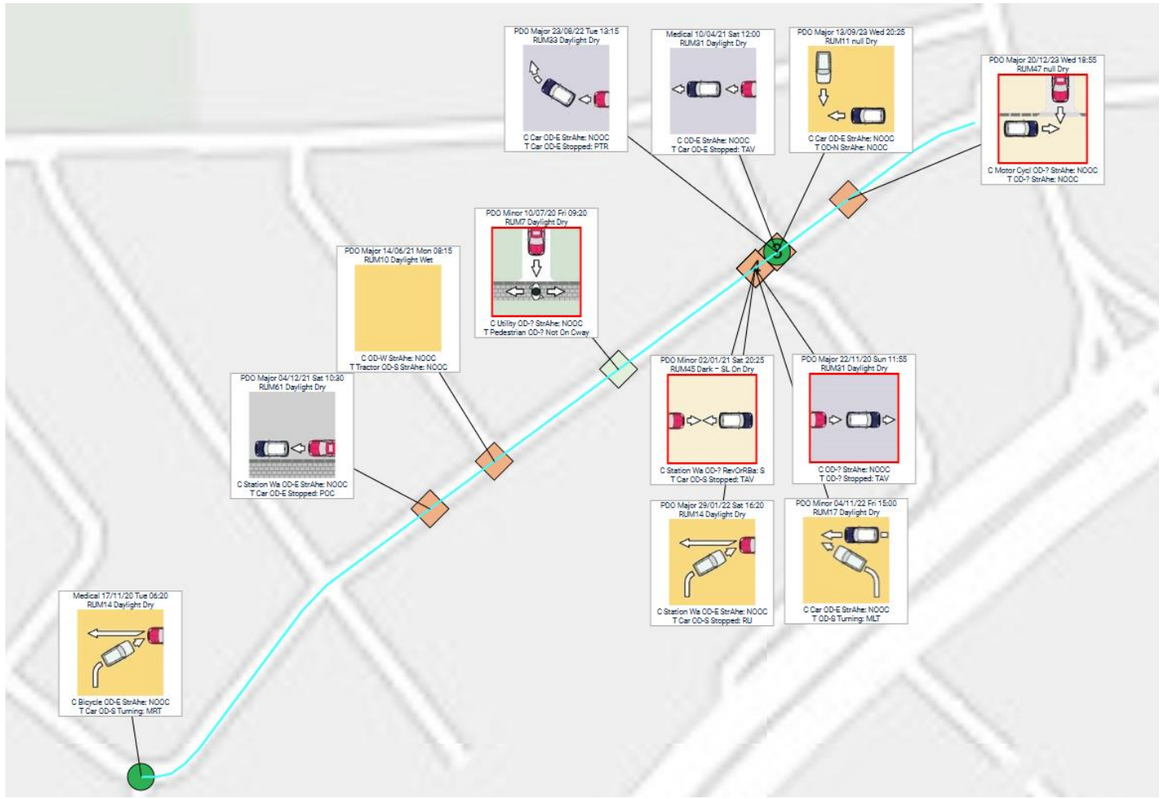
## 7.2 Impact of the Proposed Development on Road Safety

Given the relatively low number of crashes recorded over the study area in the last five year period, it is reasonable to assume that whilst the proposed residential development will contribute a low proportion of increased exposure (traffic volumes) to the surrounding roads, there is a low likelihood that the proposed development will increase the chances of regular crashes occurring.

In terms of the predicted number of increased vehicles generated by the residential development, 55 vph (two-way) equates to approximately one additional vehicle every minute during the morning and evening peak hour periods traveling to and from the development, which translates into relatively low exposure to an already low baseline of existing recorded crashes.

Also, this modest increase in generated vehicle numbers relates to less than 5% change in traffic on Brighton Road and Rowe Avenue. Considering traffic flows can vary +/-5% either side of average traffic flows from day to day, this change would be difficult to discern by the average road user and also have a low impact on crash rates.

**Figure 7-1: Crash Locations in Vicinity of Site**




*Source: Main Roads WA CrashMap (August 2024)*

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# 8 Site Specific Issues

As discussed in Section 5, the assessment of the impacts of this proposed development has been undertaken on the basis of "business as usual". That is, there is no change in typical traffic generation rates (and thus no shift in modes) due to the hybrid working practice that developed during the COVID-19 pandemic and the changing scenario of transport modes with the increased use of ride share companies and telecommuting.

This is obviously not the current reality, but the assessment of the impacts for "business as usual" has shown that the impacts of the prospect development will have little impact on the surrounding road network.

With the impacts of the change in working habits, this has led to a decrease in private car use and an increase in non-car modes such as telecommuting. Ride share is also an increasing mode of transport, a mode which does not require long term parking but rather standing areas. The use of e-bikes and e-scooters is also growing.

The above have not been considered in the traffic generation of the proposed development, thereby assessing a worst-case.

The Canning Bridge Structure Plan (CBSP) area has similar challenges to the current The Springs development area with restricted road access to a regional road, but with excellent access to public transport services (both buses and rail).

The CBSP had challenged the "business as usual" approach with target mode splits in a period prior to the effects of Covid-19 and the rising popularity of ride sharing etc.

In the case of the CBSP this has targeted a Car use mode share of 50% by 2031 and 35% by 2051, down from a current 65%. By comparison the current Rivervale area (which the Springs forms part of) has a car use (for work trips) of almost 69%, similar to the wider Perth average.

In targeting these modified mode splits for The Springs development area, there would need to be a suite of strategies which would need to be implemented, most likely through an Integrated Transport Strategy for the wider Springs development area and including the adjacent Town of Victoria Park development area west of the Graham Farmer Freeway and the Perth-Armadale train line.

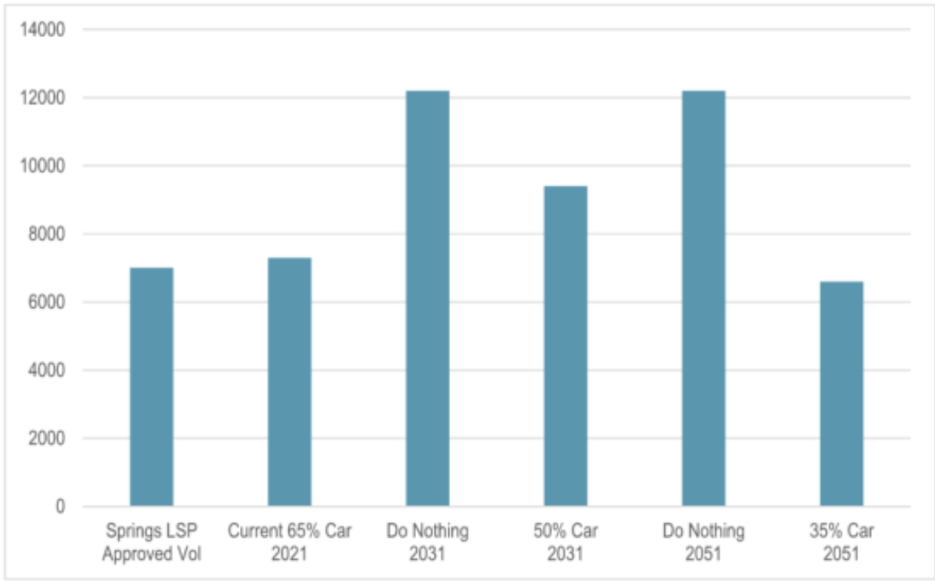
In the case of the proposed development, it proposes some of these:

- **Working from home** - some dwellings could respond to this with dedicated work spaces
- **Modified working hours** - Residents might start their day at home then head to the office after attending meetings
- **Connectivity to public transport** - the proposed development is within short walkable catchments of train stations and high-frequency bus routes. Bus and train timetables for Burswood Station and the bus stops on Great Eastern Highway could be provided in the building foyer
- **Promote walking opportunities** - provide advice as to local establishments in the walkable area
- **Adopt ride share services** - provide drop-off/pick-up bay in front of the proposed development

The above list is not exhaustive but indicates that the proposed development can respond to the transport network to reduce the reliance on private motor vehicles and shift the mode share away from this mode to non-private car modes.

Possible impacts of the above interventions across the entire Springs area could lead to significant reductions in traffic flows as compared to what might occur under the "business as usual" approach. This is shown below in Figure 7.1 at a high level for the traffic flows on Brighton Road.

**Figure 8-1: Possible Effects of Reduced Private Car Mode Share on Brighton Road Traffic Volumes**



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If a reduction in current 65% mode share (as reported by the ABS for Rivervale) is reduced to 35% in the longer term, with a 100% buildout of the Springs this would mean that Brighton Road could have traffic flows as little as of between 6,000 to 7,000 vpd, this a little less than recorded today of 7,800 vpd.

In simplistic terms, the current public transport services in the vicinity of the site have a current “to Perth” capacity over a typical morning peak of approximately 9,600 passengers by rail (8 trains each of 1,200 passengers maximum) and 2,800 passengers by bus (30-35 bus services of 60 to 100 passengers each) or 12,400 passengers total.

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# 9 Conclusions

This TIS assesses the key transport issues and impacts related to the development of the proposed residential site including the current level of accessibility by road, public transport, cycle and on foot and sets considerations to improve these where required and practical.

Conclusions and Recommendations:

- The proposed development incorporates 108 apartments and is located within 150m (walking distance) away from available bus stops on Great Eastern Highway. Burswood train station is located approximately 720m (walking distance) from the site and it can be accessed beneath the Great Eastern Highway bridge then Griffiths Street. The proximity of these facilities is likely to have an influence on reducing the typical level of vehicular traffic expected to be generated by a development such as this. However, for a conservative, analysis of the road network, no such reductions have been applied under the assessment of generated traffic contained in this report.
- Based on the estimation of development generated traffic from the site (i.e. 55 vehicles per peak hour, two-way), traffic flows on Hawksburn Road and surrounding roads are expected to increase by approximately one additional vehicle every minute during the morning and evening peak hour periods, which is considered an insignificant increase and will not be discernible to motorists on the wider road network, nor is it expected to have any deleterious effects on the traffic flows, road or intersection performance near the proposed development.
- The development will provide a total of 97 car parking bays on site for residents, plus ten visitor bays provided on site. 30 scooter bays and resident bike parking will be provided within 4.5m$^2$ stores on-site. Visitor bike parking will be provided in the order of 25 bike spaces. The development will also provide a strata bicycle share scheme inclusive of 20 bicycles which can be booked by residents through an app. The above parking provision meet and exceeds to the required provisions for vehicle and bike parking set under the WAPC's State Planning Policy 7.3 – Residential Design Codes Volume 2. It is concluded that 97 car parking bays will be more than adequate to serve the expected parking demand at this development, particularly given the proximity of the high frequency bus services on Great Eastern Highway and the nearby Burswood Train Station which will undoubtedly encourage trips to/from the development by sustainable modes i.e. other than the private car.
- One of the ongoing KPIs that the Public Transport Authority (PTA) has in its Annual Report measures "the proportion of street address within the Perth public transport area which are within 500m of a Transperth stop providing acceptable level of service". It is a recommendation of PTA that a figure of at least 90 percent of all street address should be within 500m of a Transperth bus stop. The proposed development supports and complies with this specific KPI of PTA for access to public transport services with 100% of the development falling within 500m of a bus stop.

Upon consideration of all findings within this TIS, the proposed residential development has minimal transport-related impacts on the surrounding area and therefore the development should not be considered unacceptable to proceed on transport grounds. This TIS demonstrates that the movement network to support active transport and the existing road network is capable of satisfactorily supporting the additional vehicular traffic expected to be generated by the proposed residential development.

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Appendix A

# TIS Checklist

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## Appendix A TIS Checklist

| Item | Provided | Comments/Proposals |
|---|---|---|
| **Executive Summary** | Y | |
| **Introduction / Background** | Y | |
| **Proposed development** | Y | |
| proposed land uses | Y | |
| existing land uses | Y | |
| context with surrounds | Y | |
| **Vehicular access and parking** | Y | |
| access arrangements | Y | |
| public, private, disabled parking set down/pick up | Y | |
| **Service vehicles (non-residential subdivisions only)** | Y | |
| access arrangements | Y | |
| on/off-site loading facilities | Y | |
| Traffic volumes and vehicle types (non-residential subdivisions only) | Y | |
| daily or peak traffic volumes | Y | |
| type of vehicles (eg cars, trucks) | Y | |
| **Traffic management on frontage streets** | Y | |
| **Public transport access** | Y | |
| nearest bus/train routes | Y | |
| nearest bus stops/train stations | Y | |
| pedestrian/cycle links to bus stops/ train station | Y | |
| **Pedestrian access/facilities** | Y | |
| existing pedestrian facilities within the subdivision (if any) | Y | |
| proposed pedestrian facilities within subdivision | Y | |
| existing pedestrian facilities on surrounding roads | Y | |
| proposals to improve pedestrian access | Y | |
| **Cycle access/facilities** | Y | |
| existing cycle facilities within the subdivision (if any) | Y | |
| proposed cycle facilities within subdivision | Y | |
| existing cycle facilities on surrounding roads | Y | |
| proposals to improve cycle access | Y | |
| | | |
| **Site specific issues** | Y | |
| **Safety issues** | Y | |
| identify issues | Y | |
| remedial measures | Y | |

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Appendix B

# Proposed Site Layout

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| DEVELOPMENT SUMMARY | | 16 Storeys |
|---|---|---|
| Total Site Area | 2370.0 m² | |
| Zoning | Mixed Use R100 | |
| Allowable Plot Ratio | N / A | |
| Proposed Plot Ratio | 2.21 m² | |
| Proposed Total Plot Ratio Area | 5226 m² | |

## UNIT SUMMARY

| Unit Type | | Unit Area m2 | No. of Units | % | Total Plot Ratio Area m2 |
|---|---|---|---|---|---|
| STUDIO | TYPE A | 34 | 11 | 10 | 374 |
| STUDIO | TYPE B | 34 | 11 | 10 | 374 |
| STUDIO | TYPE C | 36 | 11 | 10 | 396 |
| 1 BED / 1 BATH | TYPE D | 50 | 1 | 1 | 50 |
| 1 BED / 1 BATH | TYPE E | 55 | 1 | 1 | 55 |
| 1 BED / 1 BATH | TYPE F | 51 | 12 | 11 | 612 |
| 1 BED / 1 BATH | TYPE G | 50 | 12 | 11 | 600 |
| 1 BED / 1 BATH | TYPE H | 51 | 12 | 11 | 612 |
| 1 BED / 1 BATH | TYPE J | 50 | 11 | 10 | 550 |
| 1 BED / 1 BATH | TYPE K | 51 | 11 | 10 | 561 |
| 2 BED / 1 BATH | TYPE L | 68 | 11 | 10 | 748 |
| 2 BED / 2 BATH | TYPE M | 73 | 1 | 1 | 73 |
| 2 BED / 2 BATH | TYPE N | 73 | 1 | 1 | 73 |
| 2 BED / 2 BATH | TYPE P | 73 | 1 | 1 | 73 |
| 2 BED / 2 BATH | TYPE Q | 75 | 1 | 1 | 75 |
| **TOTALS** | | | **108** | **100** | **5226** |

## CARPARKING REQUIRED

| Unit Type | Calc. | Ratio | Total Car Bays |
|---|---|---|---|
| Resident Required 1 BED / 1 BATH + STUDIO | 93 X 0.75 | | 70 |
| Resident Required 2 BED / 1 & 2 BATH | 15 X 1.0 | | 15 |
| Visitor Required | | 1 bay per 4 up to 12 dwellings | 4 |
| | | 1 bay per 8 for 13 and above | 12 |
| **TOTALS** | | | **101** |

## CARPARKING PROPOSED

| Unit Type | Calc. | Ratio | Total Car Bays |
|---|---|---|---|
| Resident Proposed STUDIO | 11 X 0.0 | | 0 |
| Resident Proposed STUDIO | 22 X 1.0 | | 22 |
| Resident Proposed 1 BED / 1 BATH | 60 X 1.0 | | 60 |
| Resident Proposed 2 BED / 1 & 2 BATH | 15 X 1.0 | | 15 |
| Visitor Proposed | | x30 scooter bays enable -6 bays concession (SPP7.3) | 10 |
| **TOTALS** | | | **107** |

## BICYCLE PARKING CALCULATIONS

| Unit Type | Calc. | Ratio | Total Bikes Required | Total Bikes Provided |
|---|---|---|---|---|
| Resident | | 4.5m² Stores Provided (allows for bicycle parking) | 108 | 108 |
| Residential Visitor | 108 /8 | 1 bike per 8 Apts | 14 | 25 |

## SCOOTER BAYS

| | |
|---|---|
| Resident Scooter Bays Proposed | 30 |

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# DEVELOPMENT TABLE

REV A

**Lot 888, 2 Hawksburn Road,**
**RIVERVALE. SPRINGS.**

16 STOREY RESIDENTIAL DEVELOPMENT
COMPRISING 108 APARTMENTS

finbar
developing better lifestyles

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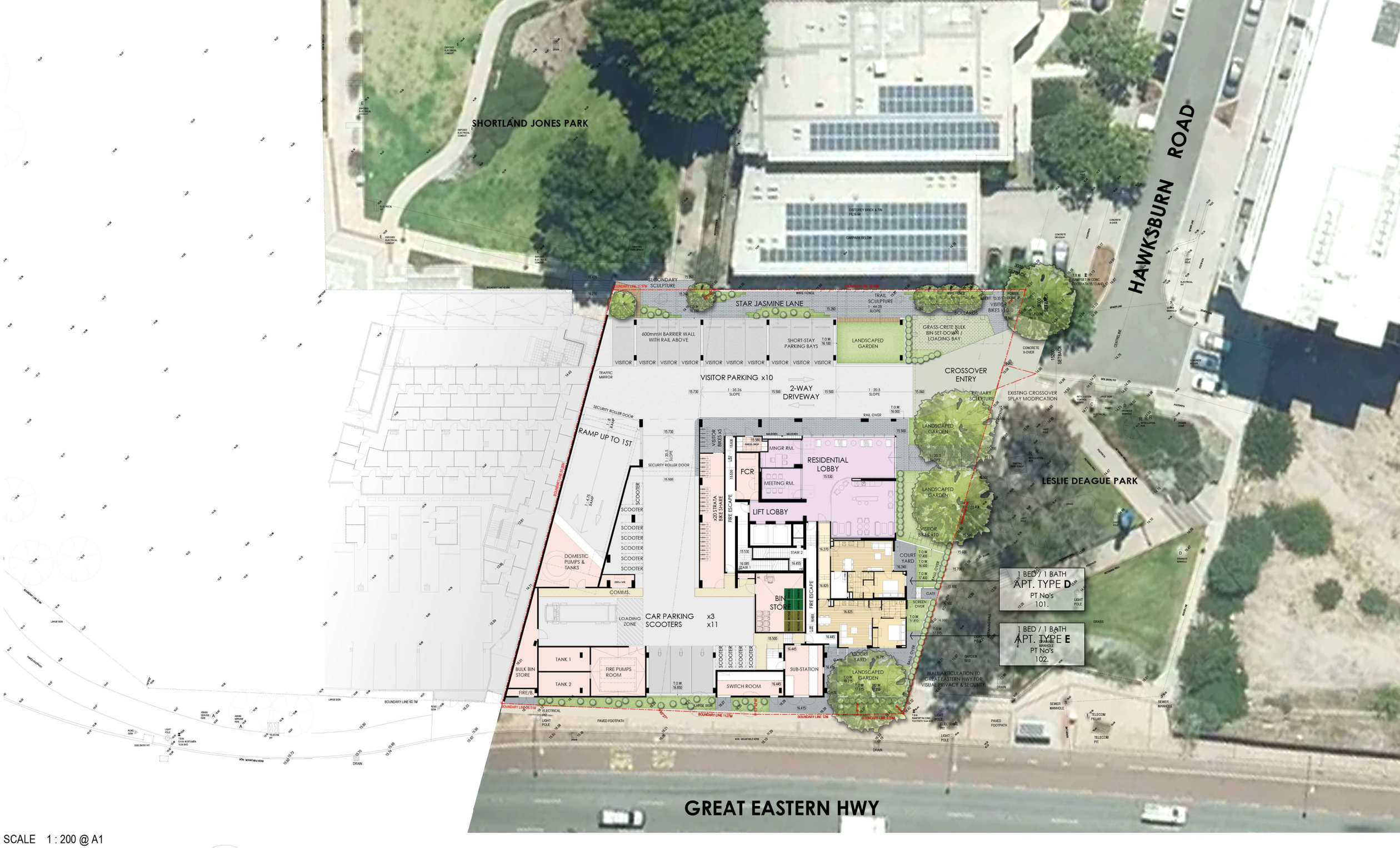


SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

0 5 10 20m

NORTH

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# GROUND FLOOR PLAN

REV A

# Lot 888, 2 Hawksburn Road,

## RIVERVALE. SPRINGS.

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COMPRISING 108 APARTMENTS

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# Lot 888, 2 Hawksburn Rd, Rivervale 6103

## Acoustic Report - Development Application

| | |
|---|---|
| Project No. | P02016 |
| Revision | 003 |
| Issued | 29 May 2025 |
| Client | Finbar |

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# Document QA and Revisions

| ISSUE | DATE | COMMENTS | ENGINEER | REVIEWER |
|---|---|---|---|---|
| 1 | 21/05/2025 | Issue for DA | Imran Khan | Teresa D Nguyen |
| 2 | 22/05/2025 | Issue for DA | Imran Khan | Teresa D Nguyen |
| 3 | 29/05/2025 | Issue for DA | Imran Khan | Teresa D Nguyen |
| 4 | | | | |

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**Authorised by:**

**E-LAB Consulting**

**Imran Khan | National Technical Director**

**Acoustics & Vibration**

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# 1 INTRODUCTION

## 1.1 DOCUMENT PURPOSE

E-Lab Consulting has been commissioned by Finbar to undertake an acoustic assessment for the proposed multi-storey residential apartment development at Lot 888, 2 Hawksburn Road, Rivervale, WA 6103.

This Acoustic report has been prepared as part of Development Application for the proposed development. The following acoustic assessments were undertaken, and recommendations are made to maintain compliance:

- Noise Intrusion to the project from external noise sources (road traffic from Great Eastern Highway and Graham Farmer Freeway) in accordance with State Planning Policy 5.4 – Road and Rail Noise
- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

## 1.2 RELEVANT DOCUMENTS

The following standards, regulations and guidelines have been used to establish the project specific acoustic design requirements for the development.

- WAPC/DPLH, State Planning Policy 5.4 – Road and Rail Noise, Sep 2019 (SPP 5.4)
- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)
- Australian and New Zealand Standard AS/NZS 2107:2016 - Acoustics – Recommended design sound levels and reverberation times for building interiors (AS2107)
- National Construction Code 2022 Volume 1, Building Code of Australia (NCC 2022)

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# 2 PROJECT SITE

## 2.1 SITE DESCRIPTION

The proposed project site is situated within a predominantly residential area, with a concentration of commercial developments along its northeastern boundary. From a transport infrastructure perspective, the site lies in close proximity to two major traffic corridors: Great Eastern Highway to the east and Graham Farmer Freeway to the south .Nearest noise sensitive receivers and the noise logging location are shown in Figure 1.

The project location is within the trigger distance of State Planning Policy 5.4 - Road and Rail Noise due to its proximity to Great Eastern Highway and Graham Farmer Freeway.

*Figure 1: Project Location and nearest noise sensitive receivers*

*Source: City of Belmont Intramaps*

## 2.2 NOISE SURVEY

Un-attended noise logging was carried out on site to ascertain the noise levels at project site and to determine the noise levels from Great Eastern Highway to assist with the SPP5.4 acoustic model calibration on the project. Noise logging was carried out between 1st May and 7th May 2025.

### 2.2.1 INSTRUMENTATION

The equipment used for the noise survey is detailed below:

- NSRT mk3 Sentry Noise Logger
- Larson Davis Sound Calibrator, S/N: 22031

Logger was calibrated before and after the measurements and no significant drift was found. All equipment carry current traceable calibration certificates that can be provided upon request.

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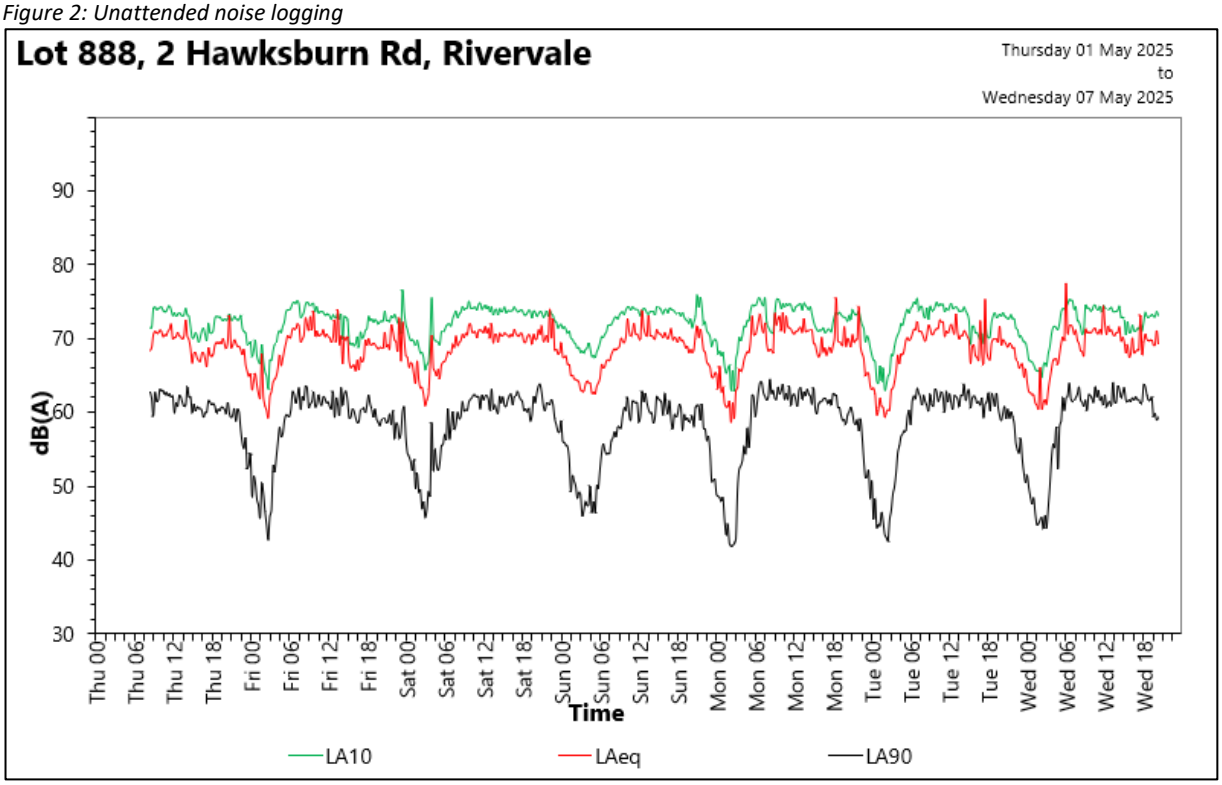
### 2.2.2 Measurement Summary

Noise data from the logger is presented in a graph shown in Figure 2. Average $L_{Aeq}$ noise levels for weekdays during the measurement period are detailed below.

- Day time (6 Am – 10Pm) 70 dB(A)
- Nighttime (10Pm – 6Am) 66 dB(A)

*Figure 2: Unattended noise logging*

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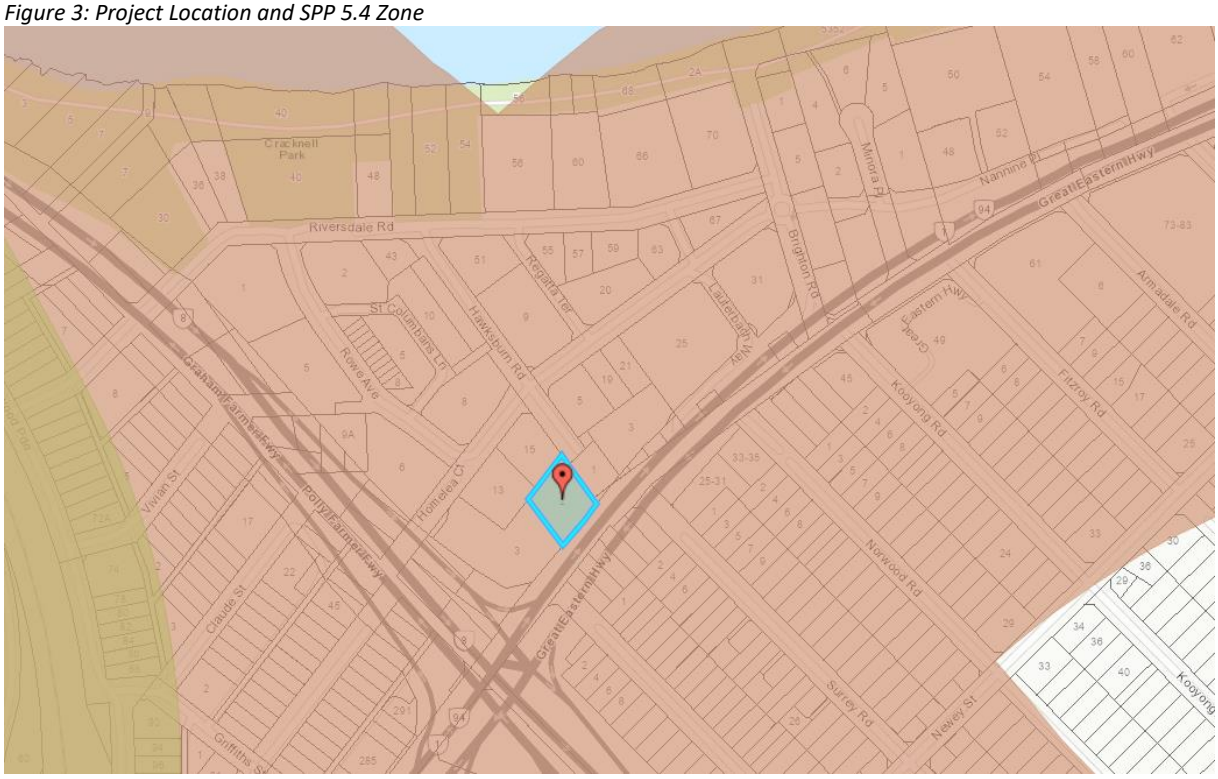
# 3 PROJECT CRITERIA

This section presents the regulatory requirements, and acoustic design criteria for the proposed development.

## 3.1 ROAD NOISE - STATE PLANNING POLICY 5.4

The project site lies within the SPP5.4 trigger zone for Great Eastern Highway and Graham Farmer Freeway, as shown in Figure 3. The SPP 5.4 establishes the indoor and outdoor noise criteria that apply to a noise sensitive land use due to noise emissions from road and rail transport.

*Figure 3: Project Location and SPP 5.4 Zone*




*Source: Department of Planning, Lands and Heritage)*

Applicable noise level criteria are presented in Table 1 in accordance with SPP5.4.

*Table 1: State Planning Policy 5.4 Criteria*

| PROPOSAL | NEW / UPGRADE | NOISE TRAGET -OUTDOOR | | NOISE TARGET - INDOOR |
|---|---|---|---|---|
| | | DAY 6AM – 10PM $L_{Aeq}$,(Day) dB | NIGHT 6AM – 10PM $L_{Aeq}$,(Night) dB | |
| Noise-Sensitive land-use and/or development | New noise-sensitive land-use and/or development within the trigger distance of an existing/proposed transport corridor | 55 | 50 | DAY – $L_{Aeq}$ 40 (Living & Work Areas)<br>NIGHT - $L_{Aeq}$ 35 (Bedrooms) |

SPP5.4 requires assessment of traffic impact for future traffic volumes for the next 20 year. Where predicted noise levels are exceeding the noise targets, mitigation measures are needed to meet the noise targets. The

policy requires outdoor targets are to be met at all outdoor areas as far as is reasonable and practical to do so using the various noise mitigation measures outlined in the guidelines.

## 3.2 INTERNAL NOISE LEVELS

Recommended internal noise levels within the development are outlined by AS2107:2016 *Acoustics - Recommended design sound levels and reverberation times for building interiors*. The levels stated in AS 2107:2016 apply to the combined internal noise levels from building services and external sources.

The internal noise level criteria in AS2107 recommend continuous equivalent ($L_{Aeq}$) levels for background noise. A summary of the AS2107 criteria is presented in Table 2.

*Table 2: Project internal noise targets – residential spaces*

| TYPE OF OCCUPANCY / ACTIVITY | RECOMMENDED DESIGN SOUND LEVEL, $L_{Aeq}$, DB(A) | | |
|---|---|---|---|
| Sole Occupancy Unit (SOU) | Sleeping Areas | 10pm to 7am | 35 - 40 |
| | Living Areas | Any time | 35 - 45 |
| Residential Building | Apartment Common Areas (Foyer, Lobby) | Any time | 45-50 |

### 3.2.1 Rain Noise

There is no mandatory guidance in relation to internal noise limits due to rain noise. However, it is recommended that the internal noise levels are designed not to exceed the Internal ambient noise levels in Table 2 by 5dBA, for a rainfall of 15mm/hr.

## 3.3 ACOUSTIC SEPARATION & INTERNAL SOUND INSULATION

### 3.3.1 NCC Criteria – Residential Spaces (Class 2 Building)

**Inter-Tenancy and Common Walls and Floors Noise Requirements**

Inter-tenancy walls and common walls and floors must be installed to meet the requirements of the National Construction Code (NCC) 2022.

The internal wall and floor airborne sound insulation matrix provided in Table 3 presents the sound transmission and insulation requirements of the deemed-to-satisfy provisions for inter-tenancy and common walls.

*Table 3: Internal wall and floor sound insulation matrix - deemed-to-satisfy provisions*

| | INTERNAL WALL AIRBORNE SOUND INSULATION – DEEMED TO SATISFY PROVISIONS | | | | |
|---|---|---|---|---|---|
| SOLE-OCCUPANCY UNIT SPACE 1 | SOLE-OCCUPANCY UNIT/COMMON SPACE 2 | | | | |
| | | Habitable Room | Wet Area | Public Corridor or Stairs | Plant Room or Lift Shaft |
| | Habitable Room | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$<br>Discontinuous Construction | $R_w \geq 50$ | $R_w \geq 50$<br>Discontinuous Construction |

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| | | | | | |
|---|---|---|---|---|---|
| | Wet Area | $R_w + C_{tr} \geq 50$ Discontinuous Construction | $R_w + C_{tr} \geq 50$ | $R_w \geq 50$ | $R_w \geq 50$ Discontinuous Construction |
| | INTERNAL FLOOR AIRBORNE SOUND INSULATION – DEEMED TO SATISFY PROVISIONS | | | | |
| | Habitable Room | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ |
| | Wet Area | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ |
| | Public Corridor or Stairs | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ | - | - |
| | Plant Room or Lift Shaft | $R_w + C_{tr} \geq 50$ | $R_w + C_{tr} \geq 50$ | - | - |

The internal wall and floor airborne sound insulation matrix provided in Table 4, presents the verification requirements for the performance solution pathway.

*Table 4: Internal wall sound insulation matrix – performance solution verification requirements*

| INTERNAL WALL AIRBORNE SOUND INSULATION – PERFORMANCE SOLUTION VERIFICATION REQUIREMENTS | | | | | |
|---|---|---|---|---|---|
| SOLE-OCCUPANCY UNIT SPACE 1 | SOLE-OCCUPANCY UNIT/COMMON SPACE 2 | | | | |
| | | Habitable Room | Wet Area | Public Corridor or Stairs | Plant Room or Lift Shaft |
| | Habitable Room | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ Discontinuous Construction | $D_{nT,w} \geq 45$ | $D_{nT,w} \geq 45$ Discontinuous Construction |
| | Wet Area | $D_{nT,w} + C_{tr} \geq 45$ Discontinuous Construction | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} \geq 45$ | $D_{nT,w} \geq 45$ Discontinuous Construction |
| | INTERNAL FLOOR AIRBORNE SOUND INSULATION – PERFORMANCE SOLUTION VERIFICATION REQUIREMENTS | | | | |
| | Habitable Room | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ |
| | Wet Area | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ |
| | Public Corridor or Stairs | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ | - | - |
| | Plant Room or Lift Shaft | $D_{nT,w} + C_{tr} \geq 45$ | $D_{nT,w} + C_{tr} \geq 45$ | - | - |

For the purposes of understanding the classification of particular spaces under the NCC 2022, definitions are provided below:

- Habitable room – means a room used for normal domestic activities, and –
  - includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but
  - excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.
- Wet area – means an area within a building supplied with water from a water supply system, which includes bathrooms, showers, laundries and sanitary compartments and excludes kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas.

**Intra-Tenancy Walls**

It should be noted that intra-tenancy walls do not have any specific acoustic performance requirements within the NCC, other than service riser. The following is noted:

- Where walls are not full height it will require the wastewater pipe work within the non-habitable spaces treated to meet $R_W+C_{tr}$ 40 requirement.

  Where there are open bulk heads from non-habitable spaces to habitable spaces it will require the bulk head closed with a single layer plasterboard (min. 10mm thick, min weight 7.2kg/$m^2$)

**Internal Riser Walls**

If a duct, soil, storm water, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an $R_w + C_{tr}$ (airborne not less than):

- 40 if the adjacent room is a habitable room (other than a kitchen); or
- 25 if the adjacent room is a kitchen or non-habitable room / wet area

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**Apartment Entry Doors**

Entry doors to apartments shall be designed and installed to achieve $R_w$ 30 or above.

**Inter-Tenancy and Common Floor / Ceilings Impact Requirements**

Inter-tenancy and common floors/ceilings must be installed to meet the requirements of the National Construction Code (NCC) 2019, together with an additional uplift for impact noise.

The internal floor/ceiling sound insulation matrix provided in Table 5 presents the sound transmission and insulation requirements of the deemed-to-satisfy provisions for inter-tenancy and common walls.

*Table 5: Internal floor/ceiling impact sound insulation matrix - deemed-to-satisfy provisions*

| INTERNAL FLOOR/CEILING IMPACT SOUND INSULATION – DEEMED TO SATISFY PROVISIONS | | | | | |
|---|---|---|---|---|---|
| SOLE-OCCUPANCY UNIT/COMMON SPACE BELOW | SOLE-OCCUPANCY UNIT/COMMON SPACE ABOVE | | | | |
| | | Habitable Room | Wet Area | Public Corridor or Stairs | Plant Room or Lift Shaft |
| | Habitable Room | $L_{n,w} \leq 62$ | $L_{n,w} \leq 62$ | $L_{n,w} \leq 62$ | $L_{n,w} \leq 62$ |
| | Wet Area | $L_{n,w} \leq 62$ | $L_{n,w} \leq 62$ | $L_{n,w} \leq 62$ | $L_{n,w} \leq 62$ |

The internal floor/ceiling sound insulation matrix provided in Table 6 presents the verification requirements for the performance solution pathway.

*Table 6: Internal floor/ceiling sound insulation matrix – performance solution verification requirements*

| INTERNAL FLOOR/CEILING SOUND INSULATION – PERFORMANCE SOLUTION VERIFICATION REQUIREMENTS | | | | | |
|---|---|---|---|---|---|
| SOLE-OCCUPANCY UNIT/COMMON SPACE BELOW | SOLE-OCCUPANCY UNIT/COMMON SPACE ABOVE | | | | |
| | | Habitable Room | Wet Area | Public Corridor or Stair | Plant Room or Lift Shaft |
| | Habitable Room | $L_{nT,w} \leq 62$ | $L_{nT,w} \leq 62$ | $L_{nT,w} \leq 62$ | $L_{nT,w} \leq 62$ |
| | Wet Area | $L_{nT,w} \leq 62$ | $L_{nT,w} \leq 62$ | $L_{nT,w} \leq 62$ | $L_{nT,w} \leq 62$ |

## 3.4 NOISE EMISSIONS – WA ENVIRONMENTAL PROTECTION (NOISE) REGULATIONS 1997

Environmental noise emissions resulting from the development are addressed through the *Environmental Protection Act 1986* with the prescribed standards detailed in the *Environmental Protection (Noise) Regulations 1997* (WA EPNR). The regulations are based on maximum allowable noise levels termed the 'assigned noise level".

According to the EPNR, noise emissions from any premises are deemed not to significantly impact the receiver if the emissions are 5 dB or less below the assigned levels. In summary, assigned noise levels are set by evaluating the presence of commercial and industrial zones, major transport routes, and sporting venues around noise-sensitive premises.

The assigned levels apply at premises receiving the noise (noise sensitive receiver) and not to areas within the project site or lot. In addition, the Environmental Protection (Noise) Regulations 1997 identify the following in Schedule 3, clause 2A.

- *"If the land within either of the circles is categorised on the land use map as land in respect of which mixed uses are permitted, the use of that land that results in the highest influencing factor is to be used in the determination of the influencing factor."*

City of Belmont and Town of Victoria Park online mapping system (with respective Local Planning Schemes) have been used to ascertain land use. Based on these maps, the influencing factor at the nearest noise sensitive receivers has been calculated, the nearest noise sensitive receiver has been identified as detailed below and shown in Figure 4 and Figure 5.

- **3 Homelea Ct, Rivervale 6103 WA.**

### 3.4.1 Influencing Factor

The influencing factor for results from identifying major roads, commercial and industrial areas for the nearest noise sensitive receivers is detailed in Table 8. The zoning maps used for the calculation of influencing factor showing the land use types has been presented in Figure 4 and Figure 5.

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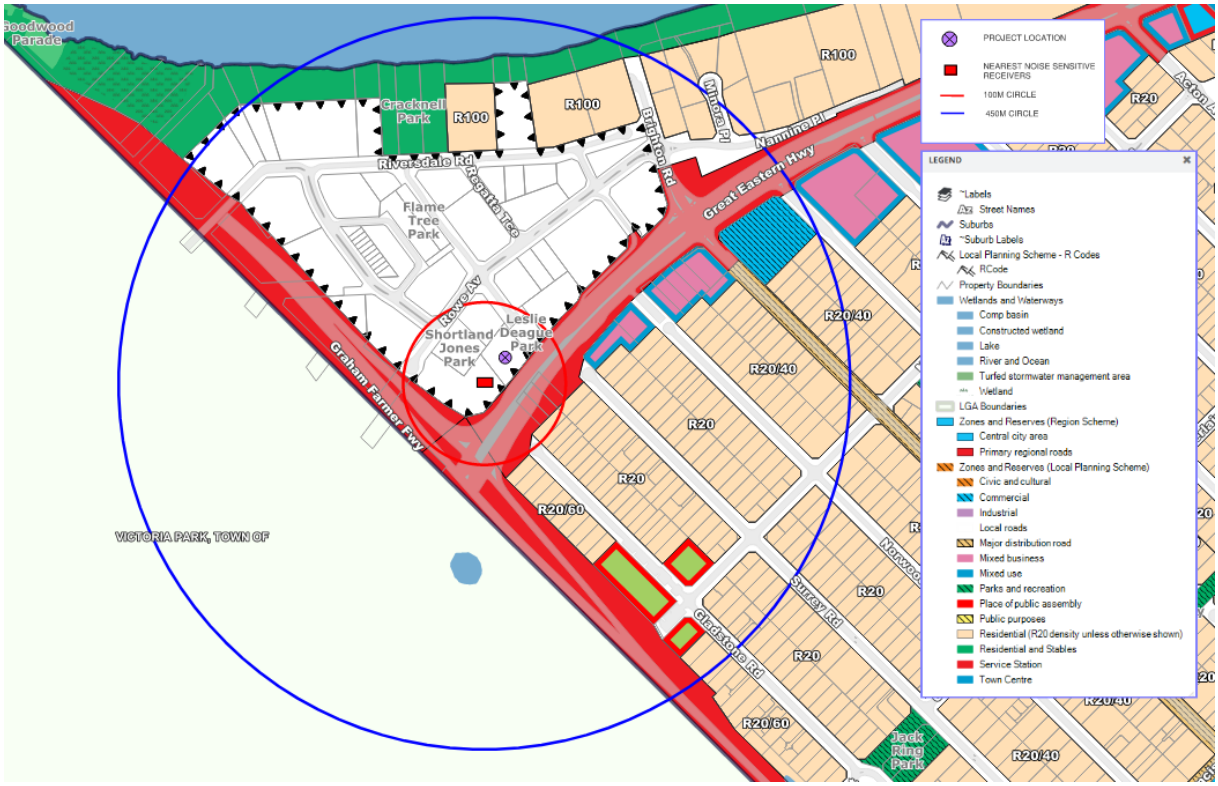
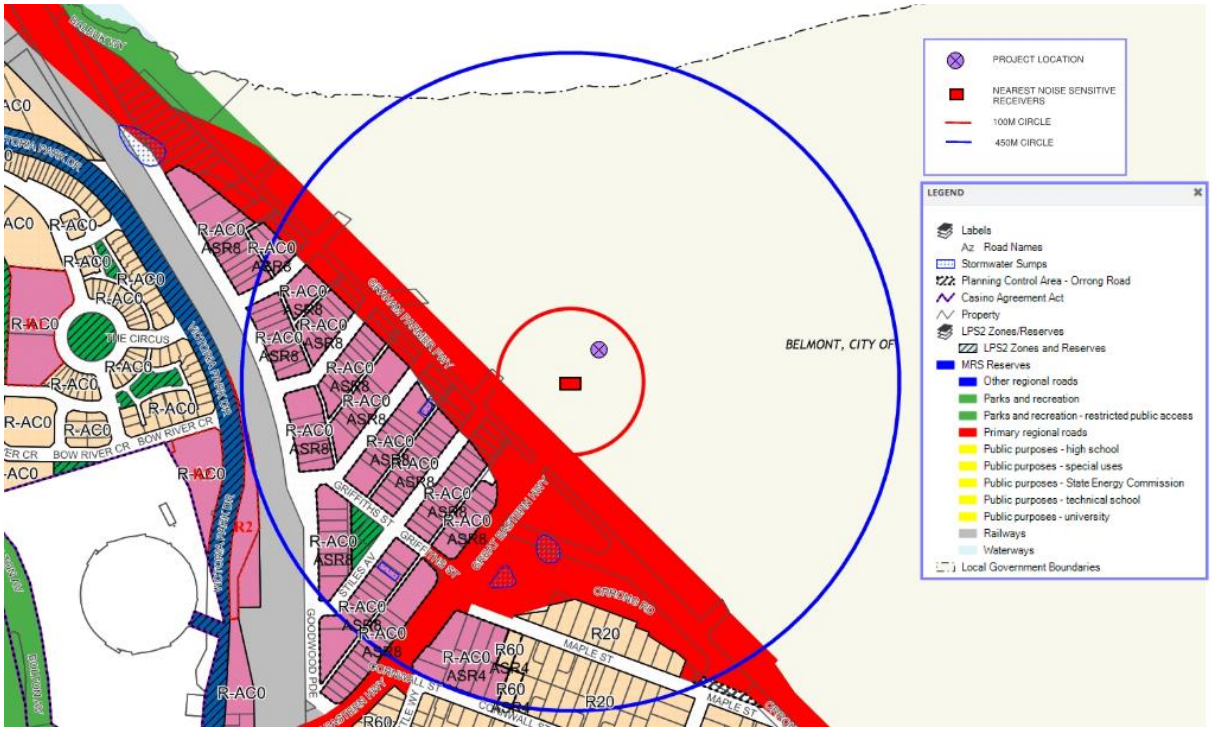
*Figure 4: City of Belmont's zoning maps for the project and surrounding areas*




*Source: City of Belmont Intramaps*

*Figure 5: Town of Victoria Park's zoning maps for the project and surrounding areas*




*Source: Town of Victoria Park Intramaps*

Traffic data for roads surrounding the nearest noise sensitive receiver were obtained from Main Roads Western Australia (MRWA). Table 7 Presents the traffic data of the nearby roads.

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*Table 7: Traffic Data (Main Roads WA)*

| ROAD | WA EPNR CLASSIFICATION | ANNUAL AVERAGE DAILY TRAFFIC VOLUMES / YEAR |
|---|---|---|
| Great Eastern Highway (South of Abernethy Rd) | Major Road | 60,406 (2021 -22) |
| Graham Farmer Freeway (At Great Eastern Hwy Bridge) | Major Road | 92,444 (2021-22) |

*Table 8: Influencing factor (IF) noise sensitive receiver*

| NOISE SENSITIVE RECIEVERS | COMMERCIAL | INDUSTRIAL | ROAD | INFLUENCING FACTOR |
|---|---|---|---|---|
| 3 Homelea Ct, Rivervale | 0 % within 100m radius<br>3 % within 450m radius | 0 % within 100m radius<br>12 % within 450m radius | Great Eastern Hwy and Graham Farmer Fwy within 100m | 7 dB |

### 3.4.2 Assigned Noise Levels – Noise Sensitive Receivers

Table 9 summarises the assigned levels at the nearest noise sensitive receivers. All noise emissions from the development are below the assigned level criteria for all defined periods of the day and at the lot boundary of the receiver or 15m from any associated building.

*Table 9: Assigned levels*

| TYPE OF PREMISES RECEIVING NOISE | TIME OF DAY | ASSIGNED LEVEL (DB) | | |
|---|---|---|---|---|
| | | $L_{A10}$ | $L_{A1}$ | $L_{Amax}$ |
| Noise sensitive premises: Highly sensitive area | 0700 to 1900 hours Monday to Saturday | 52 | 62 | 72 |
| | 0900 to 1900 hours Sunday & public holidays | 47 | 57 | 72 |
| | 1900 to 2200 hours all days | 47 | 57 | 62 |
| | 2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays | 42 | 52 | 62 |
| Noise sensitive premises: any area other than highly sensitive areas | All Hours | 60 | 75 | 80 |
| Commercial premises | All Hours | 60 | 75 | 80 |
| Industrial and utility premises | All Hours | 65 | 80 | 90 |

### 3.4.3 Noise Character Adjustments

Regulation 7 states that the noise character must be "free" of annoying characteristics, namely —

- Tonality, e.g. whining, droning;
- Modulation, e.g. like a siren; and
- Impulsiveness, e.g. banging, thumping.

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Regulation 9 (1) establishes the methodology for determining noise characteristics. If these characteristics cannot be reasonably and practicably removed, a series of adjustments to the measured levels are required, indicated in Table 10.

*Table 10: Noise character adjustment*

| ADJUSTMENT WHERE NOISE EMISSION IS NOT MUSIC THESE ADJUSTMENTS ARE CUMULATIVE TO A MAXIMUM OF 15 DB | | | ADJUSTMENT WHERE NOISE EMISSION IS MUSIC | |
|---|---|---|---|---|
| Where tonality is present | Where modulation is present | Where impulsiveness is present | Where impulsiveness is not present | Where impulsiveness is present |
| + 5 dB | + 5 dB | + 10 dB | + 10 dB | + 15 dB |

Should music noise from the project become audible at the receiving locations, a +10/15 dB adjustment will be required, likely resulting in non-compliance to the EPNR.

### 3.4.4 Mechanical Services Noise Emissions

Mechanical equipment serving the project is required to meet the assigned levels of the EPNR at the nearest sensitive receivers. It is important that noise emissions from the site do not present any form of tonality, modulation or impulsiveness (as defined by the EPNR).

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# 4 TRAFFIC NOISE INTRUSION - SPP5.4

An evaluation of external transport noise impacts on the site was conducted in line with SPP 5.4. The methodology and assessment criteria are outlined in the SPP 5.4 Guidelines (hereafter referred to as the Guidelines). Sound PLAN v9.0, a 3D noise modelling software, was used to simulate noise emissions from major roads and to assess the resulting noise levels at the building façades of the development.

The noise assessment accounts for both current and future traffic volumes that will impact the proposed development. The findings from this assessment were used to evaluate the level of noise intrusion into the apartments.

Noise levels were modeled 1 meter from the building façade. The predicted receiver noise levels at the façade also include a +2.5 dB façade correction, in accordance with SPP 5.4 requirements. Compliance with the relevant sections of the SPP 5.4 Noise Modelling Checklist is documented in Appendix A.

## 4.1 MODELLING INPUTS

### 4.1.1 Topography & Ground Absorption

Topographical data for areas surrounding the site (1m elevation contours) were sourced from Geoscience Australia Digital Elevation Model (DEM) 5 Metre Grid of Australia derived from LiDAR. A reflection order of 3 has been considered in all assessments.

### 4.1.2 Road Traffic

The road traffic noise assessment has been conducted based on the methodology described by the Calculation of Road Traffic Noise algorithm (CoRTN, UK Transport Agency).

The CoRTN algorithm has been developed to calculate $L_{A10,18hr}$ noise levels. However, SPP 5.4 requires road noise assessments to be based upon the energy averaged $L_{Aeq,16hr}$ and $L_{Aeq,8hr}$ noise descriptors for the daytime and night-time respectively. Conversions are applied using the method outlined in the DEFRA publication, *"Method for Converting the UK Road Traffic Noise Index $L_{A10,18hour}$ to the EU Noise Indices for Road Noise Mapping."*

This algorithm considers the following parameters:

- Noise levels measured on site for calibration of the model
- Traffic volume during each period of the day, and for current and future scenarios
- Traffic speeds
- Percentage of heavy vehicles; and
- Gradient and surface of road

The noise model included the heights of road traffic noise sources as specified by the Guidelines. Below are the modelled heights of the vehicle "strings":

- Passenger vehicles: + 0.5 m
- Heavy vehicles — Engine noise: + 1.5 m
- Heavy vehicles — Exhaust: + 3.6 m

The modelled and observed average daily traffic volumes for 2025 and 2045 were sourced from Main Roads Western Australia (MRWA), Reference No. 43296. This data pertains to traffic on Great Eastern Hwy and Graham Farmer Fwy.

SPP 5.4 requires that all noise assessments account for changes in traffic volumes anticipated over the next 20 years. The traffic volume projections provided by MRWA were utilized for this purpose. Table 11 summarises the current and projected future traffic volumes used in the assessment.

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*Table 11: Traffic Volumes – Current & Future*

| ROAD | YEAR | DAILY VEHICLE COUNT | DAYTIME VEHICLE VOLUME / HR | NIGHTTIME VEHICLE VOLUME / HR | PERCENTAGE OF HEAVY VEHICLE | SPEED |
|---|---|---|---|---|---|---|
| Great Eastern Hwy | Current 2025 | 70,488 | 4057 | 696 | Day – 3%<br>Night – 3% | 60 km/hr |
| Great Eastern Hwy | Future 2045 | 85,709 | 4934 | 846 | Day – 3%<br>Night – 3% | 60 km/hr |
| Graham Farmer Fwy | Current 2025 | 97,886 | 5635 | 967 | Day – 9%<br>Night – 7% | 80 km/hr |
| Graham Farmer Fwy | Future 2045 | 101,388 | 5836 | 1001 | Day – 9%<br>Night – 7% | 80 km/hr |

### 4.1.3 Model calibration

The noise model for the current year was calibrated using data obtained from the noise logging. A correction factor of -1.5 dB was applied to eliminate the discrepancy between the actual noise logger data and model predictions.

## 4.2 NOISE MODELLING RESULTS

Road traffic noise impact for the future year (2045) predicted the highest external noise levels for the day and night-time periods:

- Day-time scenario 73 dB(A)
- Night-time scenario 66 dB(A)

Predicted noise levels on the facades (façade noise maps) are provided in Appendix B. The facade sections facing Great Eastern Hwy and Graham Farmer Fwy are projected to experience noise levels exceeding the 'noise target' values outlined in SPP5.4. Noise intrusion assessment and recommendations for façade to meet the internal noise levels are provided in section 5.0.

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# 5 NOISE INTRUSION ASSESSMENT

Noise intrusion calculations were conducted using the approach outlined in British Standard BS EN 12354:2000. The calculations were based on the highest predicted noise levels at each façade to select appropriate glazing for achieving the desired internal noise levels. Adjustments were made to the linear spectral noise levels to account for potential losses from flanking paths and façade corrections.

## 5.1 EXTERNAL FACADE

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### 5.1.1 External Glazing, Solid Façade

The noise intrusion has been calculated for all façade elements, which is relative to their surface area. Based on the highest predicted noise levels for road traffic, preliminary required façade performance is presented in Table 12.

*Table 12: Acoustic Facade Categories & Glazing Arrangements*

| FAÇADE ORIENTATION | FACADE TYPE | ELEMENT CONFIGURATION | REQUIRED ACOUSTIC RATING ($R_w$, $C_{tr}$) |
|---|---|---|---|
| Southeast (facing Great Eastern Hwy) | Glazing - Studio | 6mm glass /12mm air space /12.38mm laminated glass | $R_W+C_{tr} \geqslant 35$ (42, -7) |
| | Solid Facade | 9mm fibre cement cladding+ 13mm Fyrchek plasterboard + 76mm double steel studs with insulation and 20mm gap + 2 layers of 13mm Fyrchek plasterboard | $R_W+C_{tr} \geqslant 58$ (68, -10) |
| Northeast and Northwest | Glazing | 6mm glass /12mm air space /6.38mm laminated glass | $R_W+C_{tr} \geqslant 33$ (38, -5) |
| | Solid Facade | 9mm fibre cement cladding+ 92mm steel studs with insulation + 10mm standard plasterboard | $R_W+C_{tr} \geqslant 46$ (34, -12) |
| Facing Rowe Ave | Glazing | 6mm glass /12mm air space /6mm glass | $R_W+C_{tr} \geqslant 29$ (36, -7) |
| | Solid Facade | 6mm fibre cement cladding+ 92mm steel studs with insulation + 10mm standard plasterboard | $R_W+C_{tr} \geqslant 42$ (31, -11) |

It should be noted that the façade performance and selection of glazing and external wall treatments will likely be refined during design development stage based on the selection of façade materials.

### 5.1.2 Roof

Although rain noise control is not a mandatory requirement under the NCC, it has been considered in this assessment to ensure a satisfactory level of acoustic amenity for future occupants. The assessment is based on a representative rainfall rate of 15 mm/hour, which is appropriate for residential dwellings in non-tropical regions of Australia. An internal noise criterion of no more than 5 dB(A) above the AS 2107 recommended internal noise levels during such rainfall has been adopted.

The proposed roof construction on this project is a 250mm bubble deck slab with slab with R1.1 40mm rigid panel fixed to underside of concrete soffit + R3.5 bulk fiberglass insulation on suspended 10mm plasterboard ceiling.

The above construction is adequate to control rain noise break-in to the apartments below.

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# 6 NOISE EMISSIONS

Mechanical services will be expected to comply with the respective WA EPNR criteria at the nearest noise sensitive receivers for all periods of the day. At this stage no information has been provided regarding mechanical service equipment selection.

Typically, this data is not available at the development application phase and review of mechanical equipment is conducted during the design phase prior to the issue of Building Permit.

Noise sources that shall be considered are:

- Mechanical Plant
- Fire pump rooms

Mitigation measures for the mechanical plant shall be considered during the design development stage to ensure compliance with the outlined criteria at the nearest sensitive receivers. These mitigation measures could include but not limited to the following:

- Positioning mechanical plant away from nearby receivers
- Screening around mechanical plant
- Acoustic insulation within duct work

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# 7 CONCLUSION

This acoustic assessment has been prepared by E-LAB Consulting in support of a Development Application (DA) made to City of Belmont for the proposed multi-storey residential apartment development at Lot888, 2 Hawksburn Road, Rivervale, WA 6103.

This report has been prepared as part of Development Application for the proposed development. The following acoustic assessments were undertaken, and recommendations are made to maintain compliance:

- Noise Intrusion to the project from external noise sources (road traffic from Great Eastern Hwy and Graham Farmer Fwy) in accordance with State Planning Policy 5.4 – Road and Rail Noise
- Noise emissions from the development impacting noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997

To assess each of the acoustic considerations for the proposed development, noise criteria has been established in Section 3 in accordance with the following documents:

- WAPC/DPLH, State Planning Policy 5.4 – Road and Rail Noise, Sep 2019 (SPP 5.4)
- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)
- Australian and New Zealand Standard AS/NZS 2107:2016 - Acoustics – Recommended design sound levels and reverberation times for building interiors (AS2107)
- National Construction Code 2022 Volume 1, Building Code of Australia (NCC 2022)

A road traffic noise assessment has been conducted, and the minimum recommended external façade construction has been specified to comply with internal noise level criteria. Predicted noise levels at the building façades were calculated using the 3D noise modelling software package SoundPLAN v9.0.

Regarding mechanical noise emissions, a comprehensive noise assessment will be undertaken following receipt of the complete mechanical equipment schedule and prior to the issuance of the Building Permit. Appropriate acoustic treatments shall be incorporated to ensure compliance with the applicable assigned noise limits at the nearest noise-sensitive receivers.

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# Appendix A Noise Modelling Checklist

| CHECKLIST ITEM | | ACTION |
|---|---|---|
| **Road traffic input data - Current** | | |
| Road name | Great Eastern Hwy 2025 | |
| | 16-hr daytime road traffic volume | 60166 |
| | Percentage of heavy vehicles (daytime) | 3 |
| | 8-hr night-time road traffic volume | 10322 |
| | Percentage of heavy vehicles (night-time) | 3 |
| Road pavement | Dense Graded Asphalt | |
| Road traffic heights | Have the road emissions sources been modelled at the following heights? | |
| | Light and heavy vehicle tyre-road height at +0.5 m | Y |
| | Heavy vehicle engine height at +1.5 m | Y |
| | Heavy vehicle exhaust height at +3.6 m | Y |
| Traffic speed | What is the modelled road posted (signal) traffic speed? | 60 km/h |

| CHECKLIST ITEM | | ACTION |
|---|---|---|
| **Road traffic input data - Future** | | |
| Road name | Great Eastern Hwy 2045 | |
| | 16-hr daytime road traffic volume | 73159 |
| | Percentage of heavy vehicles (daytime) | 3 |
| | 8-hr night-time road traffic volume | 12550 |
| | Percentage of heavy vehicles (night-time) | 3 |
| Road pavement | Dense Graded Asphalt | |
| Road traffic heights | Have the road emissions sources been modelled at the following heights? | |
| | Light and heavy vehicle tyre-road height at +0.5 m | Y |
| | Heavy vehicle engine height at +1.5 m | Y |
| | Heavy vehicle exhaust height at +3.6 m | Y |
| Traffic speed | What is the modelled road posted (signal) traffic speed? | 60 km/h |

| CHECKLIST ITEM | | ACTION |
|---|---|---|
| **Road traffic input data - Current** | | |
| Road name | Graham Farmer Fwy 2025 | |
| | 16-hr daytime road traffic volume | 83552 |
| | Percentage of heavy vehicles (daytime) | 9 |
| | 8-hr night-time road traffic volume | 14334 |
| | Percentage of heavy vehicles (night-time) | 7 |
| Road pavement | Open Graded Asphalt | |
| Road traffic heights | Have the road emissions sources been modelled at the following heights? | |
| | Light and heavy vehicle tyre-road height at +0.5 m | Y |
| | Heavy vehicle engine height at +1.5 m | Y |
| | Heavy vehicle exhaust height at +3.6 m | Y |
| Traffic speed | What is the modelled road posted (signal) traffic speed? | 80 km/h |

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| CHECKLIST ITEM | | ACTION |
|---|---|---|
| **Road traffic input data - Future** | | |
| Road name | Graham Farmer Fwy 2045 | |
| | 16-hr daytime road traffic volume | 86548 |
| | Percentage of heavy vehicles (daytime) | 9 |
| | 8-hr night-time road traffic volume | 14846 |
| | Percentage of heavy vehicles (night-time) | 7 |
| Road pavement | Open Graded Asphalt | |
| Road traffic heights | Have the road emissions sources been modelled at the following heights? | |
| | Light and heavy vehicle tyre-road height at +0.5 m | Y |
| | Heavy vehicle engine height at +1.5 m | Y |
| | Heavy vehicle exhaust height at +3.6 m | Y |
| Traffic speed | What is the modelled road posted (signal) traffic speed? | 80 km/h |

| NOISE PREDICTION CORRECTIONS | | | |
|---|---|---|---|
| Traffic emission | If using the Calculation of Road Traffic Noise algorithms, have the following corrections been applied? | | |
| | -0.8 dB correction to heavy vehicle engine emission? | | Y |
| | -8.0 dB correction to the heavy vehicle exhaust emission? | | Y |
| Road pavement | Has one of the following corrections been applied to the tyre/road emission? | | Y |
| | 14 mm chip seal | +3.5 dB | |
| | 10 mm chip seal | +2.5 dB | |
| | 5 mm chip seal | +1.5 dB | |
| | Dense graded asphalt | 0.0 dB | Y |
| | Novachip | -0.2 dB | |
| | Stone mastic asphalt | -1.5 dB | |
| | Open graded asphalt | -2.5 dB | |
| Australian traffic | Has a -1.7 dB Australian Road Research correction or reasonable equivalent applied? | | Y |
| Receptor façade | Has a +2.5 dB building façade correction been applied? | | Y |

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# Appendix B **Façade Noise Maps**

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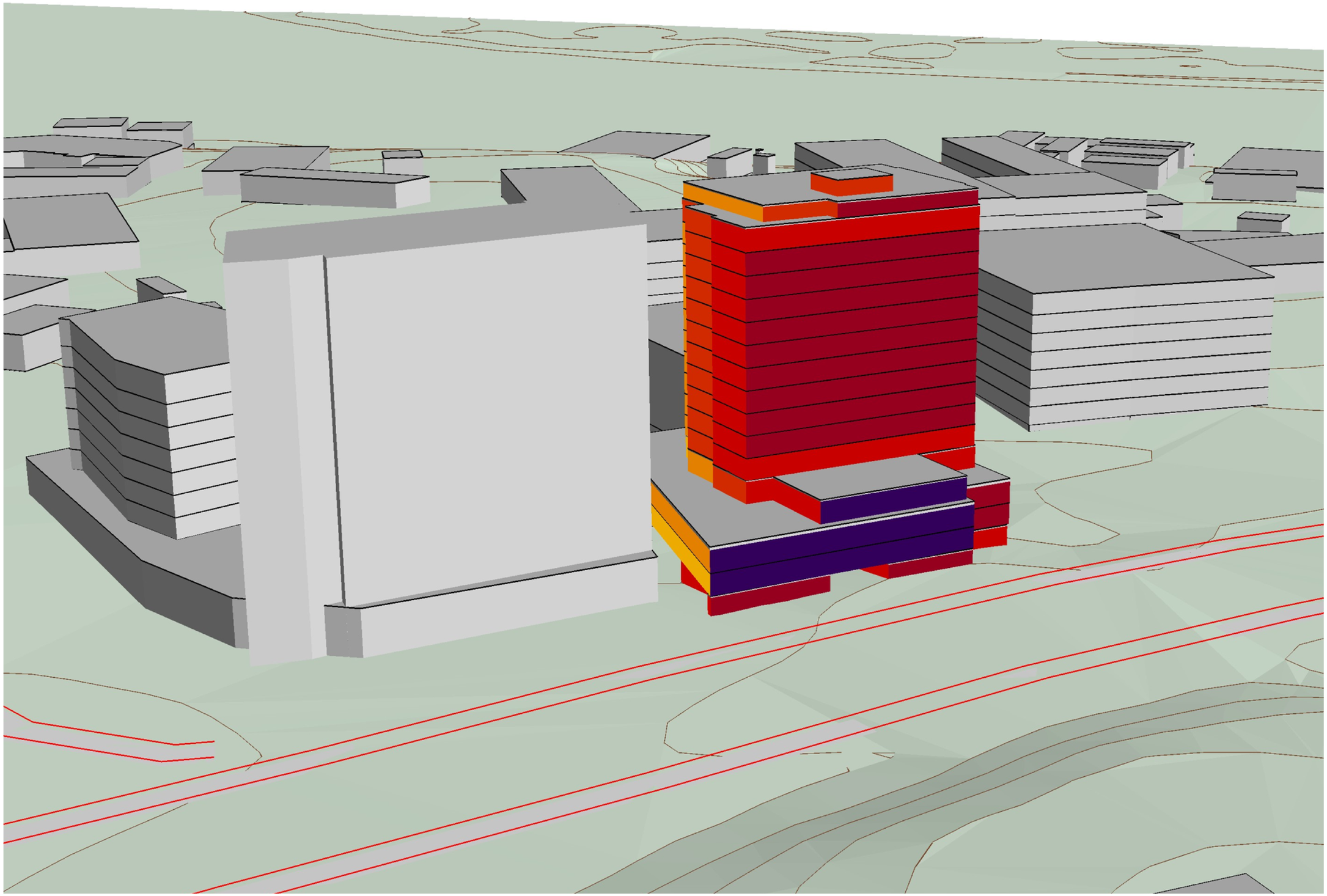

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| ISSUE | DATE | STATUS |
|---|---|---|
| 1 | 16/05/2025 | Issue for Information |

**LEGEND**

Facade Noise Level - $L_{eq,16hour}$ dB(A)

- <= 43
- 43 - 46
- 46 - 49
- 49 - 52
- 52 - 55
- 55 - 58
- 58 - 61
- 61 - 64
- 64 - 67
- 67 - 70
- 70 - 73
- 73 - 76
- 76 - 79

**NOTES**

PROJECT
LOT 888, 2 HAWKSBURN ROAD, RIVERVALE 6103

PROJECT NO.
P02016

ARCHITECT
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FINBAR

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NTS

STATUS
ISSUE FOR DA

DRAWING
2045 FACADE NOISE LEVELS - DAYTIME

VIEW 1 (Southeast)

DISCIPLINE
ACOUSTICS

| DRAWING NUMBER | REVISION |
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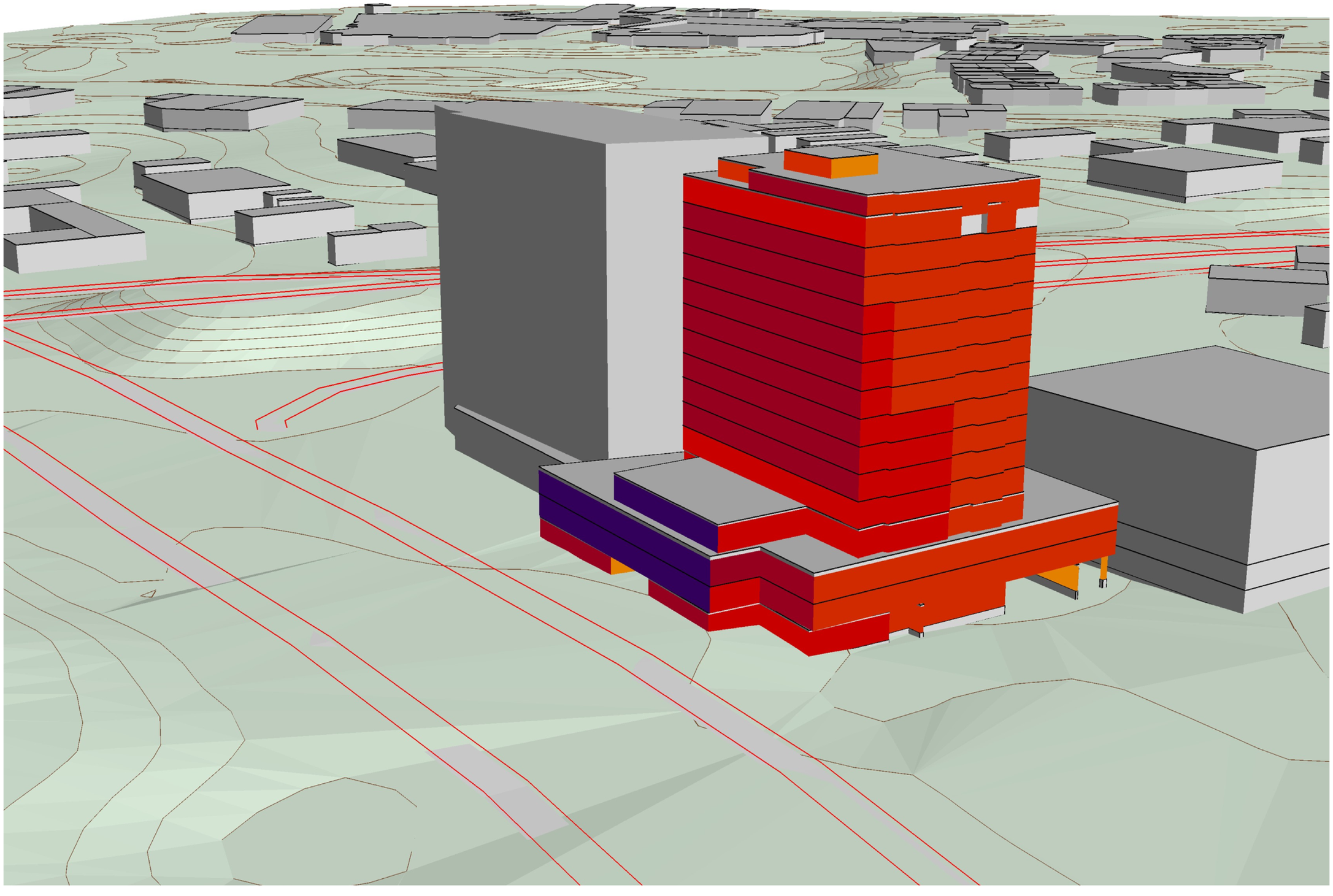

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|---|---|---|
| 1 | 16/05/2025 | Issue for Information |

**LEGEND**

Facade Noise Level - $L_{eq,16hour}$ dB(A)

- <= 43
- 43 - 46
- 46 - 49
- 49 - 52
- 52 - 55
- 55 - 58
- 58 - 61
- 61 - 64
- 64 - 67
- 67 - 70
- 70 - 73
- 73 - 76
- 76 - 79

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ISSUE FOR DA

DRAWING
2045 FACADE NOISE LEVELS - DAYTIME

VIEW 2 (Northeast)

DISCIPLINE
ACOUSTICS

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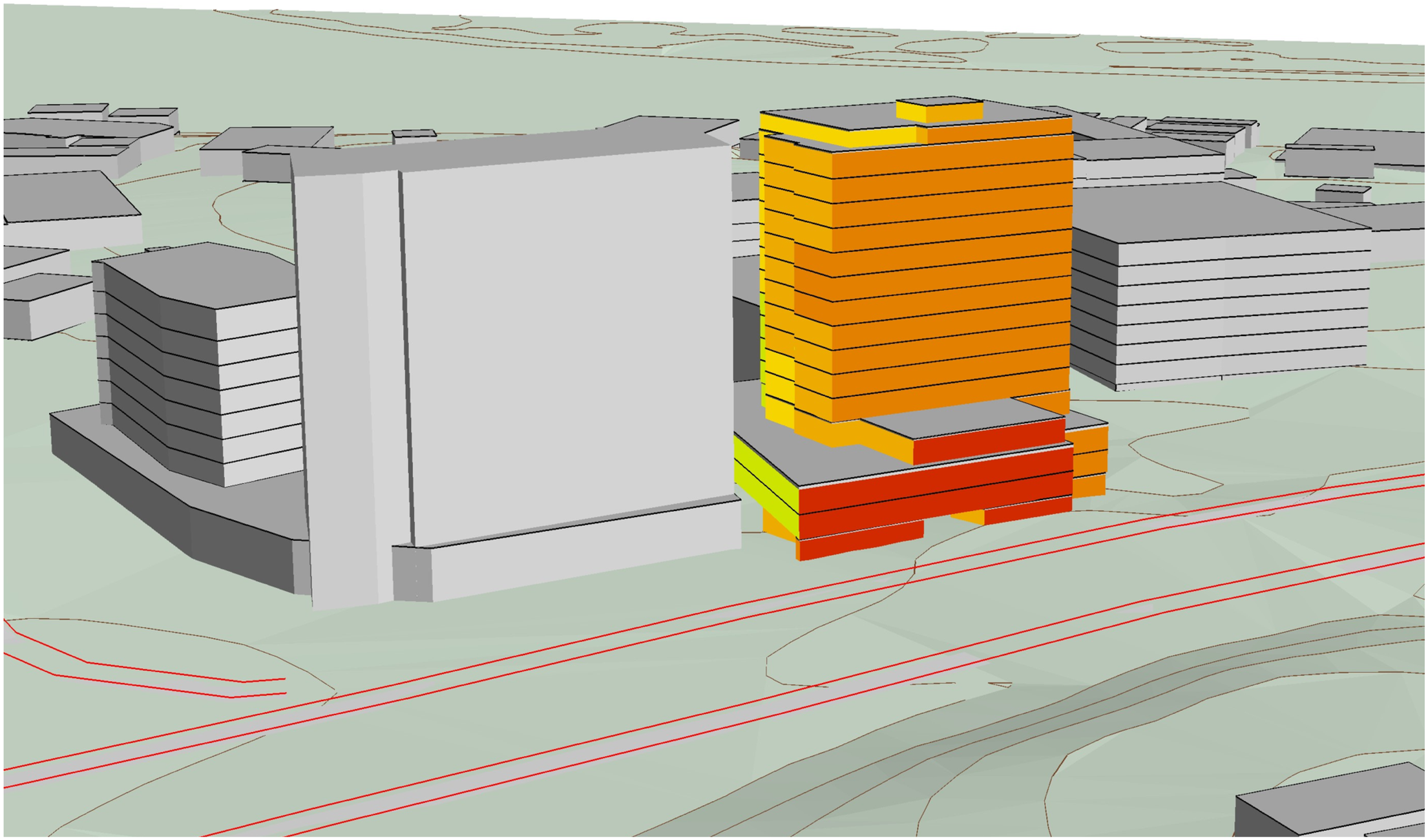

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| 1 | 16/05/2025 | Issue for Information |

**LEGEND**

Facade Noise Level - $L_{eq,9hTot}$ dB(A)

- <= 43
- 43 - 46
- 46 - 49
- 49 - 52
- 52 - 55
- 55 - 58
- 58 - 61
- 61 - 64
- 64 - 67
- 67 - 70
- 70 - 73
- 73 - 76
- 76 - 79

**NOTES**

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DRAWING
2045 FACADE NOISE LEVELS - NIGHT TIME

VIEW 1 (Southeast)

DISCIPLINE
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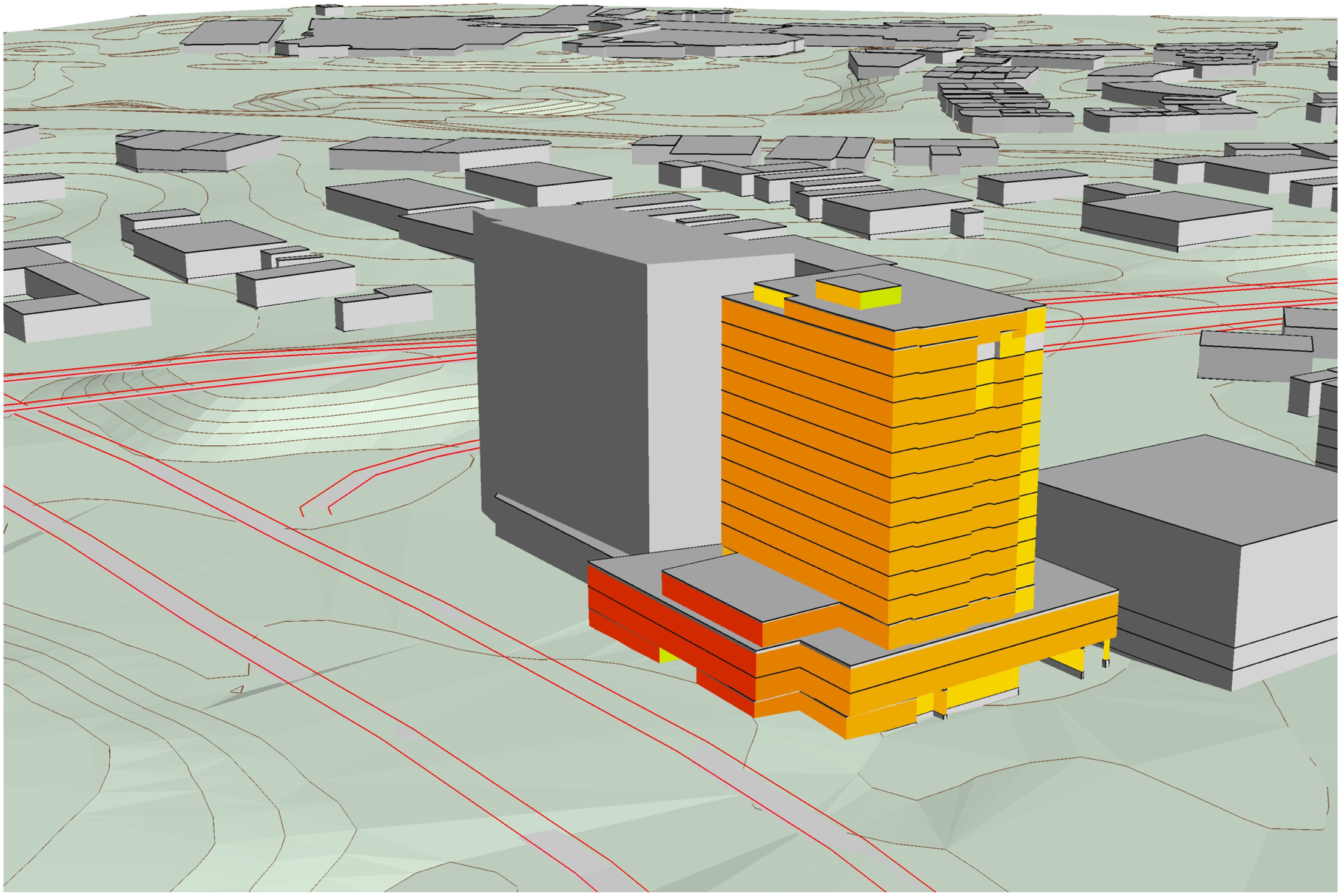

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| ISSUE | DATE | STATUS |
|---|---|---|
| 1 | 16/05/2025 | Issue for Information |

**LEGEND**

Facade Noise Level - $L_{eq,9hTotal}$ dB(A)

- <= 43
- 43 - 46
- 46 - 49
- 49 - 52
- 52 - 55
- 55 - 58
- 58 - 61
- 61 - 64
- 64 - 67
- 67 - 70
- 70 - 73
- 73 - 76
- 76 - 79

**NOTES**

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LOT 888, 2 HAWKSBURN ROAD, RIVERVALE 6103

PROJECT NO.
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DRAWING
2045 FACADE NOISE LEVELS - NIGHT TIME

VIEW 2 (Northeast)

DISCIPLINE
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