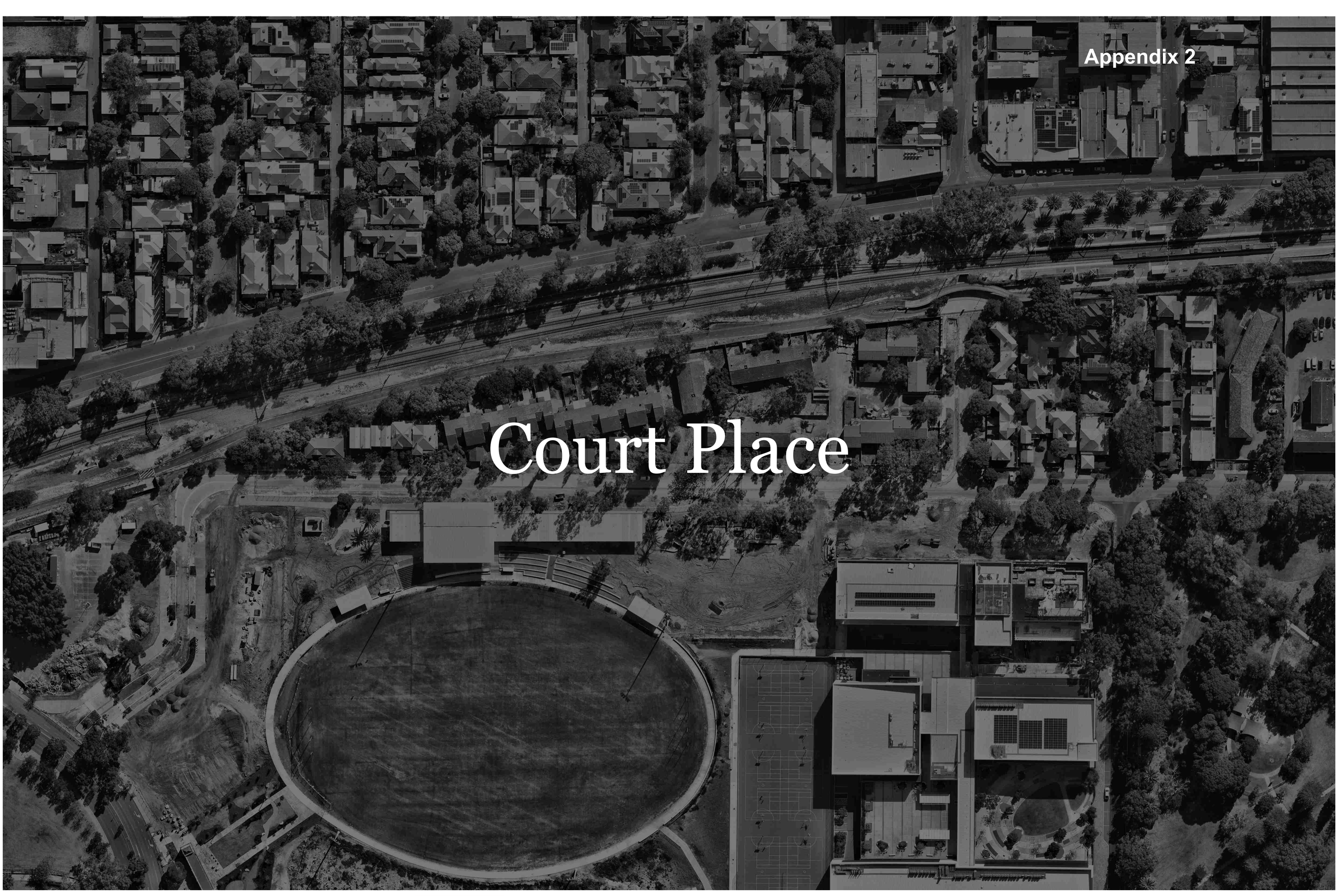
Appendix 2

Court Place



Rev	Date	By	Chk	Description
B	8/04/2026	MP	CCL	Issued for DA - Update
A	28/01/2026	MP	CCL	Issued for Development Application
03	22/01/2026	MP	CCL	Issued for DA Draft
02	26/11/2025	MP	LM	Issue for Coordination
01	18/11/2025	MP	LM	Issue for Planning

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Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

Drawing Name: Cover Page
Drawing Scale: @ A1
Drawing No.: DA000
Revision: B

| DRAWING LIST

SHEET INDEX	NO.	DESCRIPTION	SCALE	REV
DA0 Cover Pages				
	DA000	Cover Page		B
	DA001	Drawing List		B
DA1 Site Series				
	DA100	Existing Site Plan	1:500 @A1	B
	DA101	Demolition Plan	1:500 @A1	B
	DA102	Proposed Site Plan	1:500 @A1	B
DA20 Overall Plans				
	DA200	Overall - Lower Ground Plan	1:300 @A1	B
	DA201	Overall - Upper Ground Plan	1:300 @A1	B
	DA202	Overall - Level 01	1:300 @A1	B
	DA203	Overall - Level 02 / Podium	1:300 @A1	B
	DA204	Overall - Level 03-06 / Typical Plates	1:300 @A1	B
	DA205	Overall - Level 07 / T1 Roof Services	1:300 @A1	B
	DA206	Overall - Level 11 / T3 Roof Services	1:300 @A1	B
	DA207	Overall - Level 15 / T2 Roof Services	1:300 @A1	B
	DA208	Overall - T4 Roof Services	1:300 @A1	B
DA21 Plans - Tower 1 & 2				
	DA210	T1 & T2 - Upper Ground Plan	1:200 @A1	B
	DA211	T1 & T2 - Level 01	1:200 @A1	B
	DA212	T1 & T2 - Top of Podium	1:200 @A1	B
	DA213	T1 & T2 - Typical Tower	1:200 @A1	B
	DA214	T1 - Roof Services Plan	1:200 @A1	B
	DA215	T2 - Roof Services Plan	1:200 @A1	B
DA22 Plans - Tower 3 & 4				
	DA220	T3 & T4 - Lower Ground Plan	1:200 @A1	B
	DA221	T3 & T4 - Upper Ground Plan	1:200 @A1	B
	DA222	T3 & T4 - Level 01	1:200 @A1	B
	DA223	T3 & T4 - Top of Podium	1:200 @A1	B
	DA224	T3 & T4 - Typical Tower	1:200 @A1	B
	DA225	T3 - Roof Services Plan	1:200 @A1	B
	DA226	T4 - Roof Services Plan	1:200 @A1	B
DA30 Streetscape Elevations				
	DA300	South Elevation	1:300 @A1	B
	DA301	North Elevation	1:300 @A1	B
DA31 Building Elevations - Towers				
	DA310	T1 & T2 - South Elevation	1:200 @A1	B
	DA311	T3 & T4 - South Elevation	1:200 @A1	B
	DA312	T3 & T4 - North Elevation	1:200 @A1	B
	DA313	T1 & T2 - North Elevation	1:200 @A1	B
	DA314	T1 - West & East Elevation	1:200 @A1	B
	DA315	T2 - West & East Elevation	1:200 @A1	B
	DA316	T3 - West & East Elevation	1:200 @A1	B
	DA317	T4 - West & East Elevation	1:200 @A1	B
DA32 Sections				
	DA320	Section A-A	1:100 @A1	B
	DA321	Section B-B & Section C-C	1:200 @A1	B

SHEET INDEX	NO.	DESCRIPTION	SCALE	REV
DA40 Shadow Diagrams				
	DA400	Shadow Diagram - June 21st	@A1	B
	DA401	Shadow Diagram - September 23rd	@A1	B
	DA402	Shadow Diagram - December 21st	@A1	B
DA41 Eye of the Sun Diagrams				
	DA410	Eye of the Sun Diagrams 01	1:500 @A1	B
	DA411	Eye of the Sun Diagrams 02	1:500 @A1	B
	DA412	Eye of the Sun Diagrams 03	1:500 @A1	B
	DA413	Eye of the Sun Diagrams 04	1:500 @A1	B
DA5 Compliance Drawings				
	DA500	Solar Access Diagrams	1:600 @A1	B
	DA501	Cross Ventilation Diagrams	1:600 @A1	B
	DA502	Development Summary		B
DA7 Supporting Documents				
	DA700	Feature Survey		B

Rev	Date	By	Chk	Description
B	8/04/2026	LH, CCL	CCL	Issued for DA - Update
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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

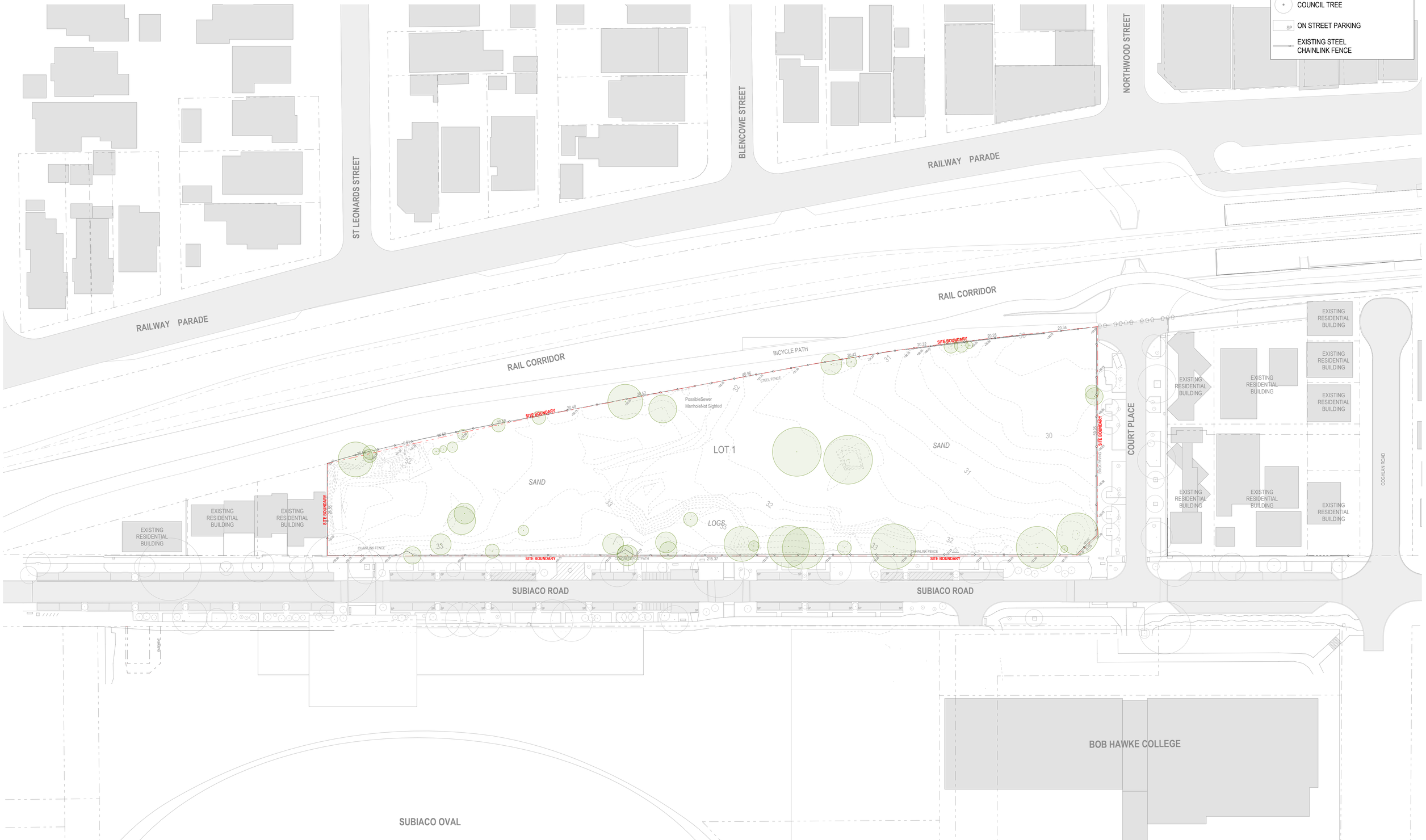
Drawing Name
Drawing List

Drawing Scale @ A1

Drawing No. DA001

Revision B

| EXISTING SITE PLAN



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	9/04/2026	LH, CCL	CCL	Issued for DA - Update
A	28/01/2026	LH, CCL	CCL	Issued for Development Application
01	22/01/2026	LH, CCL	CCL	Issued for DA Draft

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Project Number	00013365
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Drawing Name
Existing Site Plan

Drawing Scale 1:500 @ A1

Drawing No. DA100

Revision B

| DEMOLITION PLAN



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	9/04/2026	LH, CCL	CCL	Issued for DA - Update
A	28/01/2026	LH, CCL	CCL	Issued for Development Application
01	22/01/2026	LH, CCL	CCL	Issued for DA Draft

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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
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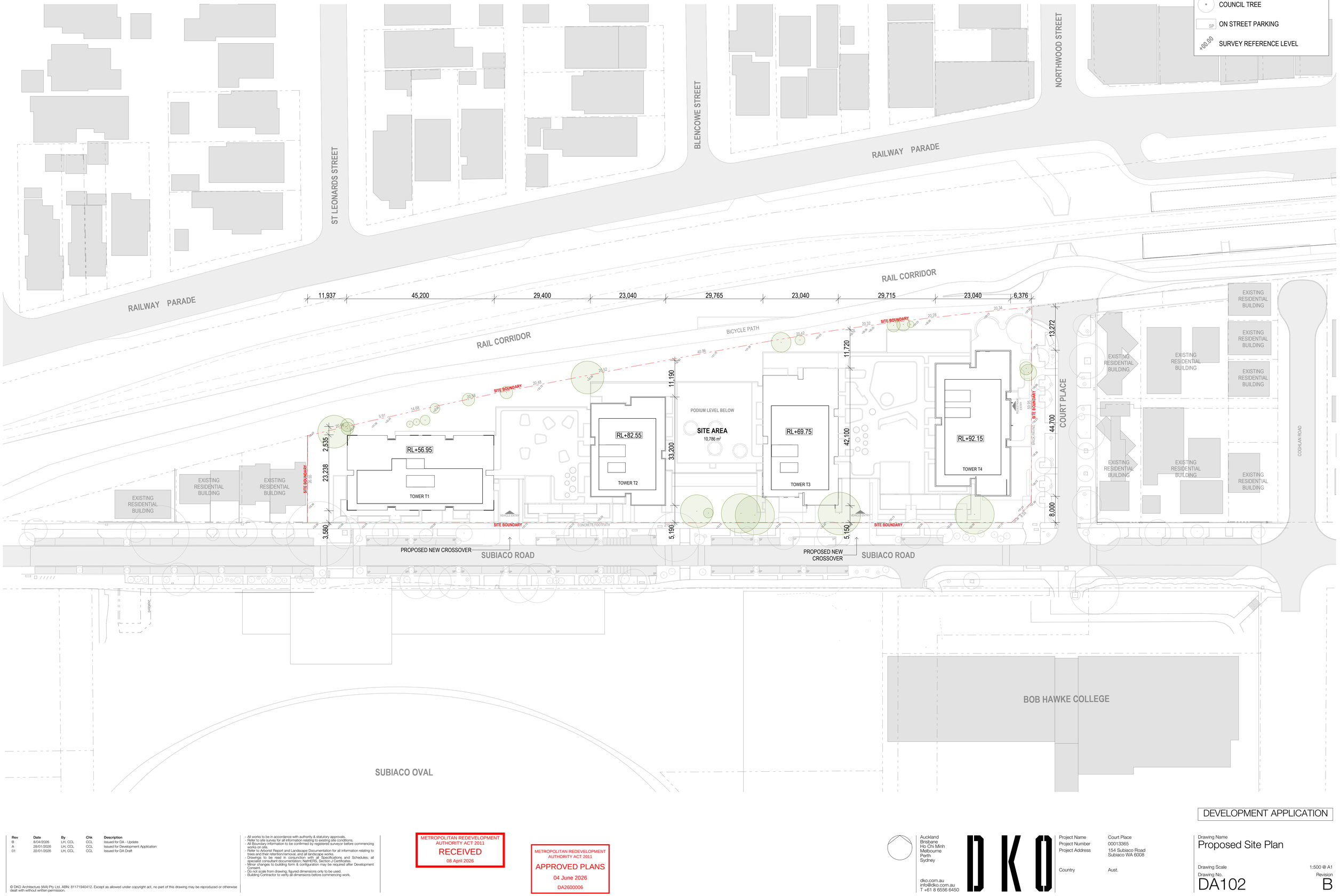
Drawing Name
Demolition Plan

Drawing Scale 1:500 @ A1

Drawing No. DA101

Revision B

| PROPOSED SITE PLAN



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH, CCL	CCL	Issued for DA - Update
A	28/01/2026	LH, CCL	CCL	Issued for Development Application
01	22/01/2026	LH, CCL	CCL	Issued for DA Draft

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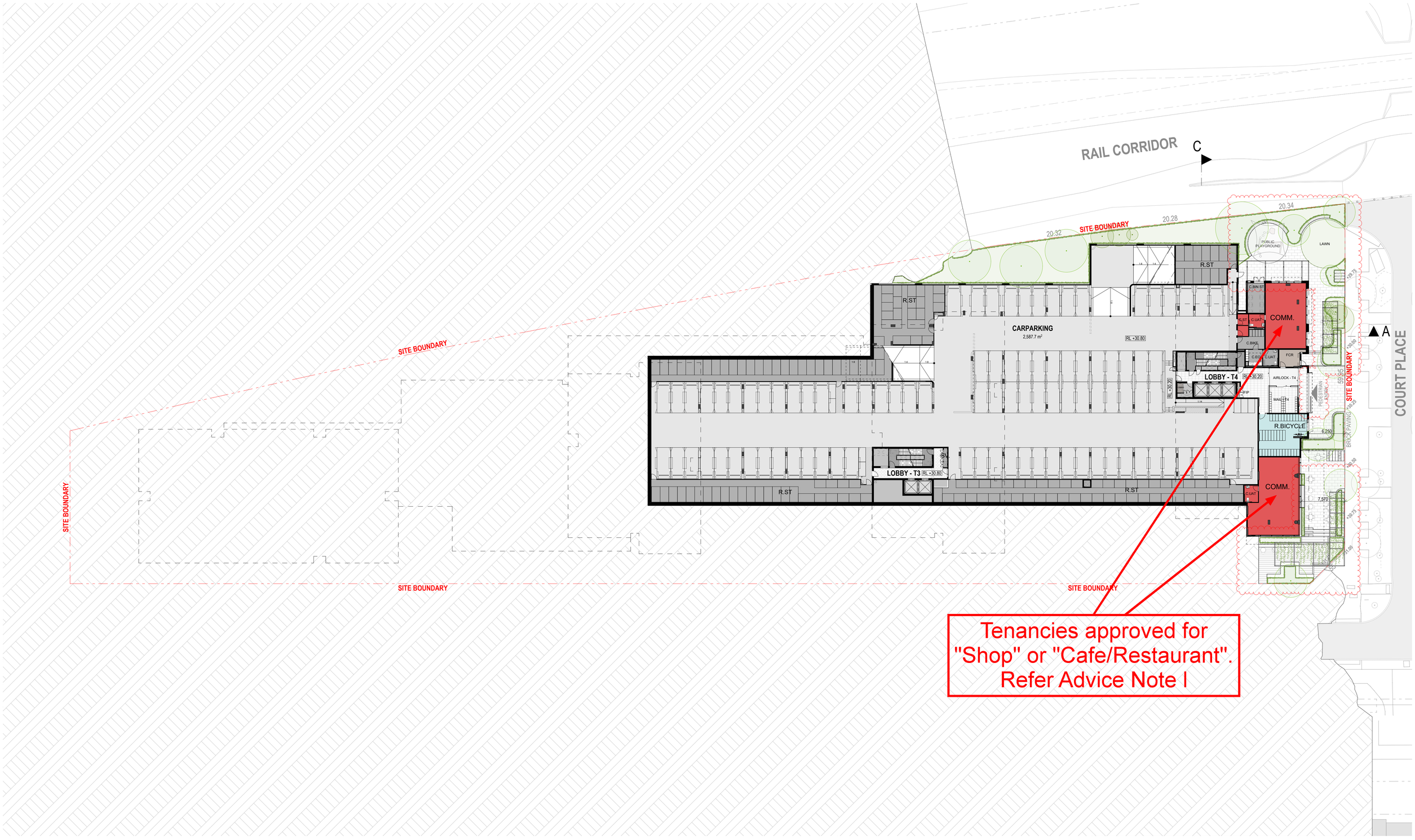
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Project Name Court Place
Project Number 00013365
Project Address 154 Subiaco Road Subiaco WA 6008
Country Aust.

Drawing Name
Proposed Site Plan

Drawing Scale 1:500 @ A1
Drawing No. DA102
Revision B

| LOWER GROUND



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports

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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

Drawing Name
Overall - Lower Ground Plan

Drawing Scale 1:300 @ A1

Drawing No. DA200

Revision B

| UPPER GROUND



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports

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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

Drawing Name
Overall - Upper Ground Plan

Drawing Scale 1:300 @ A1

Drawing No. DA201

Revision B

| LEVEL 01



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft.
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports
02	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination
01	26/11/2025	ZZ	LM	Issue for Coordination

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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
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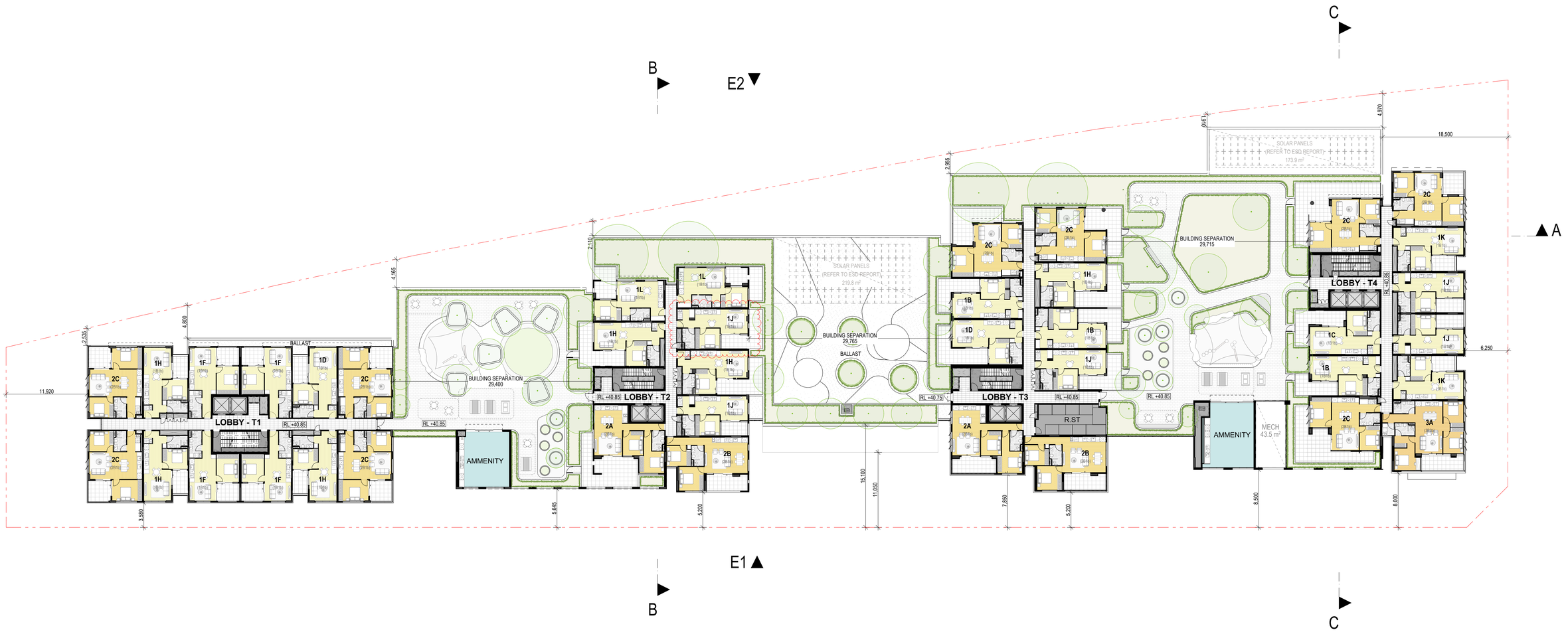
Drawing Name
Overall - Level 01

Drawing Scale 1:300 @ A1

Drawing No. DA202

Revision B

| LEVEL 02 / TOP OF PODIUM



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports
02	19/12/2025	LH,AL,MP,TQ	CCL	Issue for Coordination
01	26/11/2025	ZZ	LM	Issue for Coordination

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Project Name	Court Place
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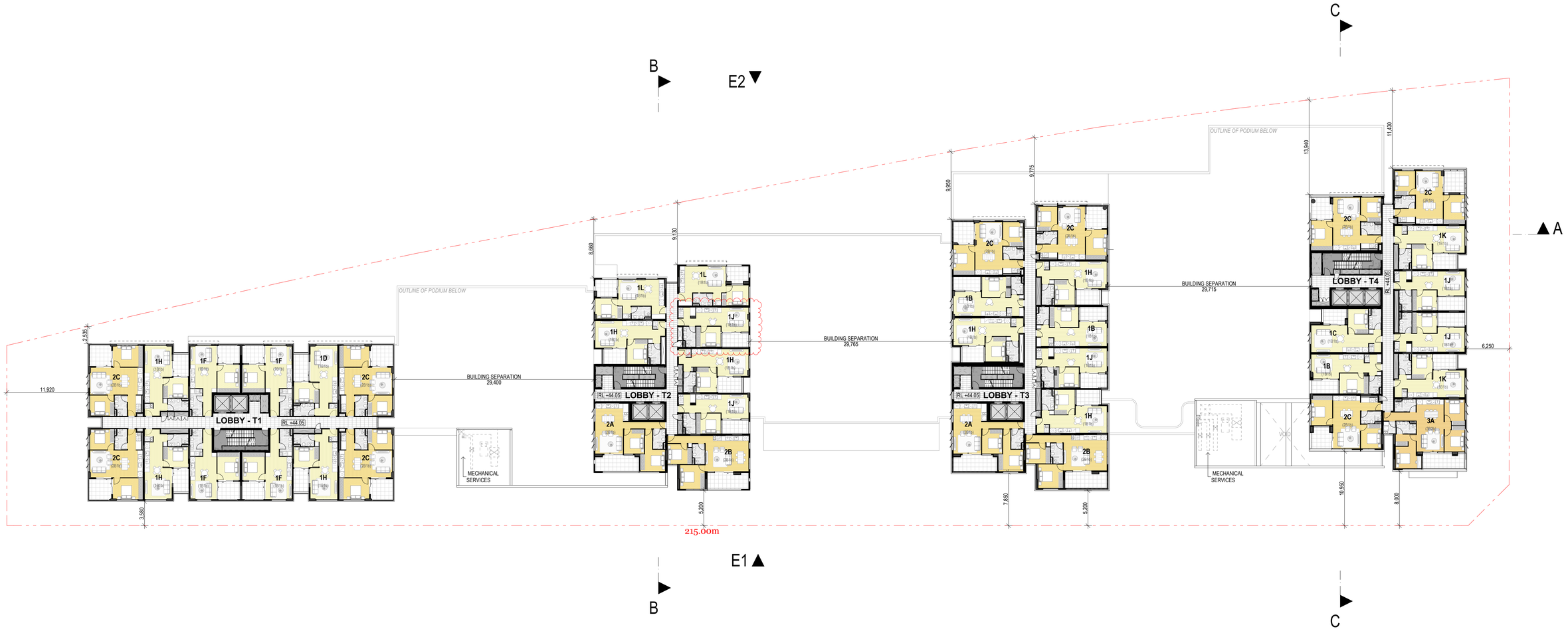
Drawing Name
Overall - Level 02 / Podium

Drawing Scale 1:300 @ A1

Drawing No. DA203

Revision B

| LEVEL 03-06 / TYPICAL PLATES



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports
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Project Name	Court Place
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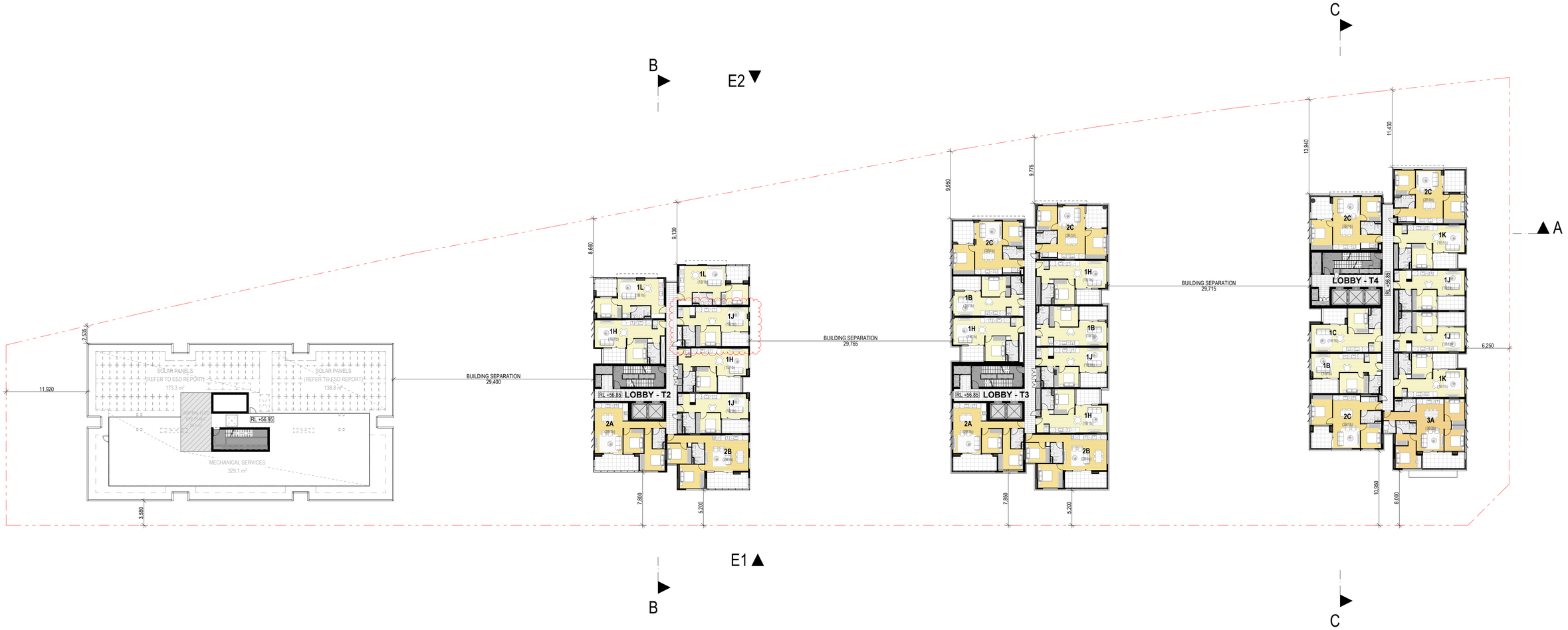
Drawing Name
Overall - Level 03-06 / Typical Plates

Drawing Scale 1:300 @ A1

Drawing No. DA204

Revision B

| LEVEL 07 / T1 ROOF SERVICES



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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01	26/11/2025	ZZ	LM	Issue for Coordination

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- Do not scale from drawing; figured dimensions only to be used.
- Building Contractor to verify all dimensions before commencing work.

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04 June 2026
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DEVELOPMENT APPLICATION

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DKO

Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

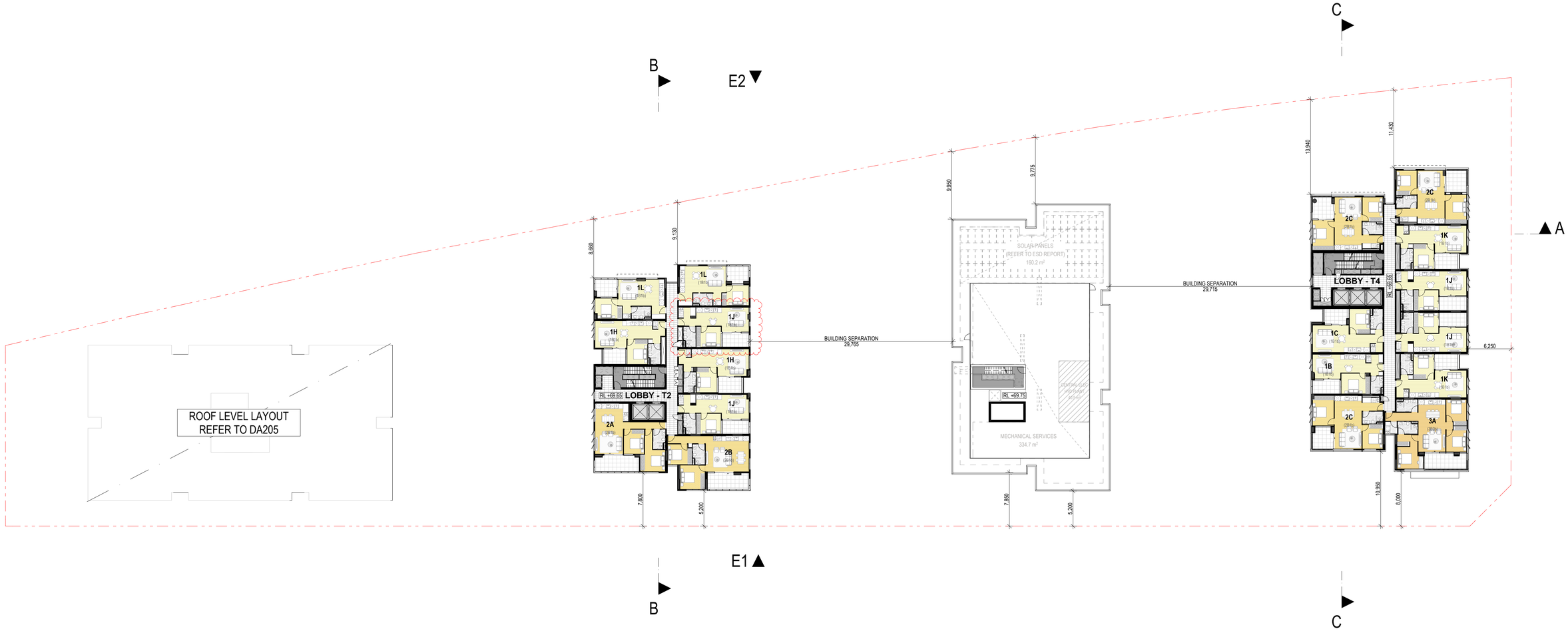
Drawing Name
Overall - Level 07 / T1 Roof Services

Drawing Scale 1:300 @ A1

Drawing No. DA205

Revision B

| LEVEL 11 / T3 ROOF SERVICES



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
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02	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination
01	26/11/2025	ZZ	LM	Issue for Coordination

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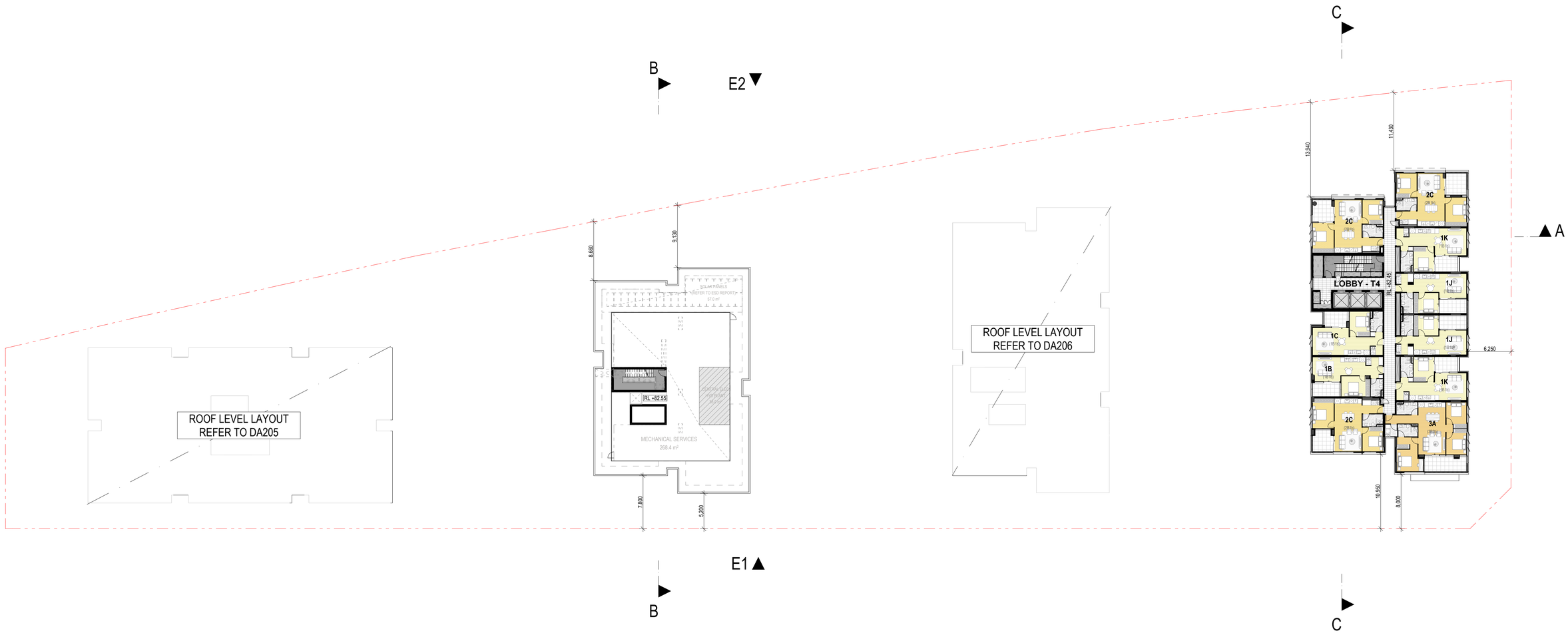
Drawing Name
Overall - Level 11 / T3 Roof Services

Drawing Scale 1:300 @ A1

Drawing No. DA206

Revision B

| LEVEL 15 / T2 ROOF SERVICES



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
04	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
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02	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination
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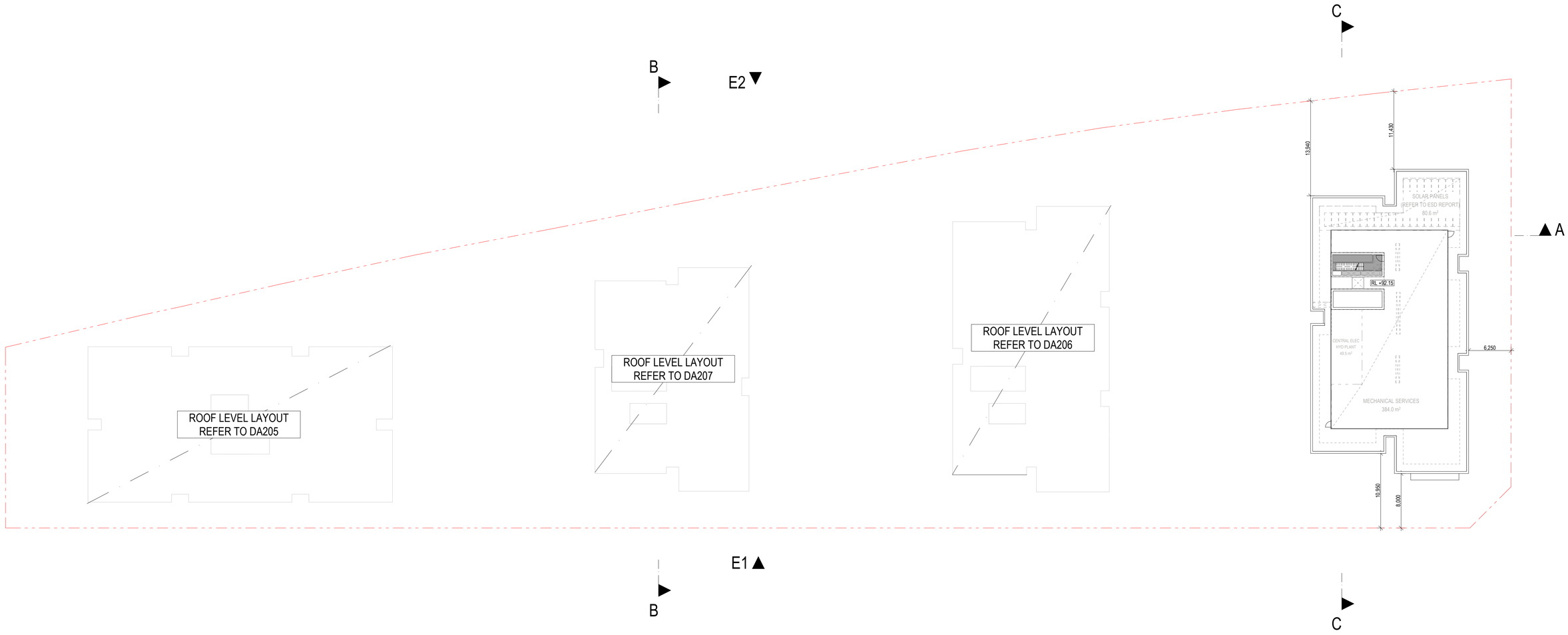
Drawing Name
Overall - Level 15 / T2 Roof Services

Drawing Scale 1:300 @ A1

Drawing No. DA207

Revision B

| T4 ROOF SERVICES



Rev	Date	By	Chk	Description
B	9/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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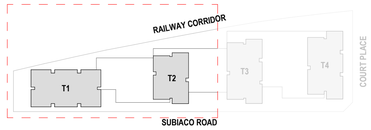
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DKO

Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

Drawing Name: Overall - T4 Roof Services
Drawing Scale: 1:300 @ A1
Drawing No.: DA208
Revision: B

| TOWER 1 & 2 - UPPER GROUND



RAIL CORRIDOR

SITE BOUNDARY

EXISTING RESIDENTIAL BUILDING

SUBIACO ROAD

FENCING ALONG NORTHERN BOUNDARY TO FUTURE DESIGN

FIRE - TANK 75.9 m²

FIRE - PUMP ROOM 78.2 m²

FIRE

R.BIN STORE 35.4 m²

R.FOGO 8.8 m²

R.HD 5.2 m²

R.ST 55.0 m²

R.ST 31.9 m²

SV

LOBBY - T1 73.5 m²

RL +33.60

ELEC HV 31.3 m²

ELEC TX 38.9 m²

SWITCH 23.1 m²

ELEC 23.3 m²

CLNR 8.1 m²

COMMS 16.5 m²

SECURITY GATE

ACCESS CONTROL

VEHICLE ENTRY

RL +34.00

E1 E2 E3 E4 E5 E6

E1.1 E2.1

3D (3B2b) AA: 109.0 m² SA: 98.1 m²

1H (1B1b) AA: 57.6 m² SA: 52.3 m²

1F (1B1b) AA: 56.9 m² SA: 50.9 m²

BALCONY 40.0 m²

BALC. 22.1 m²

BALCONY 20.0m²

MAIL - T1 21.6 m²

FIP

AIRLOCK 6.9 m²

R.BICYCLE 80.5 m² 77 BICYCLES

FIRE - BOOSTER

6x VISITOR BICYCLES (2 SIDED PARKING RAIL)

14 VISITOR BAYS

VISITOR TURNAROUND BAY

NATURALLY VENTILATED FACADE. FREE AIR PERCENTAGE TO MECHANICAL ENGINEER'S REQUIREMENT.

R.ST 224.0 m²

PERFORATED ROLLER DOOR AND FULL HEIGHT FENCE

GIVE-WAY LINE TO TRA… REQU…

R.BIN STORE 38.2 m²

R.FOGO 7.0 m²

R.HD 4.7 m²

BOH - T2 36.2 m²

CHL BOH 27.4 m²

CHL OFFICE 165.5 m² RL +34.00

LHA GOLD 3C (3B2b) AA: 98.5 m² SA: 89.7 m²

LHA GOLD 2E (2B1b) AA: 71.3 m² SA: 66.4 m²

BALCONY 40.8m²

BALCONY 38.1m²

R.BICYCLE 61.5 m² 48 BICYCLES RL +34.00

LOBBY - T2 68.1 m²

AIRLOCK - T2 RL +34.00

MAIL - T2 55.0 m²

8x VISITOR BICYCLES (2 SIDED PARKING RAIL)

6x VISITOR BICYCLES (2 SIDED PARKING RAIL)

CONCRETE FOOTPATH

REFER TO DA221 FOR CONTINUATION

20.66 20.58 14.68 5.91 20.48 20.52 40.96 215.37

11.920 26.55 3.580 5.650 5.200 11.050 6.000

+31.50 +32.25 +32.50 +32.75 +33.00 +33.25 +33.50 +33.67 +33.75 +34.00 +34.175

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
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DKO

Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

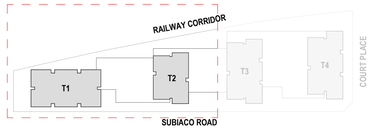
Drawing Name
T1 & T2 - Upper Ground Plan

Drawing Scale 1:200 @ A1

Drawing No. DA210

Revision B

| TOWER 1 & 2 - LEVEL 01



RAIL CORRIDOR

SITE BOUNDARY

EXISTING RESIDENTIAL BUILDING

SITE BOUNDARY

SUBIACO ROAD

CONCRETE FOOTPATH

NATURALLY VENTILATED FACADE. FREE AIR PERCENTAGE TO MECHANICAL ENGINEER'S REQUIREMENT.

NATURALLY VENTILATED FACADE. FREE AIR PERCENTAGE TO MECHANICAL ENGINEER'S REQUIREMENT.

R.ST 263.3 m²

R.ST 397.0 m²

R.ST 58.9 m²

R.ST 69.4 m²

BOH - T2 39.6 m²

LOBBY - T1 71.1 m²

LOBBY - T2 33.1 m²

RL +37.20

BALCONY 9.3 m²

1L (1B1b) AA: 56.3 m² SA: 50.3 m²

2C (2B1b) AA: 75.9 m² SA: 68.1 m²

1H (1B1b) AA: 57.6 m² SA: 52.3 m²

1F (1B1b) AA: 56.9 m² SA: 50.9 m²

BALC. 8.1 m²

BALCONY 10.9 m²

BALCONY 8.0 m²

LHA GOLD 3C (3B2b) AA: 98.5 m² SA: 89.7 m²

BALCONY 12.1 m²

BALCONY 10.3 m²

LHA GOLD 2E (2B1b) AA: 71.3 m² SA: 66.4 m²

BALCONY 8.4 m²

LHA GOLD 1A.1 (1B1b) AA: 57.1 m² SA: 51.1 m²

2B (2B1b) AA: 78.3 m² SA: 70.7 m²

BALCONY 15.1 m²

SV 3.9

MB

E1.1 E2.1 E3 E4 E5 E6

REFER TO DA222 FOR CONTINUATION

20.66 5.91 14.68 20.58 20.48 20.52 40.96

2,535 4,800 4,165 2,110 6,000 11,051 5,650 5,200 3,580 26.55 11,920 1,250 215.37

+32.50 +32.25 +31.50 +32.75 +31.75 +33.00 +33.25 +33.50 +33.75

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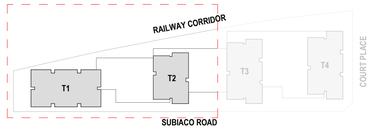
Drawing Name: T1 & T2 - Level 01

Drawing Scale: 1:200 @ A1

Drawing No.: DA211

Revision: B

| TOWER 1 & 2 - LEVEL 02 / TOP OF PODIUM





Rev	Date	By	Chk	Description
B	9/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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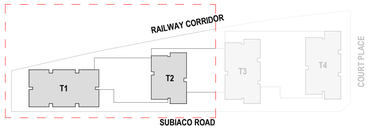
Drawing Name
T1 & T2 - Top of Podium

Drawing Scale 1:200 @ A1

Drawing No. DA212

Revision B

| TOWER 1 & 2 - LEVEL 03-14





Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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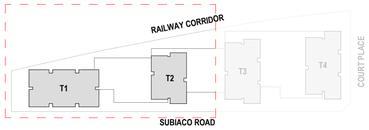
Drawing Name
T1 & T2 - Typical Tower

Drawing Scale 1:200 @ A1

Drawing No. DA213

Revision B

| TOWER 1 - ROOF SERVICES PLAN



E2.1

2,535

SOLAR PANELS
(REFER TO ESD REPORT)
173.3 m²

SOLAR PANELS
(REFER TO ESD REPORT)
136.8 m²

11,920

E3

CENTRAL EQUIPMENT
HYD PLANT
36.1 m²

RL +56.95

DEMOUNTABLE ROOF
ALLOWANCE FOR FUTURE
PLANT REPLACEMENT

MECHANICAL SERVICES
329.1 m²

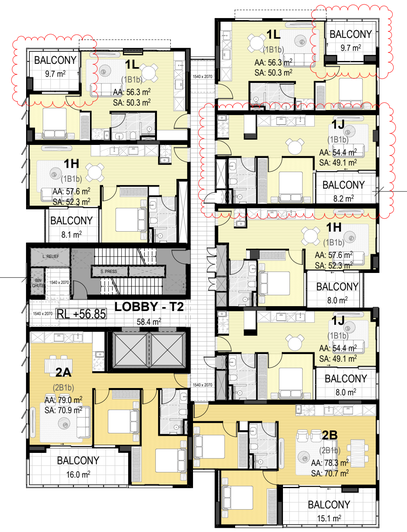
3,580

MECHANICAL SERVICES SCREEN
TO ACOUSTIC ENGINEER
REQUIREMENTS

E4

BUILDING SEPARATION
29,400

E5



E6

BUILDING SEPARATION
29,765

CONTINUATION TO TOWERS 3 & 4

E1.1

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
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Project Name Court Place
Project Number 00013365
Project Address 154 Subiaco Road
Subiaco WA 6008

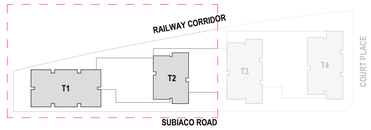
Country Aust.

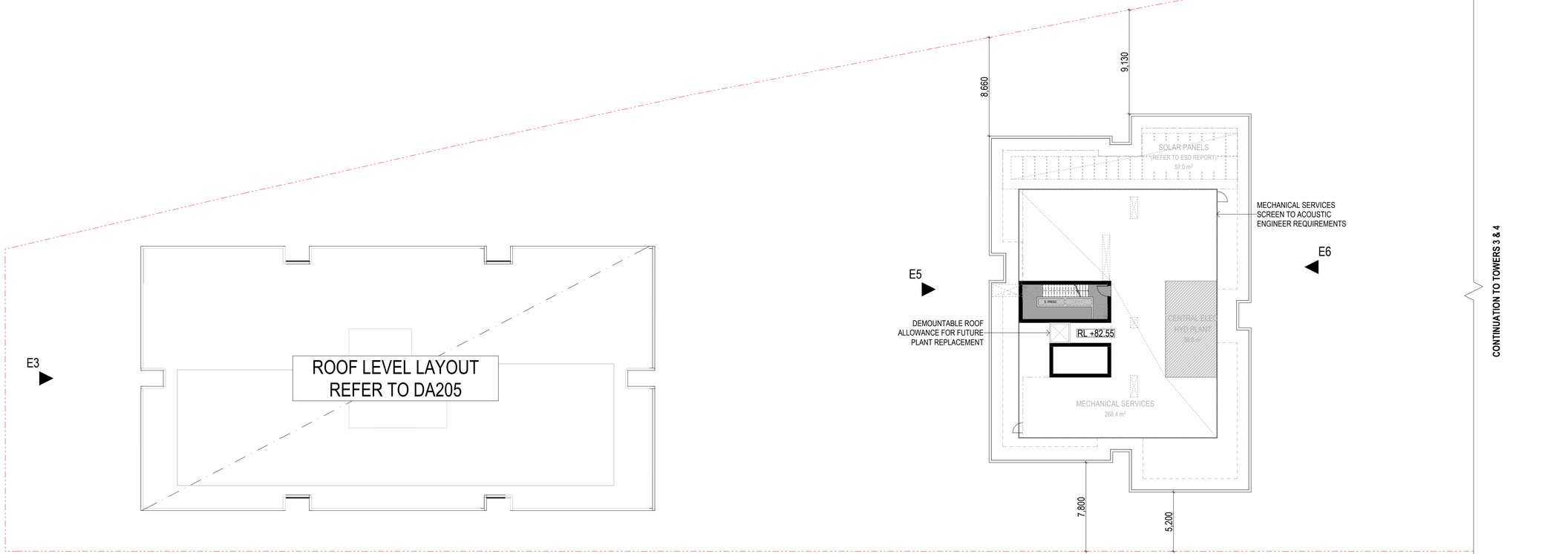
DEVELOPMENT APPLICATION

Drawing Name
T1 - Roof Services Plan

Drawing Scale 1:200 @ A1
Drawing No. DA214
Revision B

| TOWER 2 - ROOF SERVICES PLAN





DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
03	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
02	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports
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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

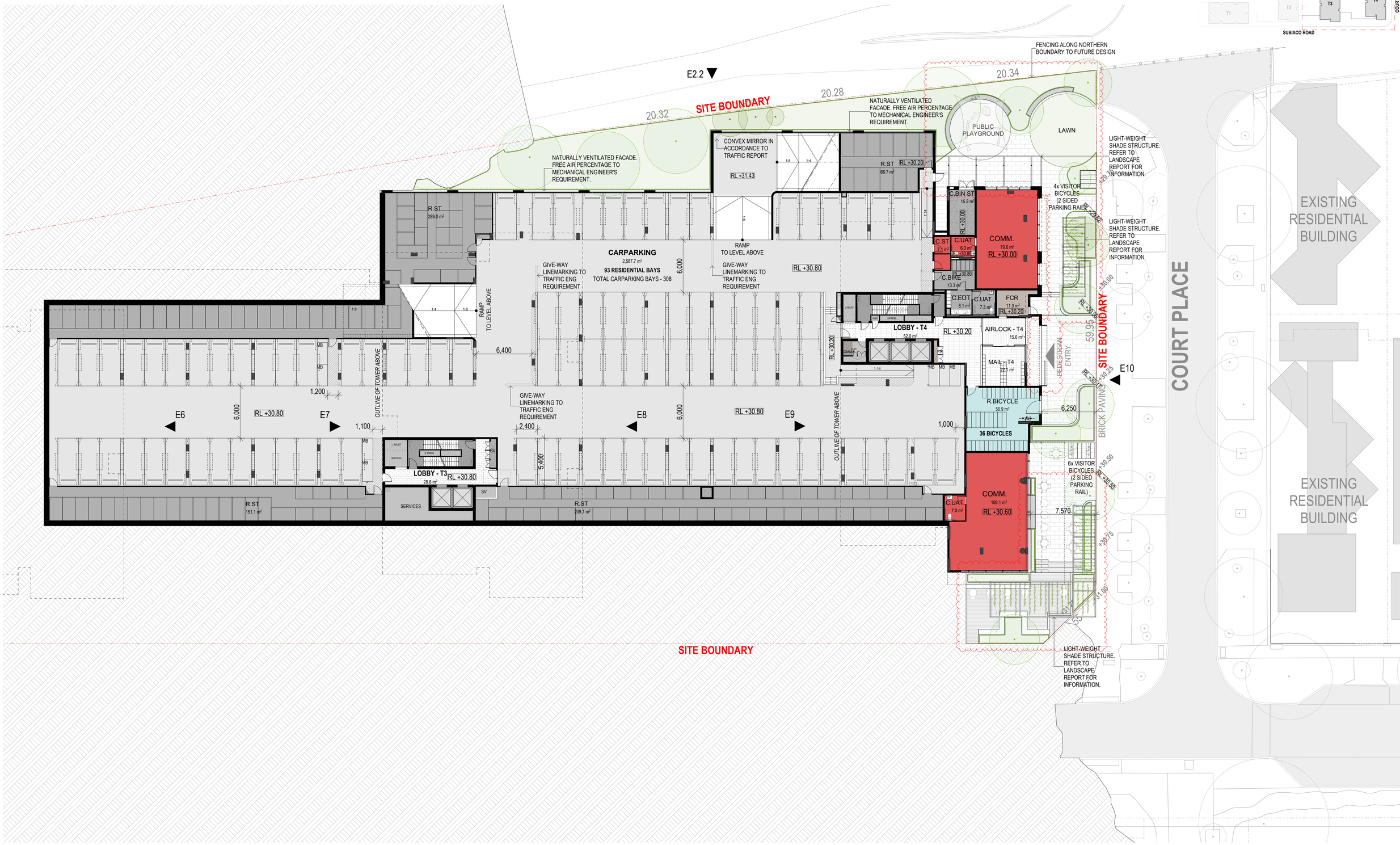
Drawing Name
T2 - Roof Services Plan

Drawing Scale 1:200 @ A1

Drawing No. DA215

Revision B

| TOWER 3 & 4 - LOWER GROUND



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

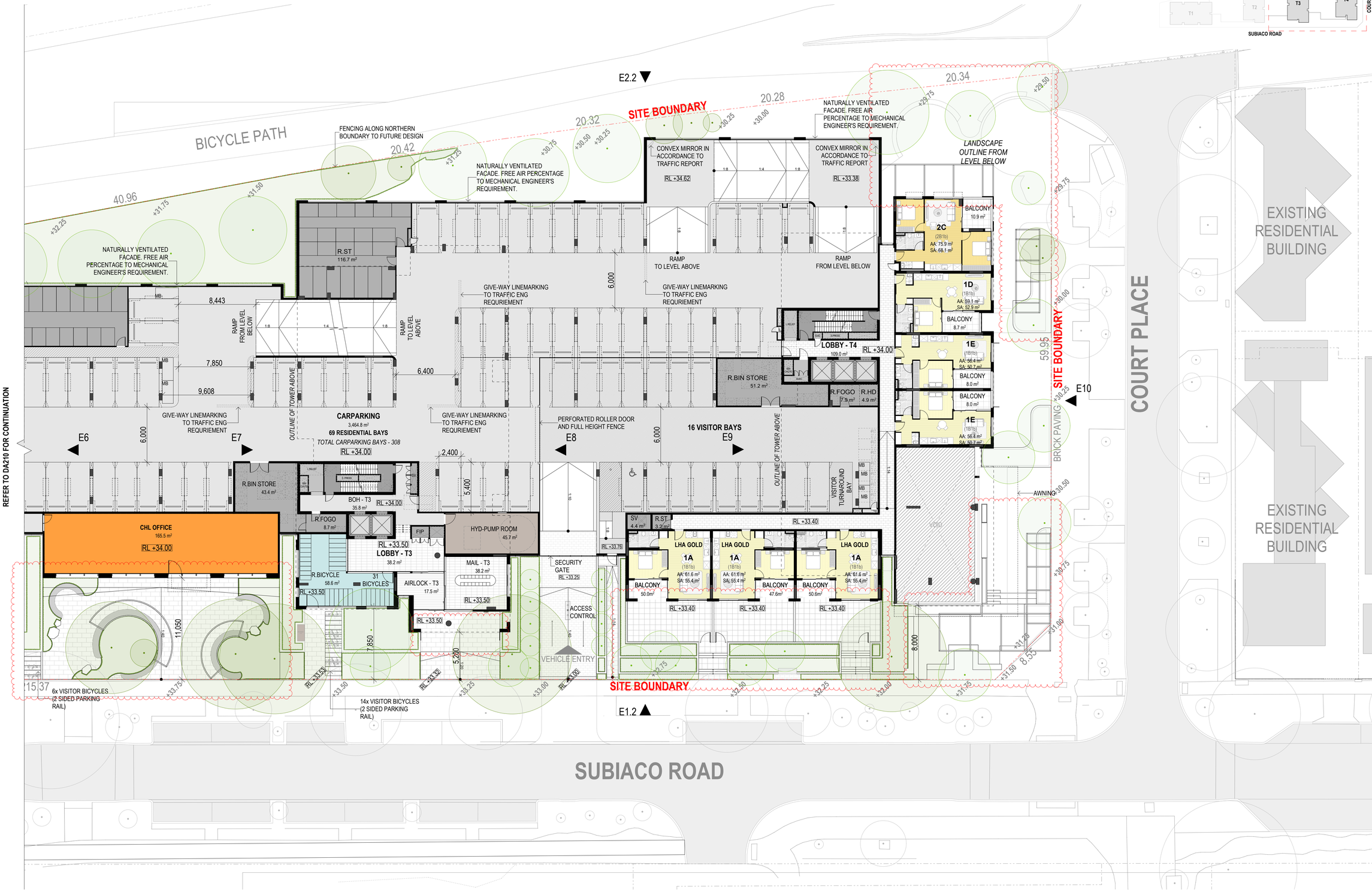
Drawing Name
T3 & T4 - Lower Ground Plan

Drawing Scale 1:200 @ A1

Drawing No. DA220

Revision B

| TOWER 3 & 4 - UPPER GROUND



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	29/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
03	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
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Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

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Drawing Name: T3 & T4 - Upper Ground Plan
Drawing Scale: 1:200 @ A1
Drawing No.: DA221
Revision: B

| TOWER 3 & 4 - LEVEL 01



Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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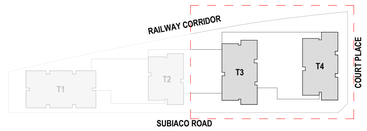
Drawing Name
T3 & T4 - Level 01

Drawing Scale 1:200 @ A1

Drawing No. DA222

Revision B

| TOWER 3 & 4 - LEVEL 02 / TOP OF PODIUM





DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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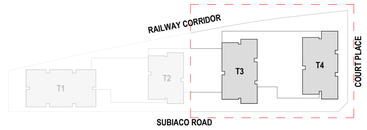
Drawing Name
T3 & T4 - Top of Podium

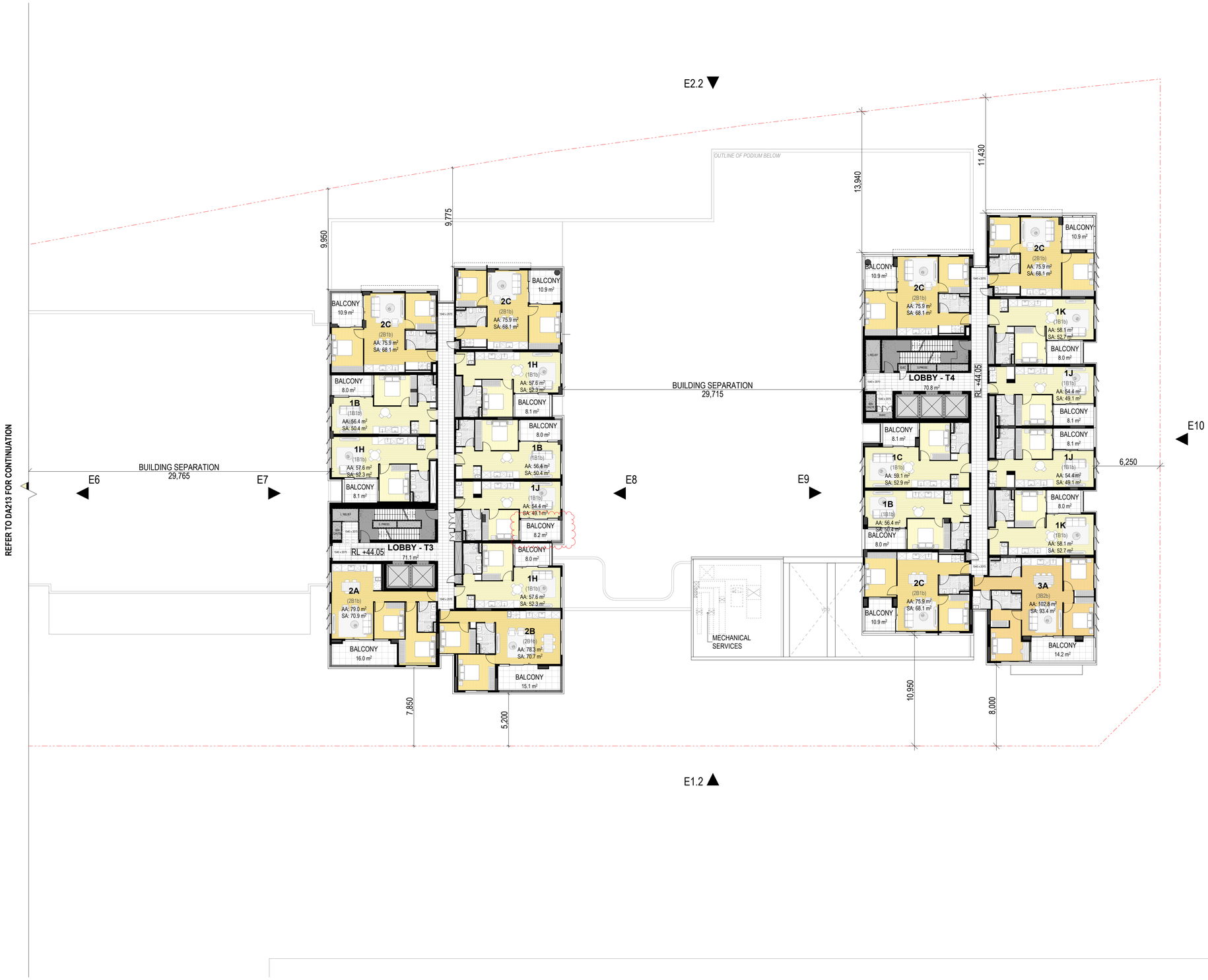
Drawing Scale 1:200 @ A1

Drawing No. DA223

Revision B

| TOWER 3 & 4 - LEVEL 03-17





Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
03	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
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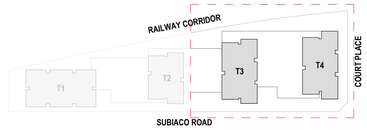
Drawing Name
T3 & T4 - Typical Tower

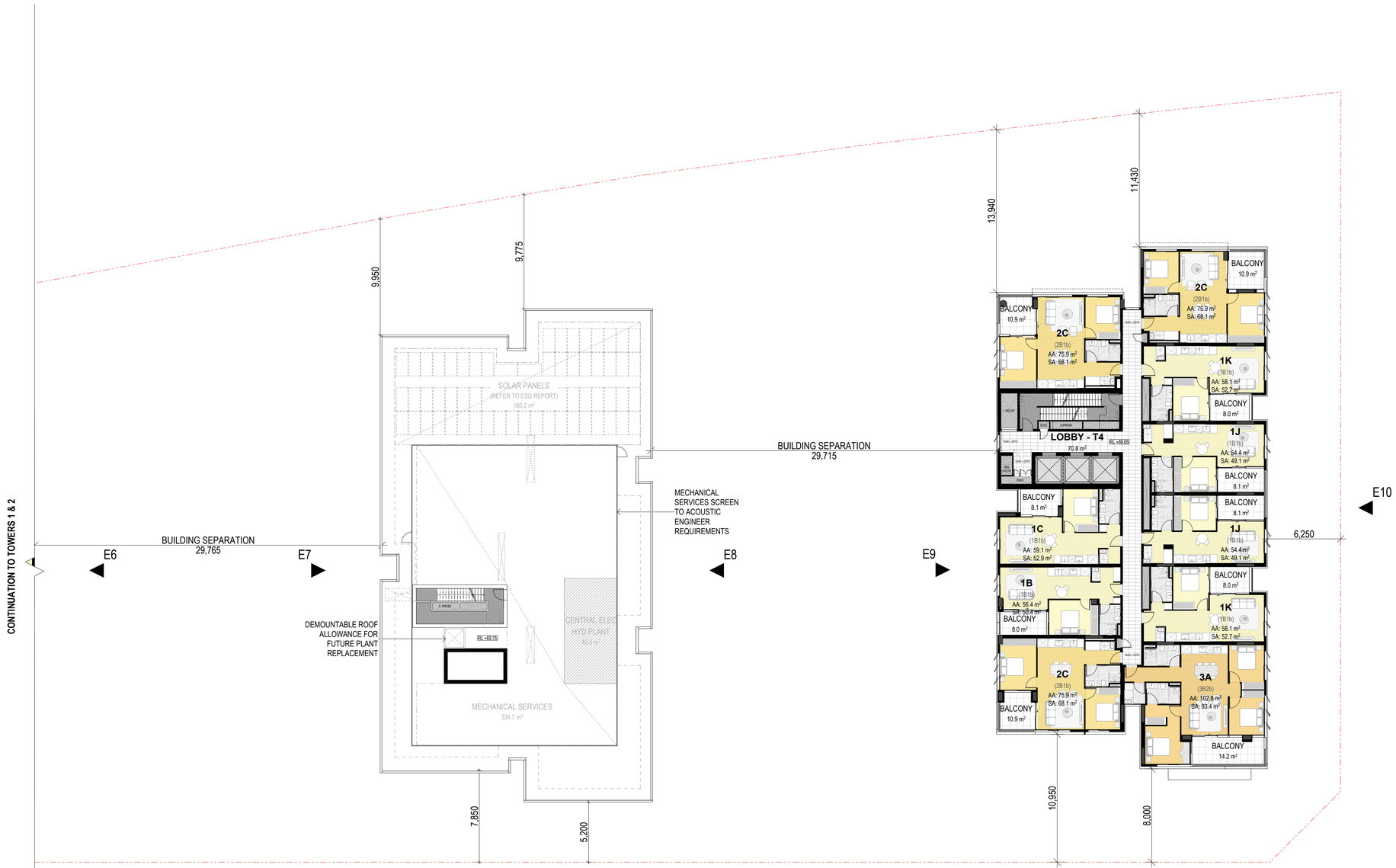
Drawing Scale 1:200 @ A1

Drawing No. DA224

Revision B

| TOWER 3 - ROOF SERVICES PLAN





Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
03	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
02	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports
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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
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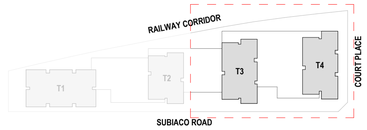
Drawing Name
T3 - Roof Services Plan

Drawing Scale 1:200 @ A1

Drawing No. DA225

Revision B

| TOWER 4 - ROOF SERVICES PLAN



CONTINUATION TO TOWERS 1 & 2

ROOF LEVEL LAYOUT
REFER TO DA206

13,940

11,430

SOLAR PANELS
(REFER TO ESD REPORT)
80.6 m²

DEMOUNTABLE ROOF
ALLOWANCE FOR
FUTURE PLANT
REPLACEMENT

E9

E10

6,250

CENTRAL ELEC
HYD PLANT
49.5 m²

MECHANICAL SERVICES
SCREEN TO ACOUSTIC
ENGINEER
REQUIREMENTS

MECHANICAL SERVICES
384.0 m²

10,950

8,000

Rev	Date	By	Chk	Description
B	9/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
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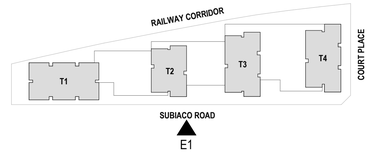
Drawing Name
T4 - Roof Services Plan

Drawing Scale 1:200 @ A1

Drawing No. DA226

Revision B

| SOUTH ELEVATION





E1 **SOUTH ELEVATION**

DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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03	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination
02	26/11/2025	TQ, MP	LM	Issue for Coordination
01	18/11/2025	TQ, MP	LM	Issue for Planning

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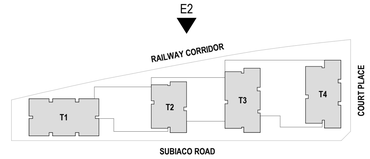
Drawing Name
South Elevation

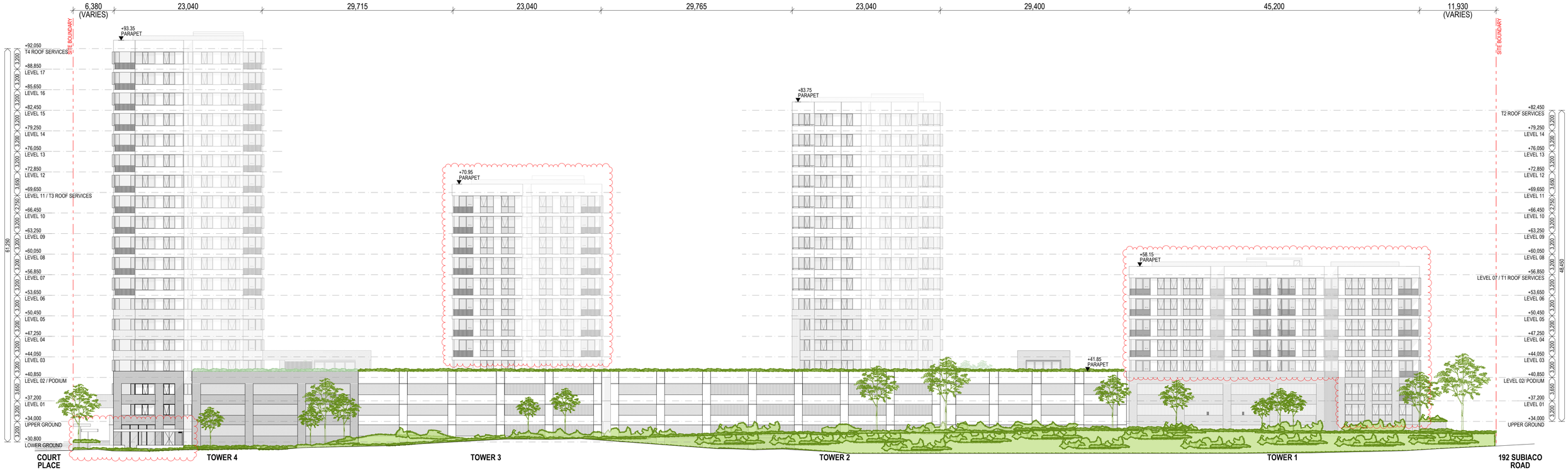
Drawing Scale 1:300 @ A1

Drawing No. DA300

Revision B

| NORTH ELEVATION





E2 **NORTH ELEVATION**

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	28/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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03	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination
02	26/11/2025	TQ, MP	LM	Issue for Coordination
01	18/11/2025	TQ, MP	LM	Issue for Planning

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DEVELOPMENT APPLICATION

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Melbourne
Perth
Sydney

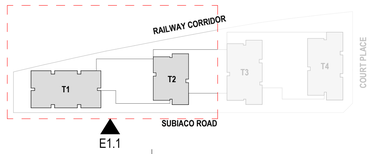
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DKO

Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

Drawing Name: North Elevation
Drawing Scale: 1:300 @ A1
Drawing No.: DA301
Revision: B

| TOWER 1 & 2 - SOUTH ELEVATION,





E1.1 TOWER 1 & 2 - SOUTH ELEVATION

ALL



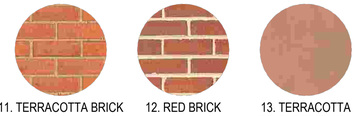
1. CLEAR GLASS
2. TINTED CLEAR GLASS
3. CHARCOAL POWDERCOAT
4. DARK GREY TEXTURED FINISH
5. CHARCOAL PERFORATED METAL

TOWER 1



6. CREAM BRICK
7. BROWN BRICK
8. BEIGE TEXTURED FINISH
9. BEIGE CORRUGATED METAL
10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2



11. TERRACOTTA BRICK
12. RED BRICK
13. TERRACOTTA TEXTURED FINISH
14. TERRACOTTA CORRUGATED METAL
15. TERRACOTTA PERFORATED CORRUGATED METAL
16. TERRACOTTA RIBBED TEXTURED FINISH

TOWER 3



17. LIGHT GREY TEXTURED FINISH
18. LIGHT GREY RIBBED TEXTURED FINISH

TOWER 4



19. RED BROWN BRICK
20. DARK BROWN BRICK
21. LIGHT / DARK RED TEXTURED FINISH
22. DARK RED TILED FINISH
23. LIGHT RED CORRUGATED METAL
24. LIGHT RED PERFORATED CORRUGATED METAL
25. LIGHT / DARK RED RIBBED TEXTURED FINISH

DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
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02	22/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Draft
01	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination

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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

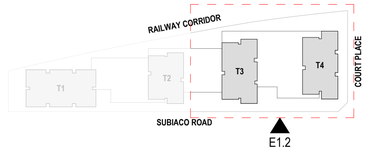
Drawing Name
T1 & T2 - South Elevation

Drawing Scale 1:200 @ A1

Drawing No. DA310

Revision B

| TOWER 3 & 4 - SOUTH ELEVATION,





E1.2 TOWER 3 & 4 - SOUTH ELEVATION

ALL



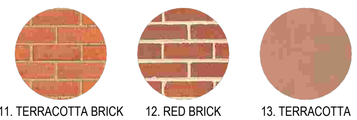
1. CLEAR GLASS
2. TINTED CLEAR GLASS
3. CHARCOAL POWDERCOAT
4. DARK GREY TEXTURED FINISH
5. CHARCOAL PERFORATED METAL

TOWER 1



6. CREAM BRICK
7. BROWN BRICK
8. BEIGE TEXTURED FINISH
9. BEIGE CORRUGATED METAL
10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2



11. TERRACOTTA BRICK
12. RED BRICK
13. TERRACOTTA TEXTURED FINISH
14. TERRACOTTA CORRUGATED METAL
15. TERRACOTTA PERFORATED CORRUGATED METAL
16. TERRACOTTA RIBBED TEXTURED FINISH

TOWER 3



17. LIGHT GREY TEXTURED FINISH
18. LIGHT GREY RIBBED TEXTURED FINISH

TOWER 4



19. RED BROWN BRICK
20. DARK BROWN BRICK
21. LIGHT / DARK RED TEXTURED FINISH
22. DARK RED TILED FINISH
23. LIGHT RED CORRUGATED METAL
24. LIGHT RED PERFORATED CORRUGATED METAL
25. LIGHT / DARK RED RIBBED TEXTURED FINISH

DEVELOPMENT APPLICATION

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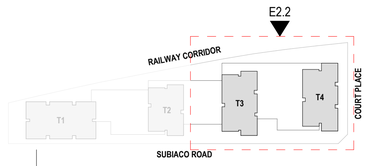
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Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

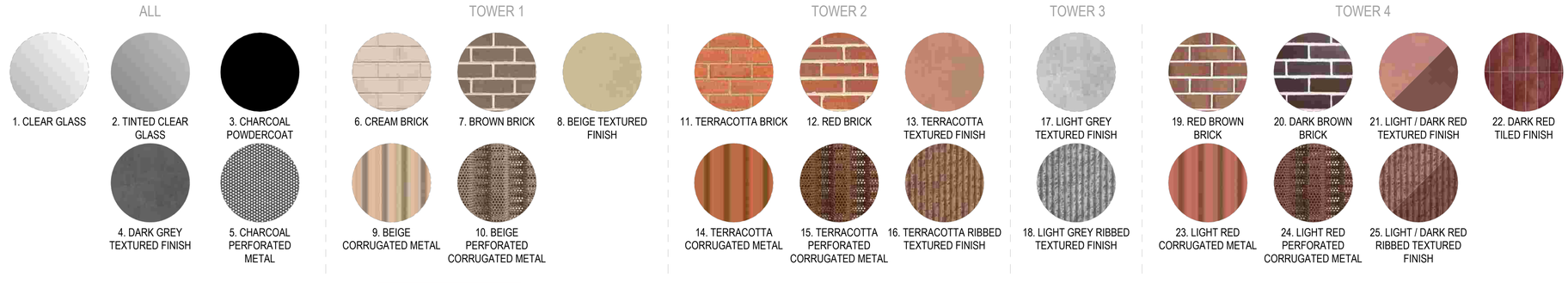
Drawing Name: T3 & T4 - South Elevation
Drawing Scale: 1:200 @ A1
Drawing No.: DA311
Revision: B

| TOWER 3 & 4 - NORTH ELEVATION,





E2.2 TOWER 3 & 4 - NORTH ELEVATION



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
A	26/01/2026	LH,AL,MP,TQ	CCL	Issued for Development Application
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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

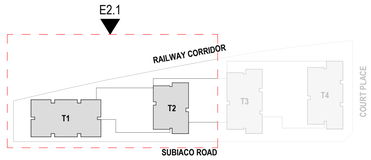
Drawing Name
T3 & T4 - North Elevation

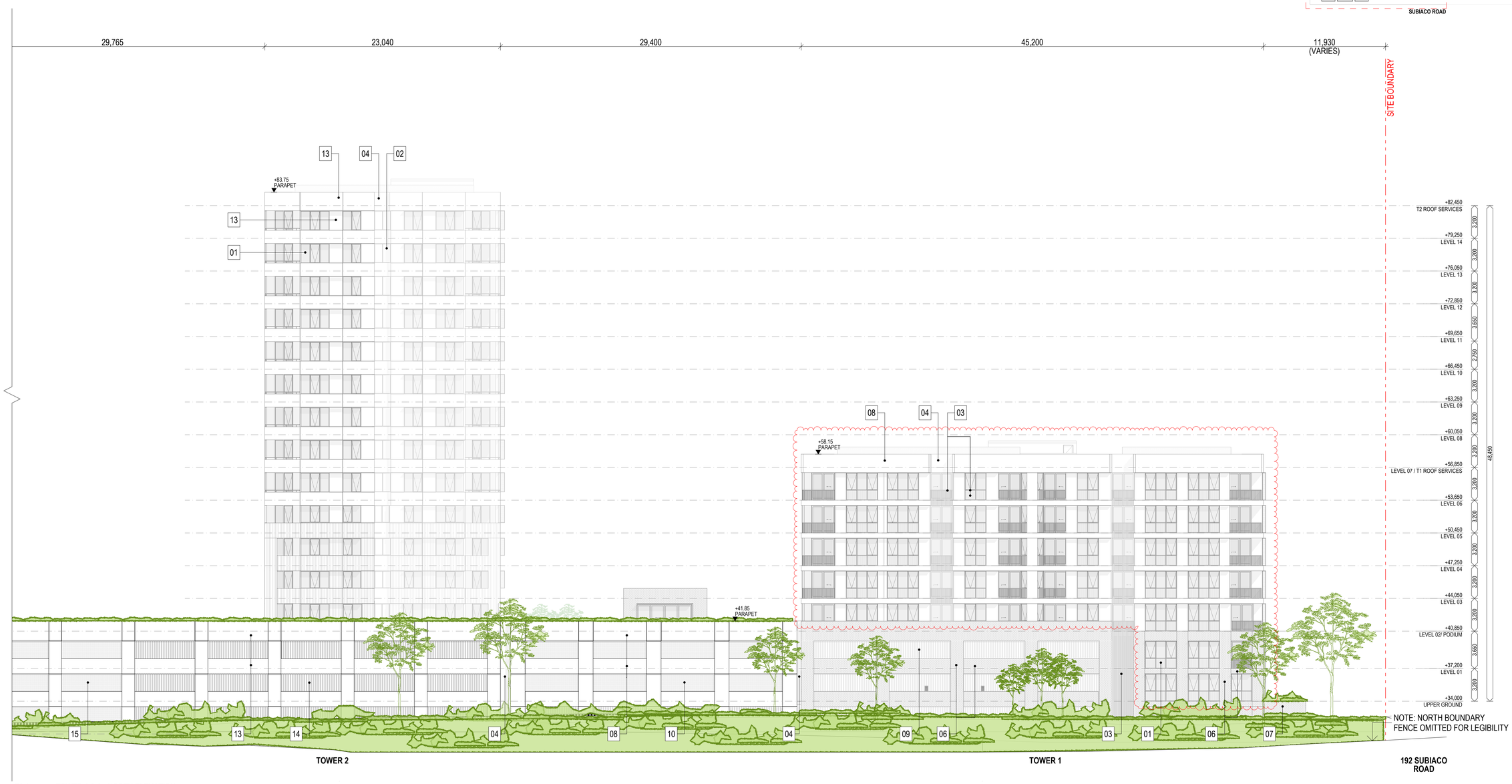
Drawing Scale 1:200 @ A1

Drawing No. DA312

Revision B

| TOWER 1 & 2 - NORTH ELEVATION,





E2.1 TOWER 1 & 2 - NORTH ELEVATION

ALL

1. CLEAR GLASS
2. TINTED CLEAR GLASS
3. CHARCOAL POWDERCOAT
4. DARK GREY TEXTURED FINISH
5. CHARCOAL PERFORATED METAL

TOWER 1

6. CREAM BRICK
7. BROWN BRICK
8. BEIGE TEXTURED FINISH
9. BEIGE CORRUGATED METAL
10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2

11. TERRACOTTA BRICK
12. RED BRICK
13. TERRACOTTA TEXTURED FINISH
14. TERRACOTTA CORRUGATED METAL
15. TERRACOTTA PERFORATED CORRUGATED METAL
16. TERRACOTTA RIBBED TEXTURED FINISH

TOWER 3

17. LIGHT GREY TEXTURED FINISH
18. LIGHT GREY RIBBED TEXTURED FINISH

TOWER 4

19. RED BROWN BRICK
20. DARK BROWN BRICK
21. LIGHT / DARK RED TEXTURED FINISH
22. DARK RED TILED FINISH
23. LIGHT RED CORRUGATED METAL
24. LIGHT RED PERFORATED CORRUGATED METAL
25. LIGHT / DARK RED RIBBED TEXTURED FINISH

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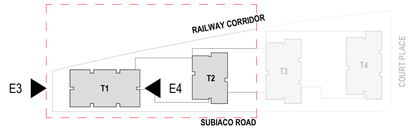
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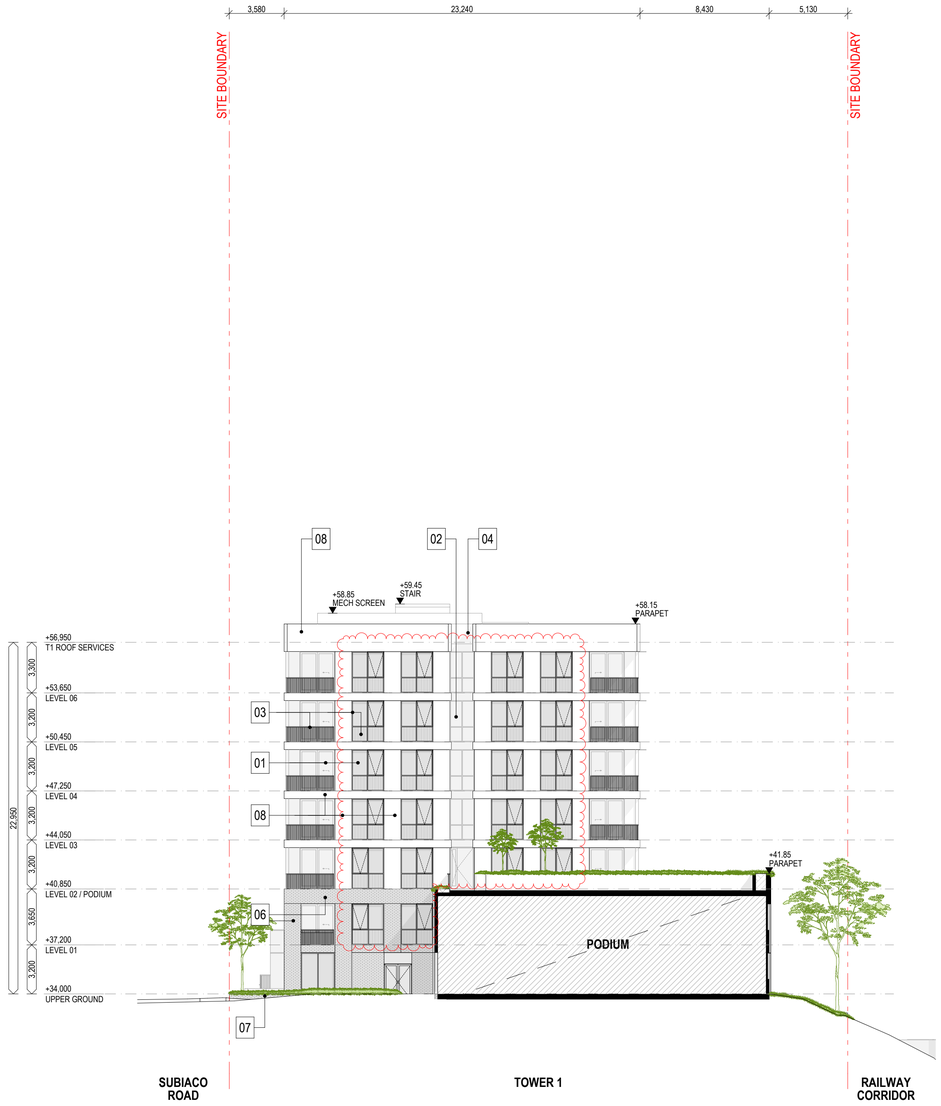
Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

Drawing Name: T1 & T2 - North Elevation
Drawing Scale: 1:200 @ A1
Drawing No.: DA313
Revision: B

| TOWER 1 - WEST ELEVATION, EAST ELEVATION,







E3 TOWER 1 - WEST ELEVATION

E4 TOWER 1 - EAST ELEVATION

ALL


1. CLEAR GLASS


2. TINTED CLEAR GLASS


3. CHARCOAL POWDERCOAT


4. DARK GREY TEXTURED FINISH


5. CHARCOAL PERFORATED METAL

TOWER 1


6. CREAM BRICK


7. BROWN BRICK


8. BEIGE TEXTURED FINISH


9. BEIGE CORRUGATED METAL


10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2

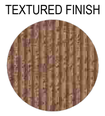

11. TERRACOTTA BRICK


12. RED BRICK


13. TERRACOTTA TEXTURED FINISH


14. TERRACOTTA CORRUGATED METAL


15. TERRACOTTA PERFORATED CORRUGATED METAL


16. TERRACOTTA RIBBED TEXTURED FINISH

TOWER 3


17. LIGHT GREY TEXTURED FINISH


18. LIGHT GREY RIBBED TEXTURED FINISH

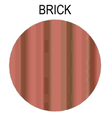
TOWER 4


19. RED BROWN BRICK


20. DARK BROWN BRICK


21. LIGHT / DARK RED TEXTURED FINISH


22. DARK RED TILED FINISH


23. LIGHT RED CORRUGATED METAL


24. LIGHT RED PERFORATED CORRUGATED METAL


25. LIGHT / DARK RED RIBBED TEXTURED FINISH

DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
B	8/04/2026	LH,AL,MP,TQ	CCL	Issued for DA - Update
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Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

Drawing Name
T1 - West & East Elevation

Drawing Scale 1:200 @ A1

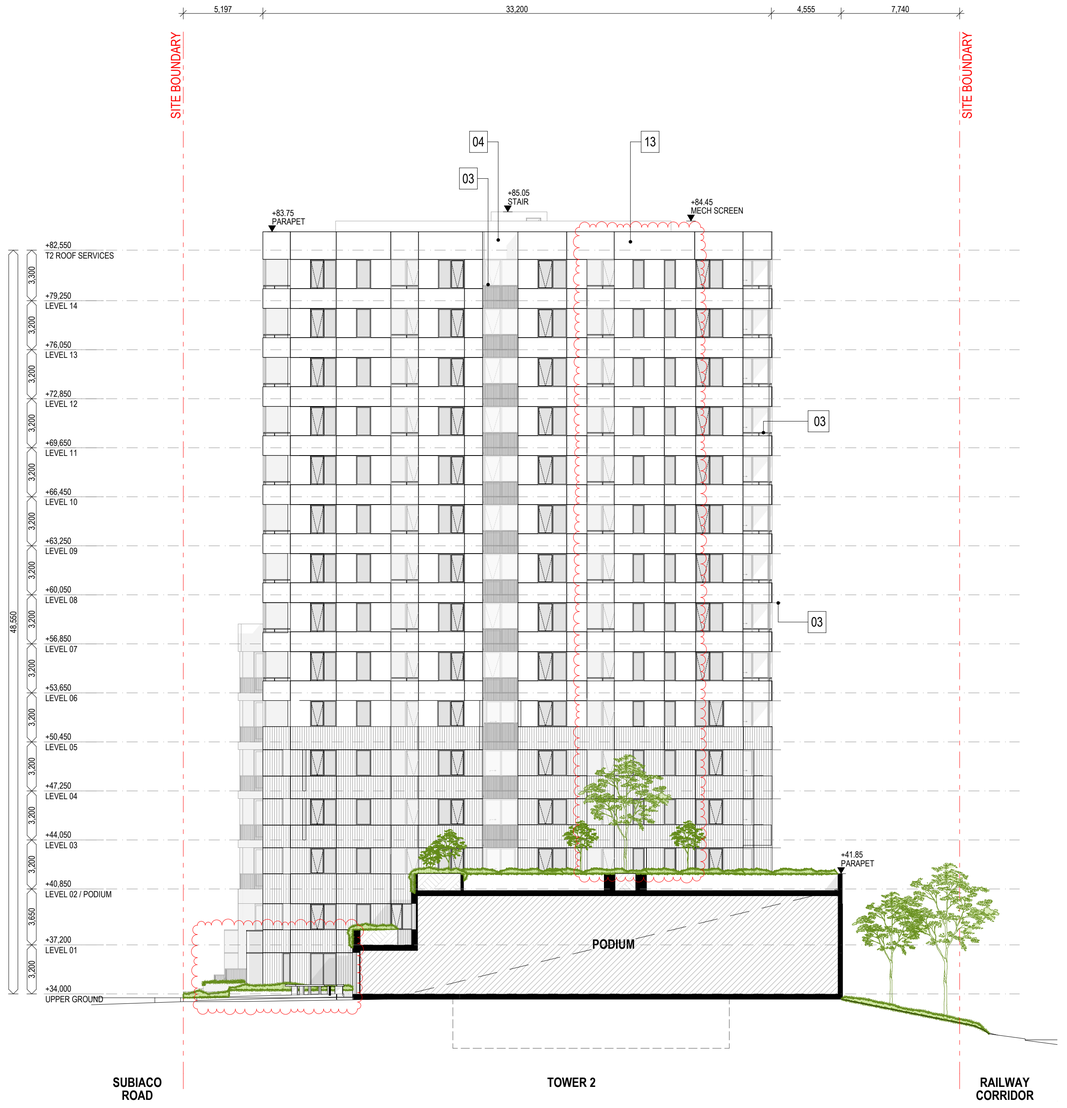
Drawing No. DA314

Revision B

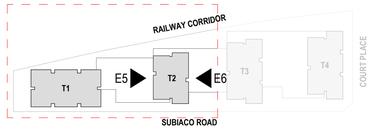
| TOWER 2 - WEST ELEVATION, EAST ELEVATION,



E5 TOWER 2 - WEST ELEVATION



E6 TOWER 2 - EAST ELEVATION



ALL


1. CLEAR GLASS


2. TINTED CLEAR GLASS


3. CHARCOAL POWDERCOAT


4. DARK GREY TEXTURED FINISH


5. CHARCOAL PERFORATED METAL

TOWER 1


6. CREAM BRICK


7. BROWN BRICK


8. BEIGE TEXTURED FINISH


9. BEIGE CORRUGATED METAL


10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2


11. TERRACOTTA BRICK


12. RED BRICK


13. TERRACOTTA TEXTURED FINISH


14. TERRACOTTA CORRUGATED METAL


15. TERRACOTTA PERFORATED CORRUGATED METAL


16. TERRACOTTA RIBBED TEXTURED FINISH

TOWER 3


17. LIGHT GREY TEXTURED FINISH


18. LIGHT GREY RIBBED TEXTURED FINISH

TOWER 4


19. RED BROWN BRICK


20. DARK BROWN BRICK


21. LIGHT / DARK RED TEXTURED FINISH


22. DARK RED TILED FINISH


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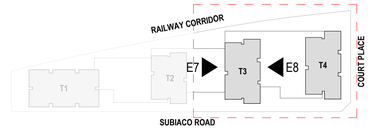
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Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

Drawing Name: T2 - West & East Elevation
Drawing Scale: 1:200 @ A1
Drawing No.: DA315
Revision: B

| TOWER 3 - WEST ELEVATION, EAST ELEVATION,





E7 TOWER 3 - WEST ELEVATION



E8 TOWER 3 - EAST ELEVATION

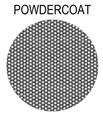
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10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2

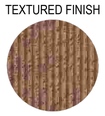

11. TERRACOTTA BRICK


12. RED BRICK


13. TERRACOTTA TEXTURED FINISH


14. TERRACOTTA CORRUGATED METAL


15. TERRACOTTA PERFORATED CORRUGATED METAL


16. TERRACOTTA RIBBED TEXTURED FINISH

TOWER 3


17. LIGHT GREY TEXTURED FINISH


18. LIGHT GREY RIBBED TEXTURED FINISH

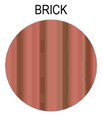
TOWER 4


19. RED BROWN BRICK


20. DARK BROWN BRICK


21. LIGHT / DARK RED TEXTURED FINISH


22. DARK RED TILED FINISH


23. LIGHT RED CORRUGATED METAL


24. LIGHT RED PERFORATED CORRUGATED METAL


25. LIGHT / DARK RED RIBBED TEXTURED FINISH

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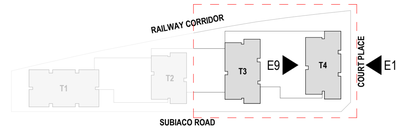
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Project Name: Court Place
Project Number: 00013365
Project Address: 154 Subiaco Road Subiaco WA 6008
Country: Aust.

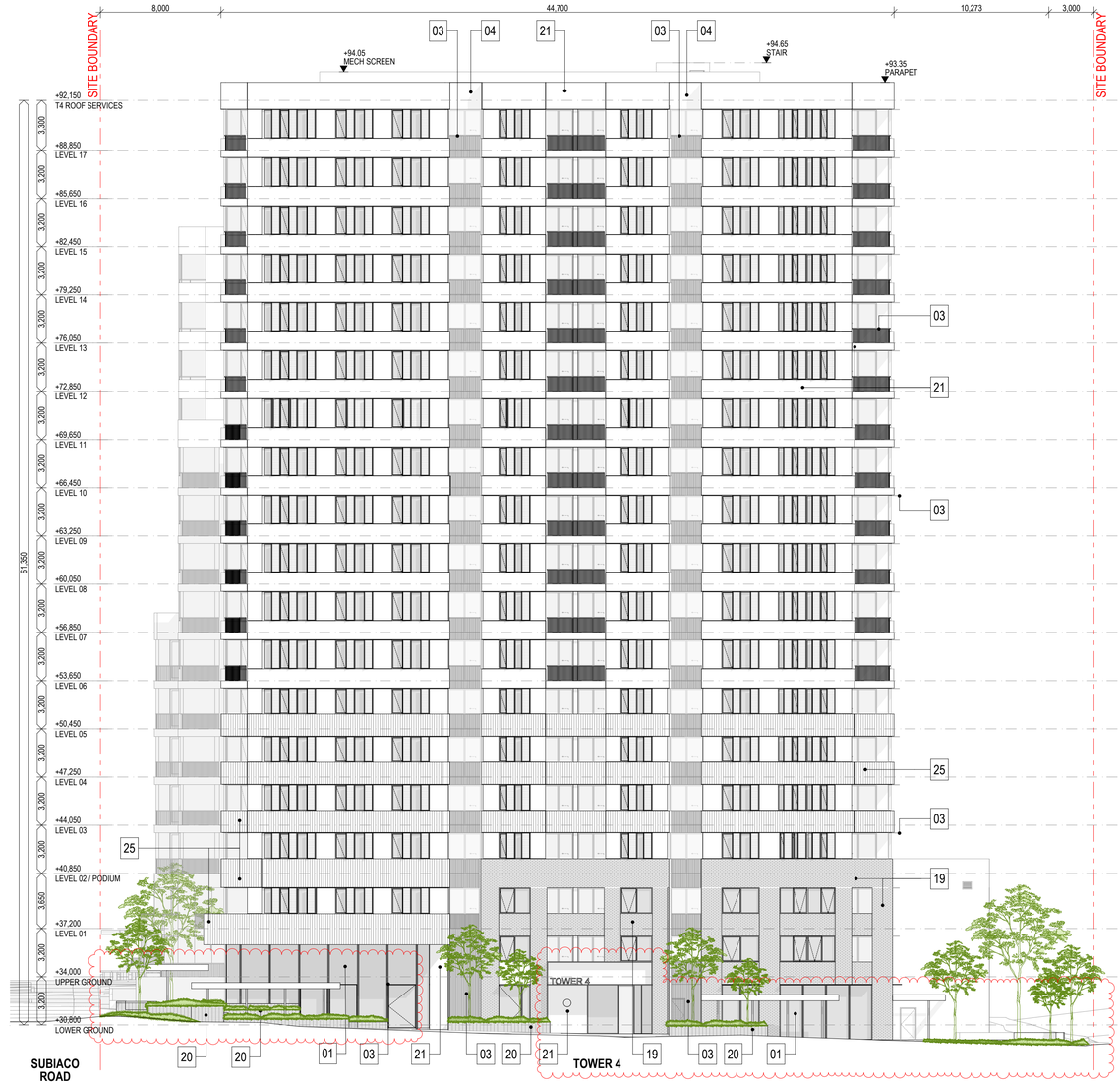
Drawing Name: T3 - West & East Elevation
Drawing Scale: 1:200 @ A1
Drawing No.: DA316
Revision: B

| TOWER 4 - WEST ELEVATION, EAST ELEVATION,





E9 TOWER 4 - WEST ELEVATION



E10 TOWER 4 - EAST ELEVATION

ALL


1. CLEAR GLASS


2. TINTED CLEAR GLASS


3. CHARCOAL POWDERCOAT


4. DARK GREY TEXTURED FINISH


5. CHARCOAL PERFORATED METAL

TOWER 1


6. CREAM BRICK


7. BROWN BRICK


8. BEIGE TEXTURED FINISH


9. BEIGE CORRUGATED METAL


10. BEIGE PERFORATED CORRUGATED METAL

TOWER 2

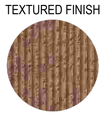

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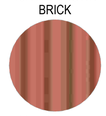
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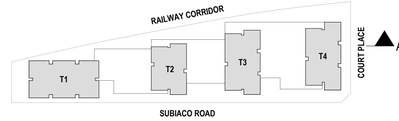
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Project Name Court Place
Project Number 00013365
Project Address 154 Subiaco Road Subiaco WA 6008
Country Aust.

Drawing Name
T4 - West & East Elevation

Drawing Scale 1:200 @ A1
Drawing No. DA317
Revision B

| SECTION A-A





SEC A SECTION A-A

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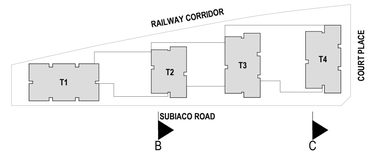
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Section A-A

Drawing Scale 1:100 @ A1

Drawing No. DA320

Revision B

| SECTION B-B, SECTION C-C





SEC B SECTION B-B



SEC C SECTION C-C

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Project Name Court Place
Project Number 00013365
Project Address 154 Subiaco Road Subiaco WA 6008
Country Aust.

Drawing Name
Section B-B & Section C-C

Drawing Scale 1:200 @ A1
Drawing No. DA321
Revision B

154 SUBIACO ROAD

METROPOLITAN REDEVELOPMENT AUTHORITY ACT 2011

APPROVED PLANS

04 June 2026

DA2600006



Landscape Architecture

DRP Comments Document

Community Housing Limited

20.03.2026



Acknowledgment of Country

This project is on Whadjuk Noongar Boodjar.

We pay our respects to their Elders past and present and recognise their ongoing care for and connection to the land that we are working on.

We acknowledge that sovereignty was never ceded.

THE SITE

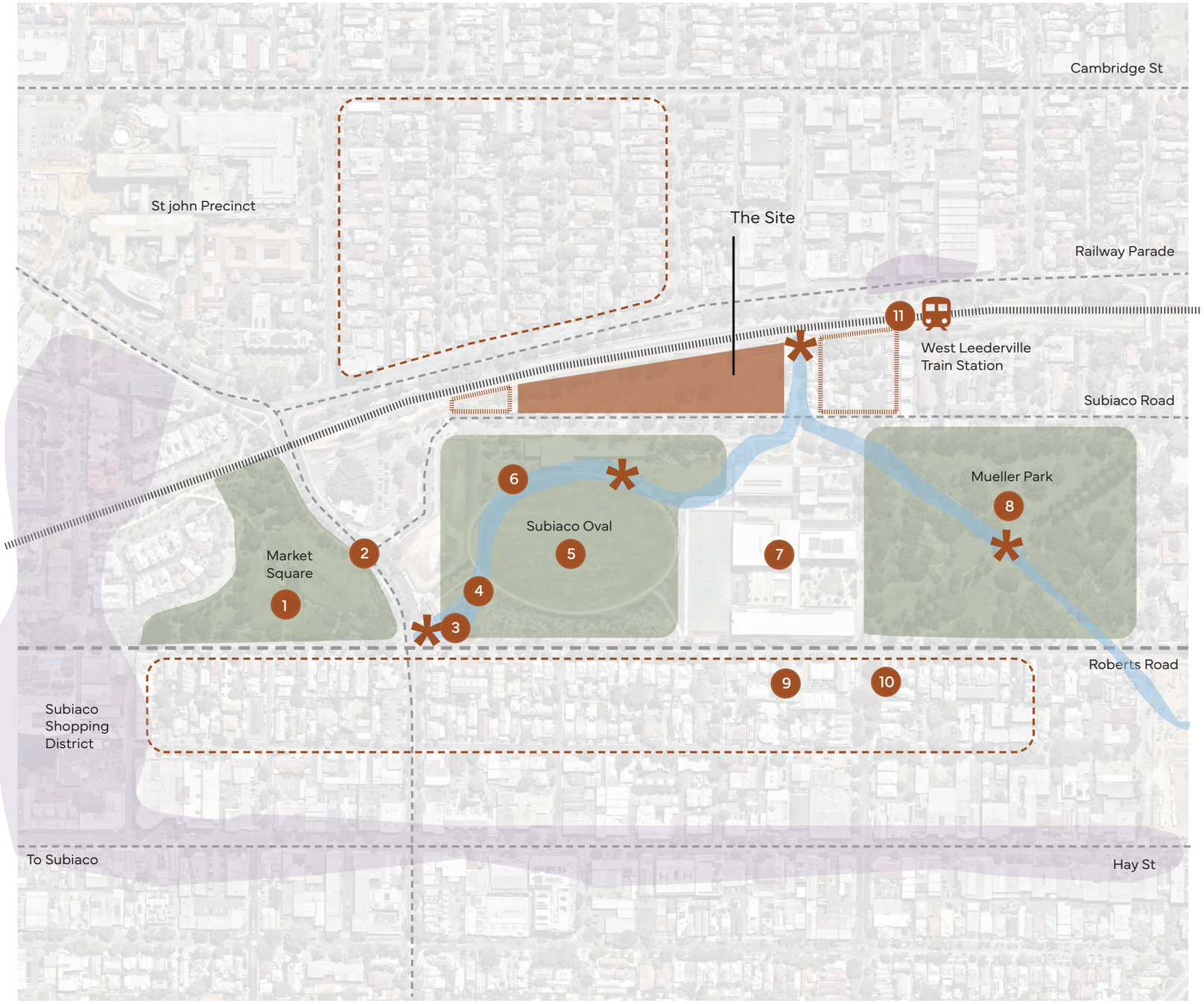
Local Context

Legend

- The site
- Future development
- Parks and Green Space
- Shopping / Food and Beverage Areas
- Bidi Trail
- 1 & 2 Story Residences
- Fremantle Train Line
- Community Spaces / Six Seasons Knowledge Areas
- West Leederville Train Station

Heritage and Cultural Spaces

1. Market Square Park
2. Haydn Bunton Drive
3. Heritage Gates
4. Civic square and end of Six Seasons Bidi Trail
5. Existing Subiaco Oval
6. Retained seating from Subiaco Stadium for viewing
7. Bob Hawke College
8. Mueller Park
9. 187 Roberts Road
10. Princess Margaret Hospital for Children
11. Pedestrian Link to Railway Parade

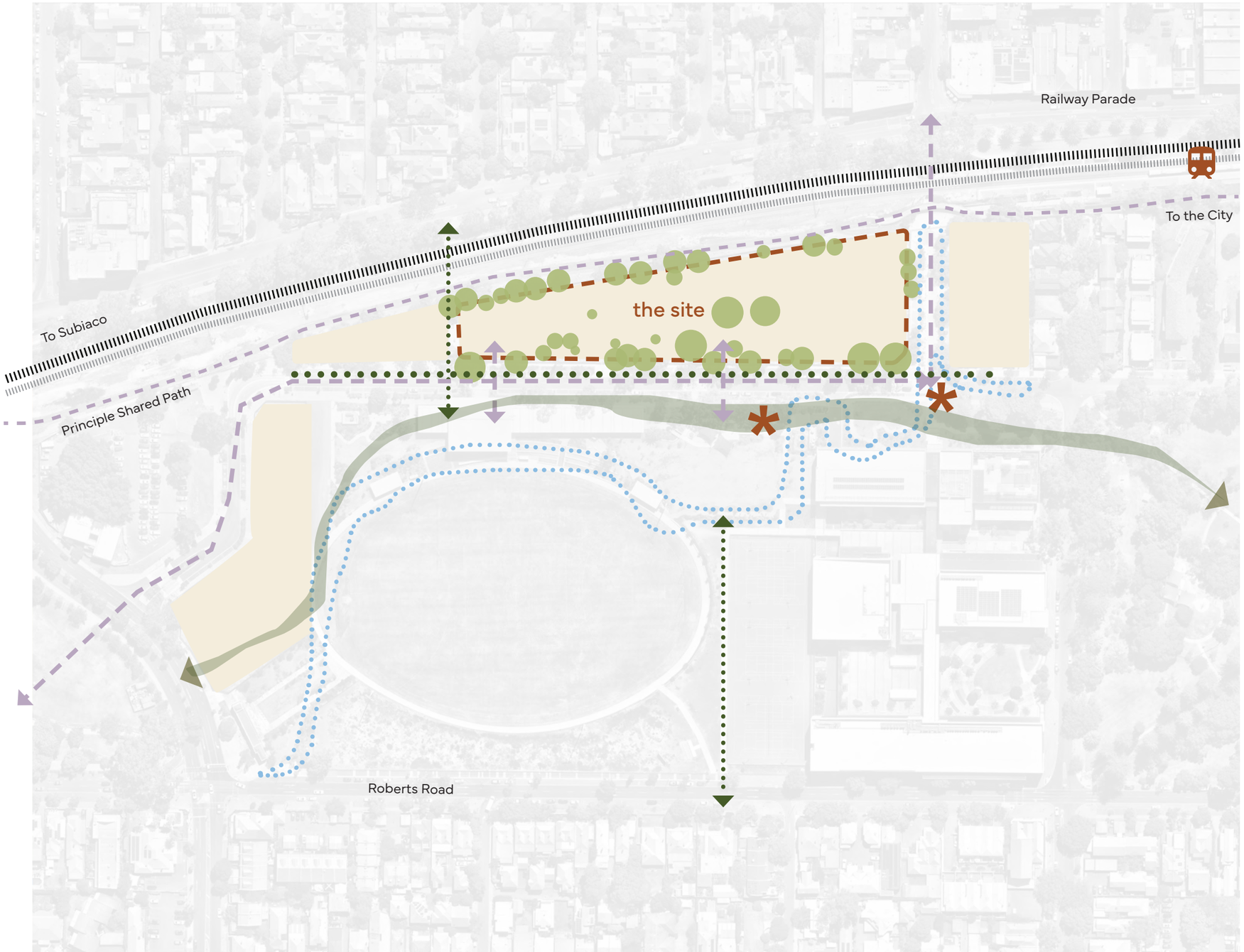


N

See Design Studio

The Site

The site is situated in a location that provides excellent public transport amenity and thoughtful urban realm design. The area has provision for streetscape activation and connection to the surrounding natural and recreational spaces.



Legend

- Activated Streetscape
- Established Tree
- Future Development
- Green Link Opportunity
- Bidi Trail Connection
- Connection to Train station / Recreation
- Opportunity for connection pathways
- Activation opportunity
- Noise from train line

N

Site Condition

The site is predominantly vacant except for a few trees located to the edge and some to the centre of the site.

The existing condition of the streetscape is of high quality, and will serve as a key design driver for the ground plane.

There is good access to the train station, Bob Hawke College, and the Subiaco Oval parkland.

The site has a gentle level change from east to west.



View to Bob Hawke College from Subiaco Road



View to Bob Hawke College from Subiaco Road



View to site from Court Place



Court Place streetscape existing condition



View to Bob Hawke College from cycle path



Subiaco Road streetscape existing condition

Neighborhood Walkability



154 Subiaco Road is located in a walkable neighborhood with cafes, shopping and parks close by. As a vibrant inner city suburb, the topography of the area is relatively flat allowing for easy accessibility to access paths. Pathways are lined with mature deciduous trees creating shade during summer and beauty all year.

Nestled between both Subiaco and West Leederville train stations, and just a short walk to the Subiaco shopping district, the site is offers great neighbourhood walk-ability and connection.

Walkable neighborhoods create healthy livable communities that are well connected to schools, community, meeting places and have easy access to nature. Exchanging short car trips for active transport (walking or cycling) has huge benefits for individuals and at a broader community level.

A successful walkable neighborhood typically has a range of community destinations within a 5-10 minute walk.

References:

- *https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/20-minute-neighborhoods*
- *Western Australian Planning Commission*, Livable Neighborhoods, *2015*

Characteristics of a Walkable Neighbourhood:



Safe and accessible



Strong local economy



Design for climate



Destinations and community services



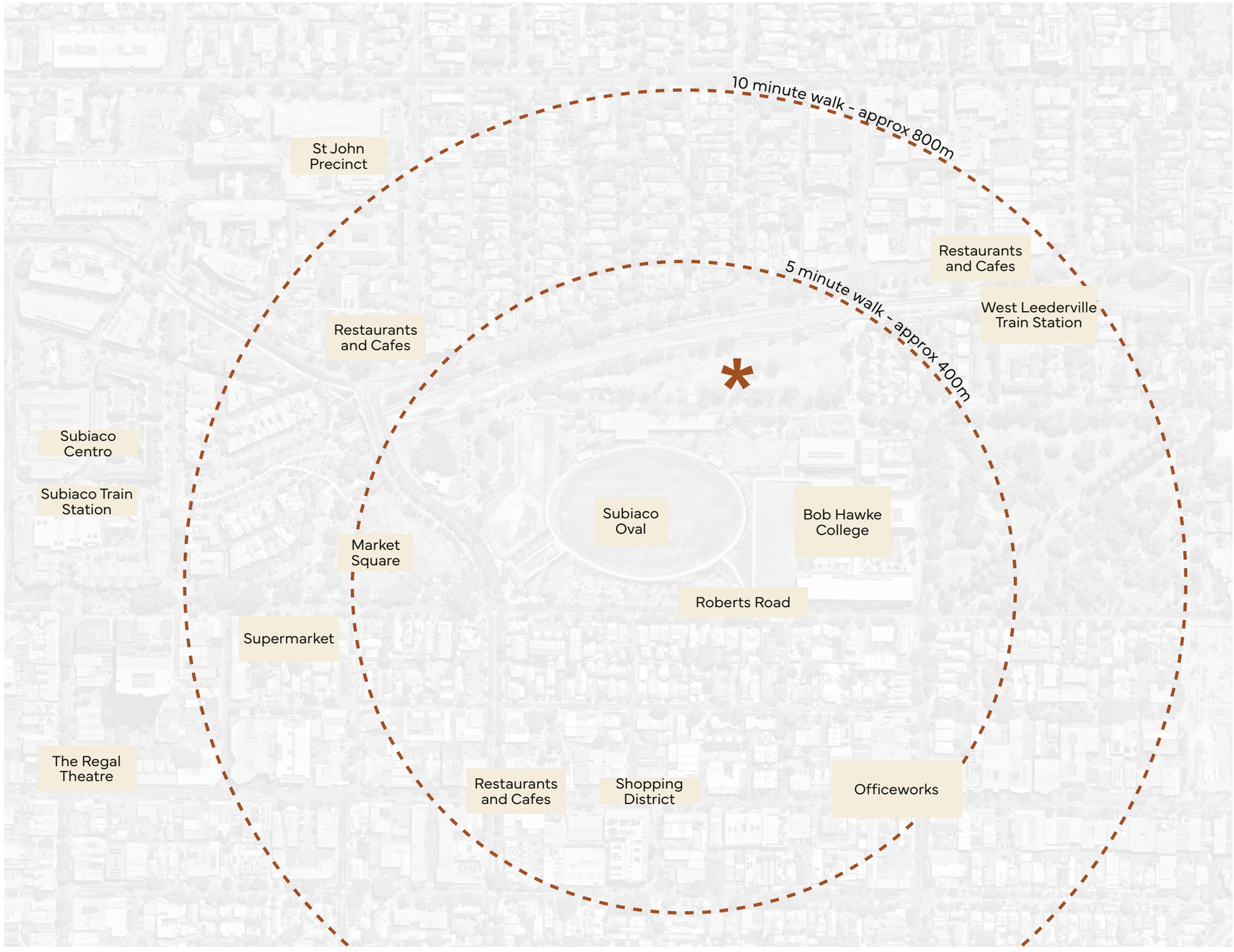
Public realm



Increased housing density

Neighborhood Walkability

This diagram outlines the location of the site in its broader context and walkability. The diagram outlines a 400m radius (5 minute walk) and 800m radius (10 minute walk) from the site.



CONCEPT DRIVERS

Noongar Boodja

Project Site Country: Whadjuk Noongar Boodja

The Noongar people of the Swan River and Swan Coastal Plains inhabited the area now known as the City of Subiaco before and during the early days of European settlement. They are the traditional landowners, keepers of knowledge, custodians and carers of the land and waterways. (1)

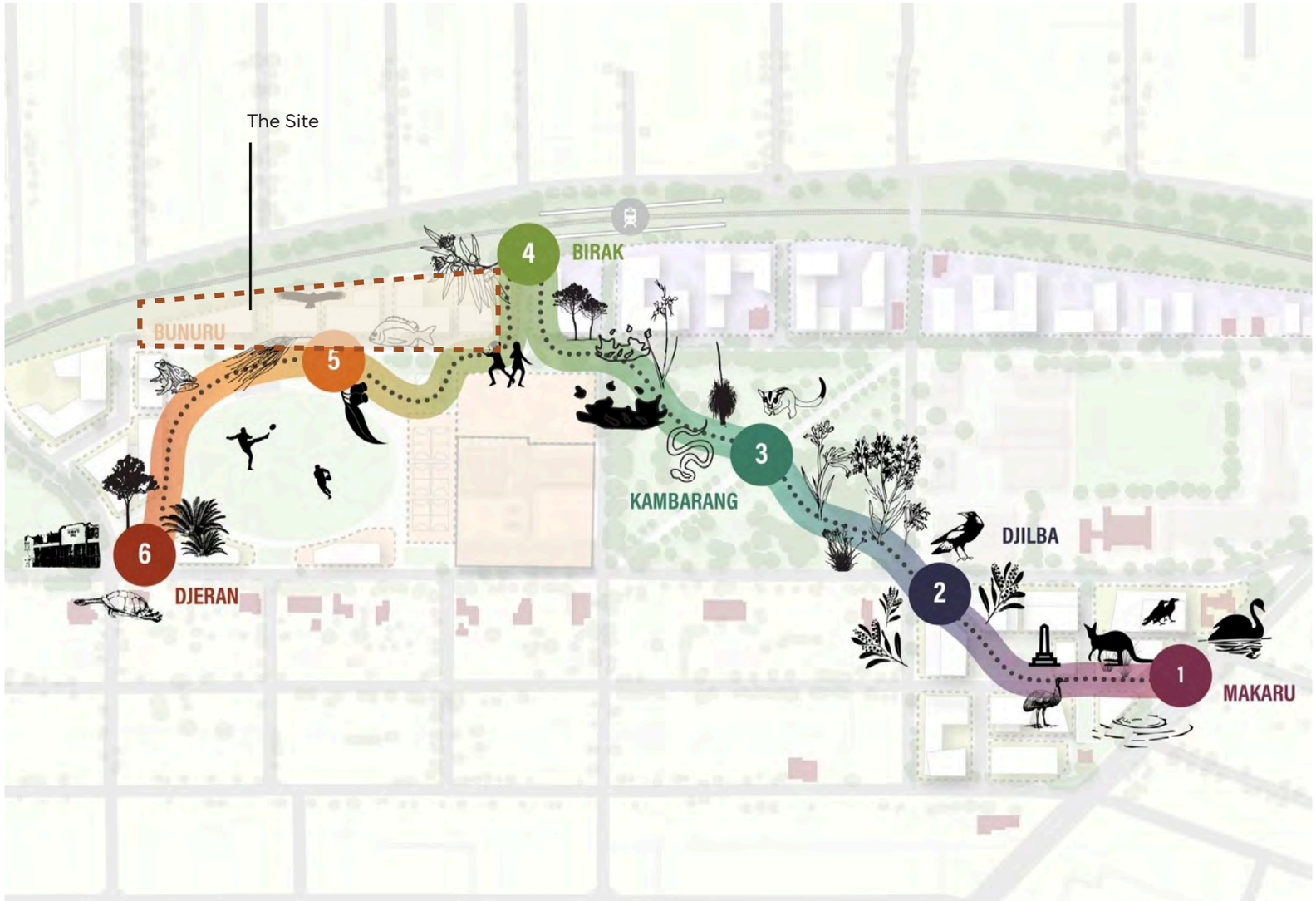
The Six Seasons Bidi Trail celebrates the Noongar seasonal calendar, weaving through the Subi East Redevelopment and connecting people to culture, knowledge, and boodjar (land).

Encouraging self-guided learning of Whadjuk Noongar cultural knowledge (katidjin), the trail integrates landscape design and public art to convey the importance of knowledge-sharing through the life cycle of the Noongar six seasons. (2)

Source:

1.*https://www.subiaco.wa.gov.au/subiacowebsite/media/media/Communications%20and%20Engagement/City-of-Subiaco-Info-sheet-History-of-Subiaco.pdf*

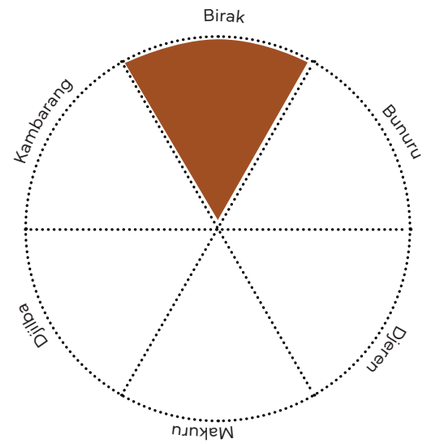
2.Subi East Elders Group and Karrda. https://developmentwa.com.au/documents/1737-noongar-six-seasons-bidi-trail-flyer/viewdocument/1737



Birak ⟶ Bunuru

The site is part of the Noongar six seasons Bidi trail that winds its way through the Subi East precinct connecting people to culture, knowledge and boodja (land). The development sits within the Birak and Bunuru seasons, which will be referenced within the landscape design.

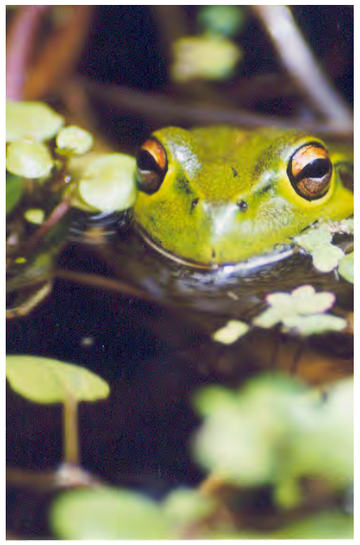
Birak



First Summer - Season of the young

December - January

Burning time of year for fuel reduction, increase grazing land for animals, seed germination and ease of travel across country



Baby frogs will be transforming into adulthood



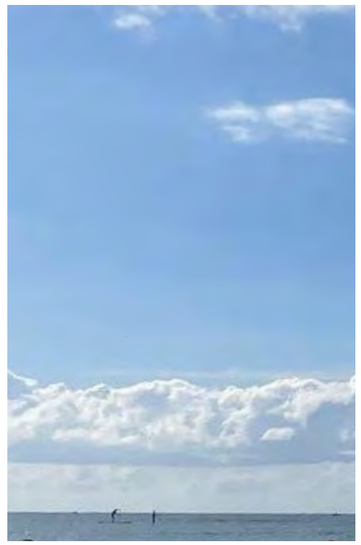
Yellow - orange flowers will start to bloom, including the striking Nuytsia (WA native Christmas Tree)



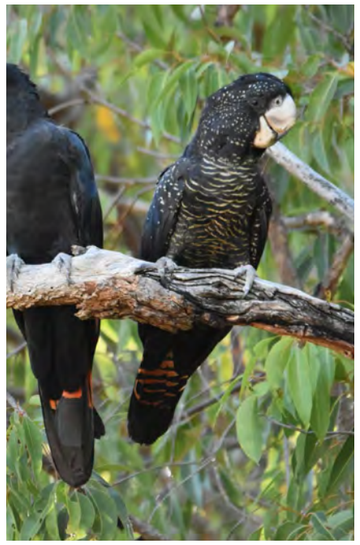
Reptiles start shedding their skin



Birak is burning time of the year. The Noongar people would burn the country in mosaic patterns.

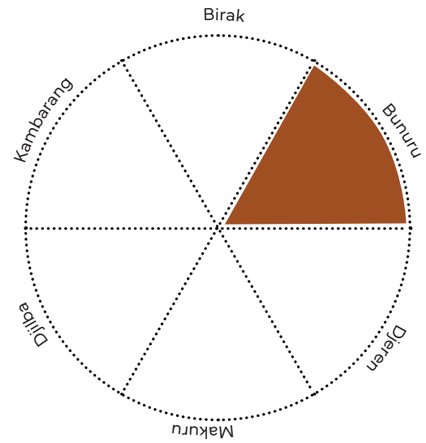


Hot and sunny, hot morning easterlies and cool afternoon sea breeze



Fledglings leave their nests

Bunuru



Second Summer - Season of the adolescence

February - March



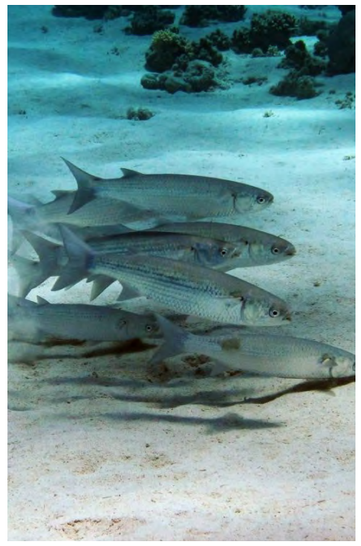
Banksias such as the Acorn Banksia in flower



Acacias in flower



White flowering trees: Marri, Jarrah, Ghost Gums



Diet was mainly fish, crab and mussels. Tailor and mullet became easier to catch as they were found in shallower waters. Marron and gilgies caught in waterways



Hottest time of year with hot morning easterlies and cool afternoon sea breeze



The female Macrozamia riedlei in flower. The cone contains a cotton like substance called ***kundyl*** which was used for fire tinder or for hygienic purposes.

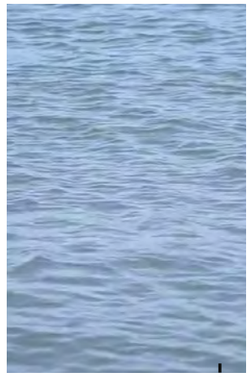
Thematic landscape planning

West Towers ⟶ Bunuru

Second Summer - Season of the adolescence



Feature macrozamia plantings and key driver in forms within the landscape



Expressions of the coast and water movement in the forms



Bunuru flowering plants throughout the landscape

East Towers ⟶ Birak

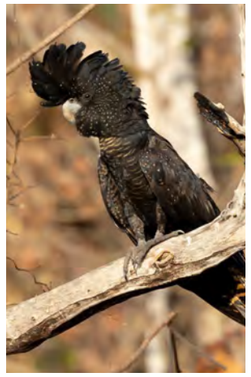
First Summer - Season of the young



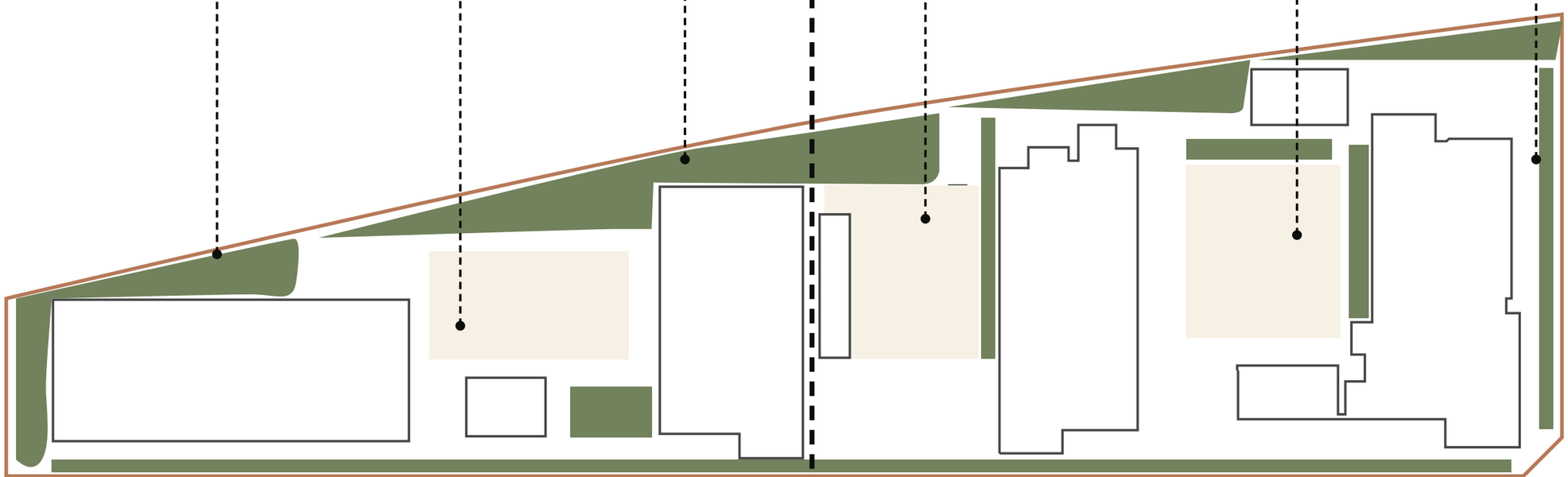
Reptile skin reference in paving



Mosaic burning pattern inspiration. Key driver in forms in the landscape



Patterns inspired by feathers incorporated into details



Landscape Zoning Diagram

Level 02

Zone 1

Zone 1 combines a childrens playspace with resident amenities, including a covered shade structure, picnic tables, and barbeque's. These spaces have been designed to be the active pulse of each podium.

Zone 2

This zone consists of a series of circular planters for herbs, vegetable growing, and citrus trees. Small in scale, these areas allow residents to grow produce and use in the resident amenity areas whilst they cook meals.

Zone 3

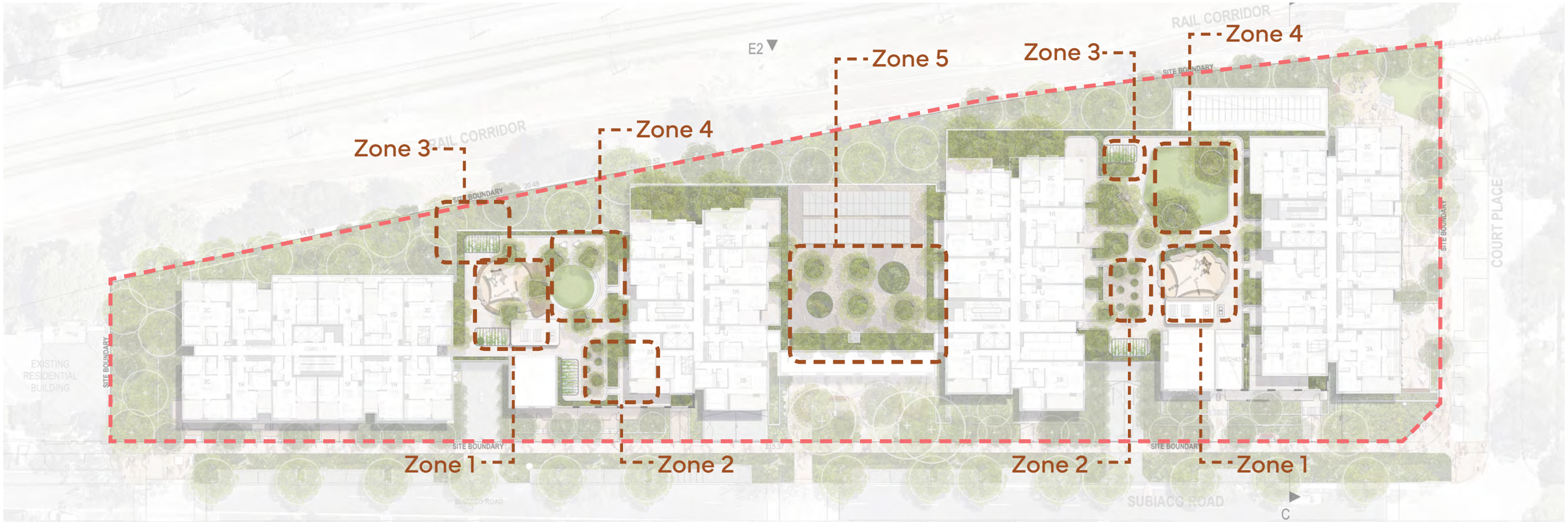
These areas are strategically position across the podiums to provide pleasant gathering spaces for individuals or smaller groups. Consisting of arbors, loose and fixed furniture, and softening through planting beds, these zones offer residents the opportunity to engage in the gardens in a peaceful manner.

Zone 4

Zone 4 provides an elevated grass area designed for flexibility and is connected to the children's play space. These grass areas have been strategically located near the play spaces to extend the active zones on the podium.

Zone 5

A series of simple circular planters with small trees in gravel have been positioned to reduce visual impact from residents looking down onto the space, and to reduce the impact of urban heat island effect.



Landscape Zoning Diagram

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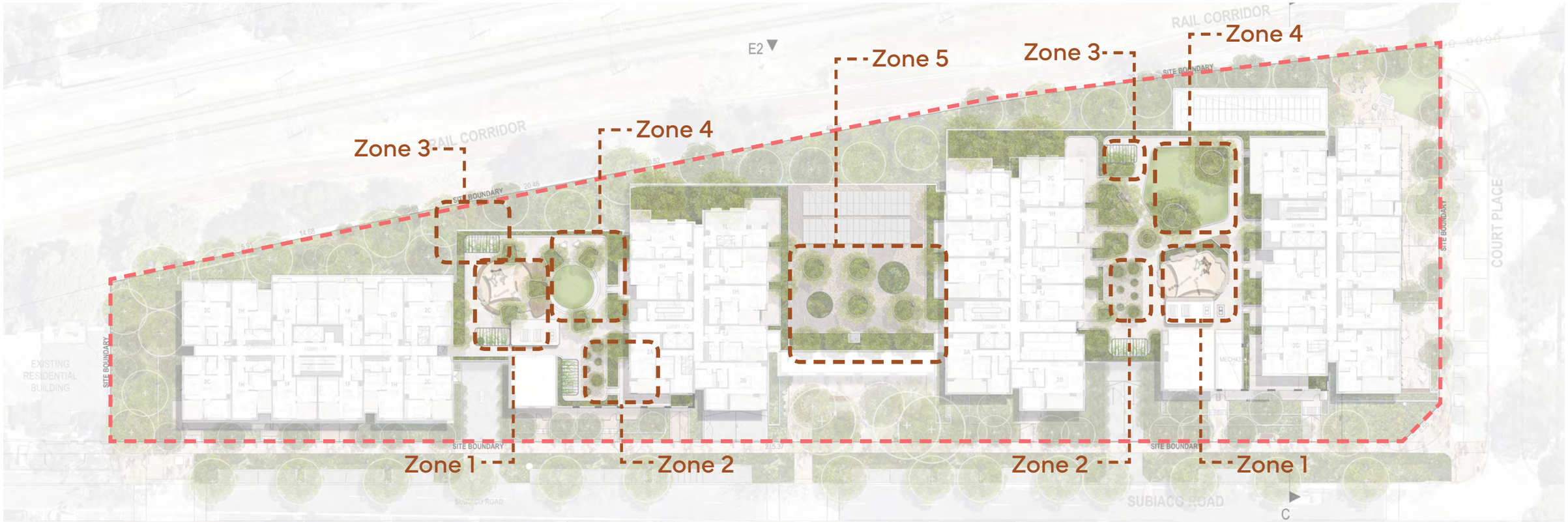
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Zone 4 provides an elevated grass area designed for flexibility and is connected to the children's play space. These grass areas have been strategically located near the play spaces to extend the active zones on the podium.

Zone 5

A series of simple circular planters with small trees in gravel have been positioned to reduce visual impact from residents looking down onto the space, and to reduce the impact of urban heat island effect.



Landscape Design Principles

Design for People

A community first approach.

The diagrams below outline how the landscape design facilitates positive urban living outcomes for residents and visitors to the site.



Welcoming, inclusive and accessible spaces.



Spaces for social connection and gathering.



Well connected and walkable spaces to create a healthy, active landscape.



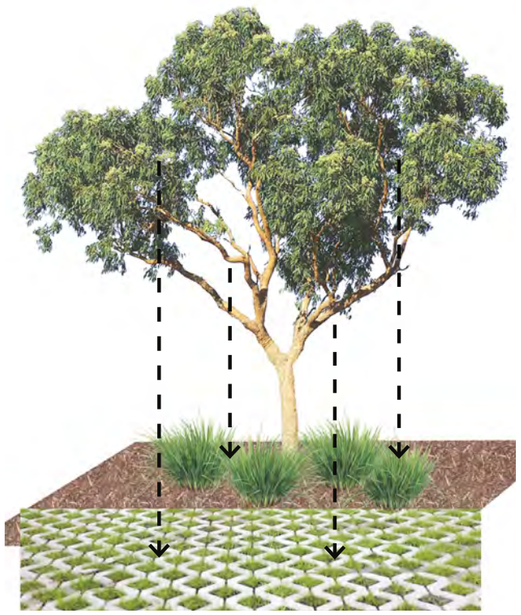
People first design. Minimise the impact of vehicles and parking.

Landscape Design Principles

Design for the Environment

Positive environmental contributions

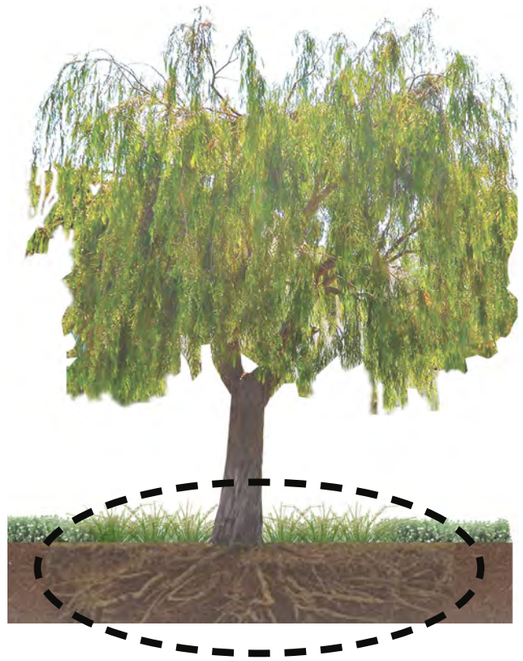
The diagrams below outline the intent for the landscape to create positive environmental ecological outcomes, further enhancing the development as a desirable place to live and work.



Permeability and enhanced water filtration.



Create habitat and improve ecology.



Healthy trees with generous deep



Use of robust, sustainable materials.

DRP Comments



Key Comments:

Following a positive response to DRP#3, the panel identified three key areas for deevlopment of the landscape design and public realm.

Subiaco Road Forecourt

1. ‘Kit of Parts’ comprising the landscape design are appropriate but consider realigning to make the forecourt more usable and welcoming to the public.
2. Consider how the forecourt addresses the street and assists with street front activation.
3. Consider wayfinding to CHL office/front door

Subiaco Road + Court Place corner

1. Consider how the public realm can interface with Subiaco Road in a more positive way, and help with activating the corner
2. Consider articulating the space with overhead canopies/arbors
3. Consider creation of ‘outdoor rooms’ within the public realm that provide additional amenity to residents and visitors to the site

Court Place Micro Park

1. Consider interface with building and accesibility.
2. Consider the opportunity to continue overhead canopies/arbors to north side of building to create a consistent aesthetic along Court Place, and make more usable/comfortable

CONCEPT DESIGN

Ground Floor Landscape Plan



1:400 @ A3

N

Subiaco Road Forecourt Detail Plan

LEGEND

1. Deep soil planting zone
2. Bicycle rack location
3. CHL outdoor forecourt
4. Community seat/table
5. Shade structure
6. Existing verge



Location Plan



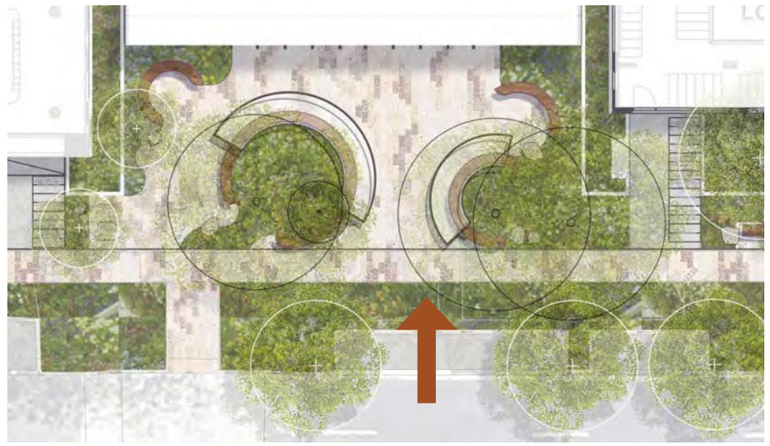
DRP#3 Plan



Revised Plan

Subiaco Road Forecourt Renders





Location Plan

Subiaco Road Forecourt Renders

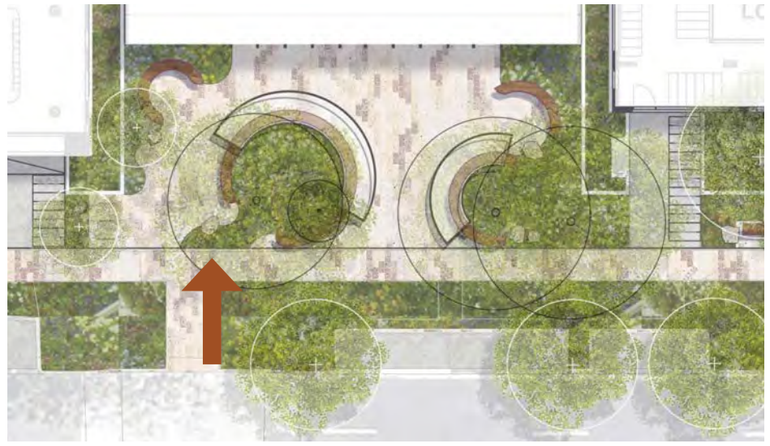




Location Plan

Subiaco Road Forecourt Renders





Location Plan

Subiaco Road Forecourt Renders





Location Plan

Subiaco Road + Court Place Detail Plan

LEGEND

1. Deep soil planting zone
2. Arbor
3. Outdoor decking rooms with built in seating
4. Timber bleachers
5. Alfresco area
6. Existing verge



Location Plan



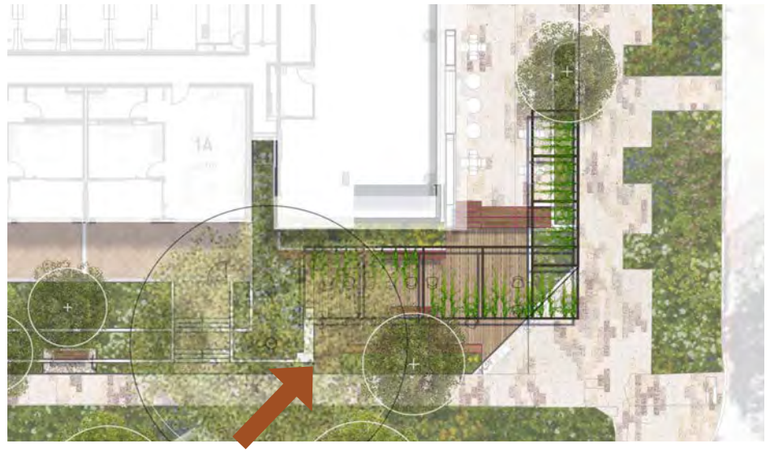
DRP#3 Plan



Revised Plan

Subiaco Road + Court Place Renders





Location Plan

Subiaco Road + Court Place Renders

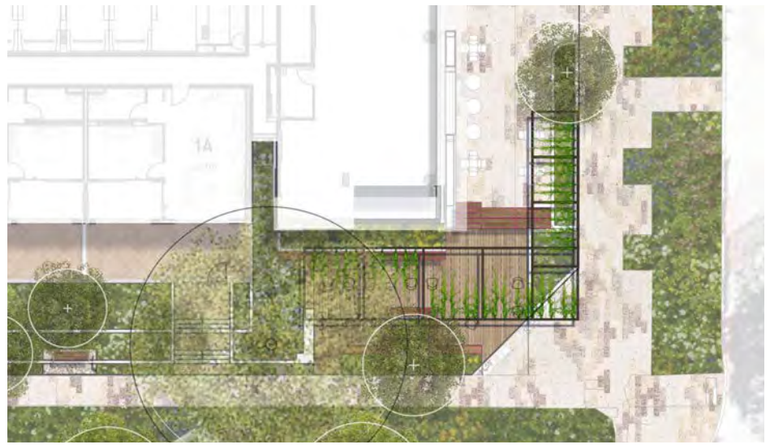




Location Plan

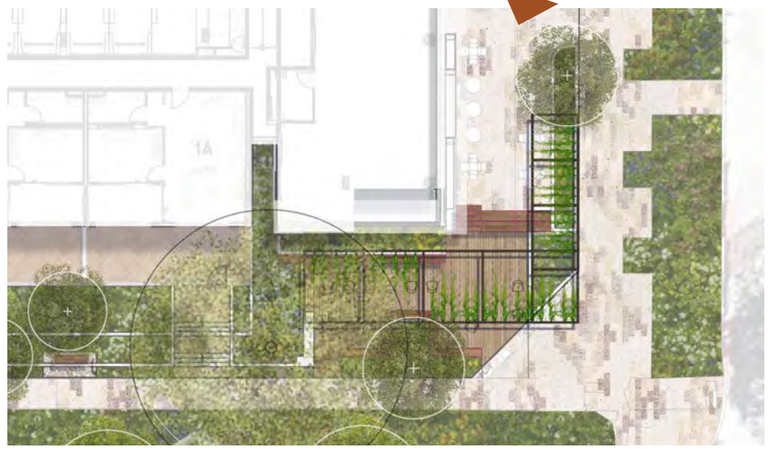
Subiaco Road Forecourt Renders





Location Plan





Location Plan

Court Place Pocket Park Detail Plan

LEGEND

1. Deep soil planting zone
2. Lawn
3. Bicycle rack location
4. Alfresco dining area + arbor
5. Nature play pocket park with shade
6. Bench



Location Plan



DRP#3 Plan



Revised Plan

1:100 @ A3

N

Level 02 Detail Plan 01

LEGEND

1. Raised planting bed
2. Lawn
3. Shelter with BBQ's + picnic benches
4. Herb garden
5. Gravel/ballast
6. Resident playground
7. Arbor

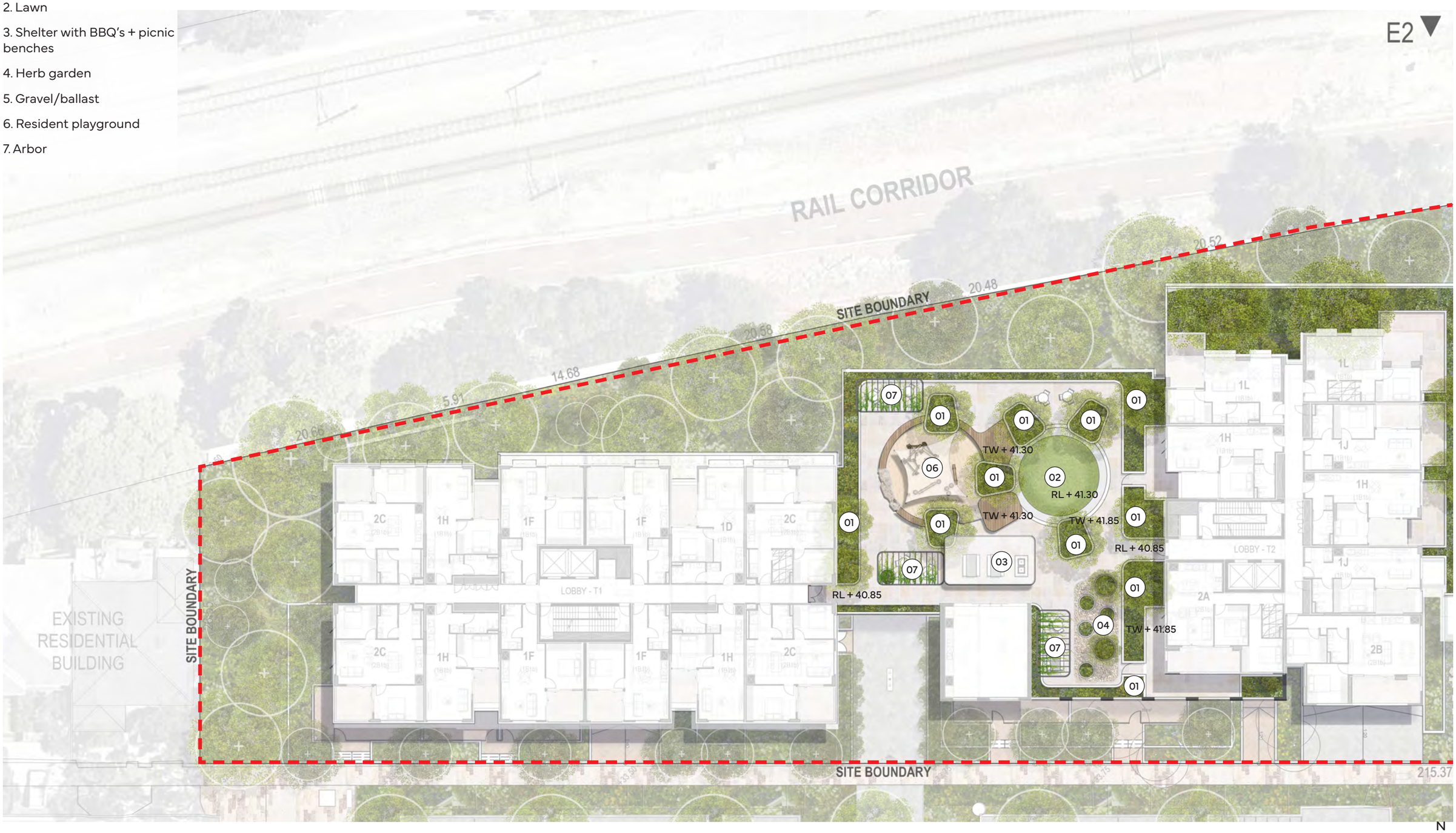


1:200 @ A3

Level 02 Detail Plan 02

LEGEND

1. Raised planting bed
2. Lawn
3. Shelter with BBQ's + picnic benches
4. Herb garden
5. Gravel/ballast
6. Resident playground
7. Arbor



1:200 @ A3

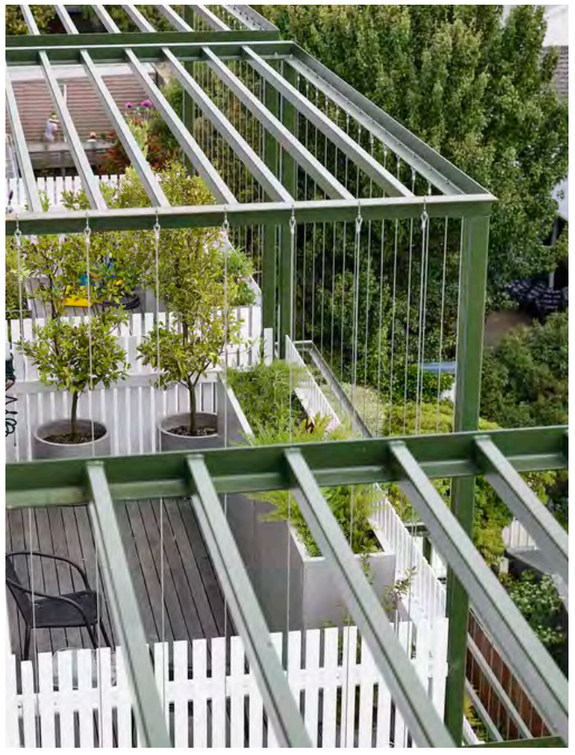
N

Look and Feel

The plant selections on the level 2 podium will focus on climate appropriate species that will create verdant, welcoming garden for the residents.

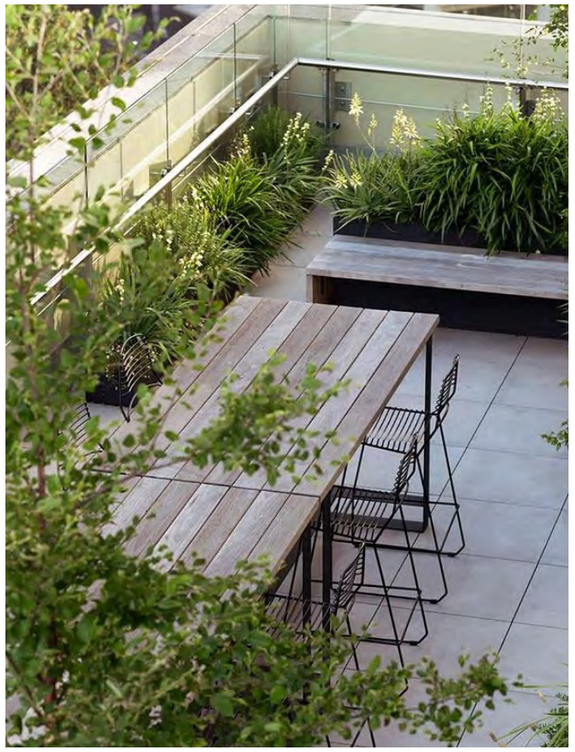
A community productive garden will provide a valuable space for connection, learning, and wellbeing within the community.







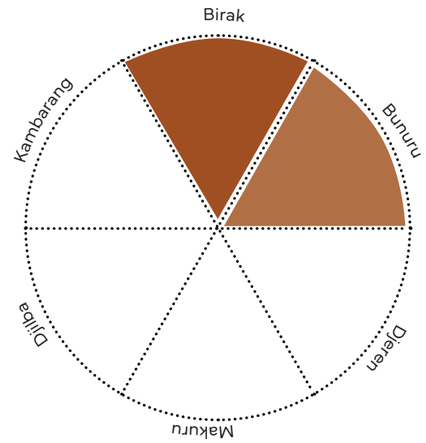






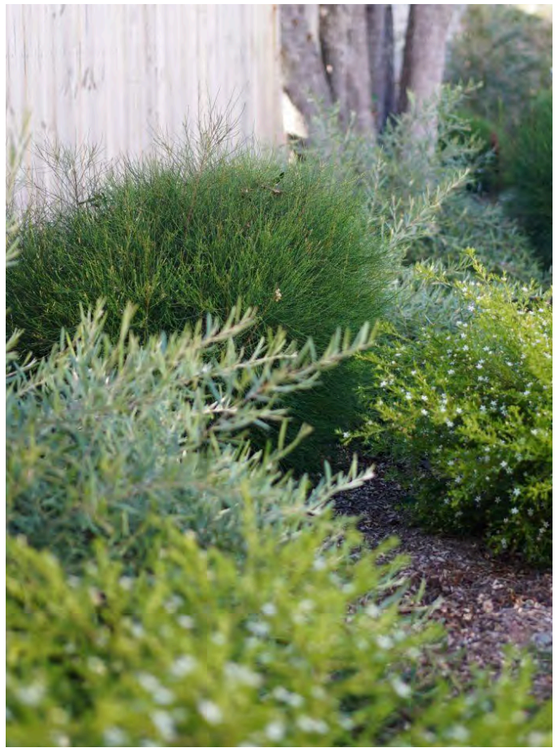
SELECTIONS

Planting Design



The plant palette comprises exclusively Australian native species, with priority given to locally endemic varieties that are inherently adapted to Perth's climate. All selections are water-wise and climate-resilient, requiring minimal maintenance once established.

The diverse mix of species has been carefully curated to provide essential habitat for native birds and beneficial insects, strengthening local ecological networks. To maintain clear sight lines and enable effective passive surveillance throughout the site, all species have been selected for their naturally low-growing habit, reaching a maximum height of one meter. Seasonal flowers will celebrate Bunuru and Birak. This palette achieves a balance between environmental sustainability, biodiversity enhancement, and practical urban design considerations.



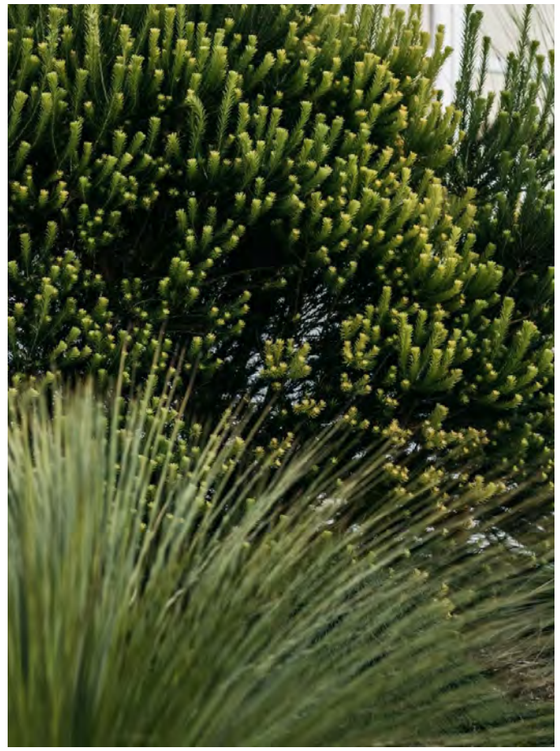
Diverse species for habitat



Native and endemic



Celebrate Bunuru and Birak seasons



Robust and low maintenance

Plant Palettes

Low native shrubs


Acacia saligna ‘prostrate’


banksia nivea


Callistemon viminalis Little John


Calothamnus quadrifidus prostrate


Westringia Mundi


Casuarina ‘Green Wave’


Eremophila glabra Kalbarri Carpet


Grevillea Gingin Gem


Hibbertia Ocean Reef


Leucophyta brownii


Hardenbergia comptoniana


Myoporum parvifolium


Chamelaucium uncinatum ‘Beach


Grevillea olivacea red


Olearia Little Smokie


Westringia ‘Low Horizon’


Adenanthos cuneata

Medium native shrubs


Grevillea olivacea red


Adenanthos sericea select


Chamelaucium Seabird White

Strappy leaf plants


Lomandra longifolia ‘Nyalla’


Lepidosperma gladiatum


Dianella ‘Cassa Blue’


Dianella Little Jess


Dianela streetscape


Liriope ‘Just Right’


Conostylis candicans


Lomandra longifolia ‘Verday’

Birak Seasonal Colour


Dianella sp.


Callistemon ‘Little John’


Agonis flexuosa


Anigozanthos flavidus


Banksia grandis ‘dwarf’

Bunuru Seasonal Colour


Macrozamia riedlei


Corymbia calophylla


Eucalyptus marginata


Eucalyptus gomphocephala

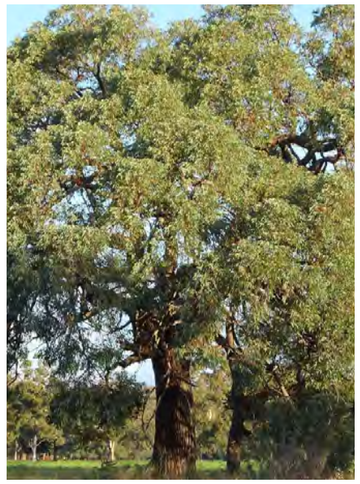

Banksia prionotes dwarf


Hemiandra pungens alba

Tree Species

Large Trees


Corymbia calophylla


Eucalyptus marginata


Eucalyptus gomphocephala

Medium Trees


Agonis flexuosa


Aucalyptus erthyrocorys

Small Trees


Melaleuca rhaphiophylaa
Size: 8m H x 4m W

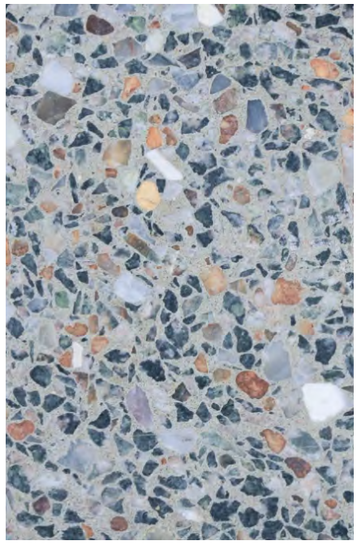

Eucalyptus foecunda
Size: 6m H x 4m W


Eucalyptus victrix
Size: 8m H x 4m W


Callistomen Kings Park Special
Size: 4m H x 4m W

Material Selections_
Ground Floor

Surface Treatments



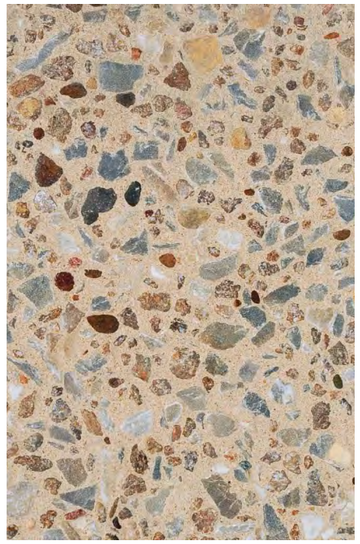
Material: Hydropave engineered concrete permeable paver

Colour: Casino Grey

Finish: Milled

Unit size: 300 x 200 x 70mm

Supplier: Urbanstone



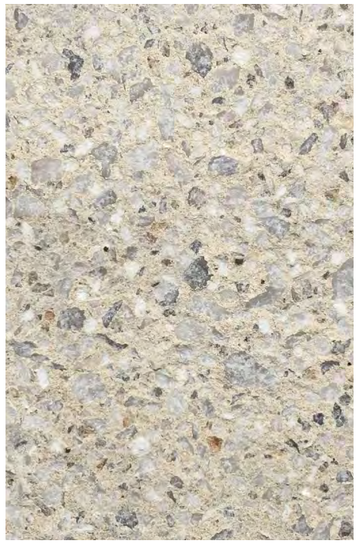
Material: Hydropave engineered concrete permeable paver

Colour: River Topaz

Finish: Shot Blast

Unit size: 300 x 200 x 70mm

Supplier: Urbanstone



Material: Hydropave engineered concrete permeable paver

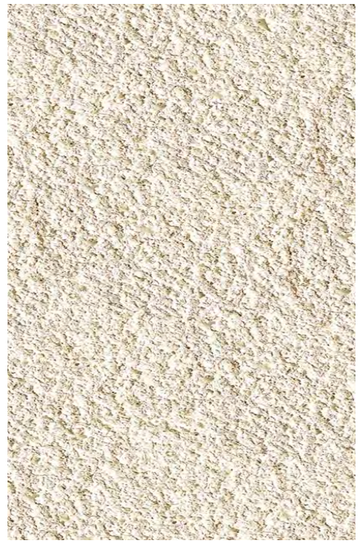
Colour: Fleece

Finish: Shot Blast

Unit size: 300 x 200 x 70mm

Supplier: Urbanstone

Wall Treatments



Material: Rendered masonry wall

Colour: Off white



Material: Brick

Colour: Subiaco Red

Unit size: 230 x 110 x 76mm

Supplier: Midland Brick

Material Selections_
Level 02

Surface Treatments



Material: Porcelain paver
Colour: Durango Acero
Unit size: 596 x 596 x 20mm
Supplier: Earp Bros



Material: Timber look battens
Colour: Coppered Oak
Unit size: 126 x 32mm
Supplier: Millboard

Wall Treatments



Material: Rendered masonry wall
Colour: Off white

TECHNICAL INFORMATION

Deep Soil Zone Benefits



Healthy roots = healthy tree



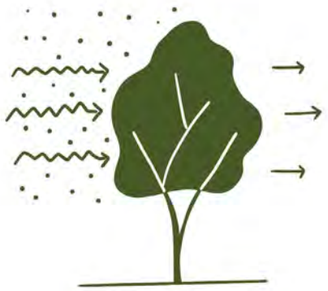
Enhance water filtration



Comfortable Micro-Climate + Reduction of Urban Heat Island Effect



Create Habitat



Improve Air Quality



Community Health through increased canopy coverage



Trees and gardens make a significant contribution to the ecology, character and amenity of neighbourhoods. They provide habitat for fauna, shade, storm water management and micro-climate benefits, as well as improve apartment outlook and privacy.

The provision of deep soil areas to support and sustain the development of tree canopy can also make a major contribution to the retention of existing trees. A deep soil area is an area of soil that is free of built structure and has sufficient area and depth to support tree growth and infiltrate rainwater. Site planning should seek to co-locate deep soil areas with existing trees on and adjacent to the site, and in locations best suited to the development of a viable tree canopy and landscaping.

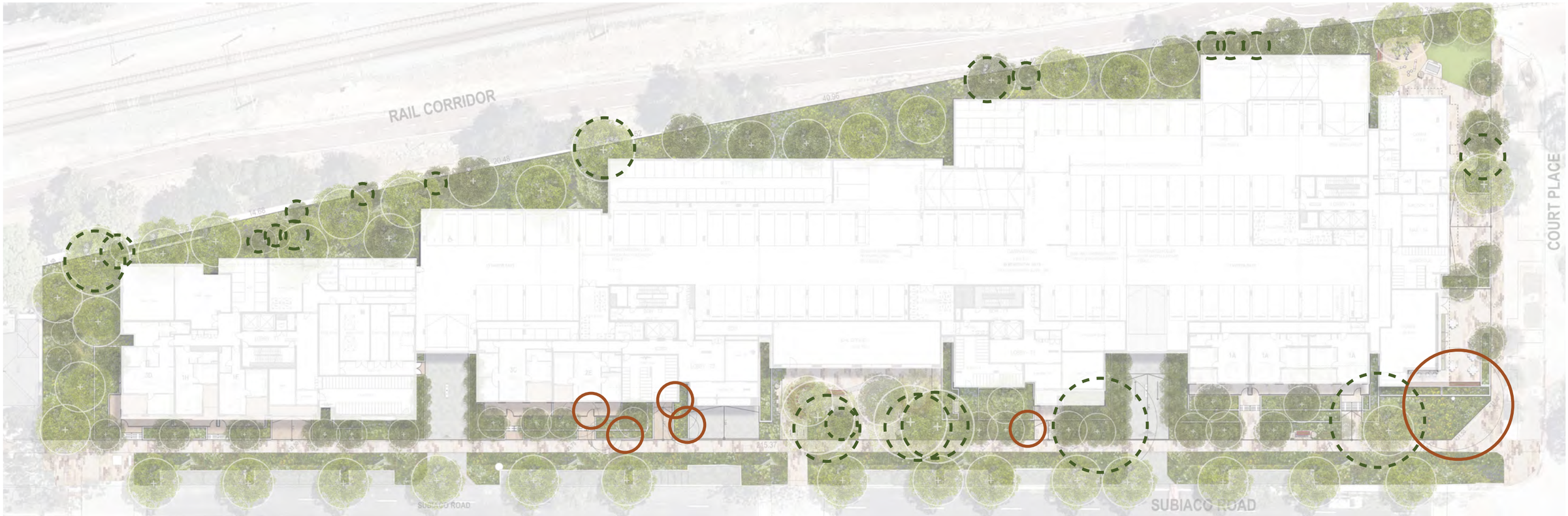
Tree retention plan

Summary

Existing trees	Total
Trees to be retained	21
Trees to be removed	6

Tree Rentention

Tree Removal



Deep Soil Requirements

Summary

DEEP SOIL REQUIREMENTS	AREA
Total Site Area	10,786 sqm
Min site wide deep soil zone required	1,078.6 sqm (10%)
Ground floor deep soil area	2,365sqm (21.9%)
Level 2 Podium planting (min 1m wide x 1m deep)	825 sqm (7.6%)
Deep soil and planting on podium total	3,190sqm (or 29.5 %)

Deep Soil Planting

Planting on Podium

Ground Floor



Level 02

Tree Requirements

NOTE:
All trees indicated meet the minimum deep soil zone requirement as per State Planning Policy 7.3 Residential Design Codes - Apartments

Summary

Tree Requirements	Area
Total Site Area	10,786 sqm
Site wide tree requirements (700 to 1,000m2)	1 large tree and small trees to suit
Additional tree requirements (based on 10,081 m2)	10 large trees and small trees to suit
TOTAL TREE NUMBERS	Large trees = 22 total
	Medium trees = 9 total
	Small trees = 81 total

‘Small Tree’ location

‘Medium Tree’ location

‘Large Tree’ location

Ground Floor



Level 02

See Design Studio
Landscape Architects

Please feel free to contact us with any inquires.

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January 2026

Court Place Subiaco

Sustainable Design Assessment Report

METROPOLITAN REDEVELOPMENT AUTHORITY ACT 2011

APPROVED PLANS

04 June 2026

DA2600006

Graham Agar

FULL CIRCLE DESIGN SERVICES

Full Circle Design Services	
Telephone: 0412 475 819	**Report Nº:** 2025_066_ESD_REP_02_SDAR
E-mail: graham.agar@fcds.com.au	**Original Date of Issue:** 6th January 2026
ACN: 163 742 890	
ABN: 84 163 742 890	

Title:	Court Place Subiaco – Sustainable Design Assessment Report
Author :	Graham Agar
Client:	Corbel Property / CHL
Contact:	David Klein
Description:	This report provides a brief summary of the proposed sustainable design strategy for the proposed new multi-unit residential development on Court Place in Subiaco. The report outlines overall intent and sustainable design features to be included within the design, as well as an overall assessment of the expected outcome for the project. Rev A is an initial draft for coordination and comment by the design team.

Revision	Date	Checked by		Transmitted by	
A	6th January 2026				GEA

Distribution	Revision								
Receiver	**A**								
CHL									
Corbel Property	X								
DKO	X								
Consultant Team	X								
Builder									

Executive Summary

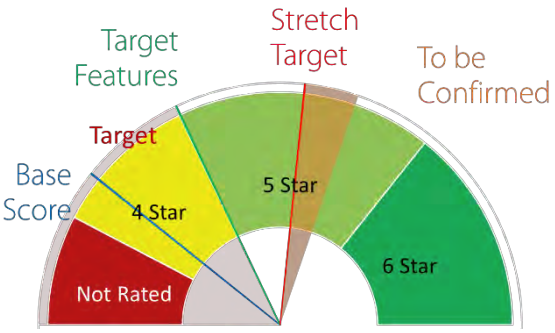
FCDS have been commissioned to provide general sustainable design advice and briefing services for the proposed new affordable and socially responsible residential development for CHL on Court Place in Subiaco.

At completing, the project will have around 450 dwellings (447 currently), serving to provide accommodation for around 620 occupants. The built form will include four separate towers, stemming from commercial tenancies and car parking and common / amenity areas on a podium.

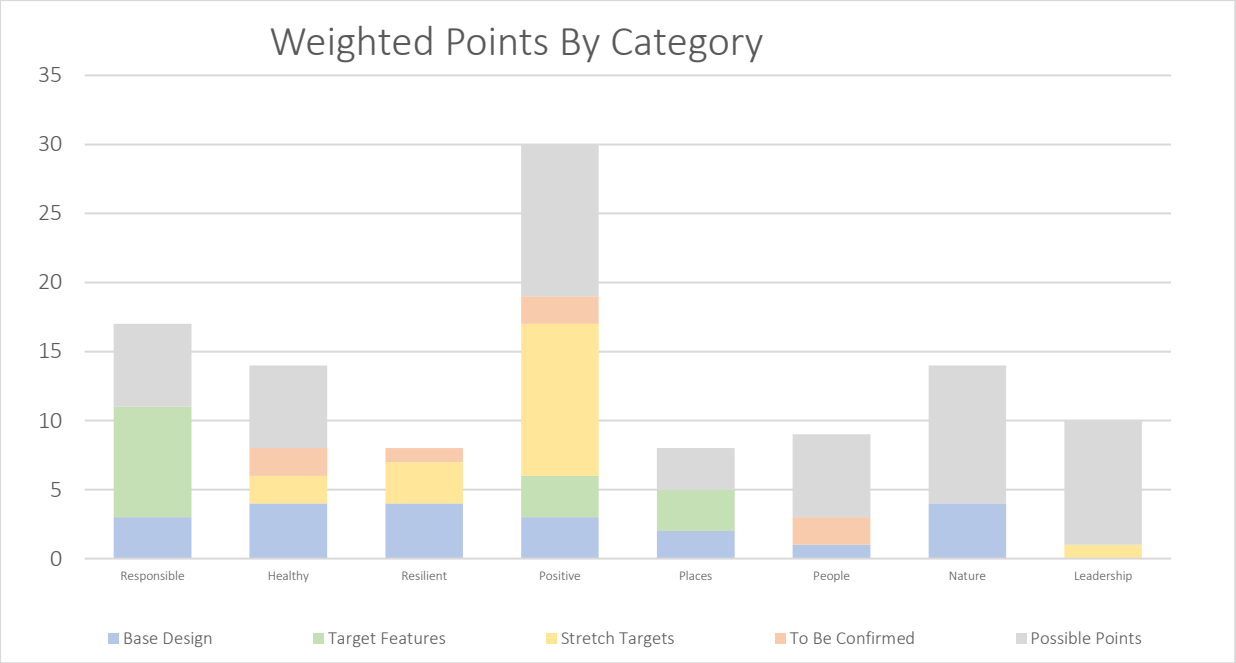
The project is committed to an outstanding sustainable design outcome and has elected to demonstrate this commitment through achieving the intent of at least 35 credits under the Green Star Buildings V1b rating system.

Whilst local planning controls require sustainable design excellence for a portion of the site, the project team are targeting the same outcome for all four residential towers.

Sustainable design performance will be self-assessed as formal certification is considered a poor cost/benefit outcome for the project and self-assessment is in alignment with other, recently approved developments in the area.



FCDS have reviewed the existing documentation and, in conjunction with the developer and project team, have identified 35 Green Star Buildings design credits which we believe can be achieved within the project planning with a further 7 pending ongoing design development to confirm:



The project, when complete, will be run by CHL (Community Housing Limited), with the project strategic requirements including; Low operational costs and carbon emissions, High durability; Simplicity of operation and maintenance and Occupant Health and wellbeing.

Further information with respect Green Star Buildings approach is available in the attached scorecard.

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1. Introduction

FCDS have been commissioned to provide general sustainable design advice and briefing services for the proposed new affordable and socially responsible residential development for CHL on Court Place in Subiaco.

At completing, the project will have around 450 dwellings (447 currently), serving to provide accommodation for around 620 occupants. The built form will include four separate towers, stemming from commercial tenancies and car parking and common / amenity areas on a podium.

The project is committed to an outstanding sustainable design outcome and has elected to demonstrate this commitment through achieving the intent of at least 35 credits under the Green Star Buildings V1b rating system.

1.1 Site Description

The proposed project is a residential development in Subiaco, comprising some 447 social and affordable housing apartments to be operated by CHL as a Build to Rent scheme.

The design is targeting high durability, minimising carbon emissions and keeping operational and rental costs as low as possible.

The project includes four towers extending from a podium level including internal and external amenity spaces, with CHL offices and commercial tenancies at street level.



1.2 Sustainability Targets

The project is targeting 'Australian Excellence' in Sustainable Design, as measured by a 5-Star self-assessed outcome. This equates to compliance with all minimum requirements as well as thirty five (35) optimisations or credits.

Category	Target	Initial Targets
Energy Consumption	15% Improvement over BCA – Envelope	- Roof > R6.0 Solar Absorbance < 0.35 - Walls – R2.2 batt insulation + Thermal break - Glass – Low-E Double Glazing - Floors – R1.9 Board insulation to any exposed floors
	30% Improvement over BCA - Overall	- All electric building - 40% reduction in lighting power density - 35% improvement in minimum efficiency for HVAC - CoP > 3.5 – All domestic hot water systems - Energy efficient appliances
	Façade leakage < 10m^3/hr @ 50Pa	Design will include detailing to control air leakage and commissioning will include building pressurisation tests. Pressure Testing ~20 Apartments each construction phase
	Renewable Energy	The project should include a large solar photovoltaic array, comprising ~200kW of panels and inverters, to produce at least 350MWhrs of electricity per annum.
Water Consumption	Low Flow Tapware	Utilise low flow tapware throughout building.
	Irrigation	Utilise low water use planting and water efficient irrigation on site.
	Stormwater Management	Minimise stormwater pollutant outflow via infiltration
Waste Targets	75%+ Recycling in operation	Design to facilitate capture of recyclable goods and use of comingled recycling. Facilitate collection through nominated store with easy bin access.
	>90% Recycling in construction	Careful consideration of construction materials to avoid waste. Use of high efficiency resource recovery facility to sort waste in construction.
Material Selections	Ethical Certification	Prioritise materials which are: - Locally sourced - Ethically sourced - Renewable - Certified – GECA / FSC / Green Tag - Recycled – preferably from on site. - Durable – 10 year+ Design Life for finishes
	Embodied Carbon	Select natural material for finishes – such as timber. Minimise steel, cement and aluminium
Durability	>10 Years	Internal finishes and flooring shall target >10 year life spans, with minimal repair and maintenance rather than regular replacement.
Indoor Environment Quality	CO_2 Levels < 800ppm	Through increased outside air rates or provision of CO_2 control, internal CO_2 concentrations should be maintained at low levels. Tenancies to be provided with louvre and electrical connections to cater for increased Outside Air rates.
	Low VOC's	TVOC < 0.27ppm Formaldehyde < 0.02ppm
General Sustainability	Green Star	35 Optimisation Credits
	Energy Use	Energy Use <4MWhrs p.a. per apartment
	Water Use	Water Use <250kL/m^2 p.a. per apartment

During design phase, the project is aiming to undertake a self-assessment only, using the Green Star Buildings tool as a benchmark. The SDAR will be issued, along with a scorecard, justifying credits claimed, with supporting evidence as noted above.

2. Responsible Design Features

The Responsible category refers to credits which are intended to minimise ecological footprint by control of the design, construction and commissioning process. The features also include elements to optimise operational performance through design of effective spaces and measuring consumption.

The following section outlines FCDS expectation with respect the Responsible design elements intended to be included by the project team:

2.1 Marketing Excellence

The design team will produce documentation to describe sustainable design features of the development for key stakeholders – including prospective occupants of each dwelling and the commercial tenancies.

2.2 Environmentally Responsible Construction

The main contractor will be expected to implement an environmental management system, using ISO 14001 practices to monitor its implementation on site.

The plan will include waste management and minimisation, targeting a minimum of 80% of construction and demolition waste diversion from landfill.

Contractors visiting site for more than 3 days will be required to undertake site familiarisation and sustainable design training covering design features for this development, as well as a wider overview of sustainability issues.

2.3 Commissioning, Verification and Handover

The design team have been provided clear design targets for environmental performance – refer to Section 1.2 above.

FCDS have been appointed to undertake the Independent Commissioning Agent role and will assist in documenting the project's approach to the Soft Landings framework.

Commissioning will be in accordance with best practice international standards, including CIBSE, ASHRA and Airah. The building envelope will be tested for air leakage prior to practical completion.

Common area services will be closely monitored over the first 12 months of operation to minimise performance issues and optimise operational efficiency against design targets. This tuning phase will be part of the Performance period.

The designers will include meters for each dwelling and tenancy, utilising utility meter reading systems to monitor and report on performance. Occupants will be able to review their performance and, hopefully, be encouraged to reduce their footprint.

Detailed handover documentation will be provided to building stakeholders in electronic format, including As Built drawings and functional control descriptions.

2.4 Operational Waste

Tallis have been appointed to the design team to ensure be ensuring that the project is effectively designed to manage operational waste across metrics including sizing, segregation of waste streams and accessibility for waste contractors.

The design includes separate commercial and residential stores at ground level in close proximity to the lifts and stairs, as well as with back of house access for tenancies.

There is a dedicated pathway from the store to the bin collection area, with excellent access for collection vehicles.

Space has been allowed for two waste chutes (general waste and mixed recyclables) as well as separate FOGO (Food Organics Garden Organics) to reduce landfill.



2.5 Sustainable Design Professional

The project team have included sustainable design considerations from schematic design phase and will continue through to practical completion and beyond.


Green Building Council Australia

Green Building Council of Australia

certifies that

Graham Agar

has obtained the following qualification

Green Star® Accredited Professional

The Green Star® Accredited Professional qualification recognises advanced knowledge and experience in sustainability, and competency in the application of the Green Star® rating tools.

Jul 2010 – Jun 2021 (Continual Enrolment)

greenstar Accredited Professional

Davina Rooney
Chief Executive
Green Building Council of Australia

2.6 Waste Minimisation

Beyond the minimum requirement to divert 80% of construction and demolition waste, the contractor will be expected to control materials brought to site and the waste disposal process to achieve a net 90% diversion of all construction and demolition waste, by mass, by practical completion.

2.7 Responsible Products

This category review products selected for building structure, envelope, systems and finishes and provides points for projects which can demonstrate performance improvement over standard practice.

Key elements supporting these features are:

- Design and Construction procurement processes to align with ISO 20400 – Sustainable Procurement Guidance
- Mechanical, electrical and hydraulic systems are to include at least 20% (by cost) achieving a Responsible Products Value, greater than 6, as per the table below:
- Finishes to follow similar sustainable requirements, with a net score of at least 9 for more than 20% of products

Metric	Score
• Industry specific environmental product declarations (EPD)	2 Points
• Product specific environmental product declarations (EPD)	4 Points
• ISO14001 certification	3 Points
• Reused Product	15 Points
• FSC Certified	10 Points
• Best Practice PVC certification	5 Points

Based on our understanding of the project and recent experience in this space, FCDS expect the project team will deliver sustainable material selections in building structure and finishes. Final compliance will be reviewed as finishes selections are finalised and verified during construction.

3. Healthy Design Features

The Healthy credit category is about ensuring the building provides a strong response to occupant health and wellbeing. Features supporting air quality, views, access to light and noise contribute to point scoring within this category:

3.1 Ventilation System Attributes

Outside air and natural ventilation systems are to comply with the prescriptive requirements of AS 1668.2 (mechanical ventilation) and AS 1668.4 (natural ventilation) for air quantity, intake location and exhaust separation.

Local exhaust systems are to be provided to isolate occupied spaces from contamination such as kitchens and toilets.

GBCA compliance for residences can be achieved with AS 1668.4 compliant openings, tenancy spaces will have louvre allocation and space to exceed BCA minimums for outside air provision.

3.2 Lighting Systems

Lighting systems are to be flicker free and provide a minimum Colour Rendering Index (CRI) >85 with a maximum of 3 MacAdam Ellipses.

The design will meet best practice illuminance levels for each task within each space type with a maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006

3.3 Glare Control

External shading systems will provide some coverage from direct solar penetration, however, internal areas will be provided with blinds and window treatments to eliminate direct solar penetration.

Lighting systems are to be provided with diffusers or other design features which maintain direct glare from the luminaries below the UGR (Unified Glare Rating) limit within AS 1680.1

3.4 Access to Daylight

All occupants have excellent access to natural lighting through strong passive design (north/south facing windows with overhangs) and relatively shallow plans.

3.5 Noise Levels

The use of high-quality mechanical plant and good architectural detailing will result in comfortable internal noise levels, generally matching AS 2107.

The acoustic design will consider noise carry over between levels as a means to improve occupant amenity and privacy.

3.6 Connection to Nature, Amenity and Comfort

At least 60% (close to 100% for this project) of spaces are within 8m of a view to outside. The design also includes a large, landscaped area for occupant amenities on level 1.

FCDS recommend the project team target the use of natural finishes and motifs to further promote the connection of users to nature.

Occupants are provided with more than 1,800m^2 of external amenity with views to nature and the adjacent Subiaco Oval at level 1:

3.7 Low Toxicity Products

The design team are expected to select finishes and composite wood products with low Volatile Organic Compound (VOC) and low formaldehyde content. This includes joinery, carpets, adhesives and sealants. Wall and ceiling paints will target a level <5 g/L for VOC content.

Performance is to be verified at practical completion through air quality tests on selected typical apartments.

4. Resilient Design Features

The Resilient category of credits highlight the need for projects to be ready for the imminent impacts of climate change and to provide a level of support to the surrounding community. Shocks to power infrastructure, ongoing weather pattern adjustment and the urban heat island effect are considered within the category.

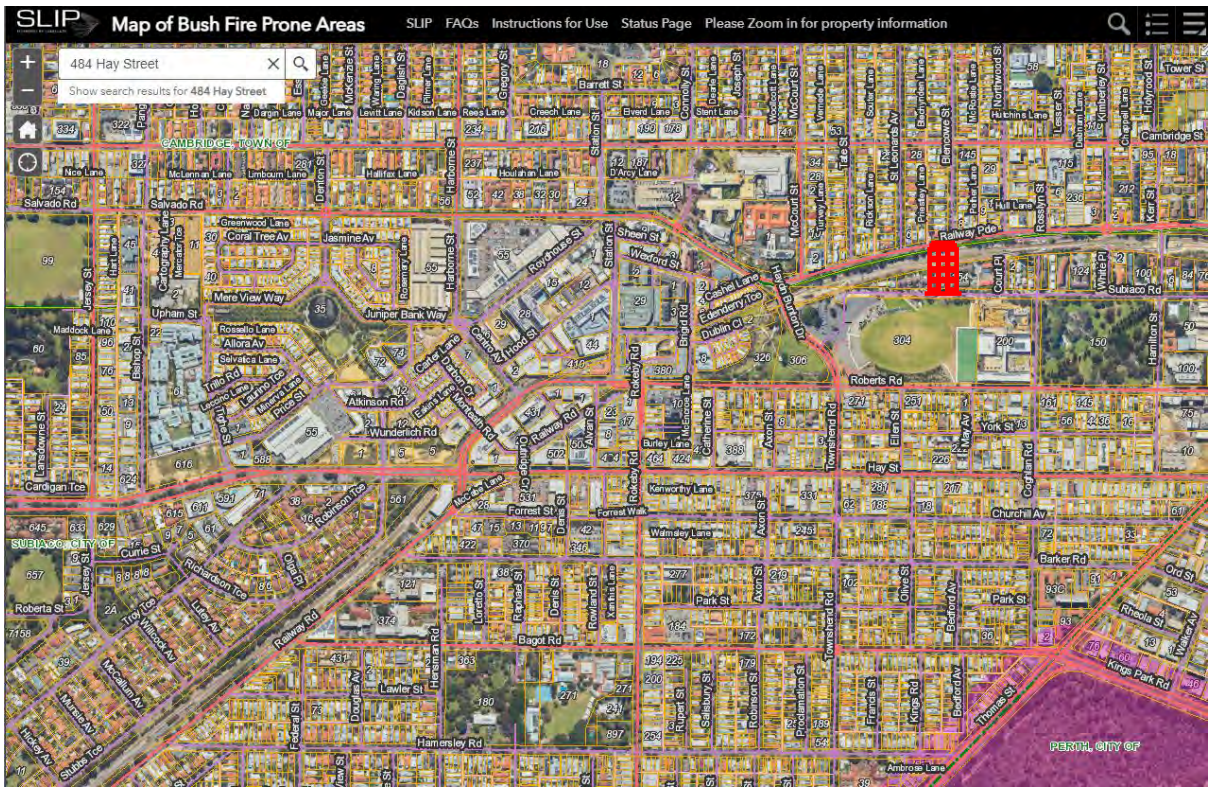
4.1 Climate Change Resilience

FCDS have undertaken a base review of the project and the potential likely impacts of climate change on the site, based on the following likely impacts of climate change in South West WA:

Variable	Current	Predicted	Expected Change	Possible Range
Annual Average Temperature (°C)	25.8°C	26.6°C	+0.8°C	26.4 – 27°C
Number of days over 35°C	28	35.3	+7.3	33.1-38.7
Annual Average Rainfall (mm)	835.1mm	785mm	-6%	726.5 – 827mm
Annual Average Potential Evaporation	1800mm	1836mm	+2%	1818-1872mm
Annual Relative Humidity	55%	54.4%	-0.6%	53.7 – 55%

The site is not at risk of floor, under even a 10m sea level rise.

Similarly there is no localised bushfire risk, with the closes 'prone' area at Kings Park to the south east:



4.2 Climate Change Risk Management

Following the base risk review above, the design team have included the following features to mitigate risks and provide an improved outcome for occupants and the local community:

Climate Change Impact	Risk	Proposed Response
Increased temperatures lead to increased bushfire risk and intensity.	Low due to current classification of site.	Consider provision of air filtration on air conditioning systems and dual aspect ventilation.
Rising sea levels and increased flood risk.	Very low.	Avoid critical construction below ground level. Ensure structure can adapt to changing water levels.
Reduced rainfall	Increasing requirement for irrigation, increased cost of scheme water.	Utilise smart irrigation, including moisture detection and prioritise drought tolerant planting.
Increased temperatures lead to increased reliance on air conditioning.	Building is unable to provide comfortable environment for extended periods.	Provide high efficiency air conditioning systems with automatic controls. Upgrade building envelope in excess of BCA minimum requirements.
Increased temperatures lead to increased power demand.	Operating cost increases as electrical prices increase. Power security becomes questionable.	Good control systems and energy efficient design. Installation of solar photovoltaics for renewable generation.

4.3 Operations Resilience

Whilst the project team have identified no significant risks in terms of operation under the loss of power, the design includes features which improve operational resilience under major shocks to electrical infrastructure including:

- Strong solar passive design
- Building envelope upgrade above minimum compliance
- Onsite renewable generation – consideration for future battery connection

The site embedded network is to be complete with an energy management dashboard, allowing management to monitor building demand and implement management strategies in future.

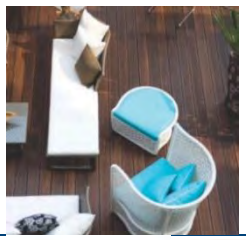
4.4 Grid Resilience:

The building will be designed to reduce its electricity peak demand by 10% of the annual peak electricity demand for at least a one-hour period through a variety of features, some of which may include:

- Improved building envelope
- High efficiency systems
- On site renewable generation.

4.5 Heat Resilience

The project will include the selection of light colours to external finishes as well as shaded area (from fixed building shading and planting) and landscape integrated into the site to minimise the impacts of urban heat island on the site. The following table shows the recommended colour palettes with respect colours and solar absorbance:

Usage	Initial SRI	3 Year SRI	Sample Product
Metal Roof > 15° Pitch	>34	>39	 Bamboo (35-48) Grey Limestone (54)
Hardscape			 
Metal Roof < 15° Pitch	>82	>64	 White Concrete (86) 

Final compliance will be confirmed following finishes selection and calculation at design finalisation.

5. Positive Design Features

The Positive category refers to design elements which contribute positively to the environment. Buildings must actively reduce their harm, but also act as a restorative force for good in order to achieve credits. The category assesses energy use, energy source, water consumption and refrigerant emissions.

5.1 Upfront Carbon Emissions

The design team will target material selections which reduce the embodied energy by a minimum of 20%. Features to support this include the reuse of structures and civil infrastructure on site, as well as the use of natural finishes, waste diversion and high durability as part of the proposed solution. Final compliance will be confirmed with a detailed LCA moel as the design is completed.

5.2 Energy Use

The design team will ensure low energy use by improving performance against BCA Section J minimum, across building envelope, air conditioning and ventilation systems and lighting.

BCA compliance for apartments will be certified by a Cert IV NatHERS assessor.

Appliances will be selected to reduce operational costs and carbon.

Performance improvements will be justified based on Section J compliance calculations and benchmarking for typical apartment energy consumption.

Material	PER embodied energy MJ/kg
Air dried sawn hardwood	0.5
Stabilised earth	0.7
Concrete blocks	1.5
In situ concrete	1.9
Precast tilt-up concrete	1.9
Kiln dried sawn hardwood	2
Precast steam-cured concrete	2
Clay bricks	2.5
Gypsum plaster	2.9
Kiln dried sawn softwood	3.4
Autoclaved aerated concrete (AAC)	3.6
Plasterboard	4.4
Fibre cement	4.8
Cement	5.6
Local dimensioned granite	5.9
Particleboard	8
Plywood	10.4
Glue-laminated timber	11
Laminated veneer lumber	11
MDF (medium density fibreboard)	11.3
Glass	12.7
Imported Dimensioned Granite	13.9
Hardboard	24.2
Galvanised steel	38
Acrylic paint	61.5
PVC (polyvinyl chloride)	80
Plastics — general	90
Copper	100
Synthetic rubber	110
Aluminium	170

5.3 Energy Source

The design will omit all fossil fuels from site. In addition, solar arrays will be provided to produce energy on site and reduce operational carbon and costs.

5.4 Water Use

The development is targeting a minimum 15% reduction in water consumption against benchmarks, including the provision of low flow fixtures are being provided for sanitary uses in accordance with the table below:

Fixture Type	WELS rating	Maximum Flow Allowable
Taps	5 stars	4.5-6 L/min
Urinals	5 stars	1.0 L / Flush + Smart demand flush device
Toilets	4 stars	<3.5 L average flush <4.7L full flush <3.2 half flush
Showers	3 stars	6.0 – 7.5 L/min
Clothes Washing Machines	4 stars	
Dishwashers	5 stars	

5.5 Net Zero Energy and Emissions Reduction

The design team are confident that the proposed energy efficient design features and onsite renewable generation will represent an annual energy consumption reduction of at least 30% against BCA minimum requirements.

5.6 Overall Footprint Reduction

The design team are confident that the proposed design features will result in a net life cycle emissions reduction of at least 30% if assessed by an LCA practitioner.

Final compliance will be confirmed by a peer reviewed LCA as the design is completed.

6. Places Design Features

The places category reflects outcomes that are linked to the location and nature of the development. Design features which reduce the impacts of transport – on the environment and occupant health – are rewarded with credits. In addition, proximity of the development to local amenity and public transport which can promote walking and reduce reliance on vehicles is also recognised.

Within the site, the category considers the provision of communal spaces and their potential beneficial impacts on the occupants. Externally, project teams are encouraged to engage with, consult and justify their design to the local community as well as their shareholders.

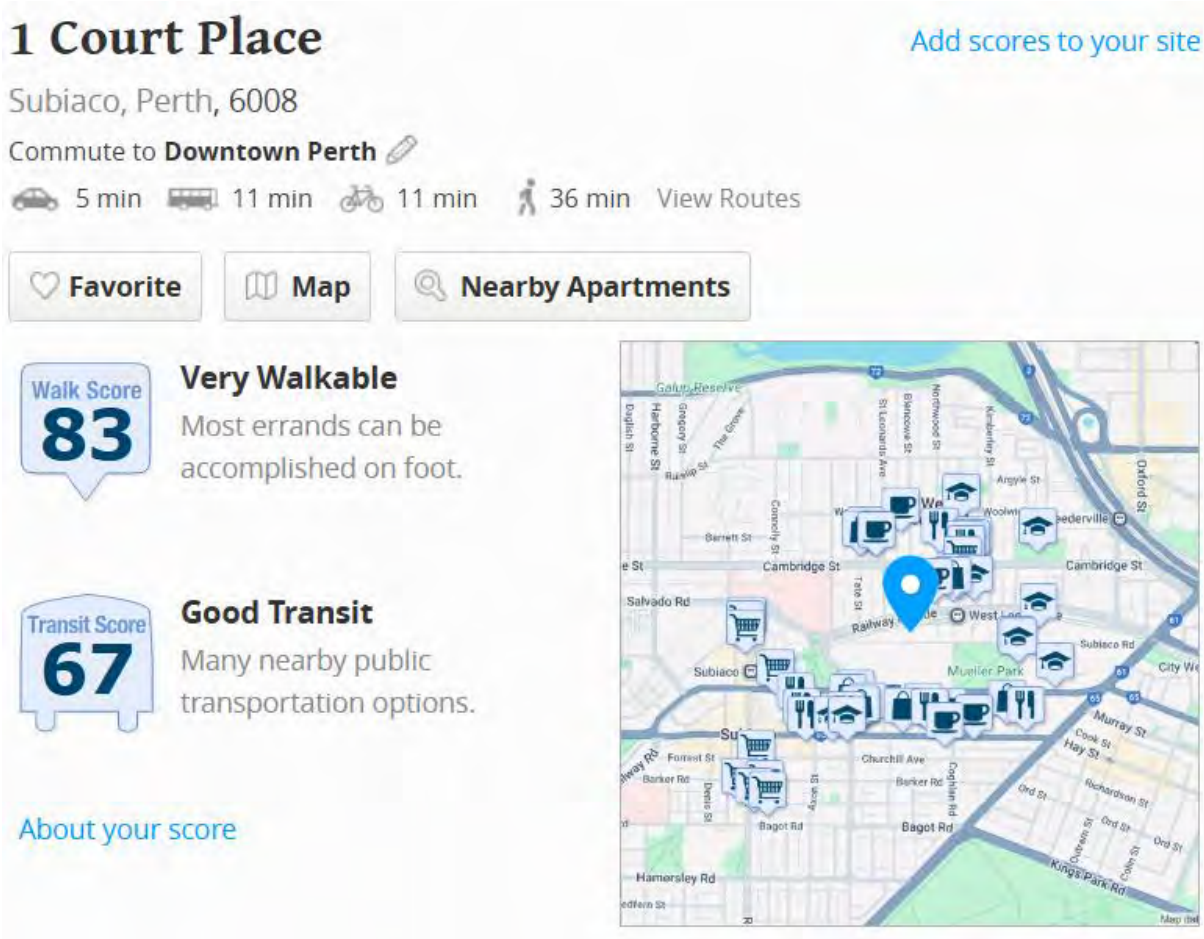
The project team includes a recognised transport planner to assist in identifying requirements to reduce carbon footprint associated with travel.

6.1 Active Transport

The design will include bike parking for visitors and occupants. Each residential tower has a dedicated resident cycle parking with good connection to lift core and pedestrian infrastructure.

6.2 Walkability

The site has good local transport options and is considered very walkable with numerous and varied amenities within 400m of the site:



7. People Design Features

The People category of credits provides an increased emphasis on social sustainability outcomes within the Green Star system. Projects are required to consider gender inclusivity and provide staff support around issues such as mental and physical health as part of their impact on the people building the project as well as the people who will use it long term.

The category also rewards projects that deliver strong outcomes for Indigenous or disadvantaged and under-represented social groups.

7.1 Minimum Requirements

The main contractor will be required to provide gender specific bathrooms and PPE on site and provide policies and training on discrimination, racism, bullying, drug and alcohol awareness and mental health. This will including introducing programs and solutions to address at least five current health issues such as suicide prevention, healthy eating and depression.

7.2 Needs Analysis

The contractor will be required to complete a needs analysis of site workers and contractors to inform the programs and policies implemented.

8. Nature Design Features

The Nature category is based on providing design solutions which prioritise and restore the natural environment around prospective developments. Features consider biodiversity, previous site usage, site emissions and waterway protection. Projects are requried to demonstrate best practice performance across the range of local impact areas considered.

8.1 Minimum Requirements

- The site is not an old growth forest, prime agricultural land or within 100m of a nationally significant wetland.
- The external lighting will comply with AS 4282 – Control of the obtrusive effects of Outdoor Lighting
- No external light fitting will have an Upward Light Output Ratio (ULOR) of more than 5%.

8.2 Ecological Value

The current and future ecological value of the site will be retained through the use of primarily native planting, with green spaces across the site.

8.3 Stormwater

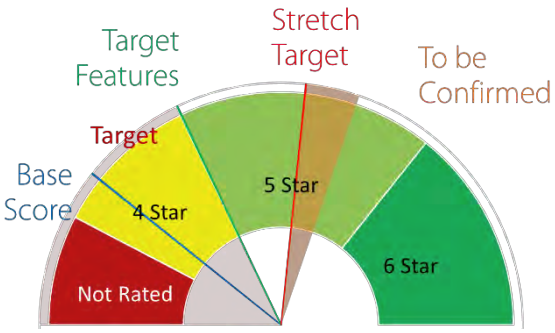
The design is to infiltrate a proportion of stormwater into local ground water, aiming to minimise outflow and achieve pollution reduction matching the performance below:

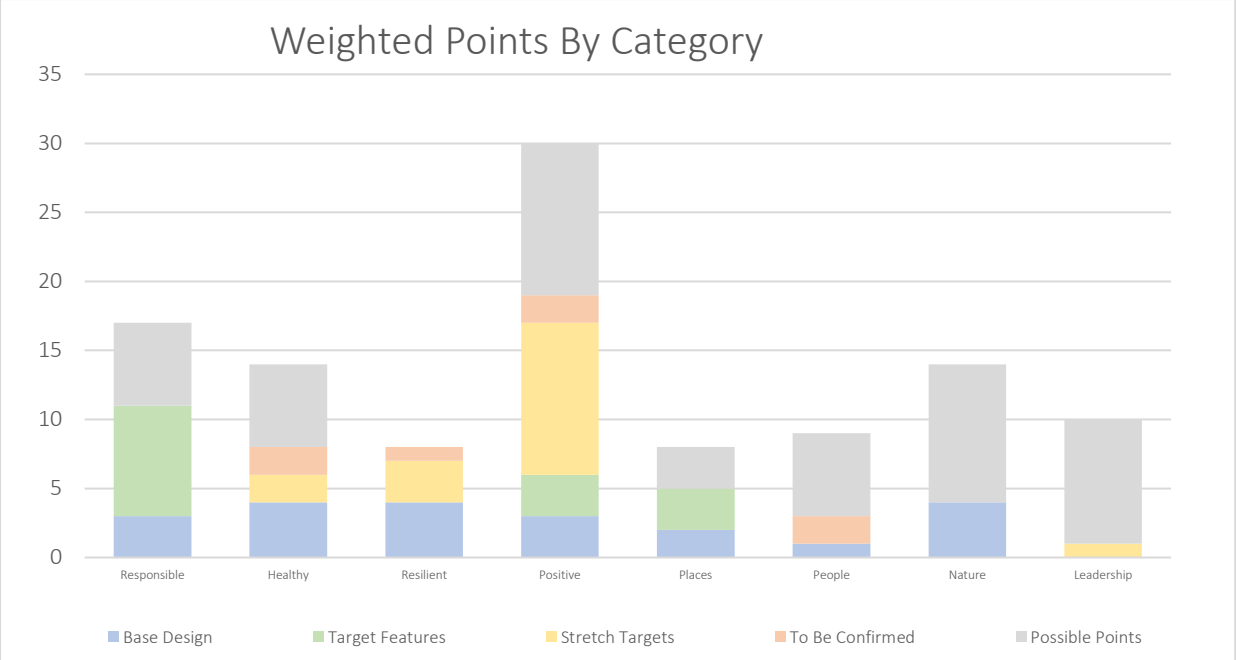
Pollutant	Contaminant Reduction
Total Suspended Solids (TSS)	90%
Gross Pollutants	95%
Total Nitrogen	60%
Total Phosphorus	70%

9. Assessment Review

FCDS have reviewed the existing documentation and, in conjunction with the developer and project team, have identified 35 Green Star Buildings design credits which we believe can be achieved within the project planning with a further 7 pending ongoing design development to confirm.

There are a further 17 points which could be added – if required – to ensure the project meets its target performance.





The design remains at an early stage and, therefore, is subject to change, however, the project notes the following key features expected to be included to support an Australian Excellence outcome include:

- Solar Array (nominal offset of more than 300 tonnes of $CO_{2(e)}$ per annum)
- Sustainable and low-toxicity material selections
- Avoidance of fossil fuels within apartments
- Dedicated exhaust systems to manage indoor air quality.
- High efficiency services and appliances and a high-performance building envelope
- Acoustic, air quality and envelope performance verification at completion
- LCA and envelope modelling certification

Further information with respect Green Star Buildings approach is available in the attached scorecard.

Full Circle
Design Services

Planning | Design | Delivery | Performance

www.fullcircledesign.com.au

Please Contact: Graham Agar

0412475819

Graham.agar@fcds.com.au

Full Circle Design Services

Project Name	Court Place		
Project Number	2024_099		
Version	Buildings V1.1		
Target Rating	5 Stars		35 Points
Buffer	10%	**Formal Certification?**	Yes
Client	CHL / Corbell		
Local Council	City of Subiaco		
Contract Value	–	>$10M	
Building Owner	CHL		
Building Tenant	Various		

ESD Consultant	FCDS	**GFA (m²)**	52,000.0
Project Manager	Corbell	**Site Area (m²)**	5,000
Architect	DKO	**Type**	Residential
Quantity Surveyor	QS	**UFA (m2)**	29,432.0
ICA	FCDS	**Car Bays**	312
Building Surveyor	Resolve	**Occupants**	1252

Project Team		
Main Contractor	Main Contractor	
Discipline	**Consultant**	**Contractor**
Mechanical	EMF Griffith	Mechanical
Electrical	Aurum	Electrical
Fire	Alphazeta	Fire Contractor
Hydraulic	Ionic	Plumber
Civil	Colliers	Civil
Structural	Hera	Structure
Façade	JMO	Façade
Lift	Aurum	Lift
Landscape	Seedesign	Landscape
Specialists		
Acoustic Engineer	Herring Storer	
Waste Consultant	Tallis	
Transport Planner	PTG Consulting	
Life Cycle Modeller	FCDS	
Climate Change	FCDS	

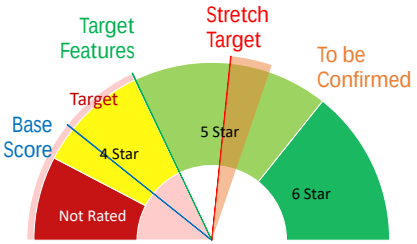
Credit	Cost	Cumulative Points	Cumulative Cost
R4.1 - Separation of Waste Streams	$0	21	$752,000
R4.2 - Dedicated Waste Storage	$0	21	$752,000
R4.3 - Access to Waste Storage Area	$0	21	$752,000
R4.4 - Qualified Waste Auditor	$0	21	$752,000
R6.1 - Responsible Structure	$45,000	24	$797,000
R6.2 - Responsible Structure - Exceptional	$30,000	26	$827,000
P27.5 - Sustainable Transport	$69,000	29	$896,000
R3.9 - Soft Landings Approach	$70,000	30	$966,000
R9.1 - Responsible Finishes	$105,000	31	$1,071,000
R9.2 - Responsible Finishes - Exceptional	$105,000	32	$1,176,000
P22.3 - Emissions Reduction	$333,333	35	$1,509,333
P27.2 - Lockers	$5,000	35	$1,514,333
P27.1 - Showers	$5,000	35	$1,519,333
R3.2 - Services and Maintainability Review	$20,000	35	$1,539,333
H11.1 - Minimum lighting comfort	$30,000	35	$1,569,333
H11.2 - Glare	$30,000	35	$1,599,333
R3.3 - Building Commissioning	$50,000	35	$1,649,333
R3.5 - Metering and Monitoring	$50,000	35	$1,699,333
H10.1 - Provision of Outdoor Air	$60,000	35	$1,759,333
P23.2 - 100% Renewable Electricity	$30,000	38	$1,789,333
P23.3 - 100% Renewable Energy	$30,000	41	$1,819,333
H13.4 - On Site Toxicity Testing	$37,500	43	$1,856,833
P21.2 - Net Zero Path	$75,000	46	$1,931,833
R20.1 - Active Generation and Storage Systems	$85,000	49	$2,016,833
P24.1 - Net Zero Path	$120,000	51	$2,136,833

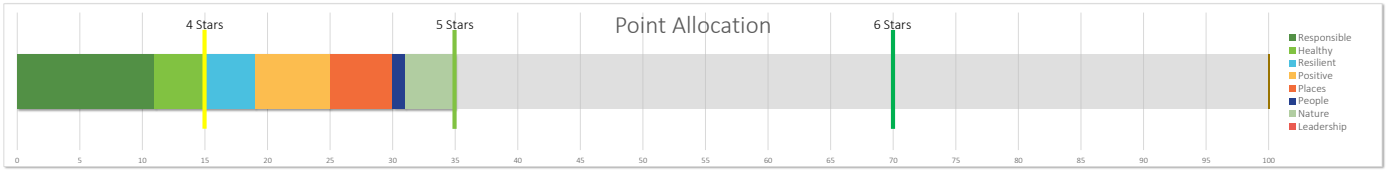
Green Star Credit List

This is FCDS self-assessment of the proposed redevelopment of Court Place. This scorecard is in no way equivalent to a formal review or certification by the Green Building Council and is intended to demonstrate how the design team intends to meet their target of 'Australian Excellence' in sustainable design.
Credits are classified as follows:
Base Design refers to features inherent in the current planning.
Target Initiatives are features which are considered to align with project goals and are part of the briefing to the project team.
Stretch Targets are features which are not currently intended to be included but could be added to replace or suplement other features as the design progresses .
Scorecard is provided for information only. Refer to Green Star manual and latest published rulings for compliance requirements.

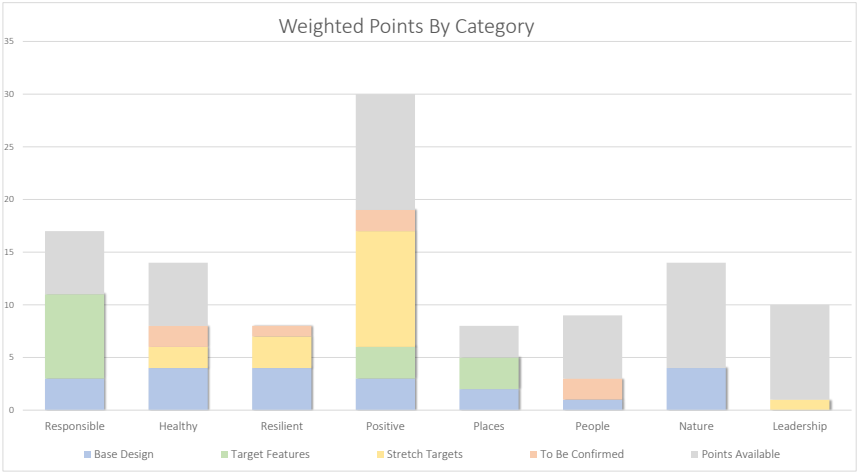
Category	Available Points	Base Design	Target Features	Stretch Targets	To Be Confirmed	Not Achieved	Total Cost
Responsible	17	3	8	0	0	6	$475,000
Healthy	14	4	0	2	2	6	$357,500
Resilient	8	4	0	3	1	0	$85,000
Positive	30	3	3	11	2	11	$1,133,333
Places	8	2	3	0	0	3	$86,000
People	9	1	0	0	2	6	$0
Nature	14	4	0	0	0	10	$0
Leadership	10	0	0	1	0	9	$0
Sector Specific	15	0	0	0	0	15	$0
	125	21	14	17	7	66	$2,136,833
		21.0	35.0	52.0	59.0		

Revision	Date	Reason for Issue
A	6th January 2026	DA Report









	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Reference Only	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Responsible	R1.1	Industry Development	The development facilitates industry transformation through partnership, collaboration and data sharing	Green Star Accredited Professional	The building owner or developer appoints a Green Star Accredited Professional, discloses the cost of sustainable building practices to the GBCA, and markets the building's sustainability achievements.	Appoint a GSAP as part of the project team.	FCDS		1	No		1					FCDS are completing this scope. Sustainable design information will be available through FCDS reporting and development marketing material.
	R1.2			Financial Transparency		The project team must complete, and include in the submission, the Green Star Financial Transparency Disclosure Template. The template assists the project team to submit the cost of sustainable building practices of the project including design, construction and documentation to the GBCA	FCDS			No							FCDS will complete this scope.
	R1.3			Marketing Excellence		* Complete Green Star Case Study * Detail Sustainability Achievements to Stakeholders * Display Green Star Certification Prominently	FCDS, DKO, CHL & Corbell			No							FCDS will need assistance from project marketing teams and project architect.
	R2.1	Responsible Construction	The builder's construction practices promote the reduction of impacts and opportunities for improved environmental outcomes.	Environmental Management System	The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes.	The builder or head contractor (responsible party) must have a formalised systematic and methodical approach to planning, implementing and auditing in place during construction. From the start of construction the builder or head contractor must implement an Environmental Management Plan (EMP) which must be project specific and cover the entire project scope including all construction activities.	Main Contractor		0	Yes		Met					Main contractor will be compliant.
	R2.2			Construction and Demolition Waste Diversion		Projects must divert at least 80% of construction and demolition waste from landfill.	Main Contractor		0	Yes		Met					Contractor to use Instant waste or similar.
	R2.3			ESD Training		The head contractor must provide the following training to 95% of all contractors and subcontractors present on site for at least three days.	Main Contractor		0	Yes		Met					Contractor to add ESD training to site induction
	R2.4			Construction and Demolition Waste Diversion - Exceptional		Projects must divert at least 90% of construction and demolition waste from landfill.	Main Contractor		1	No		1					Considered standard practice when specified.
	R3.1	Verification and Handover	The building has been optimised and handed over to deliver a high level of performance in operation.	Environmental Performance Targets	The building has been commissioned and will be tuned. The building was set up for optimum ongoing management due to its appropriate metering and monitoring systems. The project team create and deliver operations and maintenance information to the facilities management team at the time of handover. Information is available to building users on how to best use the building	Set environmental performance targets prior to construction and document them within an OPR (Owners Project Requirements)	FCDS		0	Yes		Met					FCDS will generate OPR as part of ESD consultant Scope.
	R3.2			Services and Maintainability Review		Complete a services and maintainability review prior to construction.	FCDS		0	Yes			Target				Independent commissioning agent is to complete this scope of work.
	R3.3			Building Commissioning		Commission the building in accordance with recognised best practice international standards, including a building envelope test. A specific building envelope pressure test plan and schematic are to be developed.	FCDS & EMF Griffith		0	Yes			Target				FCDS recommend appointing specialist consultant for assistance with risk review.
	R3.4			Building Systems Tuning		Engage a building tuning service provider and tune the building for at least 12 months.	CHL, FCDS & Corbell		0	Yes		Met					Building tuning to be complete within FCDS scope of works.
	R3.5			Metering and Monitoring		Provide accessible energy and water metering for all common uses, major uses, and major sources, connected to a monitoring system capable of capturing and processing the data produced by the meter	FCDS, EMF Griffith, Ionic & Aurum		0	Yes			Target				Electrical design includes meters. Sophisticated meter monitoring system to be added. Relatively few additional electrical meters. Multiple additional water meters (two per
	R3.6			Operation and Maintenance Information		Provide operations and maintenance information for all nominated building systems to the building owner (or designated representative).	FCDS, EMF Griffith, Ionic & Aurum		0	Yes		Met					O+M Documentation is not problematic.
	R3.7			Building Log Book		Develop a building log book to present to the building owner (or designated representative) before practical completion of the project	FCDS, EMF Griffith, Ionic & Aurum		0	Yes		Met					FCDS will generate the log book with assistance from project team and contractors.
	R3.8			Building User Information		All building user information must be available to the building owner and facilities management team at the time of practical completion.	Main Contractor, FCDS, EMF Griffith, Ionic & Aurum		0	Yes		Met					O+M Documentation is not problematic.
	R3.9			Soft Landings Approach	An independent level of verification is provided to the commissioning and tuning activities through the involvement of an independent commissioning agent, or through a soft landings approach that involves the future facilities management team. For large projects (>$20M) both must occur.	Deliver Soft Landings Approach for the project, including involving the FM team and/or Owners Representative across commissioning and handover, development of the Operations and Maintenance Manuals, Sign off on Operations and Maintenance Manuals and be trained before handover.	CHL, FCDS & Corbell		1	No			1				Project requires the use of an ICA **or** the completion of the soft landings approach.
	R3.10			Independent Commissioning Agent		Appoint an independent commissioning agent (ICA) to act an advocate for and reports directly to the project owner.	CHL, FCDS & Corbell			No							

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Relevant to Project	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Responsible	R4.1	Operational Waste	Operational waste can be separated and recovered in a safe and easy manner.	Separation of Waste Streams	The project team must demonstrate the building is designed to allow effective management of operational waste by: • Separating waste streams; • Providing a dedicated and adequately sized waste storage area; and • Ensuring easy and safe access to waste storage areas for both occupants and waste collection contractors.	The building must provide labelled and accessible bins or storage containers to building occupants to enable them to separate their waste. At least four waste streams are to be collected, each at >1% of annual operational waste, with any waste stream over 5% (other than food) of the annual volume provided with dedicated collection points.	CHL, Tallis & DKO		0	Yes			Target				Tallis are providing a Waste Management plan including identification of relevant streams.
	R4.2			Dedicated Waste Storage		A dedicated area, or areas, for the storage and collection of the applicable waste streams must be provided. The storage area must be sized to accommodate all bins or containers, for all applicable waste streams, for at least one collection cycle.	Tallis & DKO		0	Yes			Target				Design includes large waste store at ground level. Spatial allowances for additional streams are included in planned areas. Considere separate waste stores for commercial tenancues
	R4.3			Access to Waste Storage Area		The storage area(s) must have easy and safe access by collection vehicles and cleaning staff	CHL, Tallis & DKO		0	Yes			Target				Waste storage area is convenient at ground level. Ample space for multiple waste streams.
	R4.4			Qualified Waste Auditor		A waste specialist and/or contractor must sign-off on the designs to confirm they are adequately sized and located for the safe and convenient storage and collection of the waste streams identified	CHL, Tallis		0	Yes			Target				Waste management plan to developed with project team.
	R5.1	Responsible Procurement	The procurement process for all products, materials, and services for the building's design and construction follows best practice environmental and social principles.	Risk and Opportunity Assessment	The building's design and construction procurement process follows ISO 20400 Sustainable Procurement - Guidance and at least one identified supply chain risk and opportunity is addressed.	Undertake a risk and opportunities assessment of its supply chain to identify environmental and social risks and opportunities **and**	Main Contractor, FCDS & DKO		1	No		1					FCDS will generate a sustainable procurement plan. Social considerations to be advised by client group.
	R5.2			Responsible Procurement Plan		Develop and implement a plan to mitigate and manage identified risks and drive implementation of identified opportunities.	Main Contractor, FCDS & DKO			No							
	R6.1	Responsible Structure	The building's structure is comprised of responsibly manufactured products.	Responsible Structure	50% of all structural components (by cost) meet a Responsible Products Value score of at least 10	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points • Living Product Challenge • Declare	Hera & DKO		3	No			3				Potential to achieve credit if sourcing susainable steel - J Steel or similar - and concrete - Boral Envisia or Holcim EcoPact.
	R6.2			Responsible Structure - Exceptional	In addition, one of the following is met: • 10% of all products in the structure (by cost) meet a Responsible Products Value score of at least 15; OR • 80% of all products in the structure (by cost) have an average Responsible Products Value score of at least 10.		Hera & DKO		2	No			2				
	R7.1	Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	Responsible Envelope	30% of all building envelope components (by cost) meet a Responsible Products Value score of at least 10.	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points	Hera, JMO & DKO		2	No							Considered unlikey.
	R7.2			Responsible Envelope - Exceptional	In addition, one of the following is met: • 10% of all products in building envelope (by cost) meet a Responsible Products Value score of at least 15. OR • 60% of all products in the building envelope (by cost) have an average Responsible Products Value score of at least 10.		Hera, JMO & DKO		2	No							
	R8.1	Responsible Systems	The building's mechanical, hydraulic, transportation and electrical systems are comprised of responsibly manufactured products.	Responsible Systems	20% of all active building systems (by cost) meet a Responsible Products Value score of at least 6.	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points • Climate Active Carbon Neutral Certification	EMF Griffith, Aurum, Alphazeta, Ionic, Colliers & Aurum		1	No							Considered unlikely
	R8.2			Responsible Systems - Exceptional	In addition, one of the following is met: • 5% of all active building systems (by cost) meet a Responsible Products Value score of at least 11. OR • 35% of all active building systems (by cost) have an average Responsible Products Value score of at least 6.		EMF Griffith, Aurum, Alphazeta, Ionic, Colliers & Aurum		1	No							
	R9.1	Responsible Finishes	The building's internal finishes (flooring, plasterboard, paints, ceilings, partitions, doors, internal windows etc.) are comprised of responsibly manufactured products and materials.	Responsible Finishes	40% of all internal building finishes (by area) meet a Responsible Products Value score of at least 7.	• Industry specific environmental product declarations (EPD) - 2 Points • Product specific environmental product declarations (EPD) - 4 Points • ISO14001 certification - 3 Points • Reused Product - 15 Points • FSC Certified - 10 Points • Best Practice PVC Certified - 5 Points	DKO & FCDS		1	No			1				Design will target responsible finishes within occupied areas.
	R9.2			Responsible Finishes - Exceptional	In addition, one of the following is met: • 10% of all internal building finishes (by area) meet a Responsible Products Value score of at least 12. OR • 60% of all internal building finishes (by area) have an average Responsible Products Value score of at least 7.		DKO & FCDS		1	No			1				

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Reference Only	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Healthy	H10.0	Clean Air	Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels.	Ventilation System Attributes	Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels. Compliance is to be demonstrated for > of regularly occupied area	Ventilation systems are to comply with AS 1668.2 2012 and ASHRAE Standard 62.1:2013 for minimum separation between openings, outdoor intakes and sources of pollution. All new and existing ductwork is to be cleaned prior to occupation.	EMF Griffith		0	Yes		Met					Basic requirement for mechanical design. No issues with this requirement.
	H10.1			Provision of Outdoor Air		Provide outdoor air to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 50% **or** Monitor and control CO_2 levels <800ppm during design occupancy **or** Residential Buildings demonstrate best practice approach to outside air and prevention of mould.	EMF Griffith		0	Yes			Target				Residential spaces to comply with AS1668.4 and / or provide outside air to make up exhaust rates.
	H10.2			Exhaust or Elimination of Pollutants		Select and utilise low emissions equipment; printers, stoves, vehicles etc. **and/or** Exhaust sources of pollutants directly to outside and physically separate them from occupants.	CHL, Corbell, DKO & EMF Griffith		0	Yes		Met					Provision of exhaust systems within units and to contaminated areas are expected.
	H10.3			Ventilation System Attributes	The building's ventilation systems allow for easy maintenance, and high levels of outdoor air are provided.	Provide adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system **and**	EMF Griffith		2	No							Ducted fan coil units with MERV filtration and shallow coils can achieve this outcome. May difficult - depending on mechanical design intent
	H10.3			Provision of Outdoor Air		Provide outdoor air to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 100% or Monitor and control CO2 levels <700ppm during design occupancy or Provide 0.04m2 ventilation per apartment + 0.015m2 per habitable room.	EMF Griffith			No							AS1668.4 / make up air rates should achieve this target.
	H11.1	Light Quality	The building provides good daylight and its lighting is of high quality.	Minimum lighting comfort	The building provides adequate levels of daylight and good lighting levels suitable for the typical tasks in each space.	• All lighting must be flicker-free; • Light sources must have a minimum Colour Rendering Index (CRI) 85 or higher, in all internal and external applications; • Light sources must meet best practice illuminance levels for each task within each space type • The maintained illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006 • All light sources must have a maximum of 3 MacAdam Ellipses.	Aurum		0	Yes			Target				May restrict lighting selections. Budget of $1 per m2 for compliance.
	H11.2			Glare		Glare from light sources must be limited within the nominated area. Bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means **or** Unified Glare Rating (UGR), as estimated from the manufacturers data sheets for a standard room, must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. Where the nature of the tasks, layout and surface reflectance in a space are not known (e.g. shell and core) the lighting system must comply with the Luminaire selection system as detailed in Clause 8.3.4 of AS/NZS 1680.1:2006.	DKO & FCDS		0	Yes			Target				As above, may limit potential light fitting choices. Budget of $1 per m2
	H11.3			Daylight		• Maximise the number of occupants that are in or near daylit areas during their daily activities for all building types; • Ensure regularly occupied spaces are in reasonable proximity to glazed façades, windows or skylights; • Control or mitigates glare in the daylit spaces; • Maximise daylight to spaces that prioritise learning, healing, and living; • Provide building occupants with unrestricted access to daylit indoor common spaces.	DKO & FCDS		0	Yes		Met					Building is well oriented and designed for daylight penetration.
	H11.4			Daylight - Credit	The building provides either or both best practice Artificial Lighting and best practice access to daylight.	For non-residential buildings, at least 40% of the principle averaged across the building must receive high levels of daylight with no less than 20% on any floor or tenancy (whichever is smaller). For residential buildings, 60% of the combined living and bedroom area of each apartment unit must comply with the daylight requirements. Kitchens are not included in the calculations. The daylight levels must also be present in at least 20% of the area of each bedroom and living area. Residential buildings and hospitality buildings must provide room blackout blinds or curtains to all bedrooms. If blinds or curtains are part of a packaged décor, all blinds offered for the bedroom décor must be blackout blinds.	DKO & FCDS		2	No		2					Project will target strong daylight access for all occupied areas.
	H11.5			Artificial Lighting		• The walls within the field of view of occupants in regularly occupied spaces must have an average surface reflectance value of 0.70 and an average surface illuminance of at least 50% of the horizontal illuminance levels required for task. • Vertical illuminance in workspaces: ensure that 50% of the horizontal task illuminance reaches the average eye height for 90% of primary spaces using vertical illuminance calculation grid.	Aurum		2	No							To be reviewed with designer and lighting modeller in due course. May be achievabe with wall washing within the residential areas.
	H12.1	Acoustic Comfort	The building provides acoustic comfort for building occupants.	Internal Noise Levels	An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants.	Internal ambient noise levels in the nominated areas must be no greater than the upper range value *and (Schools and Commercial Tenancies) no less than 5 dB below the lower range value* relevant to the activity type in each space as recommended in AS/NZS 2107.	Herring Storer, EMF Griffith & DKO		0	Yes		Met					Acoustic consultant to be appointed to review and optimise design as well as measuring performance at completion. Compliance with noise levels may be problematic.
	H12.2			Acoustic Separation	The building is designed and tested to achieve minimum acoustic performance requirements aligned with the Acoustic Comfort Strategy. * Residential - 2 Additional Features * Healthcare - 3 Additional Features * Schools - 3 Additional Features * Tenancies - 3 Additional Features * Shell and Core - 2 Additional Features * Sports - 2 Additional Features * Industrial - Separation Only	Address noise transmission between enclosed spaces within the nominated area either by sound privacy or insulation.	Herring Storer & DKO		2	No							Design will include strong noise separation between dwellings as part of a premium product offering. Cost may be prohibitive.
	H12.3			Impact Noise Transfer		Floors above nominated areas or adjacent spaces belonging to different tenancies which share a floor must not exceed dB LnT,w: – 55 for floors above residential accommodation spaces – 60 for all other spaces	Herring Storer & DKO			No					2		Noise separation between levels is important for project success. May be expensive.
	H12.4			Reverberation		The reverberation time in the nominated area must be not exceed the maximum for the intended use recommended in AS/NZS2107. This does not apply for residential spaces.	Herring Storer & DKO			No							Not applicable for residential projects.

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Parkmore Star	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Healthy	H13.1	Exposure to Toxins	The building's occupants are not directly exposed to toxins in the space they work, play, or live in.	Paints, Adhesives, Sealants and Carpets	The building's paints adhesives, sealants, carpets, and engineered wood products are low or non-toxic. Occupants are not exposed to banned or highly toxic materials in the building.	Use low toxicity paints, adhesives, sealants and floor coverings.	DKO, EMF Griffith, Aurum, Alphazeta, Ionic, Colliers & Aurum		0	Yes		Met					Commit to low toxicity paints, adhesives, sealants and floor coverings.
	H13.2			Engineered Wood products		Use low emission formaldehyde composite or engineered wood products	DKO		0	Yes		Met					Commit to use of E0 joinery and composite wood products.
	H13.3			No Lead, Asbestos and PCBs		Undertake comprehensive site survey for Lead, PCB's and asbestos. Take appropriate remediation action where relevant.	CHL		0	Yes		Met					No requirement, no existing buildings are being reused.
	H13.4			On Site Toxicity Testing	On-site tests verify the building has low Volatile Organic Compounds (VOC) and formaldehyde levels.	Undertake performance testing on site at completion to confirm building meets target toxicity levels - TVOC < 0.27 ppm and Formaldehyde < 0.02ppm	FCDS & CHL		2	No				2			Onsite review of VOC and formaldehyde content would verify performance. Minimum of 5 floors, 15 samples.
	H14.1	Amenity and Comfort	The building provides internal amenities that improve occupant experience of using the building.	Amenity and Comfort	The building has dedicated amenity rooms to act as parent room, a relaxation room, or an exercise room	Provide at least 10m^2 and 1m^2 per 10 regular occupants or staff dedicated room(s) to promote either inclusivity, mindfulness or exercise for regular occupants. Room must be classified as either parent room, relaxation / meditation / prayer room or exercise room. Room must meet light quality, acoustic comfort and Design for Inclusion (where targeted) credits.	DKO - Requires ~126 m2 dedicated occupant wellness space		2	No		2					Building will provide amenity areas at podium level to support occupants.
	H15.1	Connection to Nature	The building fosters connection to nature for building occupants.	Views	The building provides views, includes indoor plants, and incorporates nature-inspired design.	>60% of primary occupied spaces are within 8m of a compliant view **and**	DKO		1	No		Met					Design easily complies with the requirement for views.
	H15.2			Plants		Indoor plants must be provided in the nominated spaces. One or more plants in pots with a soil surface area totalling at least 500cm^2 for every 15m^2 of the primary spaces is required. Plants are to be supported by an ongoing 2 year maintenance plan **and**	DKO & CHL			No							Plants could be provided in communal areas, consideration for credit to be reviewed with GBCA.
	H15.3			Nature-Inspired Design		Five additional nature-inspired design interventions must be provided in alignment with the following principles: • Elements that provide differing natural sensory experiences; • Elements that reflect natural and cultural patterns and forms; • Using natural materials; and • Natural motifs and art.	DKO			No							Integration of nature within the design can be accommodated, requires design review with project team.
	H15.4			Interaction	5% of the building's floor area/ or site area (whichever is greater) is allocated to nature in which occupants can directly engage with	Occupants can interact with nature either inside the building, or externally through a green wall or roof garden. At least 5% of the building's floor area/ or site area (whichever is greater) must be allocated to this opportunity. The allocated area must be accessible and have the necessary infrastructure to allow the activity to occur (for example water source/taps for irrigation, storage area for tools and equipment).	CHL & DKO		1	No					5% Of Usable area is ~1,400m2, current planted areas do not comply.

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Resilient	R16.1	Climate Change Resilience	The building has been built to respond to the direct and indirect impacts of climate change.	Climate Change Resilience	The project team completes the climate change pre-screening checklist. The project team communicates the building's exposure to climate change risks to the applicant.	Complete climate change risk review checklist and issue to the building applicant.	FCDS		0	Yes		Met					FCDS to complete detailed climate risk review.
	R16.2			Climate Change Risk and Adaptation Assessment	The project team develops a project-specific climate change risk and adaptation assessment for the building. Extreme and high risks are addressed.	Complete a detailed risk assessment and Mitigation strategy using an appropriately qualified professional . Ensure at least two and all Extreme and High risks are addressed.	Whole Design Team		1	No		1					~ Envelope performance ~ On site generation ~ Natural Ventilation ~ Spare mechanical capacity ~ Spare Electrical capacity
	R17.1	Operations Resilience	The building can respond to acute shocks and chronic stresses that can affect its operations over time.	Comprehensive Risk Assessment	The project team undertakes a comprehensive review of the acute shocks and chronic stresses likely to influence future building operations.	Appoint a suitably qualified professional to undertake a detailed review of operations resilience including key shocks and stresses, such as infrastructure failure, health pandemic, water security, increasing energy costs and rising cyber dependency **and**	FCDS		2	No		2					Building will be designed to provide occupant support under shocks and stresses.
	R17.2			Managing Risks	The building's design and future operational plan addresses any high or extreme system-level interdependency risks.	Provide design solutions to address at least two and all high and extreme risks **and**	FCDS supported by Whole Deign Team			No							Design team can provide potential mitigation to significant risks to project.
	R17.3			Addressing Power Loss	The building's design maintains a level of survivability and design purpose in a blackout.	Complete building performance assessment in black out conditions and provide appropriate design solutions to meet building purpose and provide a measure of survivability for occupants.	FCDS supported by Whole Design Team			No							Blackout review not likely to identify any significant issues. Requires review and confirmation of approach.
	R18.1	Community Resilience	The building contributes to improving the resilience of the community.	Community Resilience	The project team undertakes a needs analysis of the community, identifies shocks and stresses that impact the building's ability to service the community, and develops responses to manage these.	Appoint a qualified professional to develop a community resilience plan that identifies local community groups which rely on or interact (directly or indirectly) with the building. The plan must identify and address at least 2 and all high and extreme risks identified. Undertake at least one community capacity building activity prior to or during	FCDS supported by Whole Design Team		1	No		1					Provision of social housing considered to improve community resilience outcomes.
	R19.1	Heat Resilience	The building reduces its impact on heat island effect.	Heat Island	At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect.	Ensure >75% of site area is covered by materials which reduce heat island effect, including: * Vegetation and Green Roofs * Light Roofs (3 Year SRI>64 (flat roof) >34 (Pitched Roof) * Shaded or Light Hardscaping (3 Year SRI > 34) * Water bodies and/or water courses * Permanently Shaded site area	DKO & Seedesign		1	No					1		Design is compliant with the provision of a light roof and paved areas.
	R20.1	Grid Resilience	The building contributes to the functioning of the grid as it transitions to a higher level of renewable energy capacity.	Active Generation and Storage Systems	The building meets one or several of the following: • Provides active generation and storage systems; • Has the infrastructure to deliver an appropriate demand response strategy; or • Has reduced its electricity consumption through passive design.	Design the building to have the capacity to reduce its electricity peak demand by 10% of the building's annual peak electricity demand for at least a one-hour period. The peak demand reduction can occur through thermal storage solutions (such as chilled water storage systems), by electricity storage solutions (batteries), or through renewable on-site generation.	EMF Griffith & Aurum		3	No				3			Design could achieve this outcome with batteries and load management system. Initial estimate of 50kWhr battery system.
	R20.2			Demand Response		Develop a strategy and systems to automatically shed 10% of a buildings peak electrical demand without affecting occupant amenity for at least 4 hours. Requires the BMS to have predictive capabilities and a demand management dashboard and automatic load shedding, including acceptance of external control signals. Strategy is to be commissioned and demonstrated as functional.	EMF Griffith & Aurum			No							EMS and load management may be able to achieve this outcome.
	R20.3			Passive Design Solutions		Deliver a naturally ventilated building which exceeds BCA requirements for building envelope performance. Alternatively, discuss options with the GBCA for alternate compliance.	FCDS & DKO			No							Building is provided with air conditioning.

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Positive	P21.1	Upfront Carbon Emissions	The building's upfront carbon emissions from materials and products have been reduced and offset.	Minimum Expectation	Reduce the building's upfront carbon emissions reductions through good design and material selection.	Complete the LCA Calculator and demonstrate that the building's upfront carbon emissions are at least 10% less than those of a reference building.	QS, FCDS & DKO		0	Yes		Met					FCDS to complete LCA analysis for the building and optimise performance.
	P21.2			Net Zero Path		Employ an LCA professional to demonstrate the building's upfront carbon emissions are at least 20% less than those of a reference building - including any demolition works.	FCDS , CHL&DKO		3	5 Star	3			3			- RC to PT slabs - Code wind loads to site specific wind study - Full transfer slab to limited transfer - Cement substitution, carbon neutral concrete - Sustainable Steel and Concrete
	P21.3			Emissions Reduction		Employ an LCA professional to demonstrate the building's upfront carbon emissions are at least 40% less than those of a reference building - including any demolition works and all remaining emissions from Modules A1 – A5 are offset.	FCDS , Main Contractor, CHL&DKO		3	6 Star						3	Design team will utilise sustainable construction materials and processes to reduce building footprint. Cost budget based on 400g/m2 of GFA.
	P22.1	Energy Use	The building has low energy consumption.	Minimum Expectation	Reduce the building's energy consumption in comparison to BCA Section J minimum requirements. All systems and elements must exceed BCA minimum performance, irrespective of overall performance.	Complete building modelling and demonstrate that the building's energy use is at least 10% less than a reference building, excluding renewable generation on site. . For residential buildings, no individual apartment can be less than the larger number of: – The minimum NatHERS rating stated in the code, or – 6.5 star NatHERS rating.	FCDS		0	Yes		Met					Project team to target 20% improvement for Section J. ▪Roof > R4.5, Solar Absorbance < 0.35 ▪Walls – R2.2 batt insulation + Thermal break ▪Glass – Low-E Double Glazing, moderate tint ▪Openable windows ▪Floors – R1.9 Board insulation to any exposed floors
	P22.2			Net Zero Path		Complete building modelling and demonstrate that the building's energy use is at least 20% less than a reference building, including renewable generation on site. .	FCDS		3	5 Star	3	3					Compliance to be achieved through envelope performance and services design. Minimum envelope performance 20% better than BCA. Mechanical systems to utilise natural ventilation as much as practicable
	P22.3			Emissions Reduction		Complete building modelling and demonstrate that the building's energy use is at least 30% less than a reference building.	FCDS		3	5 Star			3				Requires building energy model and justification. Compliance assisted with provision of 200kW PV Array. Will require major design intervention to achieve compliance, lighting and air conditioning systems to be extremely efficient.
	P23.1	Energy Source	The building's energy comes from renewables.	Zero Carbon Action Plan	Ensure the building does not require fossil fuels to operate and develops a detailed plan to achieve net carbon neutrality in operation.	Develop a zero carbon action plan and have it endorsed by the building owner. The plan is to address all Scope 1 and 2 emissions, including refrigerants on site and provide design requirements, including additional spatial and infrastructure upgrade required. The plan is to include a cost analysis including potential savings to design as net zero from practical completion.	FCDS, Ionic, Alphazeta, EMF Griffith, Corbell & CHL		0	Yes	0	Met					* Avoid all fossil fuels on site: - Central heat pump hot water - Offset diesel emissions from fire pumps - Reverse cycle heating
	P23.2			100% Renewable Electricity		The building is to ensure all electricity under the control of the building owner or operator must be accounted for and sourced from renewables. Tenant electricity can be excluded. Where this is achieved by off-site renewables, a 5 Year contract must be presented.	FCDS, Ionic, Alphazeta, EMF Griffith, Corbell & CHL		3	5 Star	3			3			Cost of offsetting energy consumption considered reasonably small. Budget based on expected energy use and 80% solar utilisation on site, offset for 5 years.
	P23.3			100% Renewable Energy		In addition to the above, where the building includes infrastructure which can use fossil fuels to power building systems, the applicant must demonstrate how it will not use fossil fuels during the building operation.	FCDS, Ionic, Alphazeta, EMF Griffith, Corbell & CHL		3	5 Star	3			3			Offset of fossil fuels from minor uses provides limited value other than the credit points.
	P24.1	Other Carbon Emissions	The building's emissions from refrigerants and remaining carbon sources are eliminated or offset.	Net Zero Path	Ensure the building's emissions from refrigerants and all other categories are eliminated or offset.	Utilise refrigerants with a GWP<10 or offset the GWP. Maintenance access must be provided to access and replace refrigerants.	EMF Griffith		2	5 Star	2			2			Selection of GWP < 10 is not commercially feasible for this project. Limits product selection. Cost budget based on 120g/m2 of usable floor area.
	P24.2			Emission Elimination		Eliminate all other emissions, including elements above plus; • Life-cycle emissions from modules B and C as calculated in Life Cycle Impacts; • Emissions from construction equipment use, and utilities during construction on site; and	CHL		2	6 Star							Cost budget based on 300g/m2 of GFA.
	P25.1a	Water Use	The building has low water use.	Water Reduction - Prescriptive	Ensure the building meets minimum water performance requirements through a simple, prescriptive approach.	Provide low flow fixtures and appliances	FCDS		0	Yes		Met					FCDS to complete performance modelling, expected to be achieved with low-flow tapware and appliances.
	P25.1b			Water Reduction - Performance	Ensure the building meets minimum water performance requirements through a modelled approach.	Demonstrate a 15% performance improvement over minimum compliance using the Green Star Potable Water Calculator	FCDS, Ionic & DKO										
	P25.2			Improved Water Performance	Multi-unit residential buildings use 40% less potable water compared to a reference building.	Complete water modelling and demonstrate a 40 / 45% performance improvement in water consumption for the proposed development.	FCDS, Ionic & DKO		3	No							Initial water modelling indicates 30% water saving potential. Compliance could be achieved with a grey water collection / reuse system for toilet flushing.
	P25.3			Exceptional Water Performance	Multi-unit residential buildings use 60% less potable water compared to a reference building.	Complete water modelling and demonstrate a 60 / 75% performance improvement in water consumption for the proposed development.	FCDS, Ionic & DKO		3	No							
	P26.1	Life Cycle Impacts	The building has lower environmental impacts from resource use over its lifespan than a typical building.	Life cycle Impacts	The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	Appoint an LCA practitioner and demonstrate an overall 30% performance improvement against all categories with no more than 10% increase in any category.	FCDS		2	No					2		Credit considerd likely based on upfront carbon an energy emissions.

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Relevant to EoT	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Places	P27.1	Movement and Place	The building's design and location encourages occupants and visitors to use active, low carbon, and mass transport options instead of private vehicles.	Showers	The building includes showers and changing facilities for building occupants that are accessible, inclusive and located in a safe and protected space.	Provide showers at a rate of 1 per 50 occupants (1 per 200 occupants over 200)	DKO - Requires 7 Showers for Occupants		0	Yes			Target				Commerical tenancy to include EoT provisions within back of house areas.
	P27.2			Lockers		One locker must be provided for every eight staff occupants. The lockers must be secure and located in the changing rooms.	DKO - Requires 79 Lockers for Occupants		0	Yes			Target				Commerical tenancy to include EoT provisions within back of house areas.
	P27.3			Accessibility and Inclusivity		Upon accessing, pedestrians and cyclists must be protected from the elements and other vehicles. Access must be safe, with consideration given to avoiding steep gradients, surface grip levels and visibility around tight corners. Access to the facilities must be well lit between entryway to bike parking, all amenities and lift lobbies and main access points to the building. All regular building occupants must have easy access to lockers, showers, and building entry. Occupants must be able to find the facilities thanks to clear signage throughout the building and access points.	DKO		0	Yes		Met					Design will support occupant active transport.
	P27.4			Cyclist Facilities	The building's access must prioritise walking and cycling options. This means the building's access must be well lit, weather protected, and separated from vehicles. The building must also include access to cyclist facilities that are separated from the primary vehicle entrance to ensure safety.	Provide good access for cyclists and pedestrians: * Well lit * Weather Protected * Separated from Vehicles * Signposted * Secure * Access connected to relevant cyclist storage **and**	CHL & DKO		3	No		Met					Design includes parking bays for residents. Recommend addition of street level bike parking for visitors.
	P27.5			Sustainable Transport	Prepare a sustainable transport plan which seeks to change the mode of transport away from single use vehicles.	Include: * Car share parking schemes * Infrastructure for future EV charging and parking * EV load management system **and**	CHL & Aurum			No			3				Provsion of 16 EV charger would meet this requirement.
	P27.6			Reducing Private Use	The building's design and location prioritises walking, cycling, and transport options that reduce the need for private fossil fuel powered vehicles.	Appoint a professional to provide a transport plan to reduce emissions associated with private vehicle use in comparison to a reference building. Includes reduced vehicle emissions, increase active transport and reduction in trip kilometres. **And**	Corbell & PTG Consulting	x		No		Met					Project team includes a transport planner
	P27.7			Walkability		Provide at least 10 amenities across at least five categories within 400m of the project site. Prioritise pedestrians over cars with strict speed limits on site.	FCDS			No		Met					Project is considered highly walkable being close to the centre of the town and the local train station.
	P28.1	Enjoyable Places	The building provides places that are enjoyable and inclusive.	Publicly Accessible Spaces	The building delivers memorable, beautiful, vibrant communal or public places where people want to gather and participate in the community. The spaces are inclusive, safe, flexible and enjoyable	For residential spaces provide 1.75m^2 per dwelling, with a minimum of 250m^2. **and**	DKO - Requires 2348m2 Public Access Space		2	No							Design does not include sufficient public space.
	P28.2			Activation Strategy		Develop and fund an activation strategy to ensure placemaking continues after practical completion. The strategy must address target activities, funding, timing of activation, facilitators/suppliers, encouragement, future implementation.	DKO & CHL			No							
	P29.1	Contribution to Place	The building's design makes a positive contribution to the quality of the public environment.	Urban Context Analysis	The building's design contributes to the liveability of the wider urban context and enhances the public realm.	Provide an urban content report that considers economic, physical, social and cultural factors and considers planned changes to the local area. The plan should identify challenges which the building can contribute to solving and demonstrate appropriate design responses **or**	DKO		2	No		2					Design is being undertaken in close collaboration with local council and key stakeholders. There is potential for the credit to be achieved based on the service provision.
	P29.2			Independent Design Review		Utilise an independent design review panel - such as the OGA - to undertake design reviews at key points in the design. As a minimum this includes at concept / schematic phase, design development phase and at building permit stage.	DKO & CHL			No							
	P30.1	Culture Heritage and Identity	The building reflects local culture, heritage and identity	Community Led Design Response	The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities. This celebration was arrived through meaningful engagement with community groups early in the design process.	Produce a report detailing the community engagement activities undertaken and resultant design responses through features such as: • Community art or placemaking projects; • Selection of suppliers/designers of artwork or cultural elements; • Building elements that tell stories of the past and heritage; and • Spaces and uses that reflect the local identities. **or**	DKO & CHL		1	No							Project does not contribute to local culture or heritage.
	P30.2			Independent Design Review		Utilise an independent design review panel - such as the OGA - to undertake design reviews at key points in the design. As a minimum this includes at concept / schematic phase, design development phase and at building permit stag	DKO & CHL			No							

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Reference Only	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
People	P31.1	Inclusive Construction Practices	The builder's construction practices promotes diversity and reduces physical and mental health impacts	Minimum Requirement	During the building's construction, the head contractor provides gender inclusive facilities and protective equipment. The head contractor also installs policies on-site to increase awareness and reduces instances of discrimination, racism and bullying.	The main contractor shall provide gender specific bathrooms and PPE on site and provide policies and training on discrimination, racism, bullying, drug and alcohol awareness and mental health.	Main Contractor		0	Yes		Met					Contractor to ensure these requirements are met.
	P31.2			Needs Analysis	The head contractor provides high quality staff support on-site to reduce at least five key physical and mental health impacts relevant to construction workers. They must also evaluate the effectiveness of their interventions.	The contractor must complete a needs analysis of site workers and contractors to determine appropriate actions. The policies and programs should be relevant to all construction workers on site for the full duration of construction. A mix of programs is acceptable throughout the duration of construction period. **and**	Main Contractor		1	No		1					
	P31.3			Physical and Mental Health Impacts		The head contractor must introduce programs and solutions to address at least five of the following: • Suicide prevention; • Healthy eating and active living; • Reduce harmful alcohol and tobacco consumption and avoid drug use; • Increased social cohesion, community and cultural participation; • Understanding depression; • Preventing violence and injury; • Decreased psychological stress; and • Finding fulfilment at work or mindful meditation. **and**	Main Contractor			No						FCDS to assist main contractor in demonstrating compliance.
	P31.4			Evaluating Effectiveness		Provide an evaluation report to the client and sub-contractors including programs and initiatives delivered and whether they delivered the intended outcomes.	Main Contractor			No							
	P32.1	Indigenous Inclusion	The building celebrates Aboriginal and Torres Strait Islander people, culture and heritage.	Reconciliation Action Plan	The building's design and construction celebrates Aboriginal and Torres Strait Islander people, culture and heritage by undertaking one or both of the following: • Playing an active role in the organisational Reconciliation Action Plan; and • Incorporating design elements using the Indigenous Design and Planning principles.	Ensure that the project team includes a member of the organisation RAP Working Group. In addition, at least 90% of the project RAP targets are to have been met and all implemented actions related to the RAP are publicly reported on the Project's website. Any design element must be informed by consultation undertaken with the local Aboriginal and Torres Strait Islander community or through nominated representatives. **or**	DKO & CHL		2	No						Outside of the scope of this project.	
	P32.2			Inclusion of Indigenous Design		Demonstrate that the Australian Indigenous Design Charter are incorporated within the design. As a minimum, ensure the following are addressed: • Indigenous Led: Ensure Aboriginal and Torres Strait Islander representation in the creation of the design; • Community Specific: Ensure respect for the diversity of Aboriginal and Torres Strait Islander culture by following community specific cultural protocols; • Impact of Design: Always consider the reception and implications of all designs so that they are respectful to Indigenous culture; and • Shared Knowledge (collaboration, co-creation, procurement): Develop and implement respectful methods for all levels of engagement and sharing of Indigenous knowledge (collaboration, co-creation, procurement).	DKO & CHL			No							
	P33.1	Procurement and Workforce Inclusion	The building's construction facilitates workforce participation and economic development of disadvantaged and under-represented groups.	Social Procurement Strategy	Through the implementation of a social procurement strategy, at least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.	Create a strategy which includes a description of project objectives, needs and targets, a demographic survey of the local region, description of roles and responsibilities, data collection tools and templates and reporting requirements.	CHL		2	No							Outside of the scope of this project.
	P33.2			Employment Opportunities Strategies		Direct 2% of project's contract value to generate employment opportunities for disadvantaged and under-represented groups either directly, through workforce targets; or indirectly, through social procurement.	CHL			No							
	P33.3			Exceptional Performance	Through the implementation of a social procurement strategy, at least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.	Direct 4% of project's contract value to generate employment opportunities for disadvantaged and under-represented groups either directly, through workforce targets; or indirectly, through social procurement.	CHL		1	No							
	P34.1	Design for Inclusion	The building is welcoming to a diverse population and is welcoming to their needs.	Accessible Navigation	The building is designed and constructed to be inclusive to a diverse range of people with different needs.	Ensure the building's design and construction must be able to be navigated and enjoyed by stakeholders of diverse ages, genders, and abilities (for example physical, sight, sound, mind, spectrum), including: • Equal access to the building: Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building; • Diverse wayfinding: Introduce visual, physical, olfactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner; and • Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users.	DKO		2	No				2		To be reviewed as design progresses. Recommended the project consider targeting.
	P34.2			Design for Dignity	Engagement with target groups has informed the inclusive design.	Ensure the design aligns with best practice guidelines, such as the Design for Dignity Guidelines: Principals for Beyond Compliance Accessibility in Urban Regeneration. Building solutions that are expected to be included would be assistive technologies, emotional health spaces, acoustic treatments, adaptive strategies, gender, size, and physical appropriate facilities.	DKO		1	No							

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Reference Only	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Nature	N35.1	Impacts to Nature	Ecological value is conserved and protected.	Impacts to Nature - Minimum Requirements	The building was not built on, or significantly impacted, a site with a high ecological value.	Ensure site preparation and construction works do not clear: – Old-growth forest, – Prime agricultural land, – Any area within 100m of a wetland listed as being of 'High National Importance', – Aspects considered 'Matters of National Significance' listed under the Environmental Protection and Biodiversity Conservation Act (1999)	FCDS		0	Yes		Met					No major issue for this project. Site is compliant.
	N35.2			Light Pollution to Neighbouring Bodies		Demonstrate that all outdoor lighting on the project complies with AS 4282:1997 Control of the obtrusive effects of outdoor lighting.	Aurum			Yes		Met					Electrical consultant to design to avoid light spill and provide models in support.
	N35.3			Light Pollution to Night Sky		Demonstrate that no external luminaire on the project has a ULOR that exceeds 5%, relative to its actual mounted orientation **or** that the direct illuminance from external luminaires on the project produce a maximum initial point illuminance value no greater than 0.5 Lux to the Site Boundary and 0.1 Lux to 4.5m beyond the site into the night sky.	Aurum & Seedesign			Yes		Met					Electrical consultant to design to avoid light spill and provide models in support.
	N35.4			Wetland Management Plan		Where the building is within 100m of a wetland, generate and make public a site-specific Wetland Management Plan. The plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting and management of the wetland ecosystem for a minimum of five years.	CHL & Seedesign			Yes		Met					Not applicable for this site.
	N35.5			Ecological Value	• The building's design and construction conserves existing natural soil, hydrological flows and vegetation elements; and • If deemed necessary by an Ecologist, at least 50% of existing site with high biodiversity value is retained.	Demonstrate to current, future and past ecological values of the site are to be protected. Including assessment of local and regional threats and mitigation requirements and engaging with the local community **and**	CHL & Seedesign		2	No							Project does not significantly address biodiversity requirements.
	N35.6			Diversity Protection		Where an ecologist has assessed the area as high ecological value the project must retain at least 50% of the site area and manage impacts of light and noise pollution, habitat connectivity, water quality, migration and two other local issues.	CHL & Seedesign			No							Project is not considered high ecological value.
	N36.1	Biodiversity Enhancement	The building's landscape enhances the biodiversity of the site.	Landscape Area	• The building's site includes an appropriate landscape area; • The landscaping includes a diversity of species and prioritises the use of climate-resilient and indigenous plants; and • The project team develops a site-specific Biodiversity Management Plan and provides it to the building owner or building owner representative.	Provide landscaping over 15% of the site area or 0.2% of the GFA - whichever is Greater.	Seedesign - Requires ~750m2 Landscaped Area		2	No							Excessive requirement for most projects.
	N36.2			Diversity of Species		Landscape must be > 60% indigenous and achieve diversity of: * 10% Plant Species * 20% plant genus * 30% plant family. Provide 1 nesting tree per 500m^2 of landscaped area.	Seedesign			No							
	N36.3			Biodiversity Management Plan		An ecologist must assess and verify that the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. An Ecologist must provide this narrative.	Seedesign			No							
	N36.4			Increased Landscape Area	• A greater area of landscaping is provided; and • The landscaping includes critically endangered and/or endangered plant species native to the bioregion.	Provide landscaping over 30% of the site area or 0.333% of the GFA - whichever is Greater.	Seedesign - Requires ~1665m2 Landscaped Area		2	No							
	N36.5			Increased Diversity of Species		Landscape must be > 80% indigenous and achieve diversity of: * <10% Plant single species * <20% Plants single genus * <30% Plants single family. Provide 1 nesting tree per 250m^2 of landscaped area.	Seedesign			No							
	N37.1a	Nature Connectivity	Wildlife movement is facilitated within and adjacent to the site	Landscaping	The site must be built to encourage species connectivity through the site, and to adjacent sites - through either landscaping **or** infrastructure. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.	Provide landscape which is contiguous with existing, restored and new habitats. As a minimum requirement for habitat connectedness, the conservation area must make up at least 25% of the total external area within the building's site boundary to a minimum of 182m^2	Seedesign		2	No							Not feasible for this site.
	N37.1b			Infrastructure		Include design features such as a canopy bridge, wildlife tunnels, green roofs, amphibian tunnels and green infrastructure are used to connect nature on site to adjacent natural areas	Seedesign & Colliers			No							
	N38.1	Nature Stewardship	Biodiversity is restored beyond the building site.	Offsite Restoration	The building owner, as part of the project's development, undertakes activities that protects or restores biodiversity at scale beyond the development's boundary.	Achieve "Impacts to Nature" credit and restore an area at least equivalent to the GFA of the project.	CHL		2	No							Could be considered by CHL
	N39.1	Waterway Protection	Local waterways are protected, and the impacts of flooding and drought are reduced.	Run Off Volume	The building demonstrates an annual average flow reduction (ML/yr.) of 40% compared to pre-development levels and meets specified pollutants targets.	The development must demonstrate an annual average flow reduction (ML/yr.) of 40% compared to pre-development levels **and**	Colliers		2	No		2					Stormwater to be managed on site as far as practicable.
	N39.2			Water Pollution		Total Suspended Solids (TSS) 85% Gross Pollutants 90% Total Nitrogen 45% Total Phosphorus 65%	Colliers			No							
	N39.3			Run Off Volume	The building demonstrates an annual average flow reduction (ML/yr.) of 80% compared to pre-development levels and meets specified pollutants targets.	The development must demonstrate an annual average flow reduction (ML/yr.) of 80% compared to pre-development levels **and**	Colliers		2	No		2					
	N39.4			Water Pollution		Total Suspended Solids (TSS) 90% Gross Pollutants 95% Total Nitrogen 60% Total Phosphorus 70%	Colliers			No							

	Ref No.	Title	Aim of Credit	Sub-Element	Credit Criteria Summary	Design Team Actions	Key Stakeholder	Relevant to DA?	Points Available	Minimum Compliance?	Net Zero Pathway	Base Design	Target Features	Stretch Targets	To Be Confirmed	Unlikely Points	Comments
Leadership	M40.1	Market Transformation	Celebrates initiatives or outcomes that are deemed new and break barriers, and in turn inspire others to follow.	Inclusive Construction Practices	The project is seeking to remove physical barriers to participation in the construction workforce for different groups, particularly women who represent less than 2% of the construction and building workforce	Women in construction represent more than 2% of construction and building workforce			1	No							Credits currently under review
	M41.1	Leadership Challenges	The project meets a Leadership Challenge developed by the GBCA	Net Zero	Where all Net Zero Pathway credits are met, a bonus credit is awarded	Achieve all credits within the Zero Carbon Action Plan pathway.			1	No				1			Required to be achieved for all 5-Star projects.
	M41.2			Fossil Fuel Free Construction Site	The project minimises the use of fossil fuels, such as diesel, petrol or LPG, for powering construction machinery, equipment and site offices during on-site construction activities. **High Emitting** Activities are defined as: - Excavation - Demolition - Earthworks - Concrete Pumping - Piling and Drilling - Generators - Cranes	The project has achieved **Responsible Construction** Credit • **20%** of high emitting construction equipment on high emitting construction activities is fossil fuel free • The site offices are powered by **100%** renewable energy • All **electricity** used by the construction site is 100% renewable.			1	No						
	M41.3					• **50%** of high emitting construction equipment on high emitting construction activities is fossil fuel free			1	No							
	M41.4					• **100%** of all construction equipment is fossil fuel free			1	No							
	M41.5			Responsible Products	The building's products are comprised of responsibly manufactured products.	The building has both Best Practice Products and a high amount of Good Practice Products for structure, envelope, systems and/or finishes			1	No							
	M41.6					The building has both Best Practice Products and a high amount of Good Practice Products for structure, envelope, systems and/or finishes			1	No							
	M41.7					The building has both Best Practice Products and a high amount of Good Practice Products for structure, envelope, systems and/or finishes			1	No							
	M41.8					The building has both Best Practice Products and a high amount of Good Practice Products for structure, envelope, systems and/or finishes			1	No							
	M41.9			Circular Economy	The project team has identified and implemented circular economy initiatives to increase the circularity of material/s/product/s within the supply chain/s of the project.	• The project team identifies and implements circular economy principles and initiatives • The project team demonstrates an increased circularity of 10% (weighted by cost)			2	No							
	M41.10					The project team demonstrates an increased circularity of 20% (weighted by cost)			1	No							

Commissioning Brief

Project:	CHL Subiaco
Service:	Independent Commissioning Agent
Subject:	Initial Commissioning Brief
Revision:	A
Date:	5th January 2026
Author:	Graham Agar

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Overview

FCDS have been commission to assist the CHL Subiaco team with commissioning management and agency as part of our role assisting the project to achieve an 'Australian Excellence' level, in comparison to the Green Star Buildings benchmarks. The role has been briefed to achieve compliance with the Green Star Verification and Handover elements for:

- Services and Maintainability Review
- Building Tuning
- Independent Commissioning Agent

The role also includes assistance with design documentation and construction phase services to assist with delivery of documentation at completion to support the Green Star As-Built certification.

The purpose of this brief is to inform the project team as to requirements and expectations for overall design practice and upcoming deliverables.

Service and Maintainability Review

FCDS will complete a detailed service and maintainability review for the project based on the DD (~60% complete) documentation. The review is an important part of the building sustainability strategy certification and will aim to address:

- Commission-ability
  - Can the proposed design be commissioned to demonstrate required performance.
    - Access, test points, key pre-requisites for commissioning
- Controllability
  - Will the systems be able to maintain stable operation.
    - Location of sensors / automation
    - Potential feedback loops
    - Clear definition of control requirements and interfaces
- Maintainability
  - Can the proposed design be maintained
    - Specialist products / contractors
    - Availability of spare parts / requirements for bespoke elements
- Operability
  - How will the proposed design be driven by occupants
    - Access to controls
    - Required training
- Safety

Ideally, FCDS will utilise documents generated by the design team for other deliverables, however, specific requirements / comments may be required. Where designers are providing reports, FCDS recommend including high level commentary against these requirements.

Project Timeline

Project Phase	FCDS Actions	Design Team Responsibilities
Schematic Design (~30%)	Provide Commissioning Brief and project team expectations	Brief / Reverse brief confirming: • System type • Design parameters • Safety Risks • Unusual maintenance requirements
Design Development (~60%)	Initial Services and Maintainability Review Draft Commissioning Specification	60% Design documentation SID Report Control intent / draft FCD
Contract / Building Licence Documentation (~80%)	Maintainability Report Commissioning and tuning requirements for design team documentation.	Documentation to address review commentary Sign off on Maintainability Report 80% Design documentation, including plans, schematics and specifications.
IFC (100%)	Commissioning and tuning specification.	Finalised construction documentation, with all relevant inclusions.

Codes and Standards

The project is requried to commission to best practice international standards. FCDS recommend the use of the CIBSE commissioning codes as they provide coverage of all services:

- CIBSE Commissioning Code M (and ancillary codes for relevant services)
  - Code A – Air Distribution Systems
  - Code B – Boilers
  - Code C – Automatic Controls
  - Code L – Lighting
  - Code M – Management
  - Code R – Refrigeration
  - Code W – Water Distribution Systems

In addition, the building envelope is to be pressure tested to demonstrate a low level of leakage carried out by a member of the Air Tightness Testing and Measurement Association (ATTMA) or a testing member of the Air Infiltration and Ventilation Association of Australia (AIVAA) in accordance with AS/NZS ISO 9972:2015 Thermal performance of buildings - Determination of air permeability of buildings - Fan pressurization method.

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Key Requirements

As the project is targeting a strong sustainability outcome, there will be an elevated requirement in terms of documentation and testing information at or prior to commissioning. FCDS note the following for comment and/or incorporation into documentation:

Testing Plans and Protocols

All contractors should be required to provide standard ITPs and commissioning method statements as part of the **shop drawing process**. This allows FCDS to review templates and confirm that they will meet Green Star and CIBSE requirements, potentially avoiding a lot of rework at practical completion.

All contractors should nominate a technical specialist to oversee commissioning of the various systems. This / these specialists will be a point of contact for the ICA and help to streamline the commissioning and handover process.

All contractors should advise major prerequisites for completion of their works as soon as practicable after appointment to ensure major commissioning milestones are tracked within the project program. For example:

- Mechanical
  - Power to mechanical boards
  - Building envelope completion
  - Quiet site for stair pressure testing
  - Completion of roof plant for air conditioning / circulation testing
- Metering
  - Power to site
  - Water to site
  - Communications infrastructure operational
  - Circuits / piping complete down stream

Commissioning Period – it is likely that the building will need at least a week following substantial completion to allow for testing of fire systems, building envelope, VOC and integrated systems building testing (Full function fire test, black out test). This should be highlighted within the project program.

Operation and Maintenance Manuals

Operation and Maintenance manuals make up more than 50% of the required documentation to justify the project level sustainability outcomes. Contractors are encouraged to provide draft O+Ms early within the CA phase to agree layout and general content. Consultants are requested to specify the following minimum inclusions – items in bold should be either dictated or closely reviewed by the designer:

- Summary sheet of relevant building service contacts
- **System-level information for all building systems**
- **Introduction and scope, including physical and functional descriptions**
- **Operating parameters** and procedures
- Preventive maintenance requirements, including procedures and schedules;
- Corrective maintenance requirements, including repair requirements;
- Service contacts, and any warranties and certificates.
- Up-to-date drawings incorporating at least:
  - Mechanical, electrical and hydraulic drawings and schematics covering all associated nominated building systems
  - Architectural, façade/building envelope drawings
  - Architectural layout of base building

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Sustainability Outcomes

Based on the project Green Star approach, the following elements will need to be delivered by the various project trades. Consultants should ensure the design facilitates these outcomes as far as practical:

Architectural / Main Contractor

- Building Envelope Pressure Test
    - Covering at least:
        - All typical apartment types
        - All apartments at the highest level
        - All apartments at ground level
        - At least 10% of all apartments
    - Scheduled to permit witnessing
    - Design to minimise penetrations to building envelope eg, maintain power points on internal walls only.
    - Inspect penetrations during construction – risers, floor and roof penetrations.
    - Detail responsibility for wall penetrations – sealing of plenum boxes etc.
- Onsite verification of:
    - Acoustic performance, including 'quiet site' to permit accurate measurement of noise levels due to installed systems and local environment
    - VOC content, including air quality measurement prior to occupancy
        - Requires completion of internal works prior to installation of tenant furniture etc.

Remote access and hydraulic / electrical metering interfaces are considered critical and shall be demonstrated to the satisfaction of the Superintendent's Representative prior to PC.

Similarly, all meters are to be provided with meter validation certificates, in accordance with NABERS validation protocols, prior to PC.

Mechanical

- Outside air flow rates for common areas
- Exhaust system flow rates
- Refrigerant content – species and quantity

Electrical

- Online availability / access to meter readings
- Meter and meter reading system validation for all water and electrical meters. All meters shall be provided with NABERS meter validation certificate prior to PC.
    - The contractor shall allow to provide load banks if needed to ensure sufficient usage to validate all meters.
- Lighting control functionality including:
    - Variable lux levels
    - Presence / absence detection and automated control of internal lighting
    - Automated control of external lighting

Hydraulic

- Water Metering System including shall be tested for accuracy, including completion of NABERS meter validation certification and connection to meter monitoring system. All meters shall be provided with NABERS meter validation certificate prior to PC.

Fire

In addition to all statutory tests, the contractor shall complete a fire system flow test to demonstrate >90% capture of pump flow test water on site.

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Key Tuning Outcomes

FCDS note the following key commissioning / tuning outcomes for the project.

- Mechanical Capacity
    - Mechanical plant shall be tested in peak cooling and peak heating conditions. The mechanical contractor shall arrange for temperature logging in common areas on a peak day (maximum temperature over 37°C)
- Hot Water Capacity
    - Hot Water plant shall be tested in design heating conditions. The mechanical contractor shall arrange for temperature logging in common areas on a design winter day (minimum ambient <4°C).
- Solar Output
    - The solar system performance shall be trended over the year, with total annual output and monthly output shall be compared to model expectations

PTG/02566

Transport Impact Assessment
Court Place - 154 Subiaco Road, Subiaco

28th January 2026 | Revision B

Prepared for Community Housing (Subi East) Limited

METROPOLITAN REDEVELOPMENT AUTHORITY ACT 2011

APPROVED PLANS

04 June 2026

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REPORT DETAILS

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1 INTRODUCTION

1.1 Background

PTG Consulting Pty Ltd (PTG) has been commissioned by Community Housing (Subi East) Limited ("the Client") to prepare a Traffic Impact Assessment (TIA) for the proposed mixed-use residential development located at Lot No.154 Subiaco Road, Subiaco, WA (the "Site").

This report has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016) and the Transport Impact Assessment (TIA) Checklist is included at Appendix A.

Specifically, this report aims to assess the operations of the proposed development internally and its connections to the adjacent road network, with a focus on traffic volumes, parking, access and accessibility.

This report also outlines the requirements and opportunities associated with traffic and transport within the development, referencing relevant Council and WAPC policies and guidelines as well as best-practice planning within Western Australia.

2 EXISTING SITUATION

2.1 Regional Context

The Site is located at Lot No. 154 Subiaco Road within the City of Subiaco and is located around 3.0 kilometres northwest of Perth CBD as presented in **Figure 1**.

Figure 1 Site Location



Source: Main Roads Road Information Mapping System and MetroMap

2.2 Existing Site Uses

The Site is currently a vacant lot.

2.3 Existing Parking and Demand

The Site has no existing parking and demand.

2.4 Existing Access Arrangements

The Site has no existing access arrangements.

2.5 Existing Site Traffic

The Site is currently empty and generates no vehicular trips.

2.6 Surrounding Land Uses

The Subi East Master Plan shown in **Figure 2** indicates that the land uses surrounding the Site will consist of residential developments, education, and community/recreation land uses.

Figure 2 Subi East Master Plan



Source: Subi East Master Plan

2.7 Existing Road Network and Traffic Management

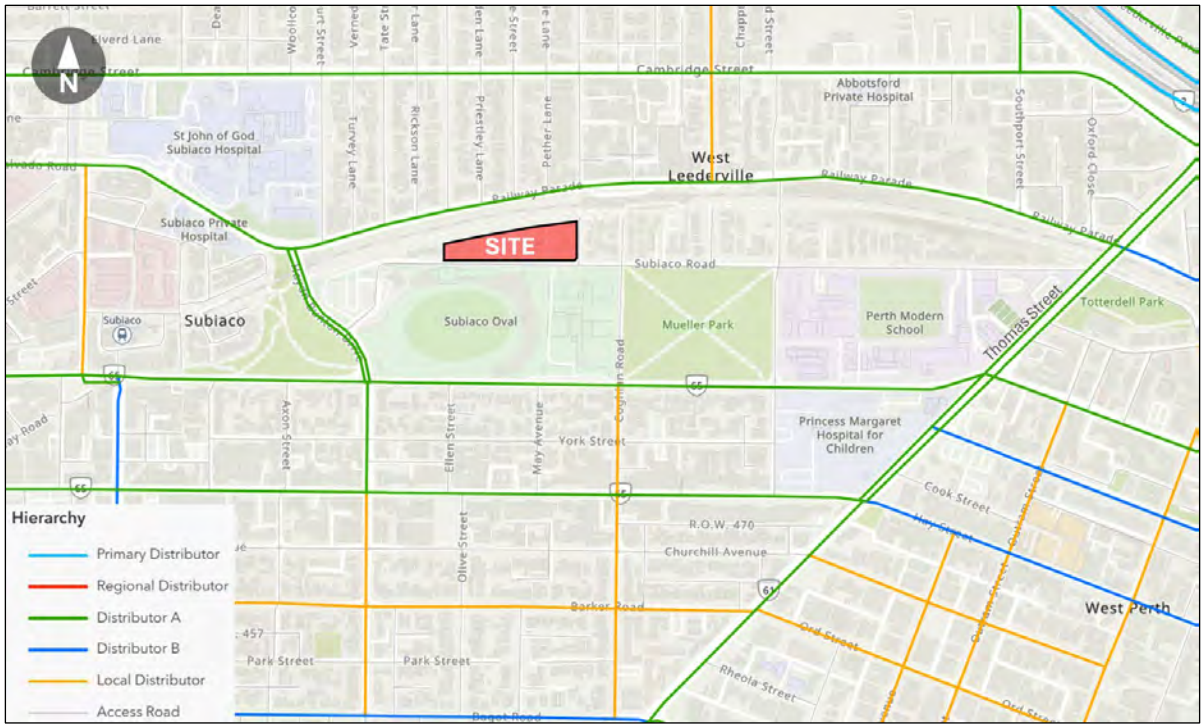
The road network within Western Australia is defined by Main Roads WA Road Hierarchy which describes the function, characteristic and management of each type of road. A description of each road type as per Main Roads WA Road Hierarchy criteria is summarised in **Table 1**.

Table 1 Road Hierarchy Description

Road Type	Description
Primary Distributor	Provide for major regional and inter-regional traffic movement and carry large volumes of generally fast-moving traffic. Some are strategic freight routes, and all are State Roads. They are managed by Main Roads Western Australia.
District Distributor A	Carry traffic between industrial, commercial and residential areas and generally connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. They are managed by local government.
District Distributor B	Perform a similar function to type A District Distributors but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with a traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and generally not through them, forming a grid which would ideally space them around 1.5 kilometres apart. They are managed by local government.
Regional Distributor	Roads that are not Primary Distributors, but which link significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. They are managed by local government.
Local Distributor (Urban)	Roads that carry traffic within a cell and link District Distributors or Regional Distributors at the boundary, to access roads. The route of Local Distributors should discourage through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. Urban Local Distributor roads are managed by local government.
Local Distributor (Rural)	Connect to other Rural Distributors and to Rural Access Roads. Not Regional Distributors, but which are designed for efficient movement of people and goods within regional areas. Rural Local Distributor roads are managed by local government.
Access Road	Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. They are managed by local government.

Figure 3 shows the road hierarchy network and **Table 2** provides a summary of the road characteristics of the surrounding road network.

Figure 3 Road Hierarchy



Source: Main Roads WA Road Information Mapping System

Table 2 Existing Road Network

Road Name	Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Approximate Road Pavement Width (m)	Speed Limit
Thomas Street	Distributor A	Local Government	6	2	21.2 (including 1.2m median)	60 km/h
Railway Parade	Distributor A	Local Government	2	2*	8.6 (including 2m median)	50 km/h
Haydn Bunton Drive	Distributor A	Local Government	4	2	16.2 (including 1.8m median)	50 km/h
Subiaco Road	Access Road	Local Government	2	2	6.2	40 km/h
Court Place	Access Road	Local Government	2	2	6.4	40 km/h

**Path is discontinuous*

Source: MRWA Road Information Mapping System & Metromap

2.8 Traffic Flows on Surrounding Roads

The existing traffic volumes of the roads surrounding the Site were sourced from Main Roads WA Traffic Map and are summarised in **Table 3**.

Table 3 Existing Traffic Volumes

Road Name	Source	Date	AM Peak (vph)	PM Peak (vph)	Weekday (vpd)
Haydn Bunton Drive (south of Railway Parade)	SCATS	2023	336	686	5,204
Loftus Street (north of Railway Parade)	SCATS	2023	2,597	1,706	27,366
Railway Parade (east of Haydn Bunton Drive)	SCATS	2023	839	586	7,684
Railway Parade (west of Northwood Street)	Traffic Map	2023/2024	1,370	1,225	15,247
Railway Parade (west of Thomas Street)	SCATS	2023	297	326	5,023
Railway Parade (east of Thomas Street)	SCATS	2023	485	386	4,574
Salvado Road (west of Haydn Bunton Drive)	SCATS	2023	825	577	7,282
Subiaco Road (west of Thomas Street)	Traffic Map	2020/2021	136	179	1,092
Thomas Street (south of Railway Parade)	SCATS	2023	1,275	2,471	28,127

2.9 Operation of Surrounding Intersections

The nearest key intersection located approximately 250 metres from the Site is the Haydn Bunton Drive and Subiaco Road intersection. This is a left-in left-out give-way-controlled intersection as illustrated in **Figure 4**.

Figure 4 Haydn Bunton Drive / Subiaco Road Intersection



Source: MetroMap

2.10 Existing Pedestrian/Cycle Networks

Figure 5 shows the existing pedestrian and cycling network as shown in MetroMap. Shared paths are present on both sides of Subiaco Road, along with raised pedestrian crossings. Pedestrians and cyclists may access West Leederville train station via Court Place (east of the development). A principal shared path also runs parallel to the rail line.

Figure 5 Existing Pedestrian/Cycling Network



Source: MetroMap

2.11 Existing Public Transport Services

Transperth Bus Routes 28, 95, 96 and 97 run in the surrounding area. Selected services of bus routes 95, 96 and 97 operate during school days only and traverse Roberts Road. The nearest bus stop to the proposed development is Robert Road Bob Hawke College Stand 1 (around 200 m). In addition to bus services, the area is also well-serviced by nearby train infrastructure. The combination of bus and train services provides flexible and reliable transport choices for daily commuting, school travel and access to key destinations across the metropolitan area.

Two Transperth train lines operate near the proposed development. Both the Fremantle Line and the Airport Line include a stop at West Leederville Station providing convenient access to a wider rail network for residents and visitors.

Table 4 and Table 5 show the frequency of bus and train trips, respectively.

Table 4 Bus Route Service Frequency Table

Bus Route	Route Description	Service Frequencies		
		Weekdays	Saturdays	Sundays & Public Holidays
28	Perth - Claremont Station via Perth High Performance Centre	12 minutes (Peak Hour)	60 minutes	
95	Glendalough Station - Subiaco Station via Harbourne Street	Two (2) AM trips* & Two (2) PM trips*	No Service	
96	University of WA South - Leederville Station via QEII Medical Centre & Thomas Street	One (1) AM trip* & Two (2) PM trips*	No Service	
97	University of WA South - Subiaco Station via QEII Medical Centre & Rokeby Road	One (1) PM trip only*	No Service	

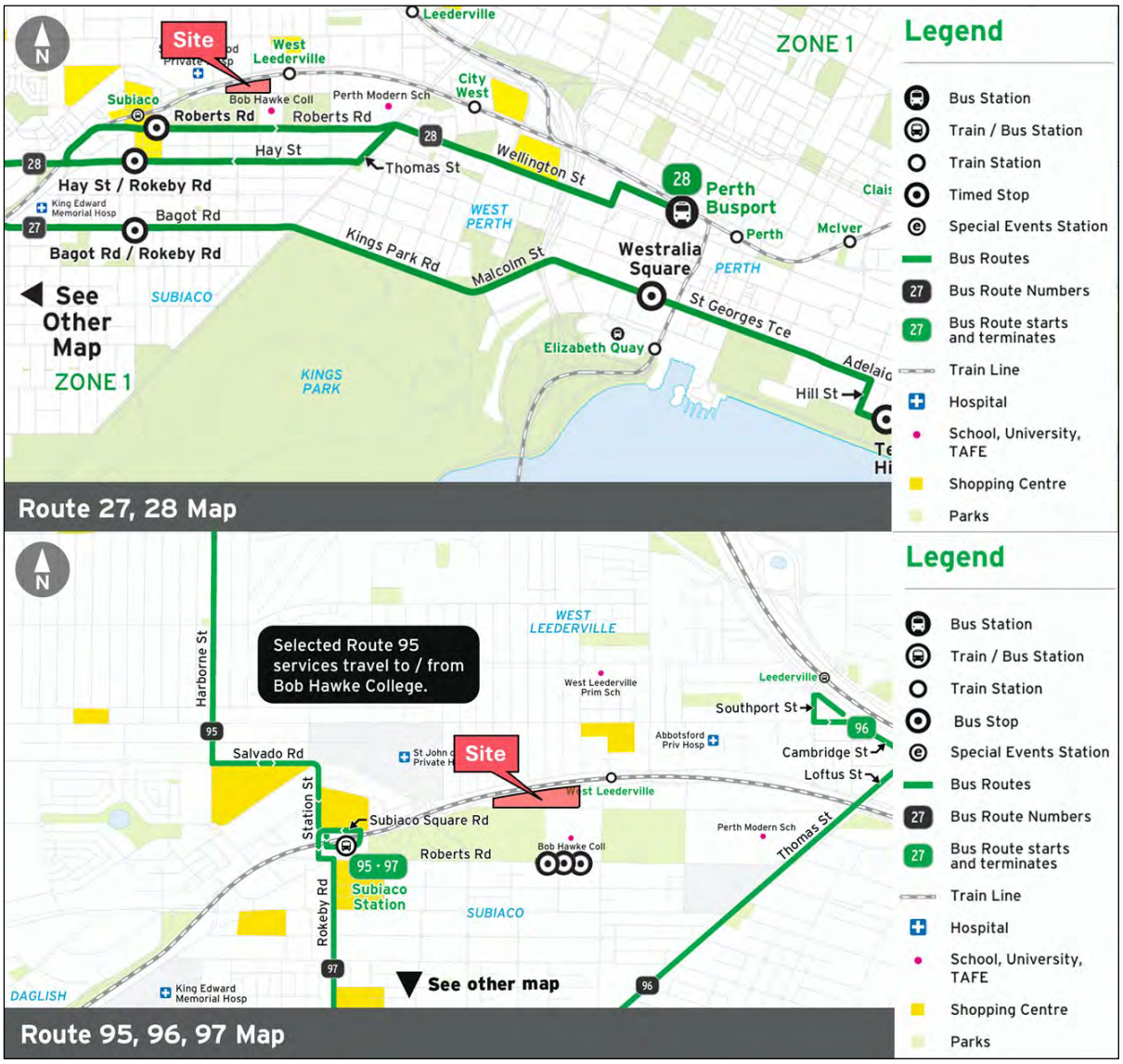
**Operates on school days only.*

Table 5 Train Route Service Frequency Table

Train Route	Service Frequencies		
	Weekdays	Saturdays	Sundays & Public Holidays
Fremantle Line	10 minutes (Peak Hour)	10 minutes (Peak Hour)	10 minutes (Peak Hour)
Airport Line	12 minutes (Peak Hour)	12 minutes (Peak Hour)	12 minutes (Peak Hour)

Figure 6 shows the bus and train routes and the bus stop location at West Leederville.

Figure 6 Bus and Train Routes Map

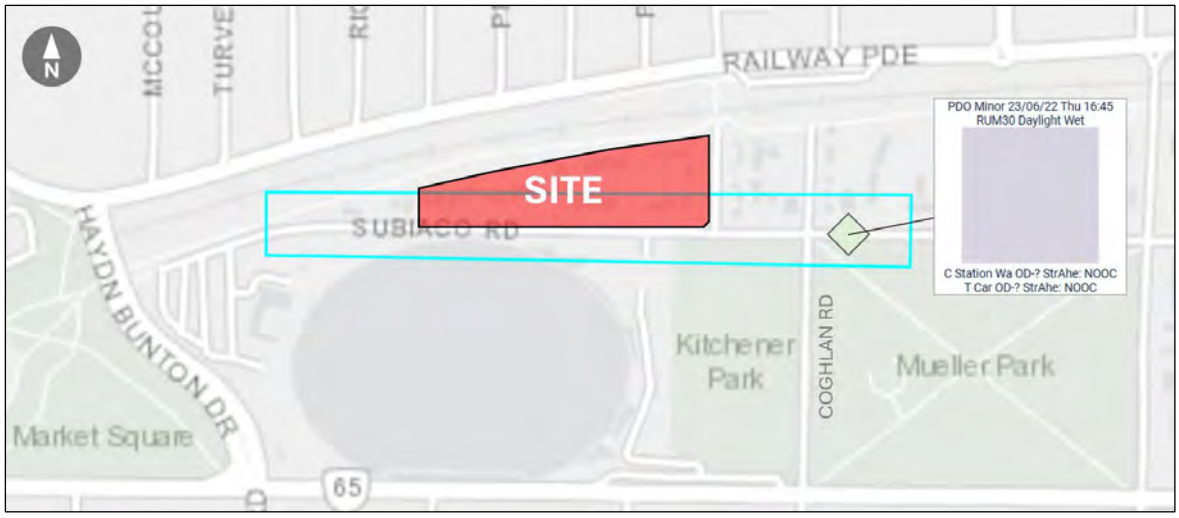


Source: Transperth

2.12 Crash Analysis

A crash assessment for the surrounding road network of the Site has been completed using Main Roads WA Reporting Centre. The assessment covers all the recorded crashes for the 5-year period between 1 January 2020 to 31 December 2024.

Figure 7 Crash Location



Source: MRWA Crash Map

Crash data is summarised as follows:

- A total of one (1) crash was recorded within the vicinity of the Site, with no fatal crashes recorded.
- One (1) recorded crash resulted in minor property damage.

Overall, based on the crash data, it is not expected that the proposed property will have an impact on road safety in the area. However, it is important to note that the road geometry of Subiaco Road has undergone significant changes during the assessment period. These modifications may have altered traffic flow, driver behaviour, and visibility conditions. As a result, the historic crash data may no longer accurately reflect the current or future road environment.

3 PROPOSED DEVELOPMENT

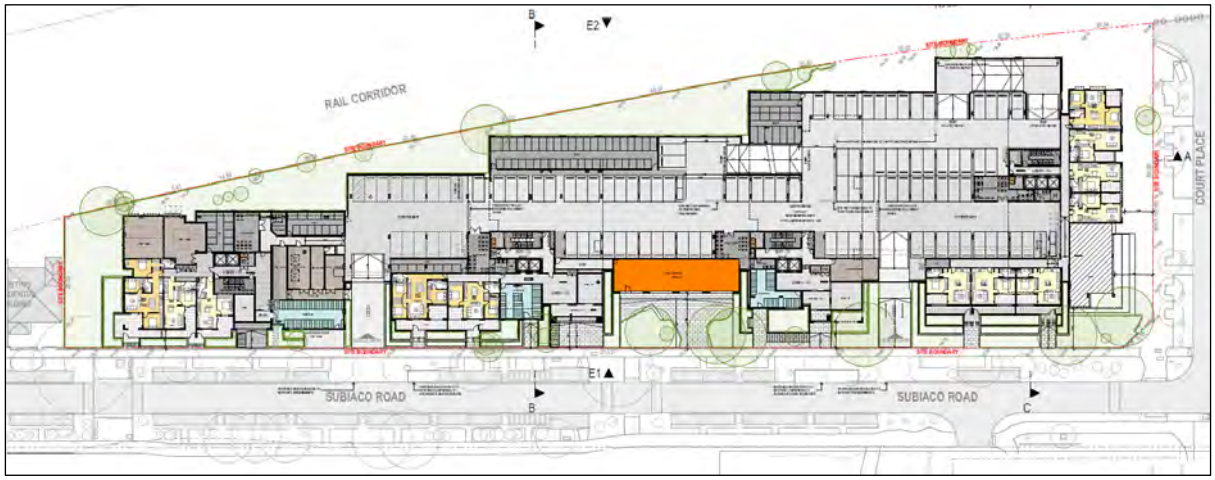
3.1 Proposed Land Uses

The proposed development is a mixed-use residential development with the following breakdown, and the site plan is shown in

Figure 8:

- 447 dwelling units
  - 1-bedroom: 288 dwelling units
  - 2-bedroom: 139 dwelling units
  - 3-bedroom: 20 dwelling units
- 352 m^2 Commercial/ Retail

Figure 8 Proposed Site Plan

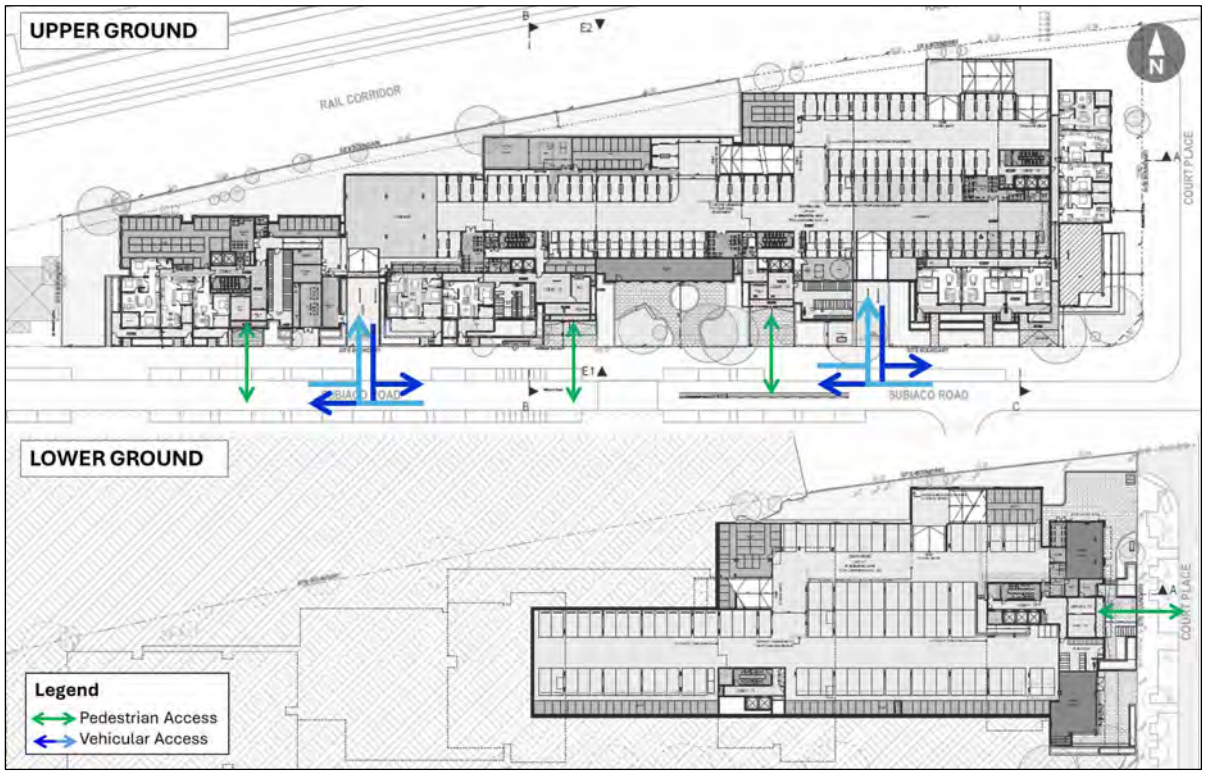


Source: DKO Architecture (WA) Pty Ltd. (January 2025)

3.2 Access Arrangements

Figure 9 shows two full-movement vehicle access points proposed to be located along Subiaco Road and three pedestrian access points along Subiaco Road to reach the upper ground level. Another pedestrian entry point is located along Court Place to access the lower ground level. Based on the proposed land use, the types of vehicles expected to access the development include passenger cars and waste trucks/ occasional delivery vehicles.

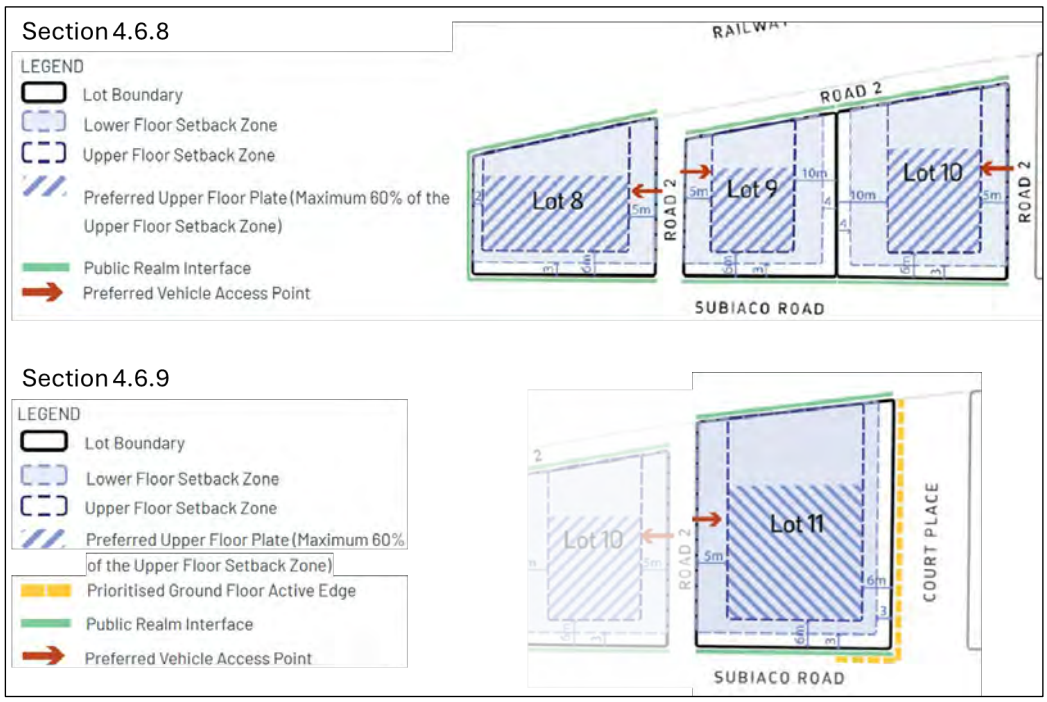
Figure 9 Proposed Access Points



Source: DKO Architecture (WA) Pty Ltd.

According to the Subiaco Oval and Railway Precinct Design Guidelines Section 4.6.8, crossovers for Lots 8-10 from Subiaco Road are not permitted for these four lots and all vehicle access should be from Road 2. The preferred vehicle access points as per the guidelines are shown in Figure 10.

Figure 10 Design Guidelines for Lots 8-11



Source: Subiaco Oval and Railway Precinct Design Guidelines

A two-way vehicle crossover (Road 2) is proposed to connect to Subiaco Road, providing access to the underground car park serving the proposed lots.

3.3 Swept Path

3.3.1 B85 and B99 Vehicles

Swept path assessment has been conducted with B85 and B99 design vehicles near the access points and within the ramps and internal roadways, as shown in **Figure 11** to **Figure 13**. The swept path diagrams demonstrate that these design vehicles are able to adequately enter and exit the proposed Site without any encroachments. Slight overlapping between vehicle paths was observed near ramp entrances. It is recommended that traffic management measures such as convex mirrors be installed near ramp corners so that appropriate visibility can be achieved. Kerb/line markings of the parking spaces nearest to the ramps should also be modified to accommodate vehicle turns.

Vehicle path overlapping near ramp entrance are considered acceptable given the directional nature of residential traffic movements during peak periods. During AM peak, vehicle movements will predominantly be outbound as residents leave for work and other activities. Conversely, inbound movements during this period will be minimal.

During the PM peak hour, the reverse travel pattern applies, with vehicle movements predominantly inbound as residents return to the development. Outbound movements during this period are generally limited. This directional split significantly reduces the likelihood of conflicting inbound and outbound movements occurring simultaneously near the ramp entrance. Furthermore, give way line marking is proposed throughout the car park at strategic locations to improve movement and circulation at key junctions.

Figure 11 Swept Path Analysis - Lower Ground

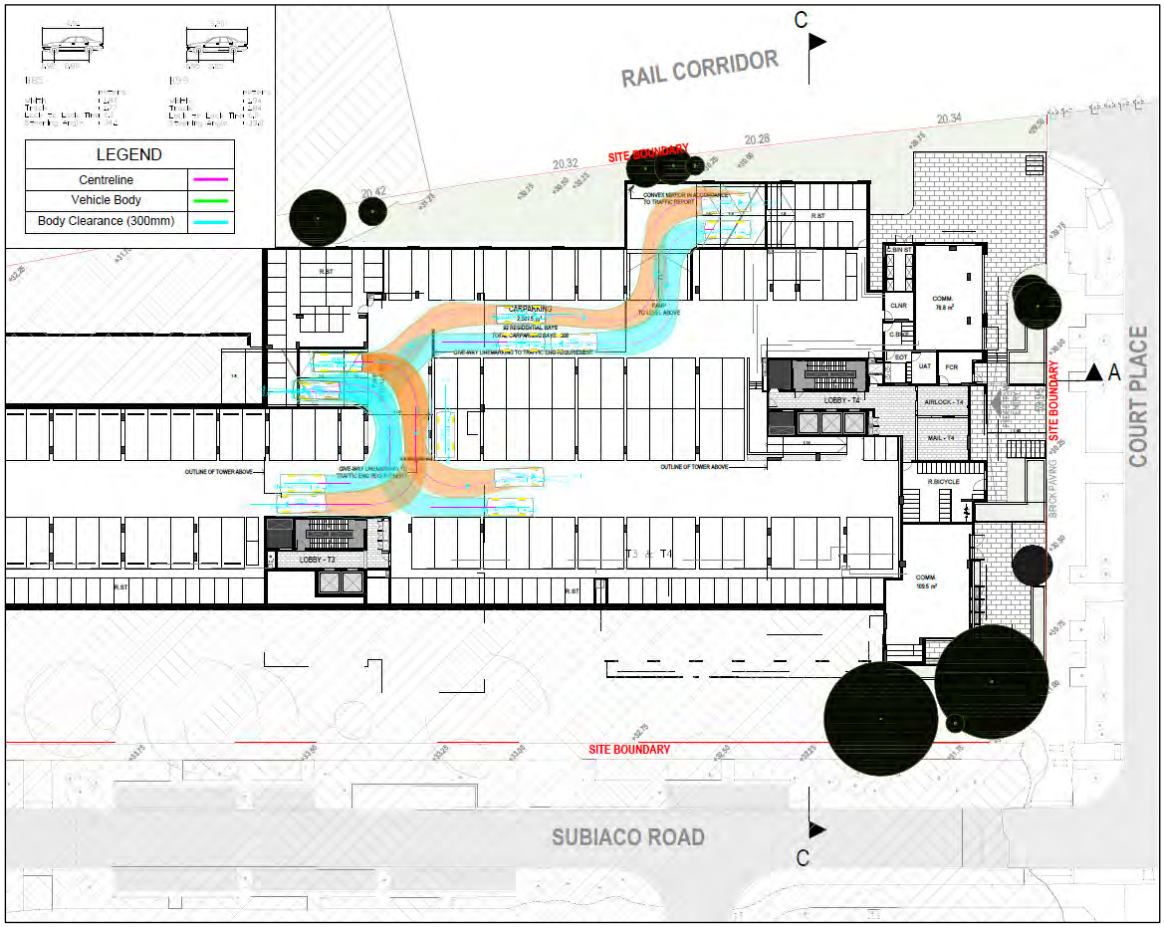


Figure 12 Swept Path Analysis - Upper Ground

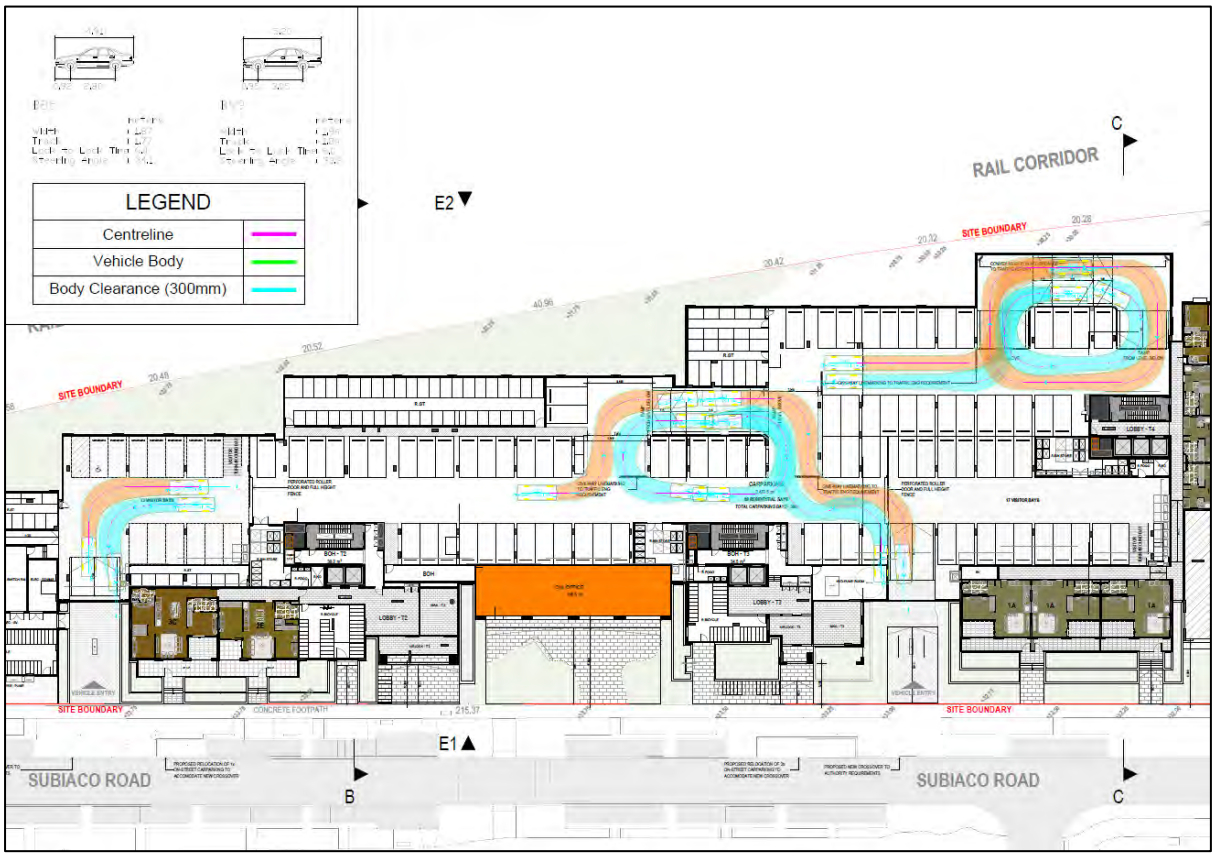
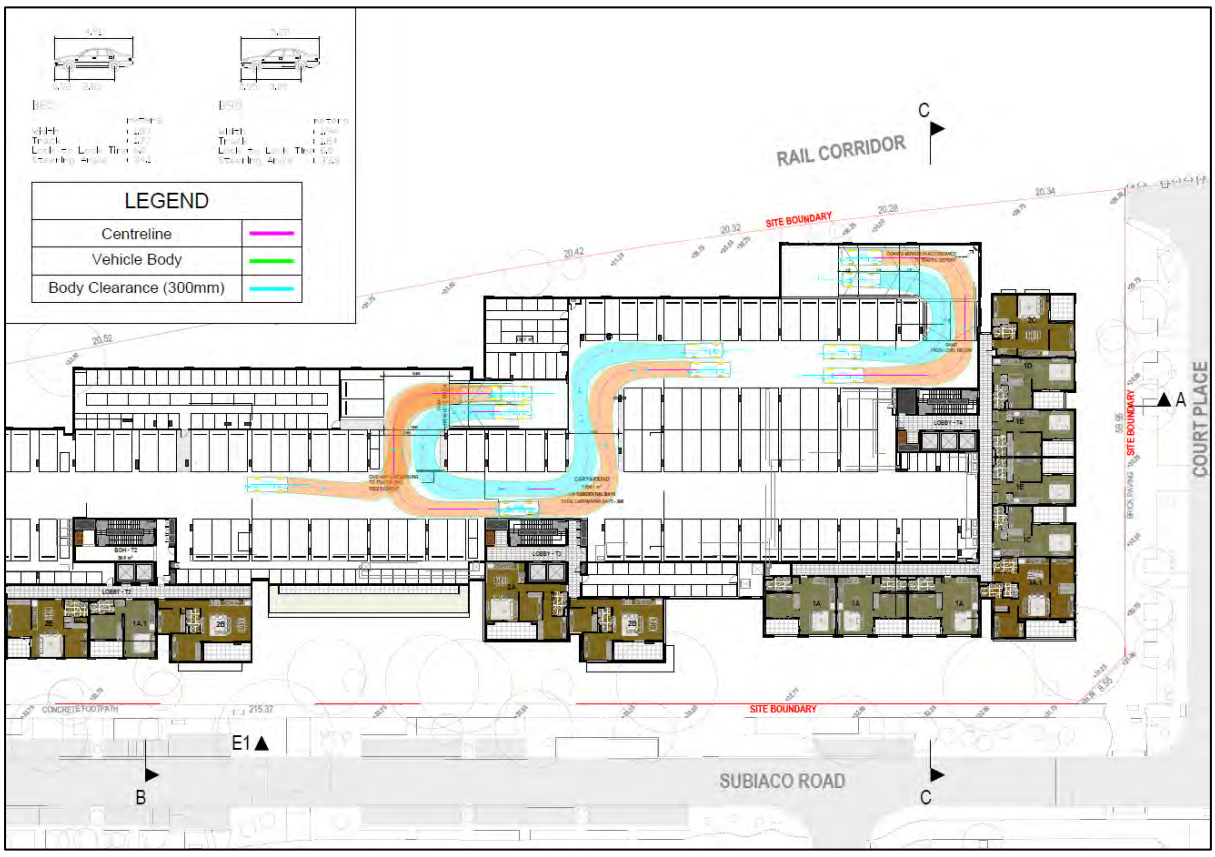


Figure 13 Swept Path Analysis - Level 01



3.3.2 Service Vehicle (Waste Truck)

A swept path assessment was undertaken for the 6.9 m waste truck and the waste collection procedures for Tower 1 to 4 and the commercial tenancy is illustrated in the figures below.

Figure 14 shows the waste truck route and collection points for Tower 2, 3 & 4. The waste collection vehicle will enter the Site via the eastern access and reverse into the collection area to service the residential waste for Tower 4. Upon completion, the vehicle will proceed forward to the collection area for Tower 3 to collect residential waste and then continue forward again to service Tower 2. After completing waste collection for Towers 2, 3 and 4, the vehicle will exit the Site in a forward direction via the western access. **Figure 15** shows the swept path.

Figure 14 Waste Truck Route and Collection Points – Tower 2,3 & 4

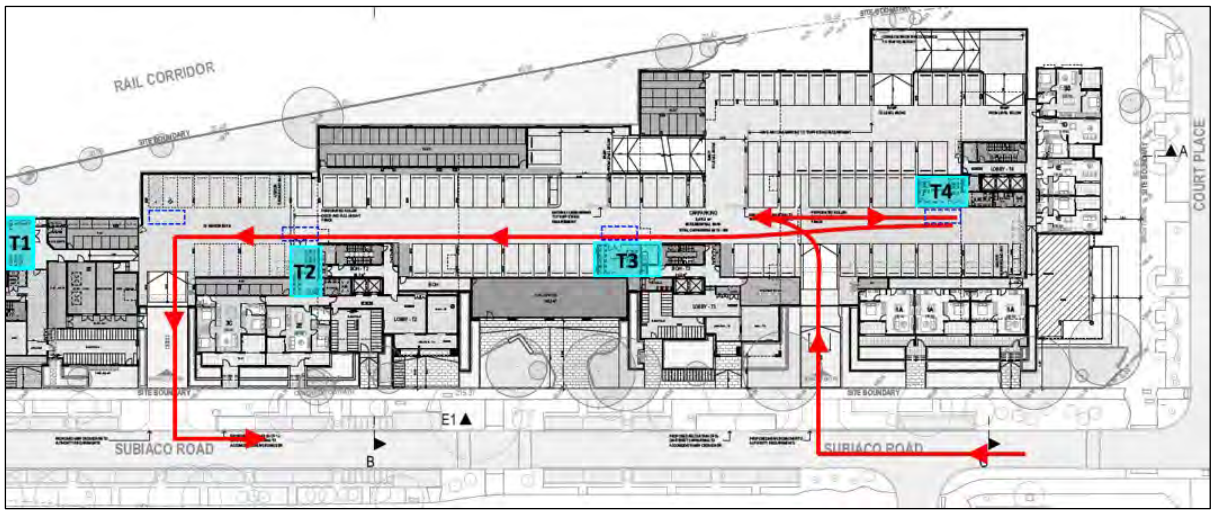
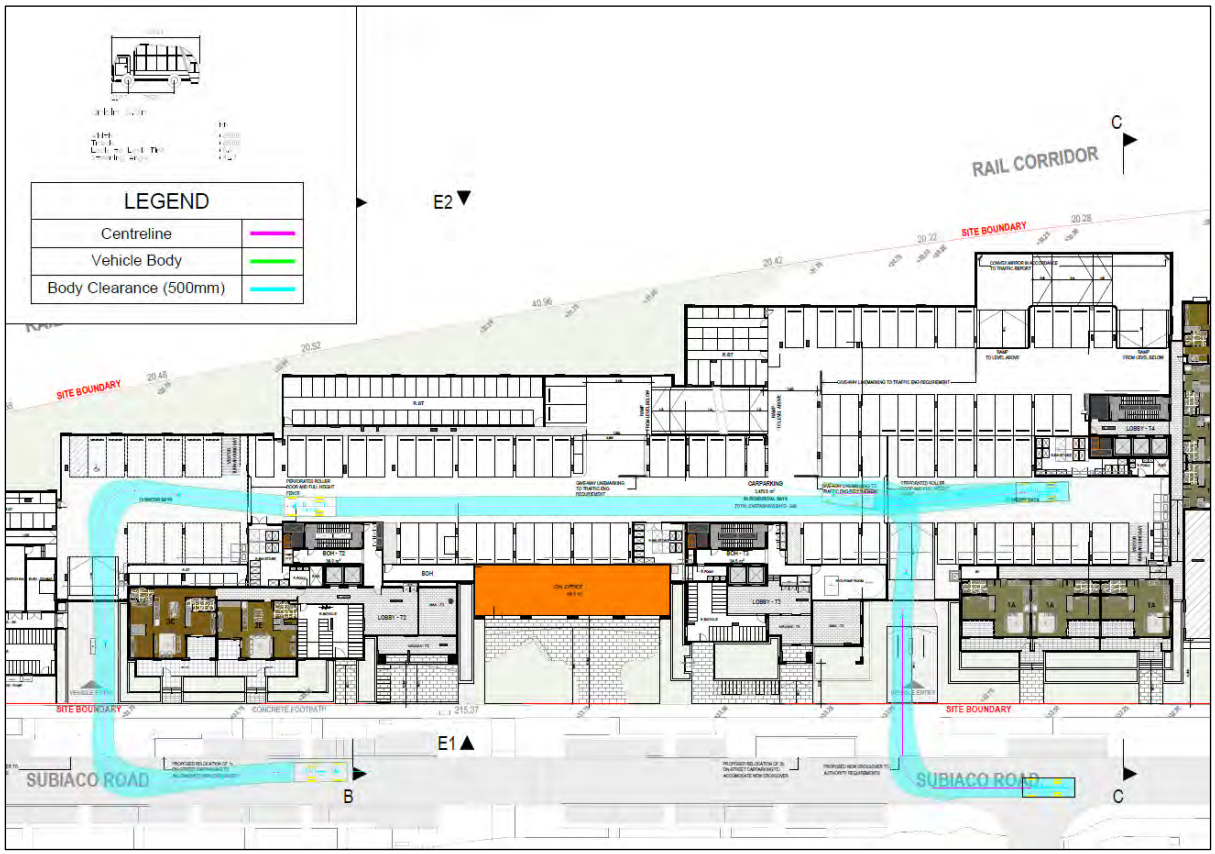


Figure 15 Collection of Residential Wastes at Tower 2, Tower 3 and Tower 4



Upon exiting the Site, the service vehicle will perform a turnaround at Court Place and travel back to Subiaco Road and re-enter the Site via the western crossover to undertake waste collection from Tower 1 as shown in **Figure 16**. The waste truck enters the Site in forward gear and reverses into the collection area to collect the wastes from Tower 1, then proceeds forward to exit through the eastern crossover. **Figure 17** shows the swept path for Tower 1 waste collection and **Figure 18** shows the commercial waste collection from Court Place.

Figure 16 Waste Truck Route and Collection Points – Tower 1



Figure 17 Collection of Residential Wastes at Tower 1

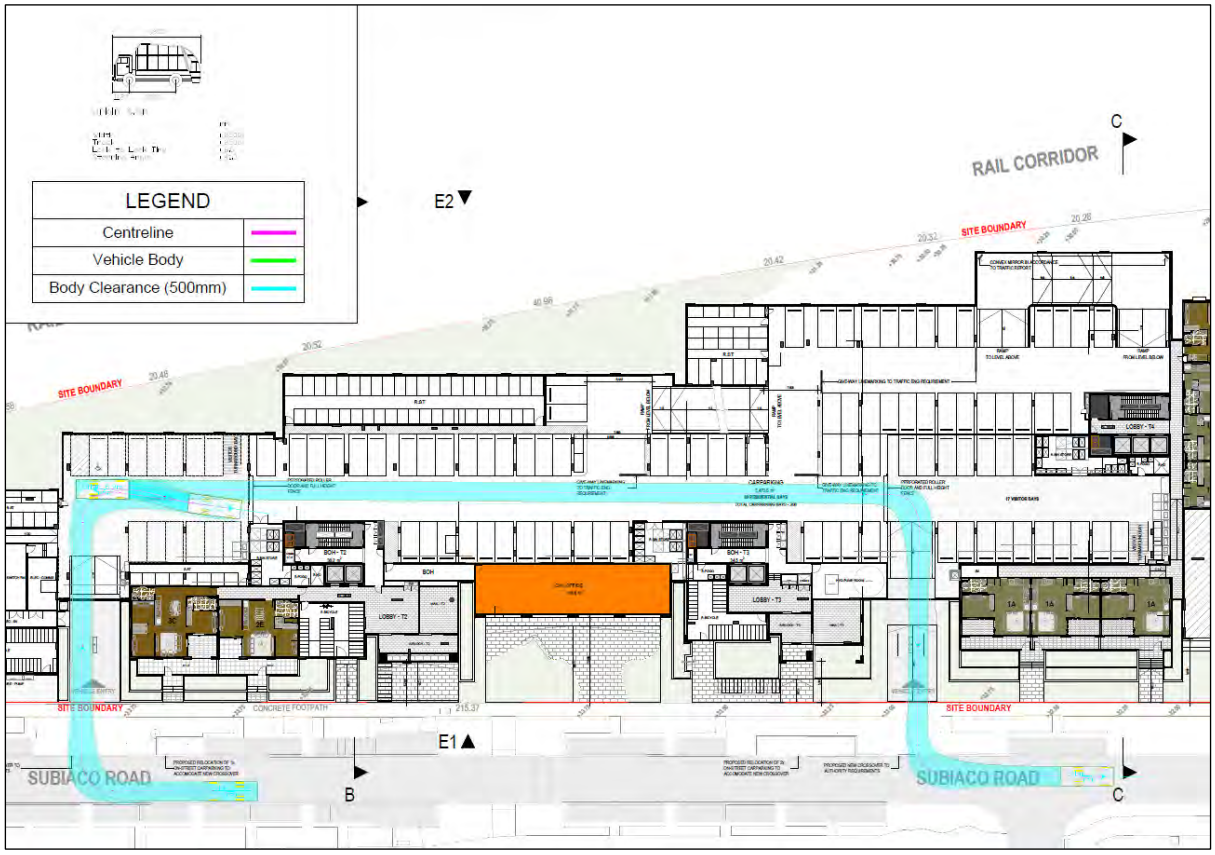
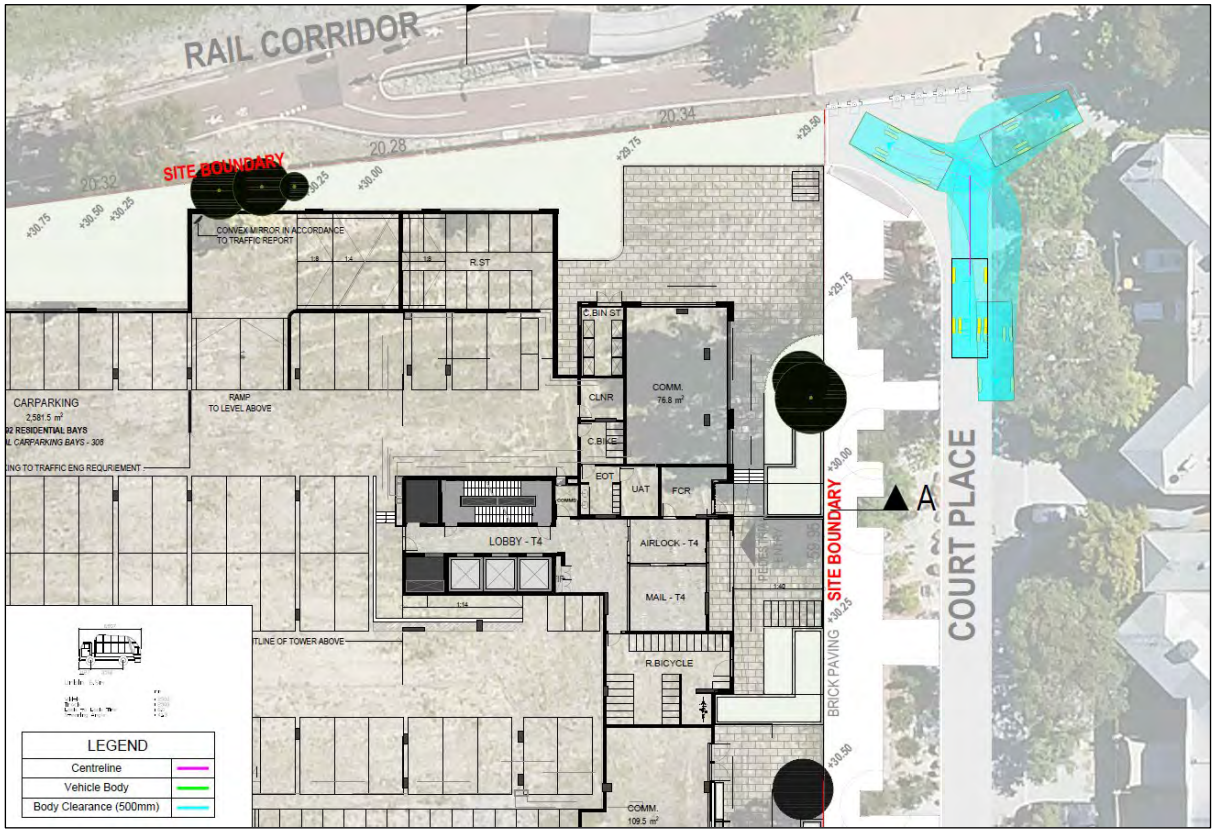


Figure 18 Collection of Commercial Wastes along Court Place



3.4 Parking Compliance

The provided parking facilities in the Site should be designed to be consistent with the requirements of AS2890.1 for User Class 1A. **Table 6** outlines the parking compliance assessment findings for the proposed parking area within the Site and is found to be compliant with the standards.

Table 6 Parking Compliance

Parameter	Minimum Requirements	Site Plan	Remarks
90-Degree Parking Bay Width, m	2.4	2.4	No non compliances identified
90-Degree Parking Bay Length, m	5.4	5.4	No non compliances identified
Aisle Width, m	5.8 (90-Degree Parking)	5.9	No non compliances identified
Ramp Grade	Up to 20 m long: 1 in 4 (25%) maximum	1:4 (25%) maximum	No non compliances identified
Circulation Roadway Width, m	5.5 (two-way)	5.5 (two-way)	No non compliances identified
Access Driveway Width, m	Entry & exit width (combined): 6.0 to 9.0	6.5	No non compliances identified
Blind Aisle Extension, m	1.0	1.0	No non compliances identified

3.5 Parking Provision

3.5.1 Car Parking

The statutory car parking requirement as per *The Subiaco Oval and Railway Precinct Design Guidelines* recommends using the parking ratios set out in R-Codes Volume 2. For non-residential land uses, the car parking requirements are assessed in accordance with the *Subiaco Oval and Railway Precinct Design Guidelines (AO 2.11.2)*.

A summary of the parking requirements and provisions of the proposed development is detailed in **Table 7**. A shortfall of 98 residential parking bays and 32 residential visitor bays has been identified in accordance with the relevant guidelines. However, the subject site is located in a highly accessible area with convenient access to public transport, including a nearby train station and high-frequency bus services operating along Roberts Road and the surrounding road network. In addition, peak demand for residential visitor parking is anticipated to predominantly occur during the evening period, at which time a level of reciprocal use of the commercial parking bays is expected.

The site is also well served by an established walking and cycling network. This includes shared paths on both sides of Subiaco Road, as well as a principal shared path that runs parallel to the railway line, providing direct and continuous connections to key destinations in the area.

Having convenient access to these facilities incentivises more people to walk and cycle and help reduce reliance on vehicular travel and thereby reducing the demand for parking.

The Development WA guidelines also seeks to take a minimalist approach to car parking in recognition to areas with close proximity to high frequency rail and bus services and high-quality cycle paths.

Table 7 Car Parking Requirements & Provision

Land Use	Reference	Yield	Car Parking Rates	Car Parking Requirements (bays)		Car Parking Provision (bays)
1 bedroom dwelling	R Codes	288 dwelling units	0.75 bay per dwelling	216	375	277
2 bedroom dwelling		139 dwelling units	1 bay per dwelling	139		
3+ bedroom dwelling		20 dwelling units	1 bay per dwelling	20		
Visitors		447 dwelling units	1 bay per 4 dwellings up to 12 dwellings 1 bay per eight dwellings for the 13th dwelling and above	58		30
Retail (Non-residential)	AO 2.11.2	352 m^2	1 bay per 100 m^2 NLA	4		
Total				437		307

3.5.2 Bicycle Parking

The bicycle parking rates are provided in accordance with *The Subiaco Oval and Railway Precinct Design Guidelines*. The proposed development plans incorporate bicycle storage for residential units, visitors and commercial tenancies. The bicycle parking requirements and provisions are presented in Table 8.

Table 8 Bicycle Parking Requirements & Provision

Land Use	Reference	Yield	Bicycle Parking Rates	Bicycle Parking Requirements (bays)	Bicycle Parking Provision
Residential	AO 2.12.1	447 dwelling units	1 per dwelling	447	143
Visitors		447 dwelling units	1 per 10 dwelling	45	48
Retail (Non-residential)	AO 2.12.1	352 m^2	1 bay per 100 m^2 NLA	4	14
Total				496	205

While a shortfall in residential bicycle parking provision has been identified, the availability of nearby public transport is a significantly more attractive and preferred mode of travel for many occupants.

CHL is the largest community housing provider in Australia, managing a portfolio of more than 12,000 properties nationwide. Based on their extensive operational experience across a diverse range of sites, CHL has consistently observed that on-site bicycle storage facilities are typically underutilised and, in many cases, largely remain vacant.

3.5.3 Motorcycle Parking

The requirement for motorcycle/scooter parking as per the City of Subiaco Local Planning Scheme (LPS) No. 5 is shown in Table 9. A shortfall of 6 motorcycle bays has been identified and this reduced provision is not expected to present any significant issues given the site's proximity to excellent public transport facilities.

Table 9 Motorcycle Parking Requirements

Land Use	Reference	Yield	Motorcycle Parking Rates	Motorcycle Parking Requirements	Motorcycle Parking Provision
Residential	City of Subiaco LPS 5	307 car parking bays	1 motorcycle/ scooter bay per 10 car bays for developments exceeding 20 dwellings	**31 motorcycle bays**	**25 motorcycle bays**

3.6 End of Trip Facilities

In addition to meeting the bicycle parking requirements, the proposed development must also provide End-of-Trip (EoT) facilities such as lockers. **Table 10** details the EoT requirements for the proposed development. These facilities will primarily be used by tenants and workers on Site.

Table 10 End of Trip Facilities Requirements

Use	Reference	Yield	End-of-Trip Facilities Requirements	
Lockers	AO 2.11.2	4 bicycle bays	1.5 lockers for every non-residential bicycle bay	**6 lockers**

The *Subiaco Oval and Railway Precinct Design* Guidelines also mentions that one (1) unisex shower and change room must be provided for developments with less than 10 non-residential bicycle parking spaces.

3.7 Specific Issues

No specific issues were identified for the Site.

4 CHANGES TO SURROUNDING TRANSPORT NETWORKS

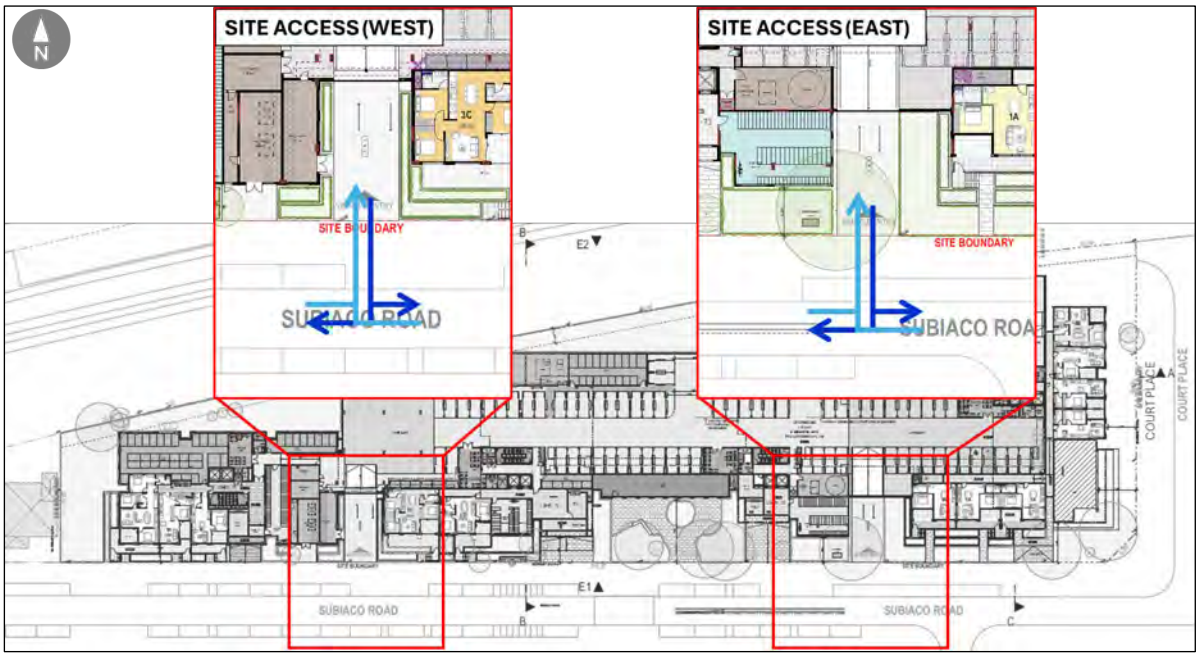
4.1 Road Network

The proposed development does not include any major changes to the surrounding road network. As part of the Subi East Redevelopment Master Plan, Subiaco Road will be designed as a boulevard with street level activation and mature tree coverage. Subiaco Road has also been recently extended to intersect with Haydn Bunton Drive to improve traffic flow within Subi East.

4.2 Intersection Layouts and Controls

Figure 19 presents the proposed two vehicular accesses to the Site from Subiaco Road, both uncontrolled intersections with full turning movements.

Figure 19 Subiaco Road / Site Access (West) & Subiaco Road / Site Access (East) Intersections

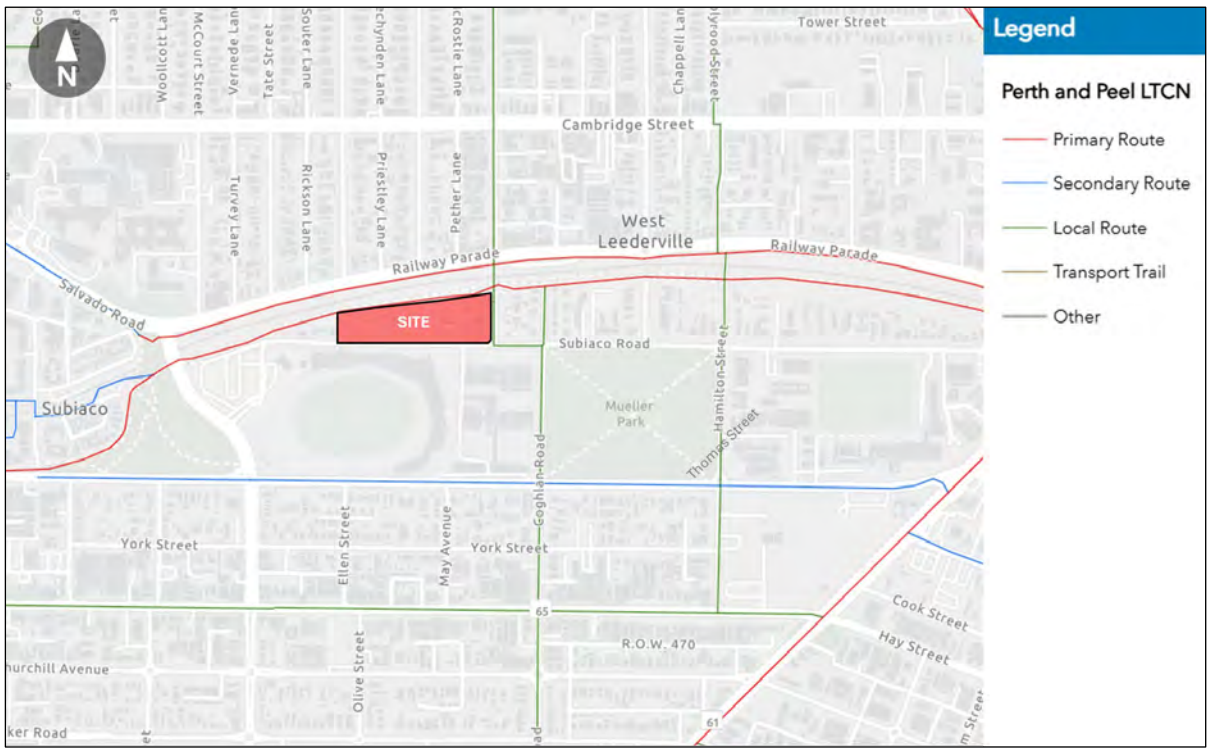


4.3 Pedestrian/Cycle Networks and Crossing Facilities

Figure 20 illustrates the proposed pedestrian and cycling infrastructure as identified in the Long-Term Cycle Network (LTCN) Map. According to the LTCN classification, both Railway Parade and Thomas Street have been designated as Primary Routes and a section of Subiaco Road has been classified as a Local Route.

Moreover, the Subi East Master Plan envisions upgrading Subiaco Road into a pedestrian and cycle-friendly street, with a shaded boulevard of mature trees for pedestrians and cyclists moving through the area.

Figure 20 Proposed Pedestrian/Cycling Network



Source: Perth and Peel LTCN

4.4 Public Transport Services

PTG contacted Public Transport Authority and was informed that there are no proposed changes in the short-term. However, there are medium to long-term changes to the existing Bus Route 28 service. At present, due to the one-way street system, buses operate along Roberts Road eastbound and Hay Street westbound. Once the one-way system is removed by the cities of Perth (east of Thomas) and Subiaco (west of Thomas), the PTA will realign bus services along Hay Street to two-way. As a result, bus services will no longer regularly operate along Roberts Street. Bus services currently serving Bob Hawke College will continue to do so regardless of the two-way street's changes, meaning that the PTA would require Roberts Road to remain trafficable for bus services.

5 INTERGRATION WITH SURROUNDING AREA

5.1 Surrounding Major Attractors/Generators

The surrounding major attractors and generators of the proposed development include:

- Subiaco Oval and Mueller Park to the south of the Site;
- Commercial and retail development to the west (Subiaco Square);
- Perth CBD approximately 3km southeast of the Site;
- Education facilities (Perth Modern School to the east & Bob Hawke College to the south); and
- St. John of God Hospital to the north of the Site.

Figure 21 Surrounding Major Attractors/Generators



5.2 Committed Development and Transport Proposals

Various developments including residential, mixed-use, commercial and community uses have been planned as part of the East Subi Redevelopment Master Plan, as shown in **Figure 22**.

Figure 22 Land Use and Urban Form - Subi East Master Plan



Source: Subi East Master Plan

5.3 Proposed Changes to Land Uses within 1200 metres

There are no major changes to land uses within 1200 metres of the Site.

5.4 Travel Desire Lines from Development to the Attractors/Generators

Travel desire lines from the Site will predominantly be directed north, east and south towards the external attractors and generators.

For nearby attractors such as train stations and Subiaco Square, pedestrian and cyclists are likely to travel along the footpaths on Railway Parade and Haydn Bunton Drive.

5.5 Adequacy and Deficiencies of the External Transport Networks

The existing transport network is deemed suitable and sufficient to accommodate the proposed development.

6 ANALYSIS OF TRANSPORT NETWORK

6.1 Assessment Years and Time Periods

In accordance with the WAPC Transport Impact Assessment Guidelines, assessment has been undertaken for the following years:

- Year of full opening of the development: 2028
- 10 years after full opening of the development: 2038

The identified peak hours, based on existing traffic flows, are as follows:

- AM Peak: 08:00-09:00
- PM Peak: 16:45-17:45

6.2 Development Generated Traffic

The traffic generation for the Site has been calculated based on the proposed land uses stated in **Table 11**. The trip generation calculations are summarised in **Table 12**. Due to the Site's excellent location near the City, rail station and cycle facilities, the trip estimate is likely to be an over-estimate.

Table 11 Trip Generation and Distribution Rates

Land Use	Reference	Trip Generation Rates		Trip Distribution Rates			
		AM Peak	PM Peak	AM (IN)	AM (OUT)	PM (IN)	PM (OUT)
Residential (<3 beds)	RTA v2.2	0.5 per dwelling	0.5 per dwelling	25%	75%	62.5%	37.5%
Residential (3+ beds)	RTA v2.2	0.65 per dwelling	0.65 per dwelling	25%	75%	62.5%	37.5%
Retail (Mixed)	WAPC	2.5 per 100m^2	5.0 per 100m^2	80%	20%	50%	50%

Table 12 Total Trip Generation

Land Use	Yield	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Residential (<3 beds)	427 dwellings	53	160	133	80
Residential (3+ beds)	20 dwellings	3	10	8	5
Retail (Mixed)	351.8 m^2	7	2	9	9
Total		236		244	

The volume of traffic generated by the proposed development is estimated to be 236 trips in the AM peak and 244 trips in the PM peak.

6.3 Distribution of Generated Traffic

The distribution of the generated trips was based on the existing traffic count data at Subiaco Road and was assumed to be 68% to/from the east and 32% to/from the west as illustrated in **Figure 23**.

Table 13 details the trip distribution results.

Figure 23 Distribution of Generated Traffic



Table 13 Trip Distribution

AM Peak				PM Peak			
IN		OUT		IN		OUT	
From East	From West	To East	To West	From East	From West	To East	To West
44	20	117	55	102	48	64	30

6.4 Background and 'With Development' Traffic Flows

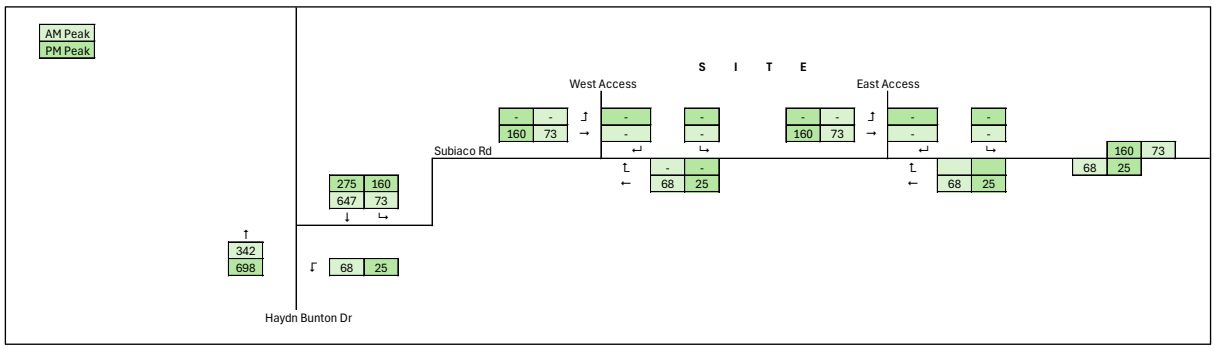
6.4.1 Background Traffic

Background traffic volumes and turning movements at key intersections were gathered from Main Roads WA Traffic Map and SCATS data at signalised intersection. The existing background peak hour traffic data in the surrounding road network is provided in **Figure 24**.

The historical traffic data in the vicinity of the Site suggest that there was minimal growth to the surrounding road network in the previous years. However, the assessment also considers the potential traffic growth, particularly along Subiaco Road as the East Subi redevelopments take place. For the purpose of this assessment:

- 0.5% per annum growth rate has been applied from existing data to opening year (2028).
- 2.0% per annum growth rate has been applied from 2028 (opening) to 2038 (10-year horizon)

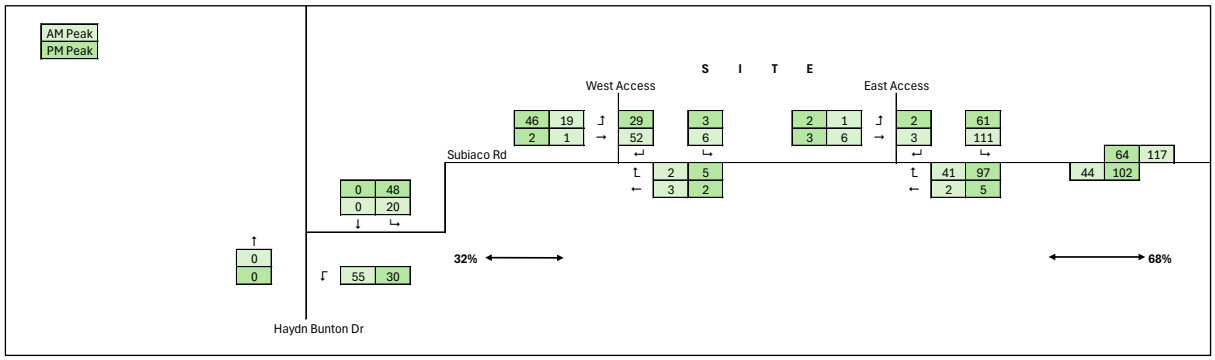
Figure 24 Background Traffic Peak Hour Flow (2026)



6.4.2 Development Traffic

The development traffic peak hour flows illustrated in **Figure 25** has been developed based on the traffic distribution discussed in Section 6.3.

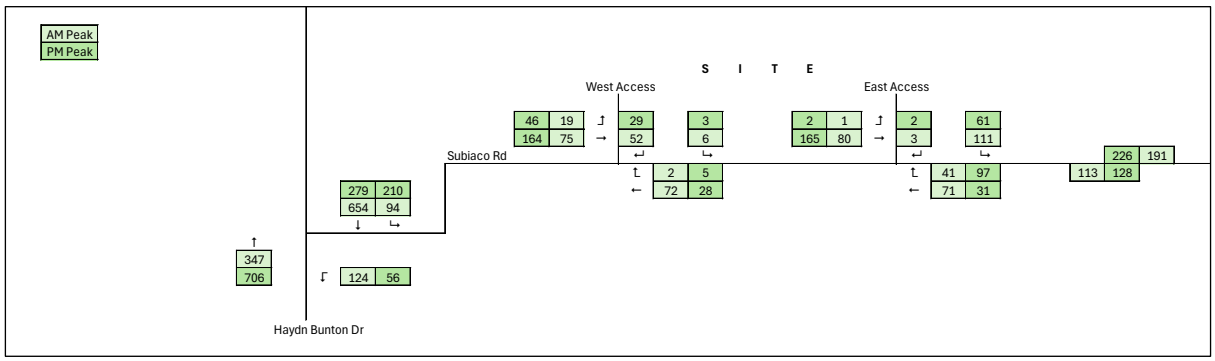
Figure 25 Development Traffic Peak Hour Flow



6.4.3 Opening Year Traffic (2028)

Figure 26 presents traffic flows for the opening year, combining background volumes with trips generated by the proposed development.

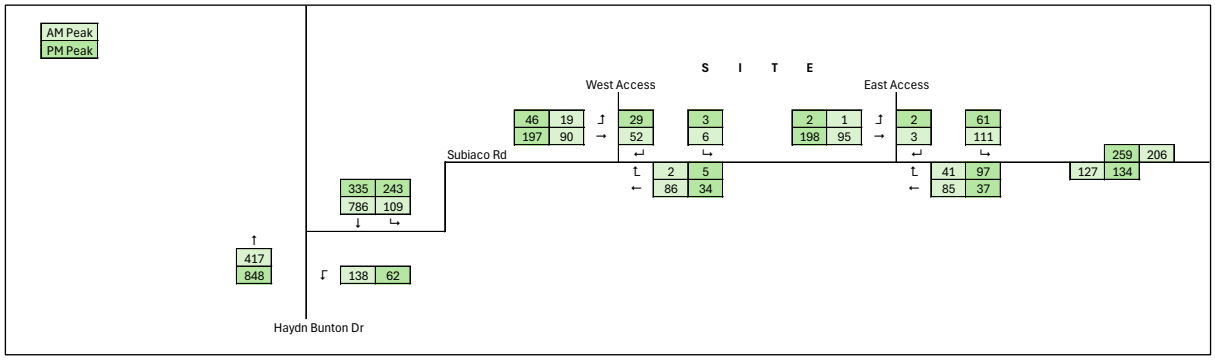
Figure 26 Opening Year, 2028 (Background + Development Traffic)



6.4.4 10-Year Horizon Traffic (2038)

Shown in **Figure 27** are the traffic flows 10 years after the full opening of the development, which include existing background traffic and development traffic.

Figure 27 10-year Horizon, 2038 (Background + Development Traffic)



6.5 Performance Criteria

The intersections have been analysed using the SIDRA analysis program. This program calculates the performance of intersections based on input parameters, including geometry and traffic volumes. As an output, SIDRA provides values for the Degree of Saturation (DOS), queue lengths, delays, level of service, and 95th Percentile Queue. These parameters are defined as follows:

- Degree of Saturation (DOS): is the ratio of the arrival traffic flow to the capacity of the approach during the same period. The Degree of Saturation ranges from close to zero for varied traffic flow, up to one for saturated flow or capacity.
- 95% Percentile Queue Length: is the statistical estimate of the queue length up to or below which 95% of all observed queues would be expected.
- Average Delay: is the average of all travel time delays for vehicles through the intersection.
- Level of Service (LOS): is the qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers. Table 14 provides a description of the different levels of service.

Table 14 Level of Service (LoS) Performance Criteria

LOS	Description	Signalised Intersection	Roundabout	Unsignalised Intersection
A	No or minimal delays (best condition). Queues are rarely more than one vehicle	≤10 sec	≤10 sec	≤10 sec
B	Short traffic delays. Occasionally more than one queued vehicle.	10-20 sec	10-20 sec	10-15 sec
C	Average traffic delays. Often more than one queued.	20-35 sec	20-35 sec	15-25 sec
D	Long traffic delays. Regularly more than one queued vehicle.	35-55 sec	35-50 sec	25-35 sec
E	Very long traffic delays. Traffic demand is near or equal to the practical capacity of the intersection. Almost always more than one queued vehicle.	55-80 sec	50-70 sec	35-50 sec
F	Forced flow conditions with extensive delays caused by geometric and/or operational constraints external to the intersection.	≥80 sec	≥70 sec	≥50 sec

6.6 Analysis of Development Accesses

An assessment for sight lines along the frontage of the proposed development was undertaken in accordance with AS2890.1: 2004 Parking Facilities: Off-street Car Parking. Based on frontage road speed of 40km/h, the desirable 5 sec gap required is 55 metres on both sides. **Figure 28** shows the assessment near the proposed crossovers.

Sightline assessment for both access points indicate that several existing on-street bays are within the hatched area (red hatch), thus, it is recommended to remove these on-street bays to limit sightline obstruction and ensure compliance with relevant sight distance and safety standards.

Figure 28 Sight Line Assessment



6.7 Impact on Surrounding Roads and Intersections

SIDRA Intersection has been used to assess the impact of proposed development on the surrounding intersections. The results for each approach are presented in the form of Degree of Saturation (DoS), Average Delay, Level of Service (LoS) and 95th Percentile Queue in metres.

6.7.1 Assessed Intersections

SIDRA analysis has been undertaken for the following intersections:

- Haydn Bunton Drive / Subiaco Road
- Subiaco Road / Site Access (West)
- Subiaco Road / Site Access (East)

6.7.2 Analysis Scenarios

The SIDRA analysis was undertaken for the following scenarios:

- Scenario 1: Opening Year (2028 Background + Development Traffic)
- Scenario 2: 10-Year Horizon (2038 Background + Development Traffic)

6.7.3 Haydn Bunton Drive / Subiaco Road

The intersection layout modelled in SIDRA is shown in **Figure 29**.

The summary of the SIDRA analysis results for Scenarios 1 and 2 are presented in Table 15 and Table 16, respectively. The results indicate that the intersection would operate satisfactorily and would be able to cater for the proposed development yield in 2028 and 2038.

Figure 29 Haydn Bunton Drive / Subiaco Road SIDRA Layout

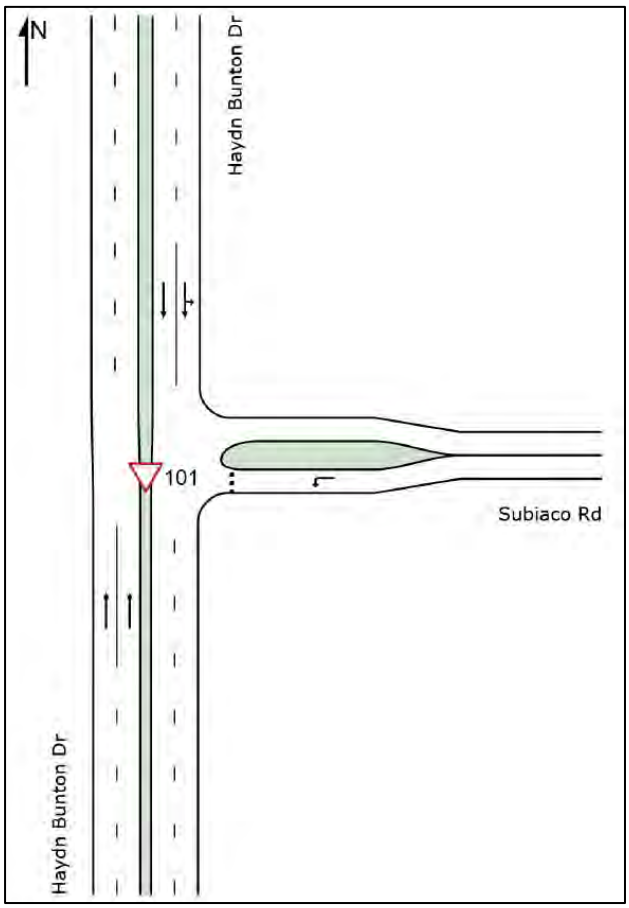


Table 15 Haydn Bunton Drive / Subiaco Road SIDRA Results (Scenario 1)

Intersection Approach	Turn	AM Peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Haydn Bunton Drive (S)	T	0.094	0	LOS A	0	0.191	0	LOS A	0
Subiaco Road (E)	L	0.133	4.8	LOS A	3.7	0.046	3.5	LOS A	1.3
Haydn Bunton Drive (N)	L	0.204	4.6	LOS A	0	0.138	4.6	LOS A	0
	T	0.204	0	LOS A	0	0.138	0	LOS A	0
		0.204	**4.8**	**LOS A**	**3.7**	**0.191**	**4.6**	**LOS A**	**1.3**

Note that the average delay for priority-controlled intersections is based on the worst-performing movement.

Table 16 Haydn Bunton Drive / Subiaco Road SIDRA Results (Scenario 2)

Intersection Approach	Turn	AM Peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Haydn Bunton Drive (S)	T	0.113	0	LOS A	0	0.229	0	LOS A	0
Subiaco Road (E)	L	0.159	5.2	LOS A	4.5	0.052	3.6	LOS A	1.5
Haydn Bunton Drive (N)	L	0.244	4.6	LOS A	0	0.164	4.6	LOS A	0
	T	0.244	0	LOS A	0	0.164	0	LOS A	0
		0.244	**5.2**	**LOS A**	**4.5**	**0.229**	**4.6**	**LOS A**	**1.5**

Note that the average delay for priority-controlled intersections is based on the worst-performing movement.

6.7.4 Subiaco Road / Site Access (West)

The intersection layout modelled in SIDRA is shown in **Figure 30**.

The summary of the SIDRA analysis results for Scenarios 1 and 2 are presented in **Table 17** and **Table 18**, respectively. The results indicate that the future intersection would operate satisfactorily and would be able to cater for the proposed development yield in 2028 and 2038.

Figure 30 Subiaco Road / Site Access (West) SIDRA Layout

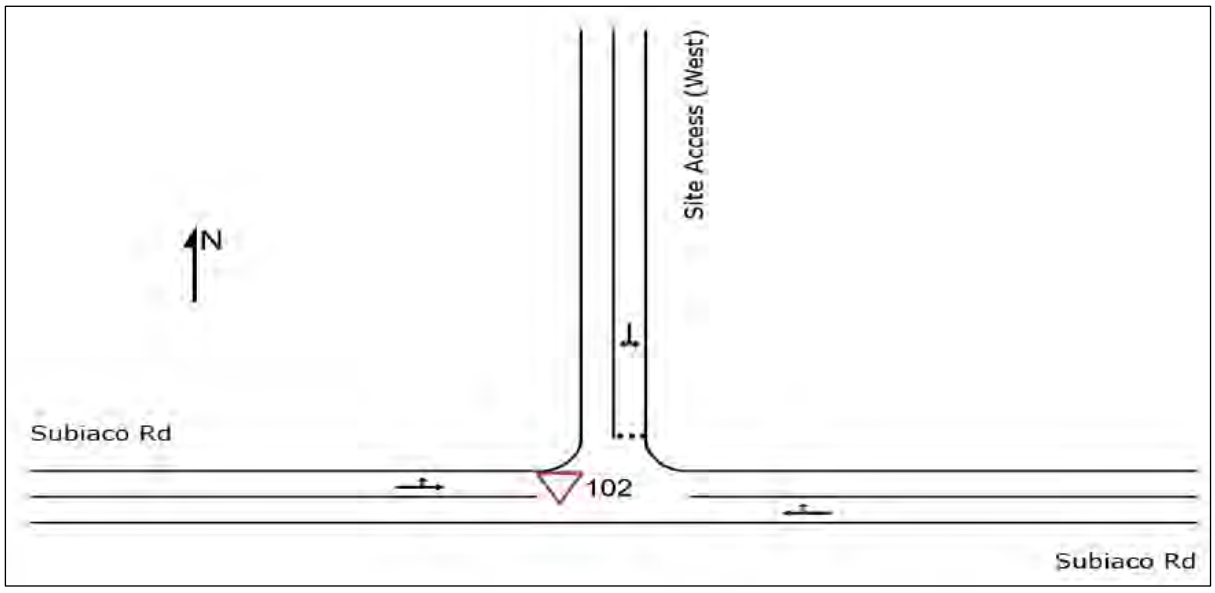


Table 17 Subiaco Road / Site Access (West) SIDRA Results (Scenario 1)

Intersection Approach	Turn	AM Peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Subiaco Road (E)	T	0.042	0	LOS A	0.1	0.02	0.2	LOS A	0.3
	R	0.042	3.6	LOS A	0.1	0.02	4.2	LOS A	0.3
Western Site Access (N)	L	0.053	0.2	LOS A	1.3	0.03	0.5	LOS A	0.7
	R	0.053	1.2	LOS A	1.3	0.03	1.4	LOS A	0.7
Subiaco Road (W)	L	0.053	3.5	LOS A	0	0.12	3.5	LOS A	0
	T	0.053	0	LOS A	0	0.12	0	LOS A	0
		0.053	**3.6**	**LOS A**	**1.3**	**0.12**	**4.2**	**LOS A**	**0.7**

Note that the average delay for priority-controlled intersections is based on the worst-performing movement.

Table 18 Subiaco Road / Site Access (West) SIDRA Results (Scenario 2)

Intersection Approach	Turn	AM Peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Subiaco Road (E)	T	0.05	0	LOS A	0.1	0.024	0.2	LOS A	0.3
	R	0.05	3.6	LOS A	0.1	0.024	4.4	LOS A	0.3
Western Site Access (N)	L	0.055	0.3	LOS A	1.3	0.033	0.6	LOS A	0.8
	R	0.055	1.3	LOS A	1.3	0.033	1.6	LOS A	0.8
Subiaco Road (W)	L	0.062	3.5	LOS A	0	0.14	3.5	LOS A	0
	T	0.062	0	LOS A	0	0.14	0	LOS A	0
		0.062	**3.6**	**LOS A**	**1.3**	**0.14**	**4.4**	**LOS A**	**0.8**

Note that the average delay for priority-controlled intersections is based on the worst-performing movement.

6.7.5 Subiaco Road / Site Access (East)

This intersection layout modelled in SIDRA is shown in **Figure 31**.

The summary of the SIDRA analysis results for Scenarios 1 and 2 are presented in **Table 19** and **Table 20**, respectively. The results indicate that the future intersection would operate satisfactorily and would be able to cater for the proposed development yield in 2028 and 2038.

Figure 31 Subiaco Road / Site Access (East) SIDRA Layout

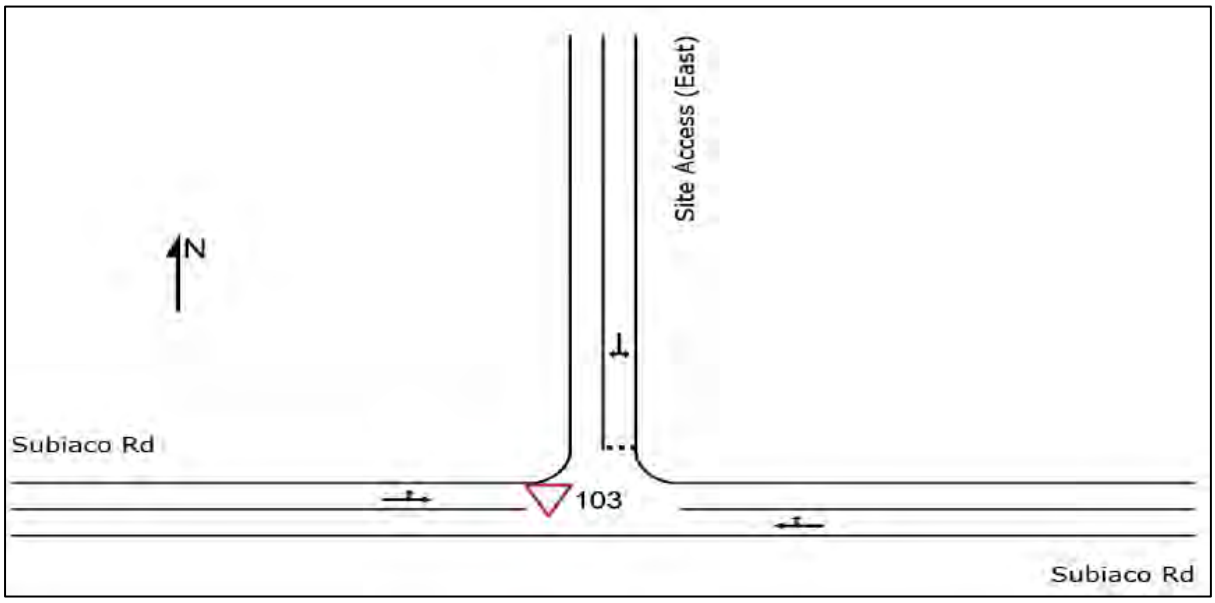


Table 19 Subiaco Road / Site Access (East) SIDRA Results (Scenario 1)

Intersection Approach	Turn	AM Peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Subiaco Road (E)	T	0.066	0.1	LOS A	1.8	0.084	0.6	LOS A	3
	R	0.066	3.8	LOS A	1.8	0.084	4.1	LOS A	3
Eastern Site Access (N)	L	0.08	0.3	LOS A	2.4	0.048	0.5	LOS A	1.4
	R	0.08	1.4	LOS A	2.4	0.048	1.8	LOS A	1.4
Subiaco Road (W)	L	0.045	3.4	LOS A	0	0.096	3.4	LOS A	0
	T	0.045	0	LOS A	0	0.096	0	LOS A	0
		0.08	**3.8**	**LOS A**	**2.4**	**0.096**	**4.1**	**LOS A**	**3**

Note that the average delay for priority-controlled intersections is based on the worst-performing movement.

Table 20 Subiaco Road / Site Access (East) SIDRA Results (Scenario 2)

Intersection Approach	Turn	AM Peak				PM Peak			
		DOS	Delay (s)	LOS	95% Queue (m)	DOS	Delay (s)	LOS	95% Queue (m)
Subiaco Road (E)	T	0.074	0.1	LOS A	1.8	0.09	0.7	LOS A	3.3
	R	0.074	3.8	LOS A	1.8	0.09	4.3	LOS A	3.3
Eastern Site Access (N)	L	0.081	0.3	LOS A	2.4	0.05	0.7	LOS A	1.4
	R	0.081	1.5	LOS A	2.4	0.05	2	LOS A	1.4
Subiaco Road (W)	L	0.054	3.4	LOS A	0	0.116	3.5	LOS A	0
	T	0.054	0	LOS A	0	0.116	0	LOS A	0
		0.081	**3.8**	**LOS A**	**2.4**	**0.116**	**4.3**	**LOS A**	**3.3**

Note that the average delay for priority-controlled intersections is based on the worst-performing movement.

6.7.6 Summary

Overall, the proposed development is unlikely to have any significant impact on the surrounding road network. All key intersections assessed would operate satisfactorily and would be able to cater for the proposed development yield during the peak periods in the opening year (2028) and 10 years after the opening year (2038).

7 ROAD SAFETY AND ACCESSIBILITY IMPACT

7.1 Impact on Neighbouring Areas

The proposed development is a mixed-use residential development which will have a similar behaviour to the surrounding residential developments. The traffic generated by the proposed development is considered relatively low and is unlikely to have any major impact to the surrounding residential developments.

7.2 Road Safety

The major intersections in the vicinity of the Site are already signalised, a Left-in Left-out intersection, and a full movement access with low turning movements. Additionally, vehicles are less likely to travel at high speed due to the sub-urban streetscape. The plan to boulevard Subiaco Road will also encourage vehicles to travel at a slower speed, improving the overall road safety of the surrounding road network.

7.3 Public Transport Access

The proposed development does not include any upgrades to public transport infrastructure and is not expected to negatively affect existing public transport access. All public transport accessibility is likely to remain as per existing.

PTG Consulting has consulted the PTA and was informed that there will not be any significant changes to the surrounding public transport network in the near future.

7.4 Pedestrian/Cycle Access/Amenity

The proposed development has taken into consideration of pedestrian and cycling amenity by providing footpath connections and bicycle parking, which encourages the use of active transport. Further progress of the East Subi Redevelopment Plan will see improvements to the overall pedestrian and cycling network in the vicinity of the Site.

7.5 Analysis of Pedestrian/Cycle Network

Overall, the proposed development is likely to provide a positive impact to the surrounding pedestrian and cycling network and will likely encourage increased use of active transportation.

7.6 Safe Walk/Cycle to School

The existing footpath network in the vicinity of the Site has good connections to the school sites in the vicinity of the Site. Further improvements will be implemented as the East Subi Redevelopment progress gradually.

8 SUMMARY AND CONCLUSIONS

This report has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016).

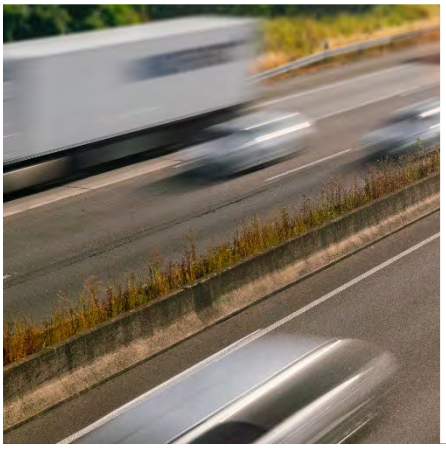
The following conclusions can be drawn from this report:

- The proposed development is estimated to generate 236 trips in the AM peak and 244 trips in the PM peak.
- Two vehicular and three pedestrian access points are located along Subiaco Road, and one pedestrian access is located along Court Place.
- The Site benefits from good public transport, pedestrian and cycling network accessibility. Having convenient access to these facilities incentivises more people to walk and cycle and help reduce reliance on vehicular travel and thereby reducing the demand for parking. The proposed development is not expected to have any negative impact on the existing public transport, pedestrian and cycling network.
- Proposed car parking provisions shows a shortfall of 98 residential parking bays and 32 residential visitor bays in accordance with the relevant guidelines. However, the subject site is located in a highly accessible area with convenient access to public transport, including a nearby train station and high-frequency bus services operating along Roberts Road and the surrounding road network. The site is also well served by an established walking and cycling network. This includes shared paths on both sides of Subiaco Road, as well as a principal shared path that runs parallel to the railway line, providing direct and continuous connections to key destinations in the area. Having convenient access to these facilities incentivises more people to walk and cycle and help reduce reliance on vehicular travel and thereby reducing the demand for parking.
- While a shortfall in residential bicycle parking provision has been identified, the availability of nearby public transport is a significantly more attractive and preferred mode of travel for many occupants. The development is located within a highly walkable, transit-oriented environment where public transport and walking are expected to account for a substantial proportion of trips. CHL is the largest community housing provider in Australia, managing over 12,000 properties nationwide. Based on their extensive experience across these sites, bicycle storage facilities are consistently underutilised and largely remain vacant.
- Sightline assessment for both access points indicate that several existing on-street bays are within the sight line triangle, thus, it is recommended to remove these on-street bays to limit sightline obstruction.
- SIDRA analysis has been conducted at Haydn Bunton Drive / Subiaco Road, Subiaco Road / Site Access (West) and Subiaco Road / Site Access (East) intersections. Results suggest that the traffic generated by the proposed development is unlikely to have any significant impact to the surrounding road network.
- Due to the nature of the development and the existing road environment and layouts, it is envisaged that any impact on road safety would be negligible.



Appendix A

WAPC CHECKLIST FOR INDIVIDUAL DEVELOPMENT - TRANSPORT IMPACT ASSESSMENT





APPENDIX A – WAPC CHECKLIST

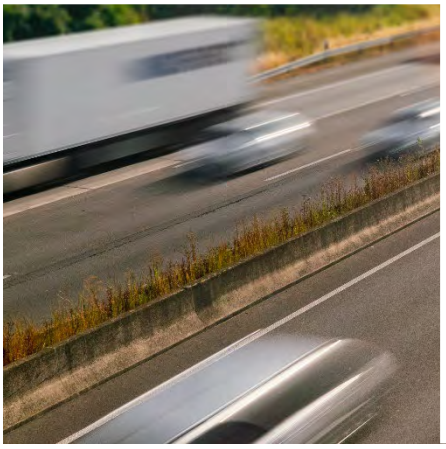
Item	Status	Comments/Proposal
Summary	Section 8	
Introduction/Background	Section 1	
name of applicant and consultant	Section 1	
development location and context	Section 1	
brief description of development proposal	Section 1	
key issues	Section 1	
background information	Section 1	
Existing situation	Section 2	
existing site uses (if any)	Section 2	
existing parking and demand (if appropriate)	Section 2	
existing access arrangements	Section 2	
existing site traffic	Section 2	
surrounding land uses	Section 2	
surrounding road network	Section 2	
traffic management on frontage roads	Section 2	
traffic flows on surrounding roads (usually AM and PM peak hours)	Section 2	
traffic flows at major intersections (usually AM and PM peak hours)	Section 2	
operation of surrounding intersections	Section 2	
existing pedestrian/cycle networks	Section 2	
existing public transport services surrounding the development	Section 2	
crash data	Section 2	
Development proposal	Section 3	
regional context	Section 2	
proposed land uses	Section 3	
table of land uses and quantities	Section 3	
access arrangements	Section 3	
parking provision	Section 3	
end of trip facilities	Section 3	
any specific issues	Section 3	
road network	Section 4	

intersection layouts and controls	Section 4	
pedestrian/cycle networks and crossing facilities	Section 4	
public transport services	Section 4	
Integration with surrounding area	Section 5	
surrounding major attractors/ generators	Section 5	
committed developments and transport proposals	Section 5	
proposed changes to land uses within 1200 metres	Section 5	
travel desire lines from development to these attractors/ generators	Section 5	
adequacy of existing transport networks	Section 5	
deficiencies in existing transport networks	Section 5	
remedial measures to address deficiencies	N/A	
Analysis of transport networks	Section 6	
assessment years	Section 6	
time periods	Section 6	
development generated traffic	Section 6	
distribution of generated traffic	Section 6	
parking supply and demand	N/A	
base and 'with development' traffic flows	Section 6	
analysis of development accesses	Section 6	
impact on surrounding roads	Section 6	
impact on intersections	Section 6	
impact on neighbouring areas	Section 7	
road safety	Section 7	
public transport access	Section 7	
pedestrian access/amenity	Section 7	
cycle access/amenity	Section 7	
analysis of pedestrian/cycle networks	Section 7	
safe walk/cycle to school (for residential and school site developments only)	Section 7	
traffic management plan (where appropriate)	N/A	
Conclusions	Section 8	



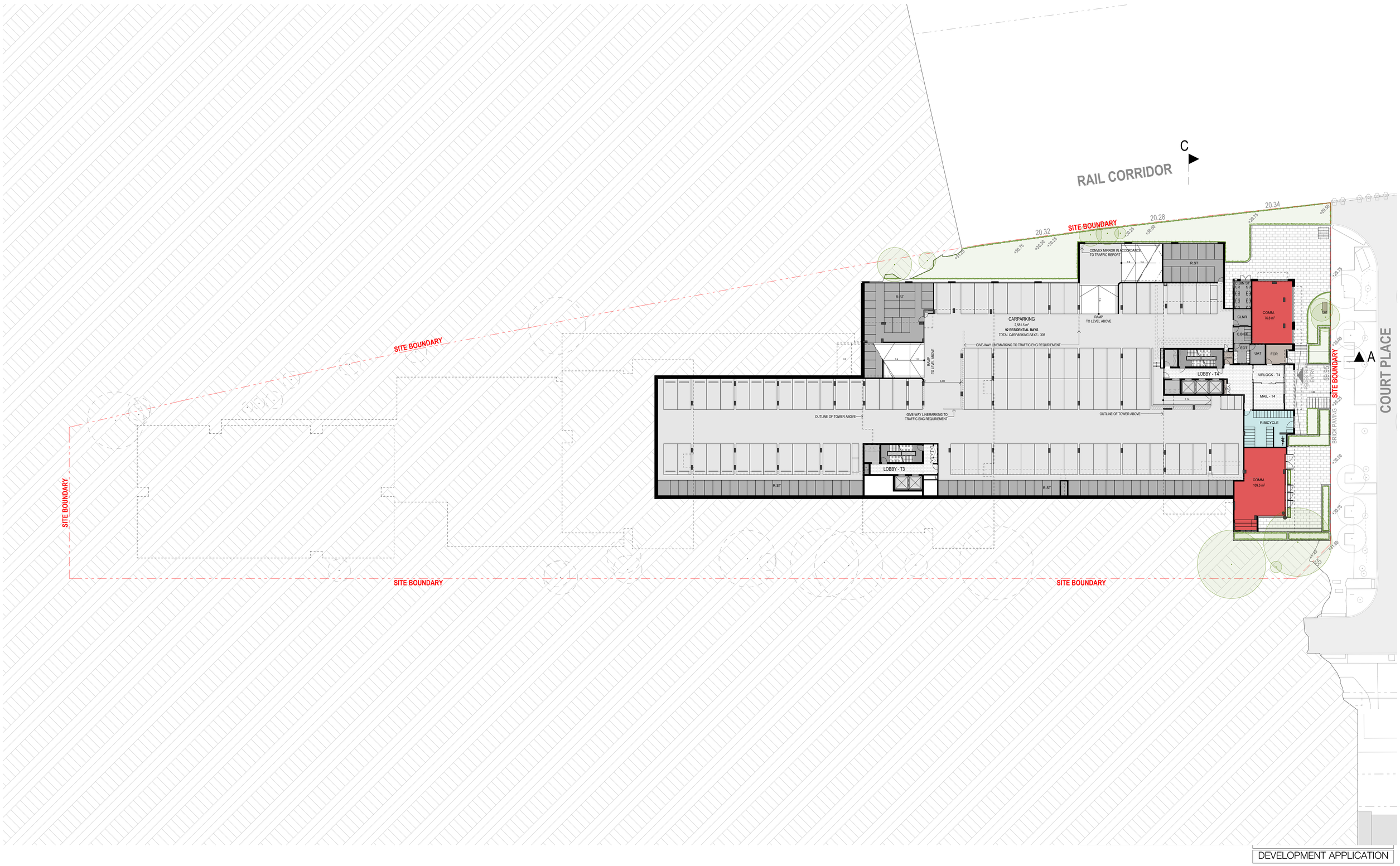
Appendix B

SITE PLANS





| LOWER GROUND



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports

- All works to be in accordance with authority & statutory approvals.
- Refer to site survey for all information relating to existing site conditions.
- All Boundary information to be confirmed by registered surveyor before commencing works on site.
- Refer to Arborist Report and Landscape Documentation for all information relating to trees and their retention/removal, and all landscape works.
- Drawings to be read in conjunction with all Specifications and Schedules; all specialist consultant documentation; NatHERS, Section J Certificates.
- Minor changes to building form & configuration may be required after Development Consent.
- Do not scale from drawing; figured dimensions only to be used.
- Building Contractor to verify all dimensions before commencing work.

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DKO

Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

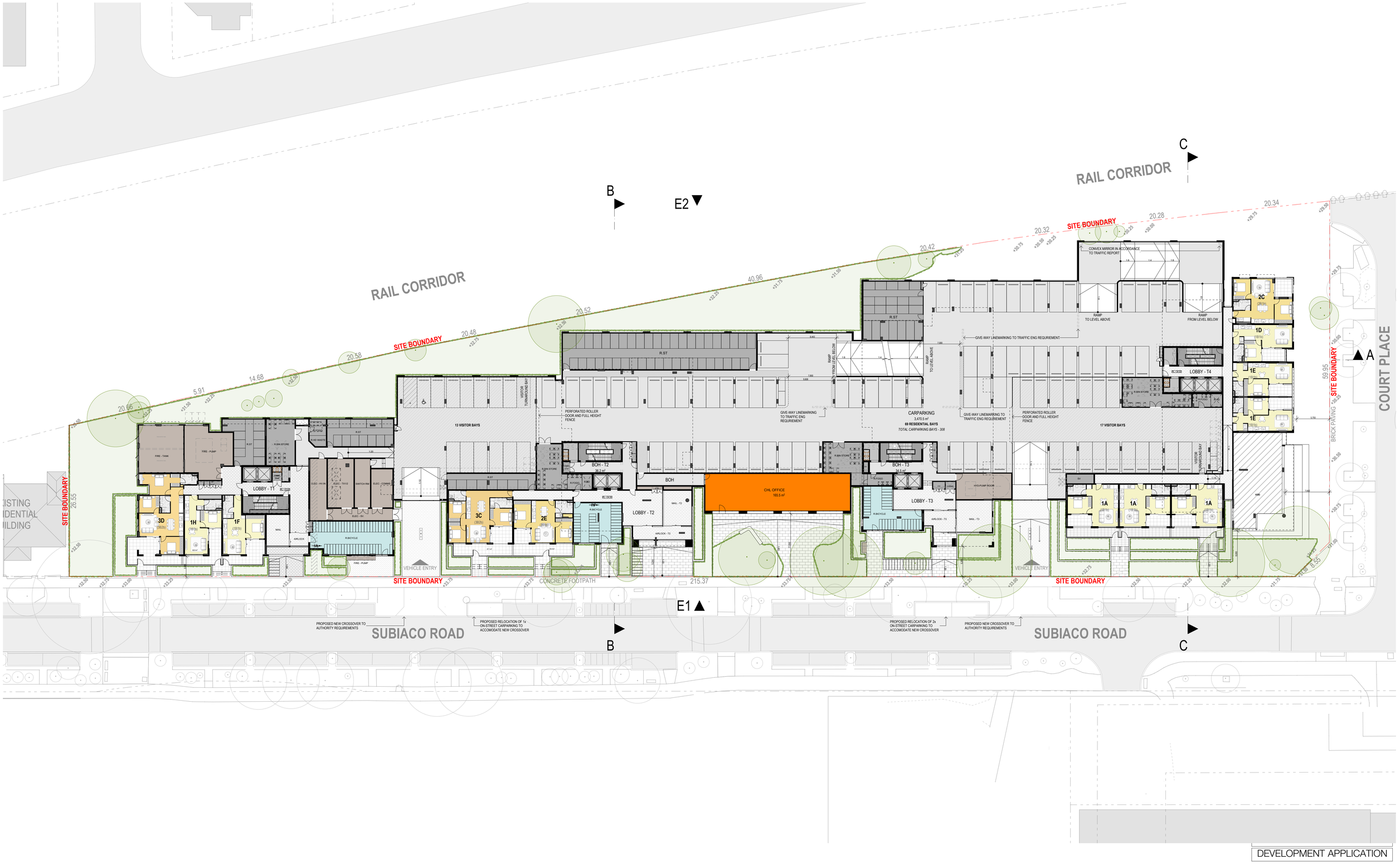
Drawing Name
Overall - Lower Ground Plan

Drawing Scale 1:300 @ A1

Drawing No. DA200

Revision 03

| UPPER GROUND



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports

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- All works to be in accordance with authority & statutory approvals.
- Refer to site survey for all information relating to existing site conditions.
- All Boundary information to be confirmed by registered surveyor before commencing works on site.
- Refer to Arborist Report and Landscape Documentation for all information relating to trees and their retention/removal, and all landscape works.
- Drawings to be read in conjunction with all Specifications and Schedules; all specialist consultant documentation; NatHERS, Section J Certificates.
- Minor changes to building form & configuration may be required after Development Consent.
- Do not scale from drawing; figured dimensions only to be used.
- Building Contractor to verify all dimensions before commencing work.

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DKO

Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

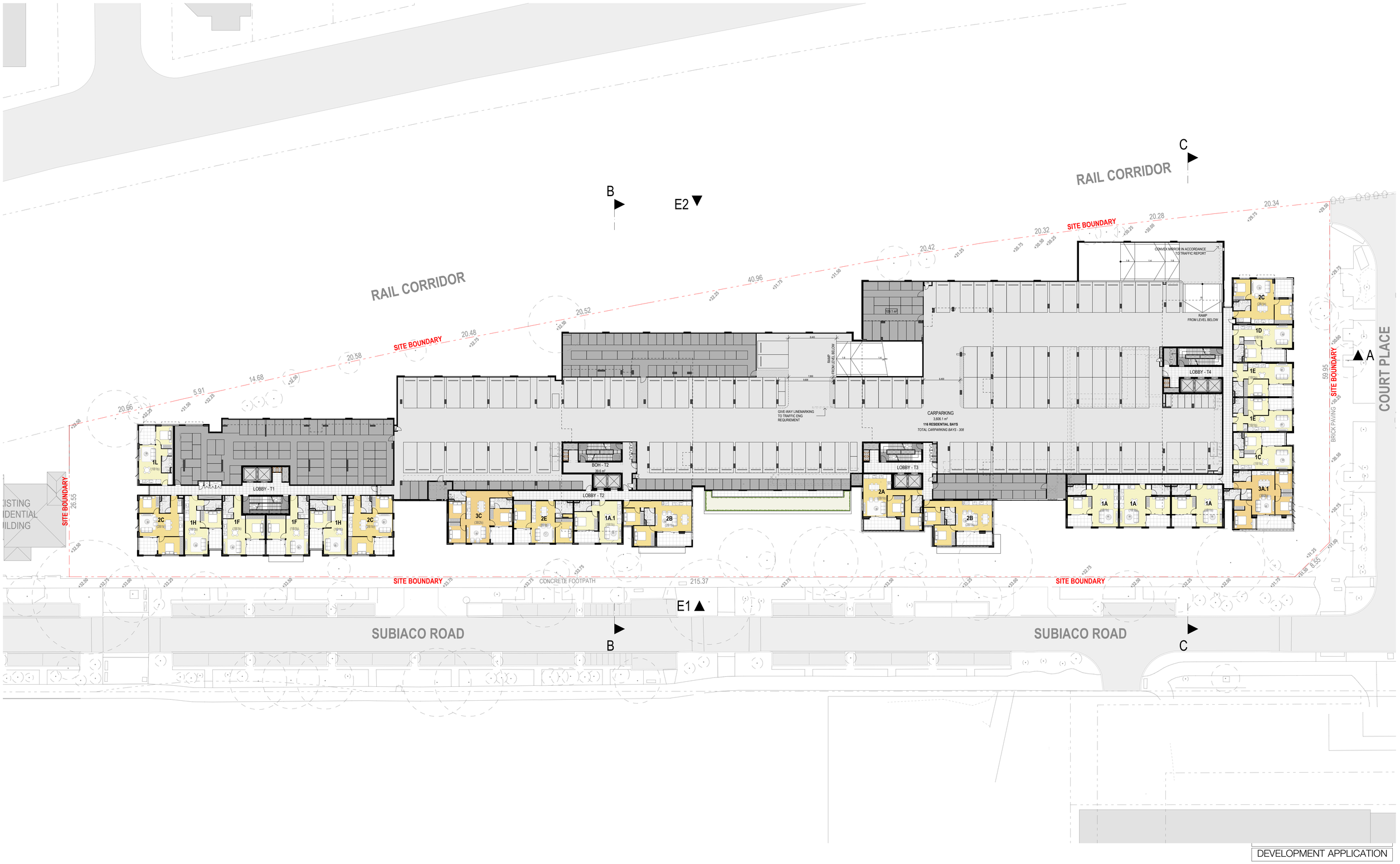
Drawing Name
Overall - Upper Ground Plan

Drawing Scale 1:300 @ A1

Drawing No. DA201

Revision 03

| LEVEL 01



DEVELOPMENT APPLICATION

Rev	Date	By	Chk	Description
03	19/01/2026	LH,AL,MP,TQ	CCL	Issued for DA Reports
02	19/12/2025	LH,AL,MP,TQ	CCL	Issued for Coordination
01	26/11/2025	ZZ	LM	Issue for Coordination

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- All works to be in accordance with authority & statutory approvals.
- Refer to site survey for all information relating to existing site conditions.
- All Boundary information to be confirmed by registered surveyor before commencing works on site.
- Refer to Arborist Report and Landscape Documentation for all information relating to trees and their retention/removal, and all landscape works.
- Drawings to be read in conjunction with all Specifications and Schedules; all specialist consultant documentation; NatHERS, Section J Certificates.
- Minor changes to building form & configuration may be required after Development Consent.
- Do not scale from drawing; figured dimensions only to be used.
- Building Contractor to verify all dimensions before commencing work.

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DKO

Project Name	Court Place
Project Number	00013365
Project Address	154 Subiaco Road Subiaco WA 6008
Country	Aust.

Drawing Name
Overall - Level 01

Drawing Scale 1:300 @ A1

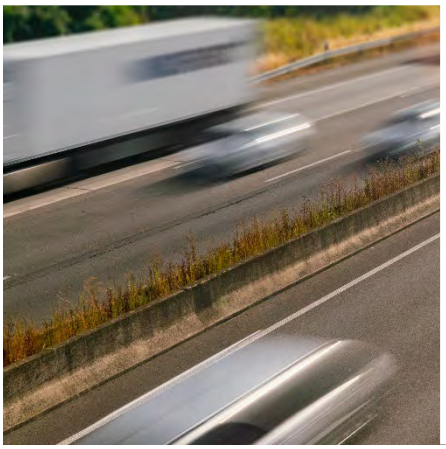
Drawing No. DA202

Revision 03

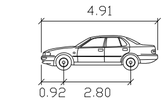


Appendix C

SWEPT PATHS

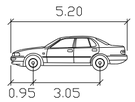






B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	6.0
Steering Angle	: 33.9

LEGEND	
Centreline	
Vehicle Body	
Body Clearance (300mm)	

RAIL CORRIDOR

C

SITE BOUNDARY

20.42 20.32 20.28 20.34

+31.25 +30.75 +30.50 +30.25 +30.25 +30.00 +29.75 +29.50

CONVEX MIRROR IN ACCORDANCE TO TRAFFIC REPORT

R.ST

C.BIN ST

CLNR

COMM. 76.8 m²

C.BIKE

EOT

UAT

FCR

CARPARKING 2,581.5 m² STANDARDS 2004 (AU_NZ)

92 RESIDENTIAL BAYS

TOTAL CARPARKING BAYS=308

RAMP TO LEVEL ABOVE

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

B85 STANDARDS 2004 (AU_NZ)

B99 STANDARDS 2004 (AU_NZ)

LOBBY - T4

AIRLOCK - T4

MAIL - T4

R.BICYCLE

PEDESTRIAN ENTRY

OUTLINE OF TOWER ABOVE

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

OUTLINE OF TOWER ABOVE

LOBBY - T3

T3 & T4

R.ST

R.ST

COMM. 109.5 m²

A

SITE BOUNDARY

BRICK PAVING

COURT PLACE

+32.25 +31.75 +33.75 +33.50 +33.25 +33.00 +32.75 +32.50 +32.25 +31.75 +31.00

SITE BOUNDARY

SUBIACO ROAD

C

RAIL CORRIDOR

SITE BOUNDARY

20.32

20.28

20.34

+30.75

+30.50

+30.25

+30.00

+29.75

+29.50

CONVEX MIRROR IN ACCORDANCE
TO TRAFFIC REPORT

1:8

1:4

1:8

R.ST

C.BIN ST

CLNR

C.BIKE

EOT

UAT

FCR

COMMS

COMM.
76.8 m²

SV

CARPARKING
2,581.5 m²
92 RESIDENTIAL BAYS
TAL CARPARKING BAYS - 308

RKING TO TRAFFIC ENG REQUIREMENT .

RAMP
TO LEVEL ABOVE

1:8

LOBBY - T4

AIRLOCK - T4

MAIL - T4

1:14

1:40

R.BICYCLE

TLINE OF TOWER ABOVE

PEDESTRIAN ENTRY

59.95

COMM.
109.5 m²

BRICK PAVING

SITE BOUNDARY

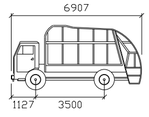
+30.00

+30.25

+30.50

A

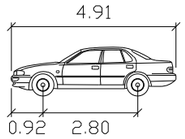
COURT PLACE



Urbin 6.9m

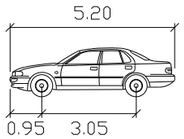
	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 41.3

LEGEND	
Centreline	
Vehicle Body	
Body Clearance (500mm)	



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	6.0
Steering Angle	: 33.9

LEGEND	
Centreline	
Vehicle Body	
Body Clearance (300mm)	

RAIL CORRIDOR

C

E2

SITE BOUNDARY

20.42 20.32 20.28

+31.25 +30.75 +30.50 +30.25 +30.25 +30.00

40.96

+32.25 +31.75 +31.50

20.52 20.48

+32.50 +32.75

CONVEX MIRROR IN ACCORDANCE TO TRAFFIC REPORT

RAMP FROM LEVEL BELOW

TO LEVEL ABOVE

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

LOBBY - T4

R.BIN STORE

R.FOGO

R.H.D

R.ST

B99 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

VISITOR TURNAROUND BAY

PERFORATED ROLLER DOOR AND FULL HEIGHT FENCE

13 VISITOR BAYS

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

CARPARKING

3,470.5 m²

69 RESIDENTIAL BAYS

TOTAL CARPARKING BAYS - 308

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

PERFORATED ROLLER DOOR AND FULL HEIGHT FENCE

17 VISITOR BAYS

VISITOR TURNAROUND BAY

SWITCH RM

ELEC - COMMS

ELEC - SV.

FIRE - PUMP

BOH - T2

36.2 m²

BOH

CHL OFFICE

165.5 m²

BOH - T3

34.5 m²

HYD-PUMP ROOM

LOBBY - T2

LOBBY - T3

MAIL - T2

MAIL - T3

AIRLOCK - T2

AIRLOCK - T3

R.BICYCLE

SV

3C

2E

1A

VEHICLE ENTRY

VEHICLE ENTRY

SITE BOUNDARY

+33.75 +33.75 +33.75 +33.50 +33.25 +33.00

CONCRETE FOOTPATH

215.37

SITE BOUNDARY

+32.75 +32.50 +32.25 +32.00

E1

B

C

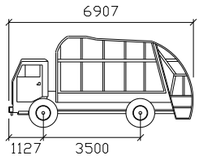
SUBIACO ROAD

SUBIACO ROAD

PROPOSED RELOCATION OF 1x ON-STREET CARPARKING TO ACCOMODATE NEW CROSSOVER

PROPOSED RELOCATION OF 2x ON-STREET CARPARKING TO ACCOMODATE NEW CROSSOVER

PROPOSED NEW CROSSOVER TO AUTHORITY REQUIREMENTS



Urbin 6.9m

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 41.3

LEGEND

Centreline	
Vehicle Body	
Body Clearance (500mm)	

RAIL CORRIDOR

C

E2

SITE BOUNDARY

20.42 20.32 20.28 40.96 20.52 20.48

+31.25 +30.75 +30.50 +30.25 +30.25 +30.00 +31.50 +31.75 +32.25 +32.50 +32.75

CONVEX MIRROR IN ACCORDANCE TO TRAFFIC REPORT

RAMP TO LEVEL ABOVE

RAMP FROM LEVEL BELOW

R.ST

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

LOBBY - T4

R.BIN STORE

R.FOGO

PERFORATED ROLLER DOOR AND FULL HEIGHT FENCE

CARPARKING
3,470.5 m²
69 RESIDENTIAL BAYS
TOTAL CARPARKING BAYS - 308

17 VISITOR BAYS

VISITOR TURNAROUND BAY

Urbin 6.9m Custom

SWITCH RM

ELEC - COMMS

ELEC - SV.

FIRE - PUMP

BOH - T2
36.2 m²

BOH

BOH - T3
34.5 m²

CHL OFFICE
165.5 m²

R.BICYCLE

LOBBY - T2

MAIL - T2

AIRLOCK - T2

LOBBY - T3

AIRLOCK - T3

MAIL - T3

HYD-PUMP ROOM

SV

3C

2E

1A

VEHICLE ENTRY

SITE BOUNDARY

+33.75 +33.75 +33.75 +33.50 +33.25 +33.00 +32.75 +32.50 +32.25 +32.00

CONCRETE FOOTPATH

215.37

E1

B

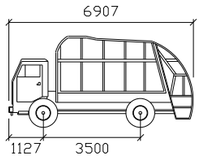
C

PROPOSED RELOCATION OF 1x ON-STREET CARPARKING TO ACCOMODATE NEW CROSSOVER

PROPOSED RELOCATION OF 2x ON-STREET CARPARKING TO ACCOMODATE NEW CROSSOVER

PROPOSED NEW CROSSOVER TO AUTHORITY REQUIREMENTS

SUBIACO ROAD



Urbin 6.9m

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 41.3

LEGEND

Centreline	
Vehicle Body	
Body Clearance (500mm)	

RAIL CORRIDOR

C

E2

SITE BOUNDARY

20.42 20.32 20.28 40.96 20.52 20.48

+31.25 +30.75 +30.50 +30.25 +30.25 +30.00 +31.50 +31.75 +32.25 +32.50 +32.75

CONVEX MIRROR IN ACCORDANCE TO TRAFFIC REPORT

RAMP TO LEVEL ABOVE

RAMP FROM LEVEL BELOW

R.ST

GIVE-WAY LINEMARKING TO TRAFFIC ENG REQUIREMENT

LOBBY - T4

R.BIN STORE

R.FOGO

R.MD

PERFORATED ROLLER DOOR AND FULL HEIGHT FENCE

CARPARKING
3,470.5 m²
69 RESIDENTIAL BAYS
TOTAL CARPARKING BAYS - 308

13 VISITOR BAYS

17 VISITOR BAYS

VISITOR TURNAROUND BAY

BOH - T2
36.2 m²

BOH

CHL OFFICE
165.5 m²

BOH - T3
34.5 m²

LOBBY - T2

LOBBY - T3

MAIL - T2

MAIL - T3

AIRLOCK - T2

AIRLOCK - T3

R.BICYCLE

HYD-PUMP ROOM

SV

1A

3C

2E

SWITCH RM

ELEC - COMMS

ELEC - SV.

FIRE - PUMP

VEHICLE ENTRY

SITE BOUNDARY

CONCRETE FOOTPATH

215.37

+33.75 +33.50 +33.25 +33.00 +32.75 +32.50 +32.25 +32.00

E1

B

C

PROPOSED RELOCATION OF 1x ON-STREET CARPARKING TO ACCOMODATE NEW CROSSOVER

PROPOSED RELOCATION OF 2x ON-STREET CARPARKING TO ACCOMODATE NEW CROSSOVER

PROPOSED NEW CROSSOVER TO AUTHORITY REQUIREMENTS

SUBIACO ROAD

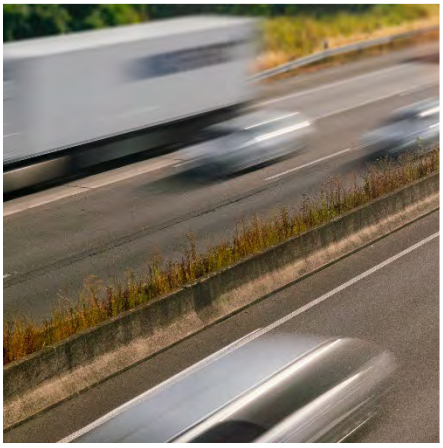
SUBIACO ROAD

Urbin 6.9m Custom



Appendix D

SIDRA MOVEMENT SUMMARIES



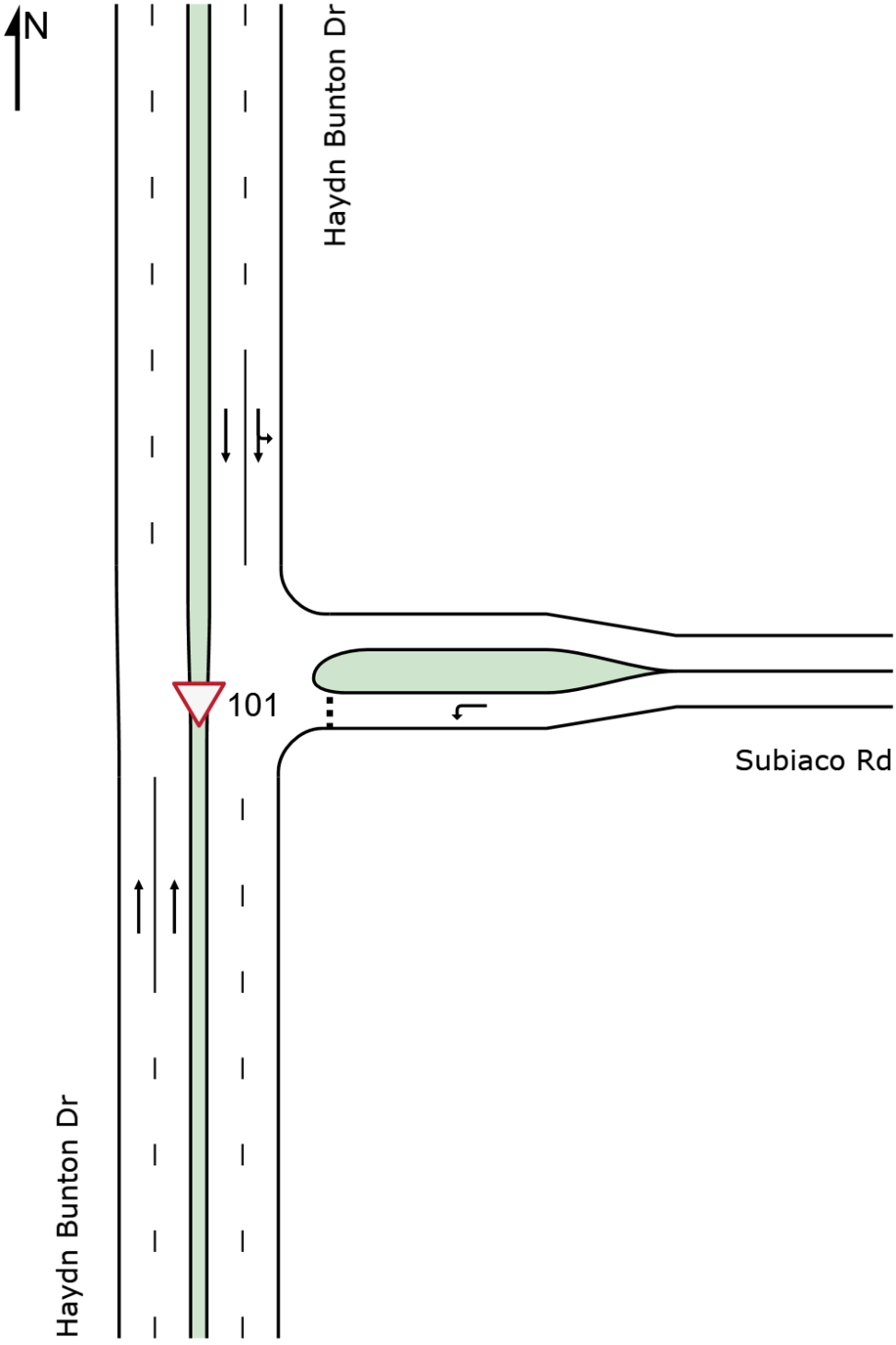


SITE LAYOUT

Site: [101] Haydn Bunton Dr/Subiaco Rd_AM (2028)

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

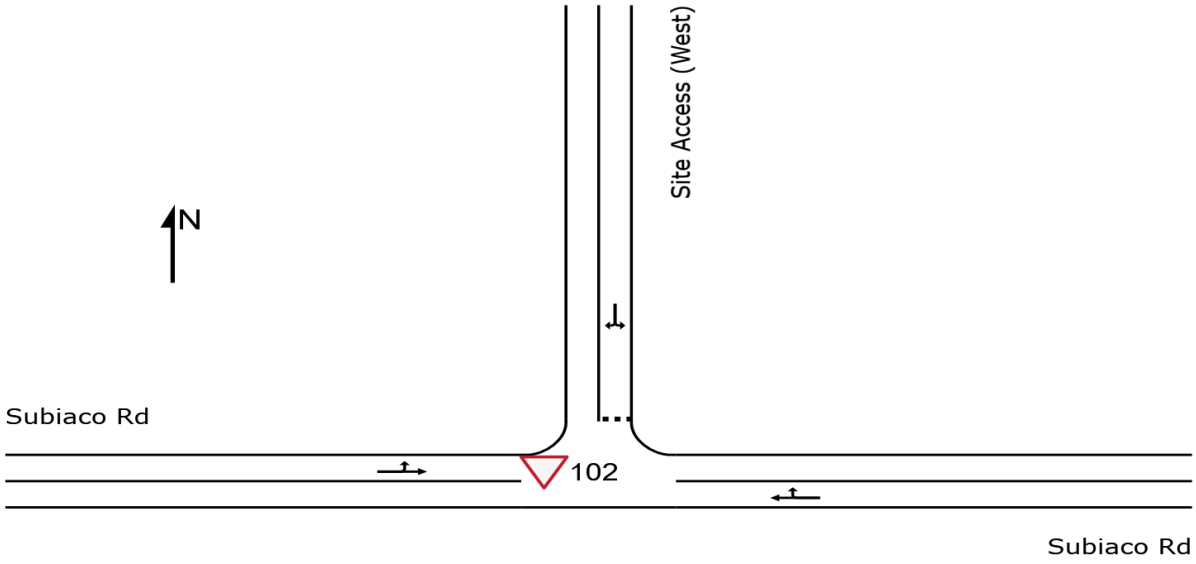


SITE LAYOUT

Site: [102] Subiaco Rd/Site Access (West)_AM (2028)

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



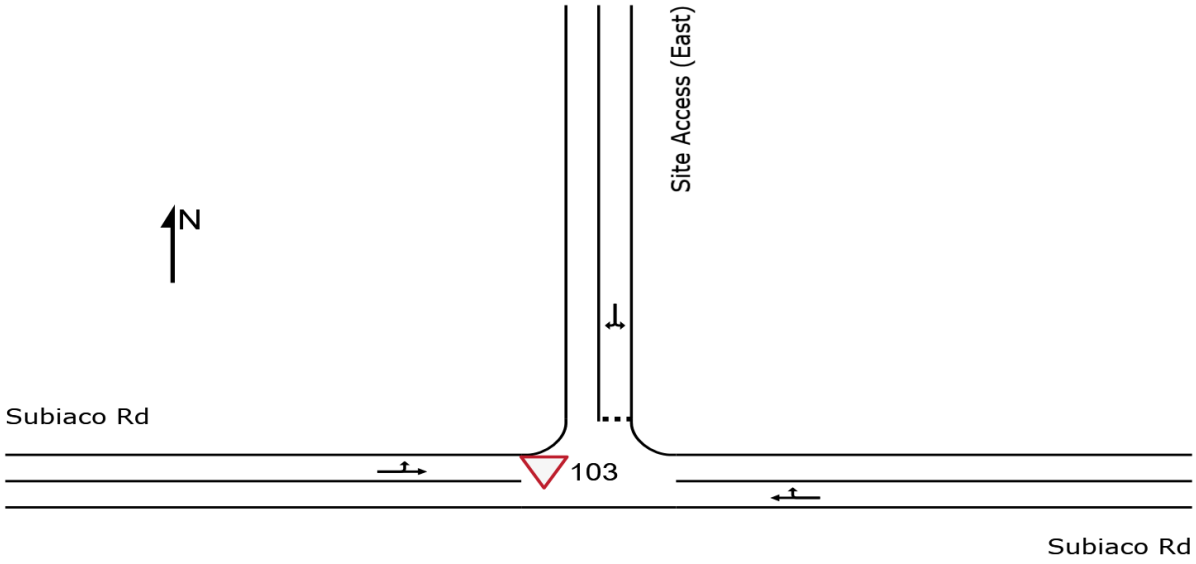
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SITE LAYOUT

Site: [103] Subiaco Rd/Site Access (East)_AM (2028)

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

Site: [101] Haydn Bunton Dr/Subiaco Rd_AM (2028)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Haydn Bunton Dr															
2	T1	All MCs	365	0.0	365	0.0	0.094	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			365	0.0	365	0.0	0.094	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
East: Subiaco Rd															
4	L2	All MCs	131	2.4	131	2.4	0.133	4.8	LOS A	0.5	3.7	0.38	0.56	0.38	34.4
Approach			131	2.4	131	2.4	0.133	4.8	LOS A	0.5	3.7	0.38	0.56	0.38	34.4
North: Haydn Bunton Dr															
7	L2	All MCs	99	3.2	99	3.2	0.204	4.6	LOS A	0.0	0.0	0.00	0.14	0.00	44.5
8	T1	All MCs	688	0.0	688	0.0	0.204	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	48.6
Approach			787	0.4	787	0.4	0.204	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.7
All Vehicles			1283	0.5	1283	0.5	0.204	0.9	NA	0.5	3.7	0.04	0.10	0.04	45.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [102] Subiaco Rd/Site Access (West)_AM (2028)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	76	4.2	76	4.2	0.042	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	39.8
6	R2	All MCs	2	0.0	2	0.0	0.042	3.6	LOS A	0.0	0.1	0.01	0.01	0.01	35.2
Approach			78	4.1	78	4.1	0.042	0.1	NA	0.0	0.1	0.01	0.01	0.01	39.8
North: Site Access (West)															
7	L2	All MCs	6	0.0	6	0.0	0.053	0.2	LOS A	0.2	1.3	0.23	0.22	0.23	28.1
9	R2	All MCs	55	0.0	55	0.0	0.053	1.2	LOS A	0.2	1.3	0.23	0.22	0.23	33.6
Approach			61	0.0	61	0.0	0.053	1.1	LOS A	0.2	1.3	0.23	0.22	0.23	33.3
West: Subiaco Rd															
10	L2	All MCs	20	0.0	20	0.0	0.053	3.5	LOS A	0.0	0.0	0.00	0.10	0.00	28.7
11	T1	All MCs	79	4.0	79	4.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	39.2
Approach			99	3.2	99	3.2	0.053	0.7	NA	0.0	0.0	0.00	0.10	0.00	36.9
All Vehicles			238	2.7	238	2.7	0.053	0.6	NA	0.2	1.3	0.06	0.10	0.06	37.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [103] Subiaco Rd/Site Access (East)_AM (2028)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	75	4.2	75	4.2	0.066	0.1	LOS A	0.2	1.8	0.14	0.21	0.14	35.7
6	R2	All MCs	43	0.0	43	0.0	0.066	3.8	LOS A	0.2	1.8	0.14	0.21	0.14	28.1
Approach			118	2.7	118	2.7	0.066	1.5	NA	0.2	1.8	0.14	0.21	0.14	33.7
North: Site Access (East)															
7	L2	All MCs	117	0.0	117	0.0	0.080	0.3	LOS A	0.3	2.4	0.18	0.07	0.18	25.6
9	R2	All MCs	3	0.0	3	0.0	0.080	1.4	LOS A	0.3	2.4	0.18	0.07	0.18	28.3
Approach			120	0.0	120	0.0	0.080	0.3	LOS A	0.3	2.4	0.18	0.07	0.18	25.7
West: Subiaco Rd															
10	L2	All MCs	1	0.0	1	0.0	0.045	3.4	LOS A	0.0	0.0	0.00	0.01	0.00	25.7
11	T1	All MCs	84	3.8	84	3.8	0.045	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.9
Approach			85	3.7	85	3.7	0.045	0.0	NA	0.0	0.0	0.00	0.01	0.00	39.7
All Vehicles			323	2.0	323	2.0	0.080	0.7	NA	0.3	2.4	0.12	0.10	0.12	32.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [201] Haydn Bunton Dr/Subiaco Rd_PM (2028)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Haydn Bunton Dr															
2	T1	All MCs	743	0.0	743	0.0	0.191	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			743	0.0	743	0.0	0.191	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: Subiaco Rd															
4	L2	All MCs	59	5.4	59	5.4	0.046	3.5	LOS A	0.2	1.3	0.08	0.44	0.08	35.4
Approach			59	5.4	59	5.4	0.046	3.5	LOS A	0.2	1.3	0.08	0.44	0.08	35.4
North: Haydn Bunton Dr															
7	L2	All MCs	221	5.2	221	5.2	0.138	4.6	LOS A	0.0	0.0	0.00	0.48	0.00	40.5
8	T1	All MCs	294	0.0	294	0.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	49.0
Approach			515	2.2	515	2.2	0.138	2.0	NA	0.0	0.0	0.00	0.23	0.00	43.8
All Vehicles			1317	1.1	1317	1.1	0.191	0.9	NA	0.2	1.3	0.00	0.11	0.00	45.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [202] Subiaco Rd/Site Access (West)_PM (2028)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	29	10.7	29	10.7	0.020	0.1	LOS A	0.0	0.3	0.11	0.12	0.11	38.9
6	R2	All MCs	5	0.0	5	0.0	0.020	4.2	LOS A	0.0	0.3	0.11	0.12	0.11	33.0
Approach			35	9.1	35	9.1	0.020	0.8	NA	0.0	0.3	0.11	0.12	0.11	38.5
North: Site Access (West)															
7	L2	All MCs	3	0.0	3	0.0	0.032	0.5	LOS A	0.1	0.7	0.28	0.26	0.28	27.8
9	R2	All MCs	31	0.0	31	0.0	0.032	1.4	LOS A	0.1	0.7	0.28	0.26	0.28	33.4
Approach			34	0.0	34	0.0	0.032	1.4	LOS A	0.1	0.7	0.28	0.26	0.28	33.1
West: Subiaco Rd															
10	L2	All MCs	48	0.0	48	0.0	0.121	3.5	LOS A	0.0	0.0	0.00	0.10	0.00	28.6
11	T1	All MCs	173	6.7	173	6.7	0.121	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	39.1
Approach			221	5.2	221	5.2	0.121	0.8	NA	0.0	0.0	0.00	0.10	0.00	36.7
All Vehicles			289	5.1	289	5.1	0.121	0.8	NA	0.1	0.7	0.05	0.12	0.05	36.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [203] Subiaco Rd/Site Access (East)_PM (2028)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	33	9.7	33	9.7	0.084	0.6	LOS A	0.4	3.0	0.29	0.42	0.29	32.0
6	R2	All MCs	102	0.0	102	0.0	0.084	4.1	LOS A	0.4	3.0	0.29	0.42	0.29	23.8
Approach			135	2.3	135	2.3	0.084	3.3	NA	0.4	3.0	0.29	0.42	0.29	26.5
North: Site Access (East)															
7	L2	All MCs	64	0.0	64	0.0	0.048	0.5	LOS A	0.2	1.4	0.27	0.14	0.27	24.9
9	R2	All MCs	2	0.0	2	0.0	0.048	1.8	LOS A	0.2	1.4	0.27	0.14	0.27	27.7
Approach			66	0.0	66	0.0	0.048	0.6	LOS A	0.2	1.4	0.27	0.14	0.27	25.0
West: Subiaco Rd															
10	L2	All MCs	2	0.0	2	0.0	0.096	3.4	LOS A	0.0	0.0	0.00	0.01	0.00	25.7
11	T1	All MCs	174	6.7	174	6.7	0.096	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.9
Approach			176	6.6	176	6.6	0.096	0.0	NA	0.0	0.0	0.00	0.01	0.00	39.7
All Vehicles			377	3.9	377	3.9	0.096	1.3	NA	0.4	3.0	0.15	0.18	0.15	32.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [301] Haydn Bunton Dr/Subiaco Rd_AM (2038)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Haydn Bunton Dr															
2	T1	All MCs	439	0.0	439	0.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			439	0.0	439	0.0	0.113	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
East: Subiaco Rd															
4	L2	All MCs	145	2.9	145	2.9	0.159	5.2	LOS A	0.6	4.5	0.43	0.60	0.43	34.2
Approach			145	2.9	145	2.9	0.159	5.2	LOS A	0.6	4.5	0.43	0.60	0.43	34.2
North: Haydn Bunton Dr															
7	L2	All MCs	115	3.7	115	3.7	0.244	4.6	LOS A	0.0	0.0	0.00	0.13	0.00	44.4
8	T1	All MCs	827	0.0	827	0.0	0.244	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	48.6
Approach			942	0.4	942	0.4	0.244	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.7
All Vehicles			1526	0.6	1526	0.6	0.244	0.9	NA	0.6	4.5	0.04	0.10	0.04	45.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [302] Subiaco Rd/Site Access (West)_AM (2038)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	91	4.7	91	4.7	0.050	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	39.8
6	R2	All MCs	2	0.0	2	0.0	0.050	3.6	LOS A	0.0	0.1	0.01	0.01	0.01	35.2
Approach			93	4.5	93	4.5	0.050	0.1	NA	0.0	0.1	0.01	0.01	0.01	39.8
North: Site Access (West)															
7	L2	All MCs	6	0.0	6	0.0	0.055	0.3	LOS A	0.2	1.3	0.25	0.24	0.25	28.0
9	R2	All MCs	55	0.0	55	0.0	0.055	1.3	LOS A	0.2	1.3	0.25	0.24	0.25	33.5
Approach			61	0.0	61	0.0	0.055	1.2	LOS A	0.2	1.3	0.25	0.24	0.25	33.2
West: Subiaco Rd															
10	L2	All MCs	20	0.0	20	0.0	0.062	3.5	LOS A	0.0	0.0	0.00	0.08	0.00	28.7
11	T1	All MCs	95	4.4	95	4.4	0.062	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	39.3
Approach			115	3.7	115	3.7	0.062	0.6	NA	0.0	0.0	0.00	0.08	0.00	37.3
All Vehicles			268	3.1	268	3.1	0.062	0.6	NA	0.2	1.3	0.06	0.09	0.06	37.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [303] Subiaco Rd/Site Access (East)_AM (2038)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	89	4.7	89	4.7	0.074	0.1	LOS A	0.2	1.8	0.14	0.19	0.14	36.0
6	R2	All MCs	43	0.0	43	0.0	0.074	3.8	LOS A	0.2	1.8	0.14	0.19	0.14	28.4
Approach			133	3.2	133	3.2	0.074	1.4	NA	0.2	1.8	0.14	0.19	0.14	34.2
North: Site Access (East)															
7	L2	All MCs	117	0.0	117	0.0	0.081	0.3	LOS A	0.3	2.4	0.20	0.08	0.20	25.4
9	R2	All MCs	3	0.0	3	0.0	0.081	1.5	LOS A	0.3	2.4	0.20	0.08	0.20	28.1
Approach			120	0.0	120	0.0	0.081	0.3	LOS A	0.3	2.4	0.20	0.08	0.20	25.5
West: Subiaco Rd															
10	L2	All MCs	1	0.0	1	0.0	0.054	3.4	LOS A	0.0	0.0	0.00	0.00	0.00	25.7
11	T1	All MCs	100	4.2	100	4.2	0.054	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			101	4.2	101	4.2	0.054	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.7
All Vehicles			354	2.4	354	2.4	0.081	0.6	NA	0.3	2.4	0.12	0.10	0.12	33.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [401] Haydn Bunton Dr/Subiaco Rd_PM (2038)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Haydn Bunton Dr															
2	T1	All MCs	893	0.0	893	0.0	0.229	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			893	0.0	893	0.0	0.229	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: Subiaco Rd															
4	L2	All MCs	65	6.5	65	6.5	0.052	3.6	LOS A	0.2	1.5	0.10	0.44	0.10	35.2
Approach			65	6.5	65	6.5	0.052	3.6	LOS A	0.2	1.5	0.10	0.44	0.10	35.2
North: Haydn Bunton Dr															
7	L2	All MCs	256	5.8	256	5.8	0.164	4.6	LOS A	0.0	0.0	0.00	0.47	0.00	40.5
8	T1	All MCs	353	0.0	353	0.0	0.164	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	48.9
Approach			608	2.4	608	2.4	0.164	2.0	NA	0.0	0.0	0.00	0.22	0.00	43.8
All Vehicles			1566	1.2	1566	1.2	0.229	0.9	NA	0.2	1.5	0.00	0.10	0.00	45.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [402] Subiaco Rd/Site Access (West)_PM (2038)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	36	11.8	36	11.8	0.024	0.2	LOS A	0.0	0.3	0.10	0.11	0.10	39.0
6	R2	All MCs	5	0.0	5	0.0	0.024	4.4	LOS A	0.0	0.3	0.10	0.11	0.10	33.2
Approach			41	10.3	41	10.3	0.024	0.7	NA	0.0	0.3	0.10	0.11	0.10	38.7
North: Site Access (West)															
7	L2	All MCs	3	0.0	3	0.0	0.033	0.6	LOS A	0.1	0.8	0.31	0.28	0.31	27.6
9	R2	All MCs	31	0.0	31	0.0	0.033	1.6	LOS A	0.1	0.8	0.31	0.28	0.31	33.3
Approach			34	0.0	34	0.0	0.033	1.5	LOS A	0.1	0.8	0.31	0.28	0.31	33.0
West: Subiaco Rd															
10	L2	All MCs	48	0.0	48	0.0	0.140	3.5	LOS A	0.0	0.0	0.00	0.09	0.00	28.7
11	T1	All MCs	207	7.1	207	7.1	0.140	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	39.2
Approach			256	5.8	256	5.8	0.140	0.7	NA	0.0	0.0	0.00	0.09	0.00	37.1
All Vehicles			331	5.7	331	5.7	0.140	0.8	NA	0.1	0.8	0.04	0.11	0.04	36.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [403] Subiaco Rd/Site Access (East)_PM (2038)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Subiaco Rd															
5	T1	All MCs	39	10.8	39	10.8	0.090	0.7	LOS A	0.4	3.3	0.32	0.43	0.32	32.0
6	R2	All MCs	102	0.0	102	0.0	0.090	4.3	LOS A	0.4	3.3	0.32	0.43	0.32	23.8
Approach			141	3.0	141	3.0	0.090	3.3	NA	0.4	3.3	0.32	0.43	0.32	26.8
North: Site Access (East)															
7	L2	All MCs	64	0.0	64	0.0	0.050	0.7	LOS A	0.2	1.4	0.30	0.17	0.30	24.7
9	R2	All MCs	2	0.0	2	0.0	0.050	2.0	LOS A	0.2	1.4	0.30	0.17	0.30	27.5
Approach			66	0.0	66	0.0	0.050	0.7	LOS A	0.2	1.4	0.30	0.17	0.30	24.8
West: Subiaco Rd															
10	L2	All MCs	2	0.0	2	0.0	0.116	3.5	LOS A	0.0	0.0	0.00	0.00	0.00	25.7
11	T1	All MCs	208	7.1	208	7.1	0.116	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			211	7.0	211	7.0	0.116	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.7
All Vehicles			418	4.5	418	4.5	0.116	1.2	NA	0.4	3.3	0.16	0.17	0.16	33.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
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Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
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Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Waste Management Plan

154 Subiaco Road, Subiaco

METROPOLITAN REDEVELOPMENT AUTHORITY ACT 2011
APPROVED PLANS
04 June 2026
DA2600006

Prepared for Community Housing (Subi East) Limited

21 January 2026

Project Number: WMP25053

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Name	Position	File Reference
Ann Brouwer	Project Manager – Waste Management Plan Lead (WA)	WMP25053-02_Waste Management Plan_0.3
Signature		

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Executive Summary

Community Housing (Subi East) Limited is seeking development approval for the proposed mixed-use development located at 154 Subiaco Road, Subiaco (the Proposal).

To satisfy the conditions of the development application the City of Subiaco (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Residential Tower 1 Bin Storage Area					
Refuse	5,976	660	Five	Twice each week	Private Contractor
Recycling	3,320	660	Three	Twice each week	Private Contractor
FOGO	664	240	Three	Twice each week	Private Contractor
Residential Tower 2 Bin Storage Area					
Refuse	9,252	660	Eight	Twice each week	Private Contractor
Recycling	5,140	660	Four	Twice each week	Private Contractor
FOGO	1,028	240	Three	Twice each week	Private Contractor
Residential Tower 3 Bin Storage Area					
Refuse	7,920	660	Six	Twice each week	Private Contractor
Recycling	4,400	660	Four	Twice each week	Private Contractor
FOGO	880	240	Two	Twice each week	Private Contractor
Residential Tower 4 Bin Storage Area					
Refuse	16,920	660	Thirteen	Twice each week	Private Contractor
Recycling	9,400	660	Eight	Twice each week	Private Contractor
FOGO	1,880	240	Four	Twice each week	Private Contractor
Commercial Bin Storage Area					
Refuse	4,043	660	Four	Twice each week	Private Contractor
Recycling	2,734	660	Three	Twice each week	Private Contractor

A private contractor will service the residential waste onsite, directly from the respective Tower's Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Subiaco Road.

A private contractor will also service the commercial waste directly from the Commercial Bin Storage Area from a truck stopping point on Court Place.

A building manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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Figure 1: Locality Plan

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1 Introduction

Community Housing (Subi East) Limited is seeking development approval for the proposed mixed-use development located at 154 Subiaco Road, Subiaco (the Proposal).

To satisfy the conditions of the development application the City of Subiaco (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by Railway Parade to the north, Court Place to the east, Subiaco Road to the south and residential properties to the west, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse, recyclables and FOGO) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide adequately sized Bin Storage Areas, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Internal Transfer of Waste;
- Section 4: Waste Storage;
- Section 5: Waste Collection;
- Section 6: Waste Management; and
- Section 7: Conclusion.

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2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse, recyclables and FOGO is based on the number of residential apartments and the floor area (m^2) of the commercial tenancies at the Proposal. The Proposal consists of the following:

Tower 1 Bin Storage Area:

- One Bedroom Apartments – 47;
- Two Bedroom Apartments – 22; and
- Three Bedroom Apartments – 1.

Tower 2 Bin Storage Area:

- One Bedroom Apartments – 79;
- Two Bedroom Apartments – 29; and
- Three Bedroom Apartments – 2.

Tower 3 Bin Storage Area:

- One Bedroom Apartments – 53; and
- Two Bedroom Apartments – 38.

Tower 4 Bin Storage Area:

- One Bedroom Apartments – 109;
- Two Bedroom Apartments – 50; and
- Three Bedroom Apartments – 17.

Commercial Bin Storage Area:

- Tenancy 1 (assumed café) – 77m^2;
- Tenancy 2 (assumed café) – 110m^2; and
- CHL Office – 165m^2.

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the City of Subiaco's *Multi Use Developments and Commercial Waste Guidelines* (2017) and the City of Perth's *Waste Guidelines for New Developments* (Revision 5, effective from June 2019).

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

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Table 2-1: Waste Generation Rates

Tenancy Use Type	Guideline Reference	*Refuse Generation Rate	Recycling Generation Rate	*FOGO Generation Rate
Residential				
One Bedroom Apartments	Subiaco – One Bedroom	72L/week	40L/week	8L/week
Two Bedroom Apartments	Subiaco – Two Bedroom	108L/week	60L/week	12L/week
Three Bedroom Apartments	Subiaco – Three Bedroom or greater	216L/week	120L/week	24L/week
Commercial				
Tenancy 1 (assumed café)	Perth – Café	300L/100m^2/day	200L/100m^2/day	-
Tenancy 2 (assumed café)	Perth – Café	300L/100m^2/day	200L/100m^2/day	-
CHL Office	Perth – Office	10L/100m^2/day	10L/100m^2/day	-

**The FOGO waste generation rate has been assumed as 10% of the refuse generation rate. Based on the Client's knowledge of existing developments it has been assumed that a small percentage of residents will participate in separating the third FOGO waste stream.*

2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

2.3.1 Tower 1 Residential Waste

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-2. It is estimated that the Tower 1 residential apartments at the Proposal will generate 5,976L of refuse, 3,320L of recycling and 664L of FOGO each week.

Table 2-2: Estimated Waste Generation – Tower 1

Tower 1 Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartments	47	72	3,384
Two Bedroom Apartments	22	108	2,376
Three Bedroom Apartments	1	216	216
		Total	**5,976**
Recyclables			
One Bedroom Apartments	47	40	1,880
Two Bedroom Apartments	22	60	1,320
Three Bedroom Apartments	1	120	120
		Total	**3,320**
FOGO			
One Bedroom Apartments	47	8	376
Two Bedroom Apartments	22	12	264
Three Bedroom Apartments	1	24	24
		Total	**664**

2.3.2 Tower 2 Residential Waste

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-3. It is estimated that the Tower 2 residential apartments at the Proposal will generate 9,252L of refuse, 5,140L of recyclables and 1,028L of FOGO.

Table 2-3: Estimated Waste Generation – Tower 2

Tower 2 Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartments	79	72	5,688
Two Bedroom Apartments	29	108	3,132
Three Bedroom Apartments	2	216	432
		Total	**9,252**
Recyclables			
One Bedroom Apartments	79	40	3,160
Two Bedroom Apartments	29	60	1,740
Three Bedroom Apartments	2	120	240
		Total	**5,140**
FOGO			
One Bedroom Apartments	79	8	632
Two Bedroom Apartments	29	12	348
Three Bedroom Apartments	2	24	48
		Total	**1,028**

2.3.3 Tower 3 Residential Waste

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-4. It is estimated that the Tower 3 residential apartments at the Proposal will generate 7,920L of refuse, 4,400L of recyclables and 880L of FOGO each week.

Table 2-4: Estimated Waste Generation – Tower 3

Tower 3 Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartments	53	72	3,816
Two Bedroom Apartments	38	108	4,104
		Total	**7,920**
Recyclables			
One Bedroom Apartments	53	40	2,120
Two Bedroom Apartments	38	60	2,280
		Total	**4,400**
FOGO			
One Bedroom Apartments	53	8	424
Two Bedroom Apartments	38	12	456
		Total	**880**

2.3.4 Tower 4 Residential Waste

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-5. It is estimated that the Tower 4 residential apartments at the Proposal will generate 16,920L of refuse, 9,400L of recyclables and 1,880L of FOGO each week.

Table 2-5: Estimated Waste Generation – Tower 4

Tower 4 Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartments	109	72	7,848
Two Bedroom Apartments	50	108	5,400
Three Bedroom Apartments	17	216	3,672
		Total	**16,920**
Recyclables			
One Bedroom Apartments	109	40	4,360
Two Bedroom Apartments	50	60	3,000
Three Bedroom Apartments	17	120	2,040
		Total	**9,400**
FOGO			
One Bedroom Apartments	109	8	872
Two Bedroom Apartments	50	12	600
Three Bedroom Apartments	17	24	408
		Total	**1,880**

2.3.5 Commercial Waste

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-6. It is estimated that the commercial tenancies at the Proposal will generate 4,043L of refuse and 2,734L of recyclables each week.

Table 2-6: Estimated Waste Generation – Commercial

Commercial Tenancies	Area (m^2)	Waste Generation Rate (L/100m^2/day)	Waste Generation (L/week)
Refuse			
Tenancy 1 (assumed café)	77	300	1,617
Tenancy 2 (assumed café)	110	300	2,310
CHL Office	165	10	116
		Total	**4,043**
Recyclables			
Tenancy 1 (assumed café)	77	200	1,078
Tenancy 2 (assumed café)	110	200	1,540
CHL Office	165	10	116
		Total	**2,734**

3 Internal Transfer of Waste

To ensure that waste is managed appropriately at the Proposal, it is important to allow for sufficient space to accommodate the required quantity of bins within the Bin Storage Areas. The transfer of bins, quantity, size, and design of the Bin Storage Areas is described in the following sections.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist residents, visitors, staff, and cleaners to dispose of their separate waste materials in the correct bins.

3.1 Residential Internal Bins

To promote positive recycling behaviour and maximise diversion from landfill, the residential apartments will have room to accommodate two under counter/kitchen bins for the separate disposal of refuse and recyclables and smaller bins/caddies for food organics.

The resident will then take the contents of their internal refuse and recycling bins to the respective Waste Chute Room on each residential level for disposal, as described below, and their internal FOGO kitchen caddy directly to the respective Tower's FOGO Bin Storage Area on the Upper Ground Level.

3.1.1 Waste Chute System

To assist with efficient disposal of waste to the Residential Bin Storage Areas, a dual chute waste system will be utilised within each of the Proposal's residential towers for refuse and recycling waste, as shown in Diagram 1.

The waste chutes will be located in close proximity to the elevators on each residential level in each Tower, have self-closing doors with and bottom hinge and fire rated to AS1530.4-2005. Chutes are typically 610mm in diameter and are ventilated with an extraction fan at the top to reduce odour and insulated for noise reduction. The chutes will be routinely cleaned via chute flushing operations. Please note, the exact design of the systems to be utilised at the Proposal will be determined at a later date following discussions with waste chute providers as the designs are finalised.

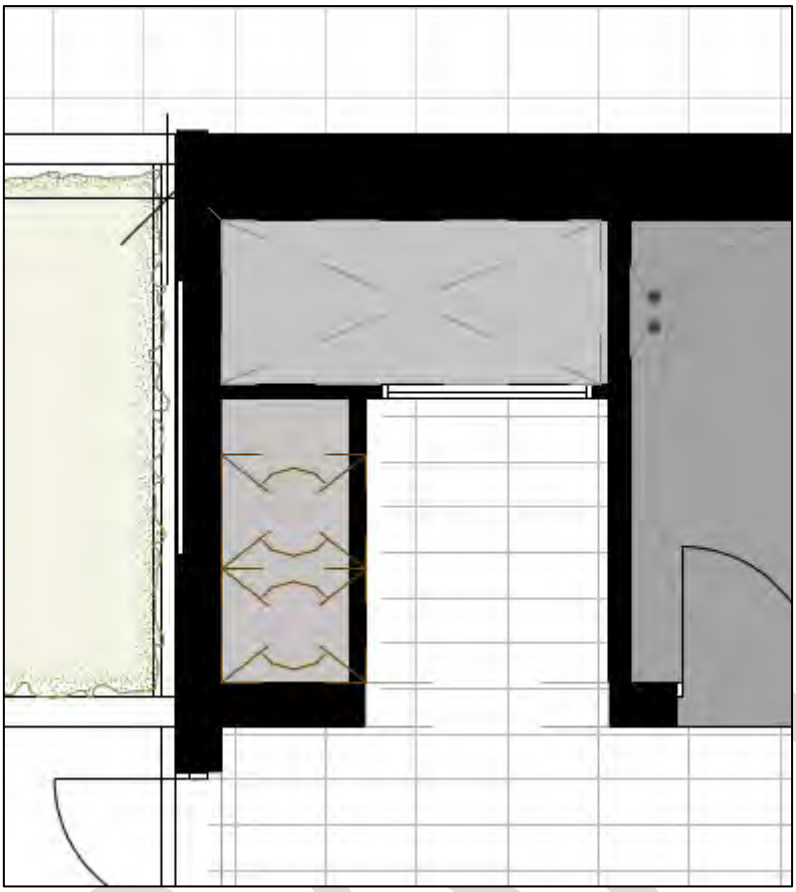
The Proposal is intending to utilise a linear track system at the terminus of each of the waste chute systems to improve the efficiency of the building manager/caretaker manoeuvring bins within the Residential Bin Storage Areas. Each linear track system will be capable of accommodating two 660L bins which can be automatically or manually rotated to ensure the capture of waste material exiting the chute system. It can also be designed to send the building manager/caretaker a digital alert of the bins capacity to ensure the swapping of empty and full bins is done in a timely manner.

The building manager/caretaker will be required to manually swap full bins with empty bins on the linear track system, as necessary.

The building manager/caretaker will provide training materials for all new residents on how to use the waste system (typically within a and new resident/tenant's handbook). The building manager/caretaker will advise residents of any changes to the waste system. In addition, signage will be included in the waste chute rooms to remind residents how to correctly dispose of their waste materials in the chute, and to provide relevant contact details for waste management at the Proposal.

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Diagram 1: Example of a Typical Residential Waste Chute Room



3.2 Commercial Internal Bins

The commercial tenancies will also have a minimum of two internal bins to facilitate the separate disposal of refuse and recycling. These bins will be transferred by the tenants, staff or cleaners to the Commercial Bin Storage Area located on the Lower Ground Floor and deposited into the correct bin.

Internal bins from Tenancy 1 and Tenancy 2 located on the Lower Ground Floor will be transferred via the external pedestrian walkway along Court Place. Internal bins from the CHL Office located on the Upper Ground Floor will be transferred via the T4 lift to the Lower Ground Floor and then via the external pedestrian walkway along Court Place. This internal servicing method may be conducted outside of main operational hours to mitigate disturbances to residents/staff/visitors.

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4 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Areas, as shown in Diagram 2 to Diagram 5, and discussed in the following sub-sections.

4.1 Bin Sizes

Table 4-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

Table 4-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes		
	240L	660L	1,100L
Depth	1,060	1,200	1,460
Width	730	780	1,090
Height	550	1,260	1,360

Reference: City of Subiaco's Multi Use Developments and Commercial Waste Guidelines (2017)

4.2 Tower 1 Bin Storage Area Size

To ensure sufficient area is available for storage of the Tower 1 bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-2 the Tower 1 Bin Storage Area has been sized to accommodate:

- Five 660L refuse bins;
- Three 660L recycling bins; and
- Three 240L FOGO bins.

Table 4-2: Bin Requirements for Bin Storage Area – Tower 1

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	5,976	13	5	3
Recycling	3,320	7	3	2
FOGO	664	3	-	-

The configuration of these bins within the Tower 1 Bin Storage Area is shown in Diagram 2. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 2 represents the maximum requirements assuming two collections each week of refuse, recyclables and FOGO.

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Diagram 2: Tower 1 Bin Storage Area



4.3 Tower 2 Bin Storage Area Size

To ensure sufficient area is available for storage of the Tower 2 bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-3, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-3 the Tower 2 Bin Storage Area has been sized to accommodate:

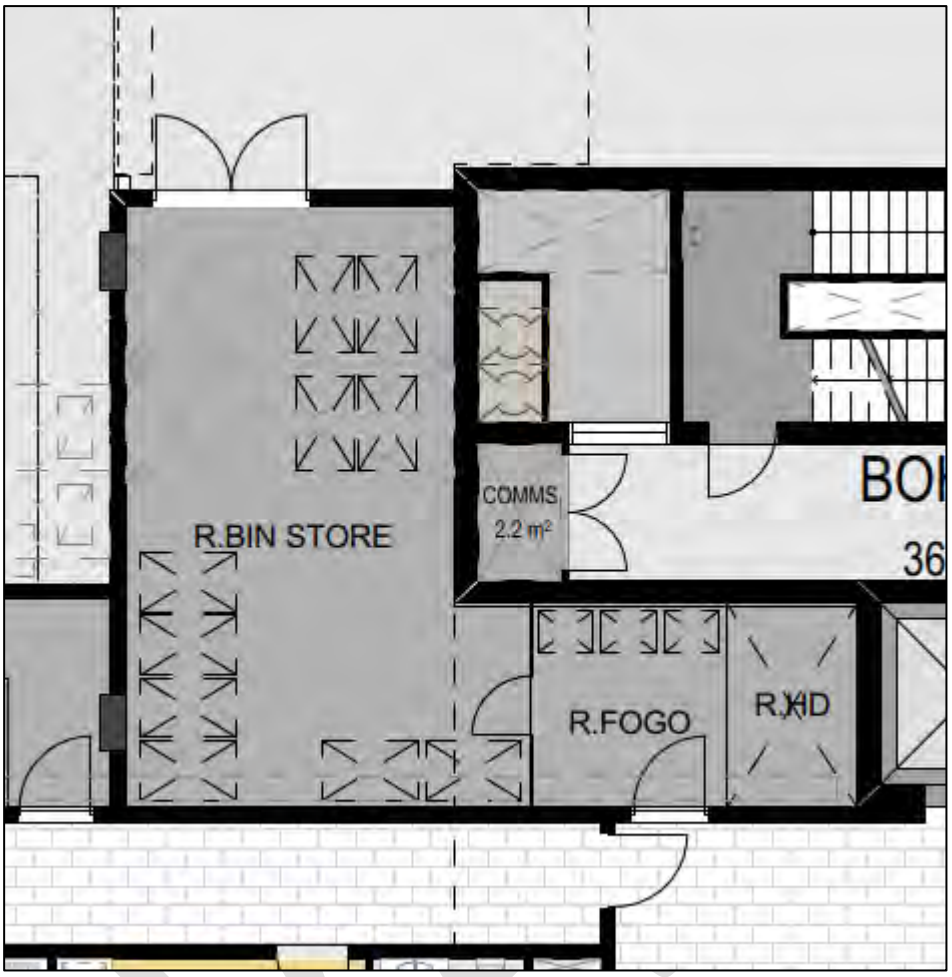
- Eight 660L refuse bins;
- Four 660L recycling bins; and
- Three 240L FOGO bins.

Table 4-3: Bin Requirements for Bin Storage Area – Tower 2

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	9,252	20	8	5
Recycling	5,140	11	4	3
FOGO	1,028	3	-	-

The configuration of these bins within the Tower 2 Bin Storage Area is shown in Diagram 3. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 3 represents the maximum requirements assuming two collections each week of refuse, recyclables and FOGO.

Diagram 3: Tower 2 Bin Storage Area



4.4 Tower 3 Bin Storage Area Size

To ensure sufficient area is available for storage of the Tower 3 bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-4, bin sizes in Table 4-1 and based on collection of refuse and recyclables two times each week.

Based on the results shown in Table 4-4 the Tower 3 Bin Storage Area has been sized to accommodate:

- Six 660L refuse bins;
- Four 660L recycling bins; and
- Two 240L FOGO bins.

Table 4-4: Bin Requirements for Bin Storage Area – Tower 3

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	7,920	17	6	4
Recycling	4,400	10	4	2
FOGO	880	2	-	-

The configuration of these bins within the Tower 3 Bin Storage Area is shown in Diagram 4. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 4 represents the maximum requirements assuming two collections each week of refuse, recyclables and FOGO.

Diagram 4: Tower 3 Bin Storage Area



4.5 Tower 4 Bin Storage Area Size

To ensure sufficient area is available for storage of the Tower 4 bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-5, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-5 the Tower 4 Bin Storage Area has been sized to accommodate:

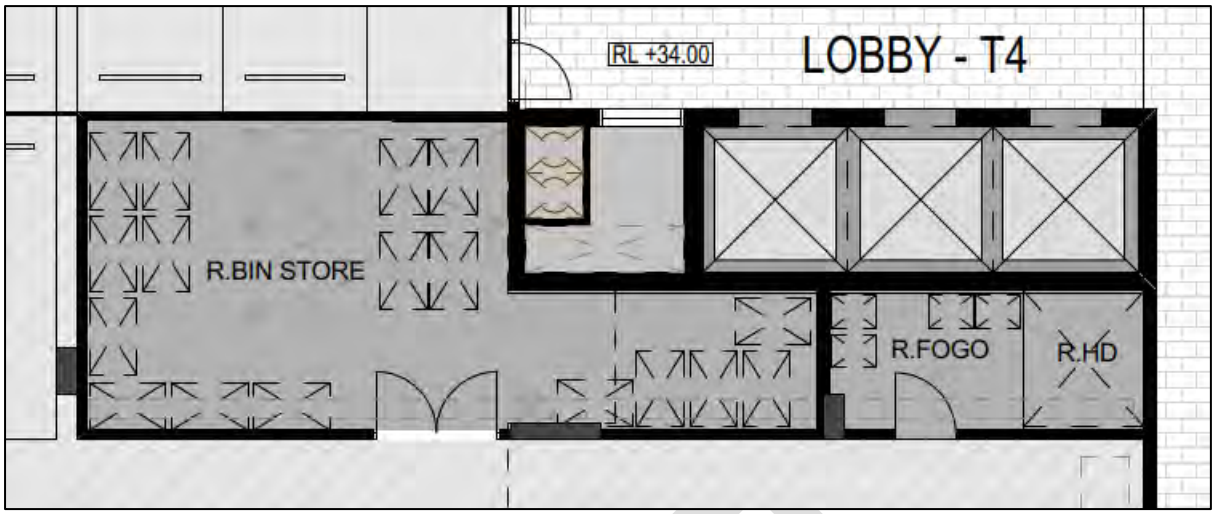
- Thirteen 660L refuse bins;
- Eight 660L recycling bins; and
- Four 240L FOGO bins.

Table 4-5: Bin Requirements for Bin Storage Area – Tower 4

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	16,920	36	13	8
Recycling	9,400	20	8	5
FOGO	1,880	4	-	-

The configuration of these bins within the Tower 4 Bin Storage Area is shown in Diagram 5. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 5 represents the maximum requirements assuming two collections each week of refuse, recyclables and FOGO.

Diagram 5: Tower 4 Bin Storage Area



4.6 Commercial Bin Storage Area Size

To ensure sufficient area is available for storage of the commercial bins, the amount of bins required for the Commercial Bin Storage Area was modelled utilising the estimated waste generation in Table 2-6, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-6 the Commercial Bin Storage Area has been sized to accommodate:

- Four 660L refuse bins; and
- Three 660L recycling bins.

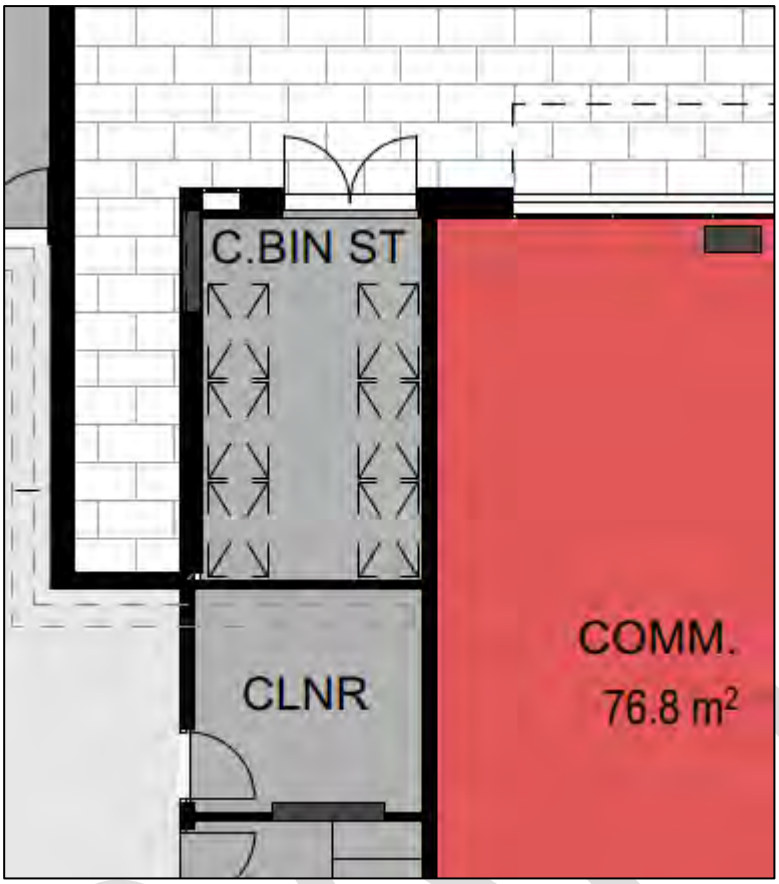
Table 4-6: Bin Requirements for Bin Storage Area – Commercial

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	4,043	9	4	2
Recycling	2,734	6	3	2

The configuration of these bins within the Commercial Bin Storage Area is shown in Diagram 6. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 6 represents the maximum requirements assuming two collections each week of refuse and recyclables.

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Diagram 6: Commercial Bin Storage Area



4.7 Bin Storage Area Design

The design of the Bin Storage Areas will take into consideration:

- Smooth impervious floor sloped to a drain connected to the sewer system;
- Taps for washing of bins and Bin Storage Areas;
- Adequate aisle width for easy manoeuvring of bins;
- Doors to the Bin Storage Areas self-closing and vermin proof;
- Doors to the Bin Storage Areas wide enough to fit bins through;
- Ventilated to a suitable standard;
- Appropriate signage;
- Undercover where possible and be designed to not permit stormwater to enter the drain;
- Located behind the building setback line;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.

Bin numbers and storage space within the Bin Storage Areas will be monitored by the building manager/caretaker during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

5 Waste Collection

A private contractor will service the Proposal and provide the bins and collection frequencies outlined in Section 4 and discussed in the following sub-sections.

5.1 Residential Waste

A private contractor (likely Veolia) will collect residential refuse, recyclables and FOGO twice each week utilising a low-profile rear loader waste collection vehicle (2.4m height clearance).

The private contractor's rear loader waste collection vehicle will service the bins onsite, directly from the respective Tower's Bin Storage Area. The private contractor's rear loader waste collection vehicle will travel with left hand lane traffic flow on Subiaco Road, turn into the eastern access of the Upper Ground Floor in forward gear and reverse into the collection area adjacent to the Tower 4 Bin Storage Area for servicing. Upon completion, the vehicle will proceed forward and pull up adjacent to the Tower 3 and Tower 2 Bin Storage Areas for servicing. The private contractor's rear loader vehicle will then exit via the western access of the Upper Ground Floor, perform a turnaround at Court Place, and re-enter via the western access of the Upper Ground Floor to service the Tower 1 Bin Storage Area.

The Upper Ground Floor will have adequate height clearances for the rear loader waste collection vehicle to enter and exit the Proposal (3.2m height clearance).

It is proposed that servicing will be conducted during school operating hours to mitigate impacts on local traffic movements during peak hours from the nearby Bob Hawke College.

Private contractor's staff will ferry bins to and from the rear loader waste collection vehicle and the respective Tower's Bin Storage Area during servicing. The private contractor will be provided with key access to the Proposal and security access gates to facilitate servicing, if required.

Once servicing is complete the private contractor's rear loader waste collection vehicle will exit in a forward motion, turning onto Subiaco Road moving with traffic flow.

The above servicing method will preserve the amenity of the area by removing the requirement for bins to be presented to the street on collection days. In addition, servicing of bins onsite will reduce the noise generated in the area during collection. Noise from waste vehicles must comply with the Environmental Protection (Noise) Regulations and such vehicles should not service the site before 7.00am or after 7.00pm Monday to Saturday, or before 9.00am or after 7.00pm on Sundays and Public Holidays.

The ability for the private contractor's rear loader waste collection vehicle to access the Proposal in a safe manner has been assessed by PTG Consulting and further information will be included within their traffic impact statement.

5.2 Commercial Waste

A private contractor will also service the commercial tenancies at the Proposal twice each week utilising its rear loader waste collection vehicle.

The private contractor's rear loader waste collection vehicle will service the bins directly from the Commercial Bin Storage Area, from a stopping point on Court Place.

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The private contractor will ferry bins to and from the rear loader waste collection vehicle and the Commercial Bin Storage Area during servicing. The travel path between the Commercial Bin Storage Area and the waste collection vehicle will be of flat surface and kept free of obstacles.

The private contractor will be provided with key access to the Proposal and security access gates to facilitate servicing, if required.

Once servicing is complete the private contractor's rear loader waste collection vehicle will exit in a forward motion, turning onto Court Place moving with traffic flow.

5.3 Bulk and Speciality Waste

To assist with the reduction of illegal dumping of bulk wastes, Bulk Waste Storage Areas have been provided on the Upper Ground Level of the Proposal for the temporary storage of bulk wastes. In addition, each resident has an allocated storage area which may also be used, if required.

The City offers two residential verge bulk waste collections each year. The building manager/caretaker will liaise with residents and tenants on procedures for bulky waste disposal within the Proposal, as required.

Residents are also entitled to two discounted tip passes per property each year to the West Metro Recycling Centre for disposal of additional bulk waste throughout the year. In addition, household hazardous and other recyclable items not accepted in the bin system can be disposed of free at the centre.

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6 Waste Management

A building manager/caretaker will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Areas;
- Cleaning of bins and Bin Storage Areas, when required;
- Exchange full bins with empty bins at the terminus of the waste chute in each Tower's Bin Storage Area, as required;
- Ensure all residents, tenants, staff, and cleaners at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor resident, tenant, staff, and cleaner behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with residents, tenants, staff, and cleaners to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractors to ensure efficient and effective waste service is maintained.

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7 Conclusion

As demonstrated within this WMP, the Proposal provides sufficiently sized Bin Storage Areas for storage of refuse, recyclables and FOGO, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that adequately designed Bin Storage Areas have been provided, and collection of refuse, recyclables and FOGO can be completed from the Proposal.

A private contractor will service the residential waste onsite, directly from the respective Tower's Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Subiaco Road.

A private contractor will also service the commercial waste directly from the Commercial Bin Storage Area from a truck stopping point on Court Place.

A building manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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Figures

Figure 1: Locality Plan

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LEGEND

- Site Boundary

Cadastre

- Crown Allotment
- Freehold
- Road
- Strata Plan or Lot
- Easement
- Reserve

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LOCALITY



0 5 10 15 20 km

LOCALITY

154 Subiaco Rd
Subiaco WA 6008

Community Housing (Subi East) Ltd

N 0 10 20 30 40 m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:1,000

Prepared:	A Barley	Date:	24/06/2025
Reviewed:	C Andersen	Revision:	A
Project:	WMP25053		

talis consultants

Figure 01

Data source: Roads, Cadastre - Landgate, 2025. Imagery: Nearmap, 2025.

Assets | Engineering | Environment | Noise | Spatial | Waste

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ABN 85 967 691 321

COMMUNITY HOUSING (SUBI EAST) LIMITED

154 SUBIACO ROAD
SUBIACO

METROPOLITAN REDEVELOPMENT AUTHORITY ACT 2011
APPROVED PLANS
04 June 2026
DA2600006

SPP 5.4 NOISE MANAGEMENT PLAN

JANUARY 2026

OUR REFERENCE: 34788-3-25214

Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
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SPP 5.4 NOISE MANAGEMENT PLAN
154 SUBIACO ROAD, SUBIACO

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FOR

COMMUNITY HOUSING (SUBI EAST) LIMITED

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2	Typos	21/01/26	AS	GW

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APPENDICES

A	Plans
B	Glazing Requirements

1. INTRODUCTION

Herring Storer Acoustics were commissioned to carry out an acoustic study with regards to passenger rail noise for a residential development at 154 Subiaco Road, Subiaco. The purpose of the study was to assess the noise that would be received within the development area from the Perth to Fremantle Passenger Rail Line and to compare the results with accepted criteria and if exceedances exist, develop the framework for the management of noise.

A plan is attached in Appendix A.

2. ACOUSTIC CRITERIA

The Western Australian Planning Commission (WAPC) released on 6th September 2019 State Planning Policy 5.4 *"Road and Rail Noise".* The requirements of State Planning Policy 5.4 are outlined below.

POLICY APPLICATION (Section 4)

When and where it applies (Section 4.1)

SPP 5.4 applies to the preparation and assessment of planning instruments, including region and local planning schemes; planning strategies, structure plans; subdivision and development proposals in Western Australia, where there is proposed:

a) *noise-sensitive land-use within the policy's trigger distance of a transport corridor as specified in **Table 1**;*
b) *New or major upgrades of roads as specified in **Table 1** and maps **(Schedule 1,2 and 3);** or*
c) *New railways or major upgrades of railways as specified in maps (**Schedule 1, 2 and 3);** or any other works that increase capacity for rail vehicle storage or movement and will result in an increased level of noise.*

Policy trigger distances (Section 4.1.2)

***Table 1** identifies the State's transport corridors and the trigger distances to which the policy applies.*

*The designation of land within the trigger distances outlined in **Table 1** should not be interpreted to imply that land is affected by noise and/or that areas outside the trigger distances are un-affected by noise.*

*Where any part of the lot is within the specified trigger distance, an assessment against the policy is required to determine the likely level of transport noise and management/ mitigation required. An initial screening assessment (**guidelines: Table 2: noise exposure forecast**) will determine if the lot is affected and to what extent."*

TABLE 1: TRANSPORT CORRIDOR CLASSIFICATION AND TRIGGER DISTANCES

Transport corridor classification	***Trigger distance***	***Distance measured from***
Roads		
Strategic freight and major traffic routes *Roads as defined by Perth and Peel Planning Frameworks and/or roads with either 500 or more Class 7 to 12 Austroads vehicles per day, and/or 50,000 per day traffic volume*	*300 metres*	*Road carriageway edge*
Other significant freight/traffic routes *These are generally any State administered road and/or local government road identified as being a future State administered road (red road) and other roads that meet the criteria of either >=23,000 daily traffic count (averaged equivalent to 25,000 vehicles passenger car units under region schemes)*	*200 metres*	*Road carriageway edge*
Passenger railways		
	100 metres	*Centreline of the closest track*
Freight railways		
	200 metres	*Centreline of the closest track*

Proponents are advised to consult with the decision making authority as site specific conditions (significant differences in ground levels, extreme noise levels) may influence the noise mitigation measures required, that may extend beyond the trigger distance.

POLICY MEASURES (Section 6)

The policy applies a performance-based approach to the management and mitigation of transport noise. The policy measures and resultant noise mitigation will be influenced by the function of the transport corridor and the type and intensity of the land-use proposed. Where there is risk of future land-use conflict in close proximity to strategic freight routes, a precautionary approach should be applied. Planning should also consider other broader planning policies. This is to ensure a balanced approach takes into consideration reasonable and practical considerations.

Noise Targets (Section 6.1)

***Table 2** sets out noise targets that are to be achieved by proposals under which the policy applies. Where exceeded, an assessment is required to determine the likely level of transport noise and management/mitigation required.*

In the application of the noise targets the objective is to achieve:

- *indoor noise levels as specified in **Table 2** in noise sensitive areas (for example, bedrooms and living rooms of houses, and school classrooms); and*
- *a reasonable degree of acoustic amenity for outdoor living areas on each residential lot. For non-residential noise-sensitive developments, for example schools and child care centres the design of outdoor areas should take into consideration the noise target.*

It is recognised that in some instances, it may not be reasonable and/or practicable to meet the outdoor noise targets. Where transport noise is above the noise targets, measures are expected to be implemented that balance reasonable and practicable considerations with the need to achieve acceptable noise protection outcomes.

TABLE 2: NOISE TARGETS

Proposals	***New/Upgrade***	***Noise Targets***		
		Outdoor		***Indoor***
		Day (L_{Aeq}(Day) dB) (6 am-10 pm)	***Night (L_{Aeq}(Night)dB) (10 pm-6 am)***	***(L_{Aeq} 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*	*L_{Aeq} (Day) 40(Living and work areas) L_{Aeq} (Night) 35 (bedrooms)*
Roads	*New*	*55*	*50*	*N/A*
	Upgrade	*60*	*55*	*N/A*
Railways	*New*	*55*	*50*	*N/A*
	Upgrade	*60*	*55*	*N/A*

Notes:

- *The noise target is to be measured at one metre from the most exposed, habitable façade of the proposed building, which has the greatest exposure to the noise-source. A habitable room has the same meaning as defined in State Planning Policy 3.1 Residential Design Codes.*
- *For all noise-sensitive land-use and/or development, indoor noise targets for other room usages may be reasonably drawn from Table 1 of Australian Standard/New Zealand Standard AS/NZS 2107:2016 Acoustics – Recommended design sound levels and reverberation times for building interiors (as amended) for each relevant time period.*
- *The 5dB difference in the criteria between new and upgrade infrastructure proposals acknowledges the challenges in achieving noise level reduction where existing infrastructure is surrounded by existing noise-sensitive development.*
- *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. For example, it is likely unreasonable for a transport infrastructure provider to achieve the outdoor targets at more than 1 or 2 floors of an adjacent development with direct line of sight to the traffic.*

Noise Exposure Forecast (Section 6.2)

When it is determined that SPP 5.4 applies to a planning proposal as outlined in Section 4, proponents and/or decision makers are required to undertake a preliminary assessment using ***Table 2****: noise exposure forecast in the guidelines. This will provide an estimate of the potential noise impacts on noise-sensitive land-use and/ or development within the trigger distance of a specified transport corridor. The outcomes of the initial assessment will determine whether:*

- *no further measures are required.*
- *noise-sensitive land-use and/or development is acceptable subject to deemed-to-comply mitigation measures; or*
- *noise-sensitive land-use and/or development is not recommended. Any noise-sensitive land-use and/ or development is subject to mitigation measures outlined in a noise management plan."*

3. MEASUREMENT

A measurement of the noise emissions associated with passenger trains on the Fremantle line was undertaken at 11 am on the 16th of May 2025. The measurement location was on the footpath adjacent to the rail line north of the lot, approximately 12 m from the centre line of the nearest track, illustrated in Figure 3.1.



FIGURE 3.1 – MEASUREMENT LOCATION

TABLE 3.1 – PASSENGER TRAIN MEASUREMENT

Vehicle	Direction	Duration	L_{Amax} (dB(A))	L_{Aeq} (dB(A))
A-Series (4 car)	Westbound	13s	81	77
A Series (4 car)	Eastbound	13s	72	67

Using the LAeq of the highest train pass and current timetabled train movement volumes the $L_{Aeq(day)}$ and $L_{Aeq(night)}$ were determined. The calculated $_{LAeq(day)}$ was used to calibrate the noise model.

TABLE 3.2 – PASSENGER TRAIN MEASUREMENT

Period	Number of Trains	Duration	$L_{Aeq(period)}$ (dB(A))
Day (6am to 10 pm)	110	13s	58
Night (10pm to 6am)	26	13s	52

4. MODELLING

Using the measured levels of the train as a basis for calibration, predictive noise modelling using Soundplan has been carried out.

The input data for the model included:

- Topographical data, with the ground level within the development based on natural ground levels as per Google Earth.
- Architectural plans (included in Appendix A)
- Current passenger rail volumes as per information contained on https://www.transperth.wa.gov.au/timetables.
- A +2.5 dB adjustment to allow for façade reflection.
- Calibrated noise levels for the $L_{Aeq(day)}$ and $L_{Aeq(night)}$ as per the measured noise levels, summarised in Table 4.2. Note calibration is against the current traffic flow.
- Existing residential housing / building throughout the study area.

5. RESULTS

Noise levels received at the façade of the development exceed the noise targets set out in *State Planning Policy 5.4*. The highest noise levels received for reach tower in the development is 61 dB(A) which places them in exposure category B. The requirements of the development are summarised in Table 5.1. It is noted that all requirements pertain only to the acoustic advice with respect to State Planning Policy 5.4 and may be superseded by other requirements (BAL, thermal, etc).

TABLE 5.1 – QUIET HOUSE DESIGN REQUIREMENTS

Quiet House Design Requirements	
Item	**Requirements**
Walls	$R_w + C_{tr}$ 50 dB
External Doors	Individual external door requirements to meet specifications as listed in the table of Appendix B.
Windows	Individual glazing requirements to meet specifications as listed in the table of Appendix B.
Roofs and Ceilings of Highest Floors	$R_w + C_{tr}$ 35 dB
Outdoor Living Area	Noise levels at the Outdoor Areas meet the criteria.
Mechanical Ventilation	Mechanical ventilation to not compromise the performance of any of the façade elements.
Notification on Title	Required

Noise levels received at the outdoor areas on the east and west podiums are 44 and 50 dB(A) respectively, which meets the outdoor noise criteria.

6. CONCLUSION

In accordance with the WAPC Planning Policy 5.4, an assessment of the noise that would be received within the development of 154 Subiaco Road, Subiaco, from future passenger rail travelling on the Perth to Armadale Train Line has been undertaken.

In accordance with the Policy, the following would be the acoustic criteria applicable to this project:

External

Day	55 dB(A) L_{Aeq}
Night	50 dB(A) L_{Aeq}

Internal

Sleeping Areas	35 dB(A) $L_{Aeq(night)}$
Living Areas	40 dB(A) $L_{Aeq(day)}$

The results of the acoustic assessment indicate that noise received at the development from future traffic volumes will exceed the external noise level criteria. The exposure category for all buildings in the development is category B. Glazing requirements to meet the target noise levels are listed in Appendix B.

It has been assumed that walls will be constructed of tilt up concrete panel or similar. If lightweight construction is to be considered, an investigation into the appropriateness of the proposed construction would be required.

APPENDIX A

PLANS

| UPPER GROUND



DEVELOPMENT APPLICATION

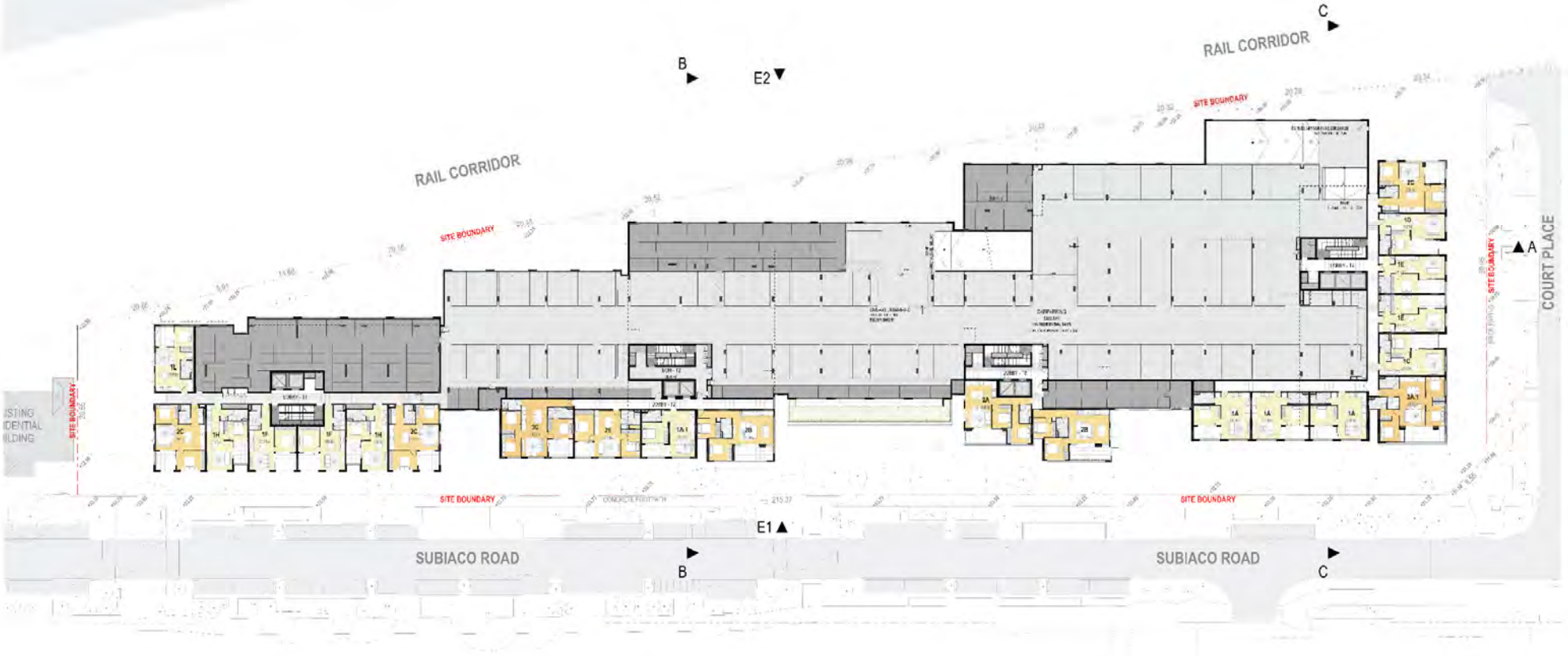
DKO

Overall - Upper Ground Plan

DA201

03

| LEVEL 01



DEVELOPMENT APPLICATION

DKO

Overall - Level 01

DA202

03

| LEVEL 02 / TOP OF PODIUM



NOT FOR CONSTRUCTION
DEVELOPMENT APPLICATION

DKO

Overall - Level 02 / Podium

DA203

03

| LEVEL 03-06 / TYPICAL PLATES



NOT FOR CONSTRUCTION
DEVELOPMENT APPLICATION

DKO

Drawing Name
Overall - Level 03-06 / Typical Plates

Drawing No.
DA204

Revision
03

APPENDIX B

GLAZING REQUIREMENTS

R_w+Ctr REQUIREMENTS

Tower*	Facade	Floors up to	L_{Aeq}	Bedrooms Window to Floor Ratio			Living Room Window to Floor Ratio		
				0.3	0.5	0.8	0.3	0.5	0.8
1	N	6	61	28	30	32	23	30	32
	E	4	46	23	23	23	23	23	23
	E	6	55	23	24	26	23	24	26
	S	6	46	23	23	23	23	23	23
	W	4	52	23	23	23	23	23	23
	W	6	58	25	27	29	23	27	29
2	N	4	55	23	24	26	23	24	26
	N	8	61	28	30	32	23	30	32
	N	14	58	25	27	29	23	27	29
	E	14	52	23	23	23	23	23	23
	S	14	43	23	23	23	23	23	23
	W	5	52	23	23	23	23	23	23
	W	14	55	23	24	26	23	24	26
3	N	4	55	23	24	26	23	24	26
	N	10	61	28	30	32	23	30	32
	E	9	55	23	24	26	23	24	26
	E	10	52	23	23	23	23	23	23
	S	10	43	23	23	23	23	23	23
	W	4	52	23	23	23	23	23	23
	W	10	58	25	27	29	23	27	29
4	N	10	61	28	30	32	23	30	32
	N	17	58	25	27	29	23	27	29
	E	4	52	23	23	23	23	23	23
	E	17	55	23	24	26	23	24	26
	S	17	40	23	23	23	23	23	23
	W	10	55	23	24	26	23	24	26
	W	17	52	23	23	23	23	23	23

*Towers numbered from west to east.

COURT PLACE

PERTH, WA

PEDESTRIAN WIND ASSESSMENT

PROJECT # 2512726

20 JANUARY 2026

SUBMITTED TO

Community Housing (Subi East) Limited
19 Catherine Street
Subiaco, WA 6008

SUBMITTED BY

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DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Initial	18 December 2025	AMC	RL
B	Final – Review of DA Set	20 January 2026	AMC	RL

NOTE

The information contained in this document produced by RWDI is solely for the use of the client identified on the front page of this report. Our client becomes the owner of this document upon full payment of our **Tax Invoice** for its provision. This document must not be used for any purposes other than those of the document's owner. RWDI undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.

QUALITY ASSURANCE

RWDI Australia Pty Ltd operates a Quality Management System which complies with the requirements of AS/NZS ISO 9001:2015. This management system has been externally certified by SAI Global and Licence No. QEC 13457 has been issued for the following scope: The provision of consultancy services in acoustic engineering, air quality and wind engineering; and the sale, service, support and installation of acoustic monitoring and related systems and technologies.

1. INTRODUCTION

RWDI Australia Pty Ltd (RWDI) was retained to undertake a pedestrian wind assessment of the Proposed Development, known as Court Place, located at 154 Subiaco Road in Subiaco, WA. The development site is situated to the north of Bob Hawke College Oval and is bounded by Subiaco Road to the south and Court Place to the east. Market Square lies to the south-west and Mueller Park to the south-east. The location of the site within its broader existing surrounding context is shown in Image 1.

The proposal comprises four residential towers, with heights ranging from 7 to 19 storeys, situated along Subiaco Road and the Railway corridor with a local rise in topography along the road from east to west. The towers are situated on a common podium sub-structure with communal amenity areas situated atop the 2-storey podium between the towers. Image 2 shows a layout plan for the development.

This desk-based report provides a review of the potential wind conditions around the site and offers conceptual wind control measures and design advice suitable for early design of the development. The key outdoor pedestrian accessible areas of interest associated with the development include the pedestrian footpaths around the site, the entrances to the development, and the amenity spaces on ground and upper levels.



Image 1: Project Location and Surrounding Context
Source: Nearmap

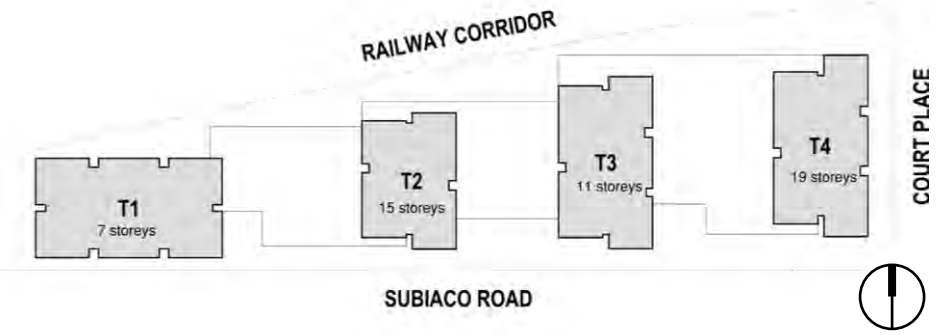


Image 2: Development Layout Plan

2. METHODOLOGY

Predicting wind speeds and occurrence frequencies around a building is a complex process, encompassing an assessment of factors such as building geometry, orientation, surrounding building heights and positions, terrain upstream, and the local wind climate. RWDI has amassed extensive expertise through conducting numerous wind tunnel studies and Computational Fluid Dynamics (CFD) assessments specifically focused on pedestrian wind conditions around buildings. This wealth of experience, complemented by comprehensive literature, facilitates a reliable and efficient desktop estimation of pedestrian wind conditions for concept designs without the need for wind-tunnel testing or detailed CFD studies.

Note that this approach delivers a preliminary assessment of potential wind conditions around the site. It offers a conceptual framework for wind control measures aimed at enhancing wind comfort, if and where necessary. To further validate and refine the predicted conditions discussed in this report or to fine-tune the suggested wind control measures, physical scale model tests in a boundary layer wind tunnel or CFD simulations will be required. These detailed studies offer a quantitative validation and enable a more detailed assessment, ensuring the accuracy and effectiveness of proposed wind control strategies.

Therefore, RWDI's assessment is based on the following:

- A review of the regional long-term meteorological data;
- Drawings and information received by RWDI in January 2026.
- Wind-tunnel studies, CFD simulations, and desktop assessments undertaken by the microclimate team for projects in the region;
- RWDI's engineering judgement, experience, and expert knowledge of wind flows around buildings[1, 2]; and,
- Assessment against a suitable criteria for pedestrian wind comfort and safety.

Note that other microclimate issues such as those relating to cladding and structural wind loads, door operability, building air quality, noise, vibration, etc. are not part of the scope of this assessment.

1. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", Journal of Wind Engineering and Industrial Aerodynamics, vol.104-106, pp.397-407.
2. C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999), "Experience with Remedial Solutions to Control Pedestrian Wind Problems", 10th International Conference on Wind Engineering, Copenhagen, Denmark.

3. METEOROLOGICAL DATA

Meteorological data recorded at Perth International Airport for the period from 1998 to 2023 were used as a reference for wind conditions in the study area.

Image 3 depicts the directional distributions of wind frequencies and speeds recorded at the station. The records indicate that strong winds typically originate from the east. These are an inland wind and are generally common during the summer months. Other regional prevailing winds originate from the northeast and from the south to southwest sectors (the Fremantle Doctor).

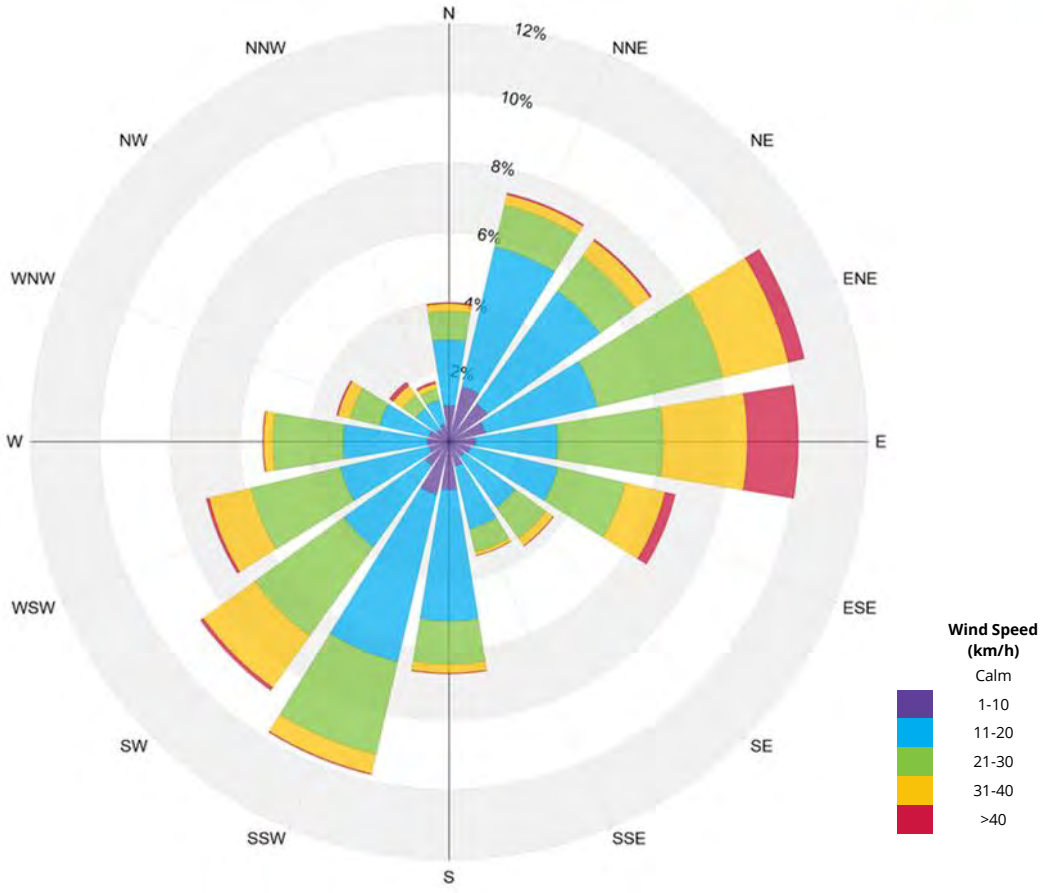


Image 3: Directional Distribution of Winds Approaching Perth International Airport
(1998 - 2023)

4. PEDESTRIAN WIND CRITERIA

4.1 Pedestrian Wind Safety Criterion

Pedestrian wind safety is associated with excessive gusts that can adversely affect a person's balance and footing. The *Australasian Wind Engineering Society Guidelines for Pedestrian Wind Effects Criteria* (2024) recommends assessing wind safety using a threshold of 3-second gusts exceeding 83 km/h for more than 0.1% (or 9 hours) per year. Wind conditions surpassing this limit are considered severe and likely to impact pedestrian stability. This has been assessed qualitatively in the current report.

4.2 Pedestrian Wind Comfort Criteria

Pedestrian wind comfort is assessed using the criteria developed by Soligo et al.[1, 2] which are illustrated in Image 4. These criteria, established at RWDI through extensive research and consulting since 1974, are based on gust-equivalent mean wind speeds. Wind comfort levels are categorised according to the typical/intended pedestrian activity such that higher the activity level, higher the wind speed tolerable while engaged in the activity. Wind conditions are assessed at a typical pedestrian chest height and are considered suitable for the intended use of the space if the associated winds for the category are expected for at least 80% of the time. Wind control measures are recommended for areas where the occurrence frequencies of wind speeds are expected to exceed the threshold values for specific pedestrian activities.

It should be noted that these criteria for wind forces represent average wind tolerance and can be subjective with regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. also impacting and individual's perception of the wind climate. For a full assessment of comfort, a thermal comfort study is required.



Image 4: RWDI Pedestrian Wind Comfort Criteria

1. M.J. Soligo, P.A. Irwin, and C.J. Williams (1993). "Pedestrian Comfort Including Wind and Thermal Effects," Third Asia-Pacific Symposium on Wind Engineering, Hong Kong.
2. M.J. Soligo, P.A. Irwin, C.J. Williams, and G.D. Schuyler (1998). "A Comprehensive Assessment of Pedestrian Comfort Including Thermal Effects," Journal of Wind Engineering and Industrial Aerodynamics, vol. 77&78, pp. 753-766.

5. RESULTS AND DISCUSSION

5.1 General Wind Flow around Buildings

In the discussion of wind conditions on and around the Proposed Development, reference may be made to the following generalised wind flows (see Image 5). If these building / wind combinations occur for prevailing winds, there is a greater potential for increased wind activity and uncomfortable or potentially unsafe conditions. Design details such as setting back a tower from the edges of a podium for a prevailing wind direction, deep canopies close to ground level, wind screens / tall trees with dense landscaping, etc. can help reduce high wind activity. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings.

Conversely, in areas where higher wind velocities are desired, design measures can be implemented to enhance wind flow. For instance, channels aligned with prevailing wind directions can be integrated into the design to promote increased wind infiltration in regions prone to stagnant conditions. Such measures are particularly beneficial in areas with generally milder climates and high humidity levels, such as those closer to the equator.

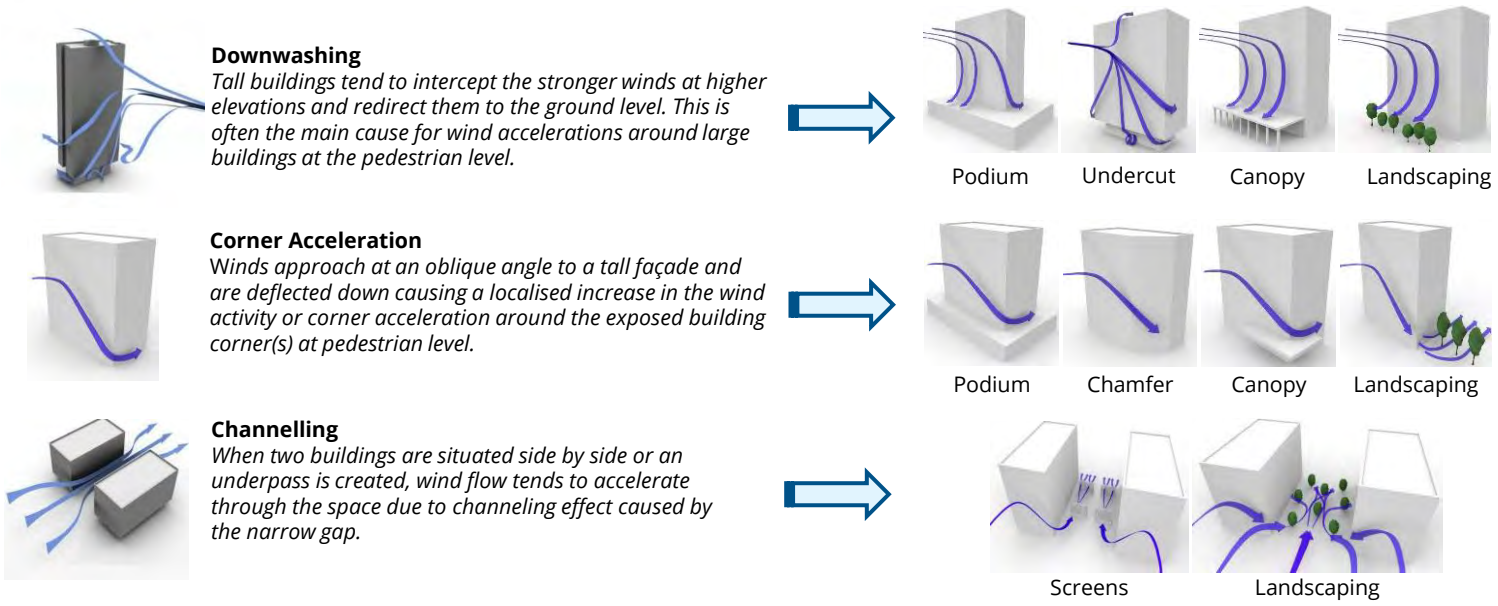


Image 5: General Wind Flow around Buildings with Examples of Common Wind Measures

5. RESULTS AND DISCUSSION

5.2 Site Exposure and Existing Site Conditions

The exposure of the site to regional prevailing winds is illustrated in Image 6. The upwind terrain for all key wind directions comprises of low-rise suburban terrain. This is expected to provide reduction in surface-level winds. However, any exposed structures are likely to impact local wind conditions. The open terrain from parkland and the oval to the south-east, south and south-west provide no obstruction to the winds which are likely to be stronger from these directions.

The existing site is currently empty and not likely to impact local wind microclimate. Wind conditions are likely to be governed by the wind exposure discussed above. Hence, wind conditions along Court Place are likely to be comfortable for sitting to standing use throughout the year. The alignment of Subiaco Road with the primary east winds and the rise in topography from east to west is likely to increase the impact of these winds. Hence, conditions along Subiaco Road are likely to be comfortable for standing to strolling use during the year. High winds exceeding the comfort or safety limits are not expected within and around the existing site areas.

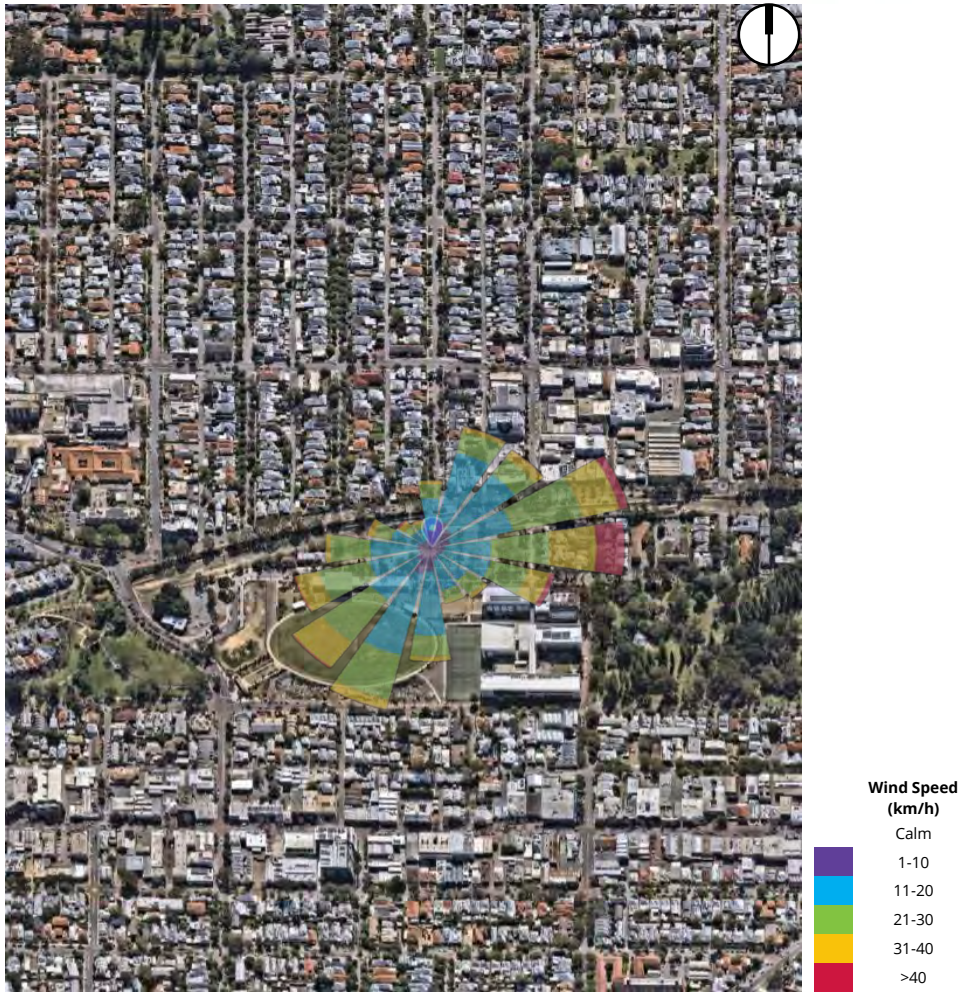


Image 6: Exposure of Site to Regional Prevailing Winds
Source: Nearmap

5.3 Proposed Site Conditions

The Proposed Development comprises of four residential towers that are significantly taller than the surrounding context. Hence, there is a high potential for prevailing winds to be redirected into the street corridors. A summary of wind conditions within and around key areas is provided below:

- **Surrounding Streets:** Winds from the east are likely to be captured by Tower 4 and redirected towards the ground (downwash). These winds can then accelerate around the eastern corners of the site. Current design shows planters and an awning along the southeast corner of the site which will likely reduce these wind effects. The east winds can also increase along Subiaco Road leading to conditions typically comfortable for strolling use. Increased winds are also expected along Court Place with conditions likely to range from standing to strolling use due to redirected north-easterly and south-westerly winds.
- **Primary Lobby Entrances:** The primary lobby entrances to Towers 1 – 3 are located along Subiaco Road and are recessed into the building form with dense surrounding landscape. This is likely to reduce wind impacts around these spaces with conditions expected to be comfortable for standing use.
  The primary lobby entrance to Tower 4 is located approximately at the middle of the eastern façade along Court Place and includes a recess of approximately 1.5 m with an overhead awning. Winds here are expected to be suitable for standing use.
- **Level 2 Communal Spaces:** Two communal terraces are located on Level 2 of the development above the podium between Towers 1 & 2 and between Towers 3 & 4. The terraces are generally sheltered from prevailing winds from the east due to the proposed towers and benefit from strategic landscape interventions to reduce buildup of winds. Overall wind impacts are likely to be small with conditions expected to be suitable for the intended use of the spaces. Wind conditions will be further assessed during the detailed design stage.
- **Private Balconies:** Private balconies that are inset within the planform of the buildings benefit from a single aspect design and are expected to have comfortable conditions throughout the year. In contrast, balconies at the corners are likely to be exposed to windier conditions due to potential for wind acceleration through the balcony around the corner of the building.
  For Towers 1–3, corner balconies are partially sheltered from prevailing easterly winds. However, other regional wind directions may still influence overall conditions. Due to the exposed location of the development with little shelter from upwind terrain, strong winds are likely to persist on the eastern corner balconies of Tower 4. Similarly, upper-level corner balconies of Towers 1–3 may be impacted by higher wind speeds compared to mid- or lower-level balconies due to an increase in wind speeds with height above ground.

5.4 Mitigation Measures

Based on the discussions provided, the following design advice and wind control measures should be considered to improve wind conditions around the site (examples shown in Images 7a-7c):

- **Ground Level Landscape/Awning:** It is recommended to include densely foliating trees with interlocking canopies along the eastern boundary of the site to mitigate the downwash of easterly winds. It should be ensured that the gap between the tree foliage and the façade is kept to a minimum. Alternatively, a continuous awning extending from Level 1 slab can be included along the eastern aspect to reduce downwash. Other landscape elements, such as trees and dense shrubs, should be retained along Subiaco Road to reduce the build-up of east winds up the slope.
- **Level 2 Communal Spaces:** The current design of the Level 2 communal spaces provides ample opportunity to integrate wind mitigation strategies which will be further explored during wind tunnel testing at detailed design stages. It is advised to consider densely foliating trees along the perimeter of the terraces. Additional mitigation strategies such as screening or landscape elements around outdoor seating areas can also provide a local shelter from channelling winds.
- **Private Balconies:** It is noted that the southeast corner balconies of Tower 4 include impermeable screening for half the width of the corner balconies. This design feature should be maintained to provide comfortable conditions within these balconies. Similar screening is recommended for the northeastern corner balconies of Tower 4 and all corner balconies above Level 10 within the development site.
  All corner balconies should also include impermeable balustrades to reduce wind impacts (Towers 1-4).

5. RESULTS AND DISCUSSION



Image 7a: Examples of Wind Control Measures
Ground Level Awnings and Landscape for Downwash



Image 7b: Examples of Wind Control Measures
Level 2 Podium Terrace

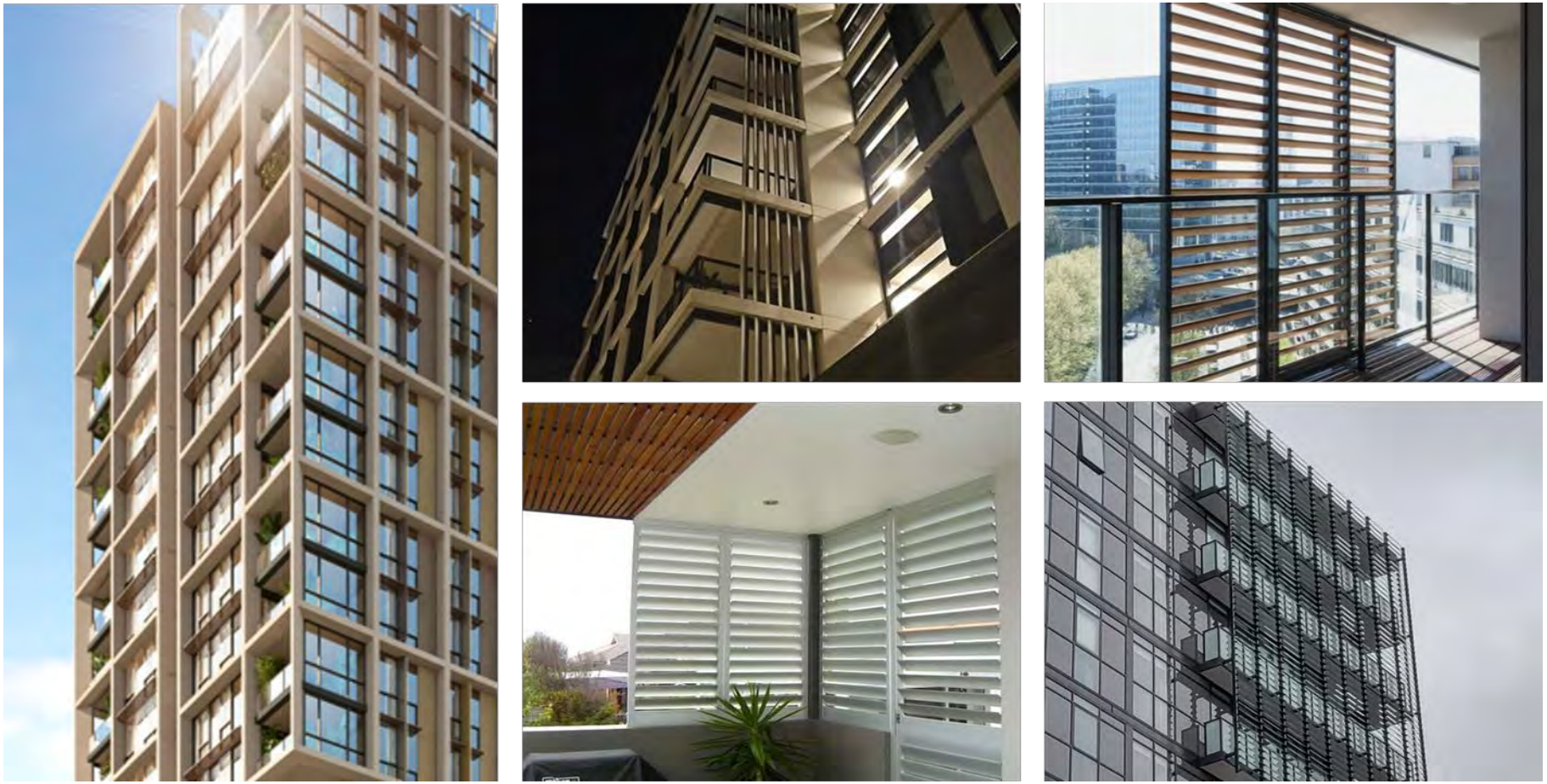


Image 7c: Examples of Wind Control Measures
Private Balconies

6. SUMMARY

Wind conditions on and around the Proposed Development, known as Court Place, located at 154 Subiaco Road in Subiaco, WA are discussed in this report. The qualitative assessment is based on the review of local wind climate and the current design of the proposed development. The impact of the surrounding buildings and the local land topography has also been considered. The assessment is based on RWDI's experience with wind tunnel testing and CFD analysis of similar buildings within the region.

Conceptual wind flows around the Proposed Development are discussed in the report for the prevailing wind directions to identify key wind sensitive areas. The review indicates that wind conditions within and around the development site are likely to be impacted by the exposure of the development to regional winds. Hence, higher wind speeds can occur near the eastern corners of the site at the ground level and within the northeast corner balconies. Level 2 may be exposed to some channelling winds, but the current design provides ample opportunity to implement dense vegetation and other measures to improve overall comfort. Preliminary advice has been provided and can be considered further at a more detailed design stage.

This qualitative assessment provides a screening-level estimation of potential wind conditions across the development site and outlines conceptual wind control strategies appropriate for early-stage design. The integration of these measures is expected to support wind conditions that align with the intended use of various outdoor spaces within and around the proposed development. To validate and refine these preliminary findings, wind tunnel testing will be undertaken during the detailed design phase. This will enable quantification of wind effects and confirmation of the predicted comfort levels. The conceptual mitigation strategies presented herein can be further optimised based on the outcomes of these detailed studies.

6. SUMMARY

The assessment discussed in this report pertains to the Proposed Development in accordance with the drawings and information received in January 2026. In the event of any significant changes to the design, construction or operation of the building or addition of surroundings in the future, RWDI could provide an assessment of their impact on the wind conditions discussed in this report. It is the responsibility of others to contact RWDI to initiate this process.

Statement of Limitations

This report entitled ' *Court Place: Pedestrian Wind Assessment*', dated 20 January 2026, was prepared by RWDI Australia Pty Ltd ("RWDI"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilise the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provide.

Access Review of Plans for Development Approval

Community Housing Limited c/o Corbel Property

Court Place

Court Place 154 Subiaco Road, Subiaco WA 6008

METROPOLITAN REDEVELOPMENT AUTHORITY ACT 2011

APPROVED PLANS

04 June 2026

DA2600006



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EXECUTIVE SUMMARY

The proposed Court Place development comprises predominantly of Class 2 apartments, along with a Class 5 office and Class 6 commercial tenancies on the Ground Floor. The proposed Class 2 works consist of four towers – Tower 1 with 6 storeys, Tower 2 with 14 storeys, Tower 3 with 10 storeys, and Tower 4 with 17 storeys.

At this stage of design and documentation, the accessibility requirements relating to door clear open width, accessible path of travel, turning space, provision and dimensions of accessible car parking spaces and lifts, and access to common-use areas are confirmed to be achieved.

The following issues have been identified:

- Insufficient doorway circulation space, and
- Unclear path of travel from the accessible carparking bay at the eastern portion of the Upper Ground car park to the lift and commercial tenancies.

All dwellings within the Court Place development are designed to meet LHDG Silver Level requirements at the minimum and as such, the LHDG requirements have been used as the basis for assessment of all Class 2 dwellings.

All proposed dwellings are confirmed to achieve the LHDG Silver Level requirements.

1. INTRODUCTION

1.1 SOCIAL AND AFFORDABLE HOUSING DELIVERY

A new social and affordable housing [S&AH] development proposed at 154 Subiaco Road Subiaco aims to deliver a high-quality, community integrated residential outcome that meets both the social and affordable housing needs and long term operational requirements for Community Housing Limited (CHL) as a registered Community Housing Provider.

This housing initiative is a Class 2 development comprising a mix of social and affordable housing with dwellings designed to the Silver Level of the Livable Housing Design Guidelines [LHDG].

1.2 INTENT OF REVIEW

This Development Application (DA) review has included an assessment of the provided drawings as detailed below to determine compliance with the following, as they pertain to access for people with disability to this Class 2 development:

- National Construction Code (NCC) Building Code of Australia (BCA) Volume One 2022 Amendment 2
- Disability (Access to Premises – Buildings) Amendment (2024 Measures No1) Standards 2024
- Applicable Australian Standards on access and mobility
- Livable Housing Design Guidelines [Fourth Edition] [LHDG}

The assessment has been completed to the extent appropriate for this DA stage. The report does not address elements for which design detail is not yet developed.

The assessment undertaken when preparing this report has considered all areas that are mandatory under legislation, to meet the access requirements of people with disability, plus the additional requirement to achieve Silver Level of the Livable Housing Design Guideline [LHDG], including external access, car parking, entrances, internal accessways, doorways and circulation space, vertical access including stairs, lifts and ramps, statutory signage, hearing augmentation, application of tactile ground surface indicators, treatment of glazing, the provision and design of the Silver Level apartments, application of luminance contrast requirements, and any accessible sanitary facilities.

1.3 GLOSSARY

Accessible [NCC 2022 Glossary]: Having features to enable use by people with a disability.

Accessway [NCC 2022 Glossary]: A continuous accessible path of travel (as defined in AS 1428.1) to, into or within a building.

Livable Housing Design [LHDG] A livable home is designed and built to meet the changing needs of occupants across their lifetime. Livable homes include key easy living features that make them easier and safer to use for all occupants including; people with disability, ageing Australians, people with temporary injuries, and families with young children. A livable home is designed to:

- be easy to enter
- be easy to navigate in and around
- be capable of easy and cost-effective adaptation, and
- be responsive to the changing needs of home occupants

Silver Level [LHDG]

Silver Level of the LHDG includes the seven core livable housing design elements and focuses on the key structural and spatial elements that are critical to ensure future flexibility and adaptability of the home. The seven core design features elements in the silver level are:

(1) A safe continuous and step free path of travel from the street entrance and / or parking area to a dwelling entrance that is level.
(2) At least one, level (step-free) entrance into the dwelling.
(3) Internal doors and corridors that facilitate comfortable and unimpeded movement between spaces.
(4) A toilet on the ground (or entry) level that provides easy access.
(5) A bathroom that contains a hobless shower recess.
(6) Reinforced walls around the toilet, shower and bath to support the safe installation of grabrails at a later date.
(7) Stairways are designed to reduce the likelihood of injury and also enable future adaptation.

1.4 REFERENCES

- Disability (Access to Premises – Buildings) Standard 2010
- National Construction Code Volume One, Building Code of Australia 2022 Class 2 to Class 9 Buildings [Amendment 2]
- AS1428.1 2021 – Design for Access and Mobility – General Requirements for Access – New Building Works

- AS2890.6 2009 – Parking Facilities – Off-street parking for people with disabilities
- AS1735.12 1999 – Lifts, escalators and moving walks – Facilities for persons with disabilities
- Livable Housing Design Guidelines (Fourth Edition)

1.5 DRAWINGS ASSESSED

Sheet Number	Sheet Name	Issue date	Drawing Revision
DA200	Overall – Lower Ground Plan	19/12/2025	02
DA201	Overall – Upper Ground Plan	19/12/2025	02
DA202	Overall – Level 01	19/12/2025	02
DA203	Overall – Level 02/Podium	19/12/2025	02
DA204	Overall – Level 03-06/Typical Plates	19/12/2025	02
DA205	Overall – Level 07/T1 Roof Services	19/12/2025	02
DA206	Overall – Level 07/T1 Overrun	19/12/2025	01
DA207	Overall – Level 11/T3 Roof Services	19/12/2025	02
DA208	Overall – Level 11/T3 Overrun	19/12/2025	01
DA209	Overall – Level 15/T2 Roof Services	19/12/2025	02
DA210	T1&T2 – Upper Ground Plan	19/12/2025	01
DA211	T1 & T2 – Level 01	19/12/2025	01
DA212	T1 & T2 – Top of Podium	19/12/2025	01
DA213	T1 & T2 – Typical Tower	19/12/2025	01
DA214	T1 – Roof Services Plan	19/12/2025	01
DA220	T3&T4 – Lower Ground Plan	19/12/2025	01
DA221	T3&T4 – Upper Ground Plan	19/12/2025	01
DA222	T3&T4 – Level 01	19/12/2025	01
DA223	T3&T4 – Top of Podium	19/12/2025	01
DA224	T3&T4 – Typical Tower	19/12/2025	01
DA225	T3 – Roof Services Plan	19/12/2025	01
DA300	South Elevation	19/12/2025	03
DA301	North Elevation	19/12/2025	03
DA310	T1 & T2 – South Elevation	19/12/2025	01
DA311	T1 & T2 North Elevation	19/12/2025	01
DA312	T1 – West & East Elevation	19/12/2025	01
DA313	T2 – West & East Elevation	19/12/2025	01
DA320	T3&T4 – South Elevation	19/12/2025	01
DA321	T3&T4 – North Elevation	19/12/2025	01
DA322	T3 – West & East Elevation	19/12/2025	01
DA323	T4 – West & East Elevation	19/12/2025	01
DA2010	Overall – Level 16/T2 Overrun	19/12/2025	01

1.6 ASSESSMENT AND DIMENSIONING

Unless dimensioned on the plans, O'Brien Harrop Access has reviewed dimensions and distances using the PDF reviewing tool, Bluebeam Revu.

1.7 REPORT TRACKING AND REVISIONS

Report title	Access Review of Plans for Development Approval
Date report issued	19 January 2026
Report issued to	Community Housing Limited c/o Corbel Property
Report prepared by:	Silvia Rossi Occupational Therapist BSc (OT) Associate member ACA No. 510
Report reviewed by:	Anita Harrop Occupational Therapist BAppSc (OT) (Hons) Diploma of Access Consulting Access Consultant, Accredited member ACA No. 147 Livable Housing Design Guideline Assessor #LHDG099 Changing Places Assessor #CP011 Accredited SDA Assessor #SDA00070

Development Approval (DA) Design Review for Court Place



O'Brien Harrop Access

1. EXEMPT AREAS

1.1 INTRODUCTION

NCC D4D5 states that the following areas are not required to be accessible:

(a) an area where access would be inappropriate because of the particular purpose for which the area is used.

(b) an area that would pose a health or safety risk for people with a disability.

(c) any path of travel providing access only to an area exempted by (a) or (b).

The Guideline on the Application of the Premises Standards [Version 2 February 2013] [Clause D3.4 Exemptions] provides additional clarity by the following examples:

"These areas could include cleaners store rooms, commercial kitchens, staff serving areas behind bars, cool rooms, rigging lofts, waste-containment areas, foundry floors, abattoir animal processing areas, railway shunting yards, electrical switch rooms, chemical and hazardous materials store areas, loading docks, fire lookouts, plant and equipment rooms and other similar areas."

1.2 EXEMPT AREAS

Areas considered exempt for provision of access for people with disability and not considered as part of this drawing review were those spaces generally considered where access would be inappropriate because of the purpose for which the area is used, or an area that would pose a health or safety risk for people with a disability, or the area is solely used by staff undertaking such duties, as is pertinent to this development.

Areas considered exempt for the purpose of this report are therefore considered to be:

- R.ST Storage spaces
- Mech rooms
- Comms, Mech, Solar, Electrical, SV and other service areas
- Fire Control Room, Fire Tank and Pump rooms
- Hyd Pump room

1.3 EXEMPT AREAS TO BE CONFIRMED

To ensure that any declaration of exemption is not based on inappropriate assumptions about the ability of people with a disability or people with a particular type of disability to undertake work or activities in the above-mentioned spaces, further clarification/consultation as to the purpose of the areas listed below, may be necessary. A clear determination must be sought as to whether the following areas are to meet access requirements for people with disability.

- R.Bin store, R.HD Waste & R.Fogo as residents of the Silver Level dwellings on the Ground Floor may require access to these areas

2. ACCESSIBLE CARPARKING

2.1 CLASS 7A CAR PARK

For a Class 7a [car park] building as per the NCC D4D2(1)(7):

(1) Buildings and parts of buildings must be accessible as required by this clause, unless exempted by D4D5.

(7) For a Class 7a building, access must be provided to and within any level containing accessible carparking spaces.

Implications

Within this proposed development, access for people with disability must therefore be provided to and within the Upper Ground Floor car park, as it contains accessible carparking spaces.

2.2 PROVISION

In accordance with NCC D4D6:

(1) Accessible carparking spaces—

(a) subject to (b), must be provided in accordance with (2) in—

(i) a Class 7a building required to be accessible; and

(ii) a carparking area on the same allotment as a building required to be accessible; and

(c) subject to (d), must comply with AS/NZS 2890.6; and

(d) need not be identified with signage where there is a total of not more than 5 carparking spaces, so as to restrict the use of the carparking space only for people with a disability.

(2) For each class of building to which the carpark or carparking area is associated, the number of accessible carparking spaces required is as follows:

(b) Class 5, 7, 8 or 9c buildings — 1 accessible space for every 100 carparking spaces or part thereof.

(c) Class 6 buildings—

(i) with up to 1000 carparking spaces — 1 accessible space for every 50 carparking spaces or part thereof; and

(ii) for each additional 100 carparking spaces or part thereof in excess of 1000 carparking spaces — 1 accessible space.

Interpretation

For this Class 2, 5, and 6 building, accessible car parking is not required for the Class 2 residential parking area but for the carparking associated with the Class 5/6 component of the allocated parking. With a total of 30 visitor carparking bays, one accessible parking space is required.

Confirmation

It is confirmed that two accessible visitor carparking bays are proposed, which satisfies the requirement of NCC D4D6(1)(a)(2).

2.3 DESIGN

NCC D4D6(1)(c) states that accessible carparking spaces must be designed to AS2890.6 2009.

Confirmation

On assessment of drawing [DA201], the accessible carparking bays and the adjacent shared area meet the general dimensional requirements as per AS2890.6 2009 Clause 2.2.1 and Figure 2.1.

Recommendations

Ensure that the accessible carparking bay and the adjacent shared area are at the same level, in accordance with AS2890.6 2009 Clause 2.2.1(d).

Provide a minimum of 2500mm headroom above the accessible carparking bays and adjacent shared area as per AS2890.6 2009 Clause 2.4 and Figure 2.7.

3. GENERAL BUILDING ACCESS REQUIREMENTS FOR PEOPLE WITH DISABILITY

3.1 CLASS 2

The NCC 2022 **D4D2(1)(4)** states for a Class 2 [apartment building] that common areas are to be accessible as described:

(1) Buildings and parts of buildings must be accessible as required by this clause, unless exempted by D4D5.

(4) For a Class 2 building, common areas are to be accessible as follows:

(a) From a pedestrian entrance required to be accessible to at least 1 floor containing sole-occupancy units and to the entrance doorway of each sole-occupancy unit located on that level.

(b) To and within not less than 1 of each type of room or space for use in common by the residents, including a cooking facility, sauna, gymnasium, swimming pool, common laundry, games room, individual shop, eating area, or the like.

(c) Where a ramp complying with AS 1428.1 or a passenger lift is installed—

(i) to the entrance doorway of each sole-occupancy unit; and

(ii) to and within rooms or spaces for use in common by the residents.

(d) The requirements of (c) only apply where the space referred to in (c)(i) or (ii) is located on the levels served by the lift or ramp

Confirmation

On assessment of the DA drawings [DA200 & DA201], it is confirmed that access has been provided from the main pedestrian entrances off Subiaco Road on the Upper Ground Floor to the T1, T2 and T3 Lobbies, and from Court Place on the Lower Ground Floor to the T4 Lobby.

Two lifts in Towers 1, 2 and 3, and three lifts in Tower 4 provide vertical access to all floors containing sole-occupancy units. Access is achieved to most of the apartments on each level from the lift lobbies.

On assessment of the Class 2 common areas in accordance with NCC 2022 D4D2(1)(4), it is confirmed that access has been provided to the bin chutes, courtyards and amenity areas on Level 02, the two R. Bicycle stores on the Upper Ground Level and the R. Bin store, R. HD Waste & R. Fogo on the Ground Floor.

Refer to Section 6 of this report for discussion on doorways.

3.1.1 Livable Housing Design Guideline requirements – Silver Level

All dwellings are designed to the Silver Level of the Livable Housing Design Guidelines [LHDG]. All seven core living requirements pertain to the internal of apartments only and not the external path of travel to the apartments.

Thus, in considering all aspects of the Class 2 building, this report addresses both the Class 2 building requirements, and the Silver Level Livable Housing requirements pertaining to the private spaces within the apartments.

A summary of the outcome of the Silver Level Level Livable Housing assessment is provided in Section 9 of this report.

3.2 CLASS 5 OFFICE & CLASS 6 RETAIL

The NCC **D4D2(1)(6)** states that access requirements for a Class 5 office and Class 6 commercial building/tenancy are as follows:

(1) Buildings and parts of buildings must be accessible as required by this clause, unless exempted by D4D5.

(6) For Class 5 and 6 buildings, access must be provided to and within all areas normally used by the occupants.

Comment/Recommendations

Ensure flush transitions from the footpath into the commercial tenancies and the CHL Office as per AS1428.1 2021 Clause 3.1 and Clause 4.2.

As the plans develop, given the varying topography and gradients of the footpaths, align flat landings at the entrance doors to the commercial tenancies and CHL Office as per AS1428.1 2021 Clause 7.1(b) & (c), 10.3.1 & Figure 31 (swing) or 32 (sliding), to enable a wheelchair user to make a 90˚ turn to enter.

4. ACCESS TO BUILDINGS

4.1 PROVISION OF AN ACCESSWAY TO A BUILDING

NCC D4D3(1) requires that:

(1) An accessway must be provided to a building required to be accessible-

(a) from the main points of a pedestrian entry at the allotment boundary; and

(b) from another accessible building connected by a pedestrian link; and

(c) from any required accessible carparking space on the allotment.

Confirmation

In this proposed development an accessway is confirmed:

- From the allotment boundary on Subiaco Road and Court Place to the principal pedestrian entrances via footpaths, and
- Between the towers, commercial tenancies and CHL Office via the footpaths surrounding the building and via the carpark.

On assessment of access to and within the car park on the Upper Ground Floor, it is confirmed that one out of two accessible car parking bays is located in proximity to the Tower 1 Lobby.

Findings/Consideration

The second accessible carparking bay on the Upper Ground Floor is near Tower 4. However, at this stage of design, the path of travel from the accessible carparking bay to the lift or commercial tenancies is yet to be detailed.

Ensure the accessible carparking bay near Tower 4 is connected to the lift and/or commercial tenancies by an accessible and safe path of travel.

4.2 ACCESS VIA THE PRINCIPAL PEDESTRIAN ENTRANCE

In regards the principal pedestrian entrance(s) to the building, NCC D4D3(2) necessitates that:

(2) In a building required to be accessible, an accessway must be provided through the principal pedestrian entrance, and-

(a) through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and

(b) in a building with a total floor area more than 500m2, a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance,

except for pedestrian entrances serving only areas exempted by clause D4D5.

Confirmation

On assessment of drawings [DA200 & DA201], an accessway is provided through pedestrian entrances to the lift lobbies of all towers via the Lower and Upper Ground floors.

It is assumed that these pedestrian entrance doorways into the lift lobbies are automatic doors with flush thresholds. If they are manual, ensure that the requirements doors (including clear open door width, door hardware, door force, and door circulation space) are achieved to AS1428.1 2021 Clause 10.2 and Figure 31.

5. PARTS OF A BUILDING REQUIRED TO BE ACCESSIBLE – VERTICAL ACCESS

5.1 RAMPS

As per NCC D4D4(a)(i) in a building required to be accessible every ramp, except for ramps in areas exempted by D4D5 as listed above, and fire-isolated ramps, must comply with Clause 7 of AS1428.1 2021.

Confirmation

No pedestrian ramps have been documented within this development. While walkways within the development comprise varying topography, their gradients do not exceed the maximum allowable 1:20 gradient for a walkway.

Recommendation

Provide walkways with landings, as specified in Clause 7.8, at intervals according to AS1428.1 2021 Clause 7.2(b).

5.2 STAIRWAYS

As per NCC D4D4(a)(ii) in a building required to be accessible every stairway, except for stairways in areas exempted by D4D5 as listed above, must comply with Clause 8 of AS1428.1 2021.

Interpretation/Implications

At this stage of design, the indicative common stairways (e.g., the stairway adjacent the Mail room in Tower 3 [Figure 1] appears sufficiently wide to accommodate compliant handrails on both sides. The stair set back may need further resolution to ensure the required handrail end extensions and warning TGSIs on the bottom landing of the stair can be contained within the confines of the partition wall and the door circulation space requirements (where clouded in blue).

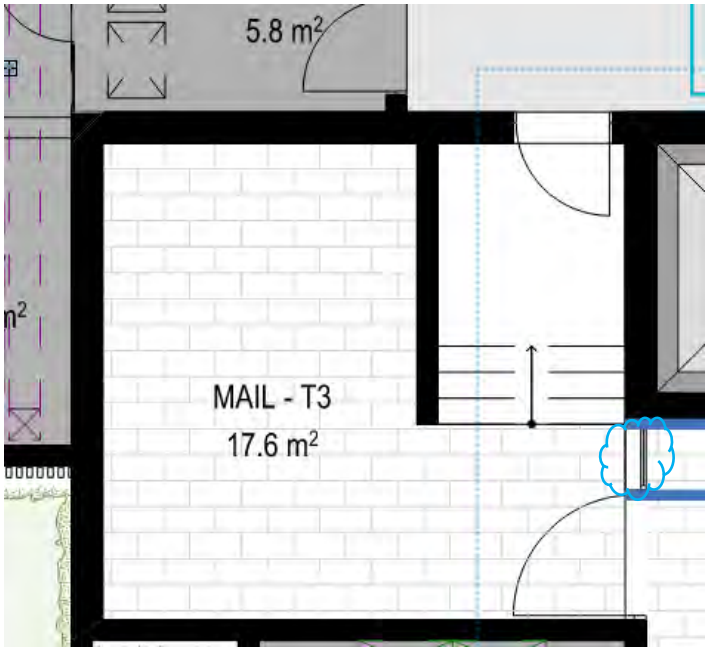


Figure 1: Extract of drawing [DA201], showing the T3 Mail Room stairway

Recommendations

At the appropriate design stage of this project ensure stairs are designed to the full requirements of AS1428.1 2021 Clause 8.1, 8.2 and 9 and warning tactile ground surface indicators (TGSIs) in accordance with AS1428.4.1 2009 [Amt 2] Clauses 2.1, 2.2, 2.3 & 2.4.

5.3 FIRE-ISOLATED STAIRWAYS

As per NCC D4D4(a)(iii) in a building required to be accessible, fire-isolated stairways must comply with Clause 8 (f) and (g) of AS1428.1 2021.

Confirmation

A fire isolated stairway is located within each of the four towers, which provides vertical access to all floors of each tower. At this early stage of design, there is insufficient detail for assessment of the stairways.

Recommendations

At the appropriate design stage of this project ensure a warning strip 50-75mm deep in 30% luminance contrast is documented to the tread of steps in fire-isolated stairways [AS1428.1 2021 Clause 8.1(f) and (g)].

5.4 LIFTS

As required by NCC D4D4(b), all passenger lifts must comply with E3D7 and E3D8. When specified, the lift must be of a type identified in E3D7(1), subject to the limitations on use specified in this same table.

Further, the lift must have accessible features in accordance with Clause E3D8 and not rely on a constant pressure device for its operation if the lift car is fully enclosed as per Clause E3D7(2).

Confirmation

On review of drawings [DA203 to DA209], a bank of two lifts is proposed within Towers 1, 2 and 3, and a bank of three lifts is proposed within Tower 4. All lifts indicatively achieve the general dimensional requirements for the lift car size and the minimum clear width of car door openings. The lift landings on each level achieves the minimum 1500mm wide by 1500mm long circulation space required for a wheelchair user to make a 90˚ turn.

Recommendation

When the manufacturer/supplier is confirmed, ensure the lift car dimensions, fittings and fixtures as specified by AS1735.12 1999 are achieved.

6. PARTS OF A BUILDING REQUIRED TO BE ACCESSIBLE: HORIZONTAL ACCESS

6.1 DOORWAYS

The NCC Glossary defines an **accessway** as a **continuous accessible path of travel** (as defined in AS1428.1) to, into or within a building, and AS1428.1 2021 Definition 1.4.6 states that this continuous accessible path of travel is *"an uninterrupted path of travel to, into or within a building providing access to all accessible facilities.*

It is the interpretation of O'Brien Harrop Access that the provisions for:

- Luminance contrast requirements at doorways;
- Clear opening width of the active leaf of doorways;
- Circulation spaces at doorways;
- Distances between successive doorways;
- The force required to operate a door, and
- Door controls, including manual controls to automate a door;

are to be achieved on all accessible paths of travel through the proposed apartment, commercial and office building.

Australian Standard AS1428.1 2021 Clauses 3 [continuous accessible path of travel] and 10 [doorways] pertain to doorways.

Confirmation

At this early stage of design and documentation, the doorways along the accessible paths of travel are assessed to achieve:

- Compliant clear open widths of more than the required 850mm.
- Insufficient door circulation space has been identified at the following doors as per AS1428.1 2021 Figure 31:
  - The corridor entrance doorways connecting a block of apartments to the T1 and T2 Lobbies on the Upper Ground Floor [Figures 2 & 3]
  - Door between T2 Lobby Level 01 [Figure 4].
  - The R. Bicycle store doorway within Tower 4 [Figure 5]
  - The T1 Lobby doorway connecting to the courtyard on Level 02 [Figure 6]

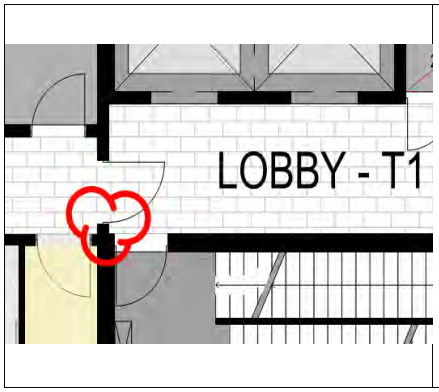


Figure 2: Extract of Drawing [DA201], showing insufficient latch side clearance at corridor entrance doorway in Tower 1

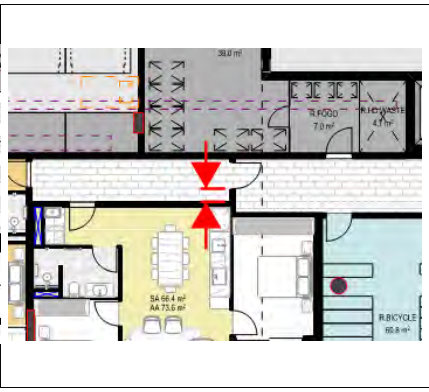


Figure 3: Extract of Drawing [DA201], showing insufficient latch side clearance at corridor entrance doorway in Tower 2



Figure 4: Extract of Drawing [DA202], showing insufficient latch side clearance at the T2 Lobby doorway on Level 01

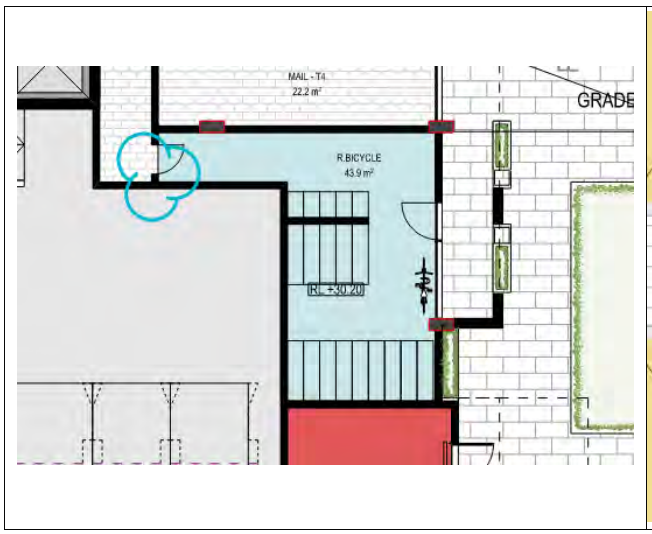


Figure 5: Extract of drawing [DA200], showing insufficient doorway circulation space at the internal doorway of R.Bicycle within Tower 4 on the Lower Ground Floor.

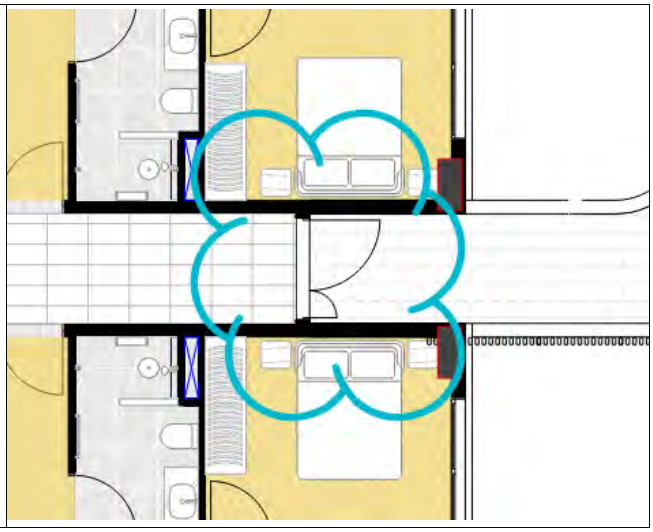


Figure 6: Extract of drawing [DA203], showing insufficient doorway circulation space at the T1 Lobby doorway connecting to the courtyard on Level 02

Recommendations

As the design progresses, ensure that all doorways along the accessible paths of travel achieve the circulation spaces in accordance with AS1428.1 2021 Clause 10.3, Figures 31 or 32 and are compliant with the requirements of:

- Luminance contrast requirements at doorways in accordance with AS1428.1 2021 Clause 10.1
- Distances between successive doorways in accordance with AS1428.1 2021 Clause 10.3.5 (if applicable)
- The force required to operate a door in accordance with AS1428.1 2021 Clause 10.4.2(e) noting fire and smoke doors are exempted from this requirement

- Door controls, including manual controls to automate a door in accordance with AS1428.1 2021 Clauses 10.4.3 & 10.4.4

6.2 DOORWAYS WITH MULTIPLE LEAVES

NCC D4D3(5) states that where a doorway on an accessway has multiple leaves, (except an automatic opening door) one of those leaves must have a clear opening width of not less than 850mm in accordance with AS1428.1. AS1428.1 2021 Clause 10.2 requires that where double doors are used, the 850mm minimum clear open width must apply to the active leaf of the doorway.

Confirmation

The active leaf of the Lobby double doorway on Level 02 achieves the minimum 850mm clear open width required.

6.3 ACCESSWAYS - PASSING AND TURNING SPACES

Part D4D4(c)(i), (ii)(A) and (ii)(B) of the NCC requires that accessways must have:

- passing spaces complying with AS1428.1 2021 Clause 3.4 and Figure 3 at maximum 20 metre intervals on those parts of an accessway where a direct line of sight is not available; and
- turning spaces complying with AS1428.1 2021 Clause 3.5 and Figures 4 and 5 within 2 metres of the end of accessways where it is not possible to continue travelling along the accessway and at maximum 20 metre intervals along the accessway.

Confirmation

It is confirmed that non-exempted corridors indicatively achieve the minimum width requirements for turning and passing spaces

6.4 GLAZING ON AN ACCESSWAY

As per the requirement of the NCC D4D13 and AS1428.1 2021 Clause 3.6, any door (and / or side light) without a transom that is fully glazed or frameless that could be mistaken for an open door or opening shall be clearly marked for the full width of the glazing panel with an unbroken, solid, and opaque contrasting line.

Findings

On review of the elevation drawings [DA300 to DA301; DA310 to DA 313; DA320 to DA323], glazing is documented to the apartment, commercial and office building, however at this early stage of design visual indicators are not detailed.

Recommendation

As the design is progressed, ensure treatment for glazing as per the requirement of the NCC D4D13 and AS1428.1 2021 Clause 3.6 is achieved.

7. SURFACES

7.1 INTRODUCTION

AS1428.1 2021 Section 4 addresses floor or ground surfaces on continuous accessible paths of travel and circulation spaces, and the general requirement is that a continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with an ambulant or sensory disability.

NOTE 1 Information relevant to slip resistance can be found in AS 4586, AS 4663, HB 197, and SA HB 198.

Findings

At this early stage of design, details for ground (landscape) and floor coverings have yet to be developed for assessment.

Recommendation

As the design progresses OHA will continue to work with the design team to ensure floor and ground surfaces meet accessibility requirements.

8. SANITARY FACILITIES

8.1 UNISEX ACCESSIBLE AND AMBULANT SANITARY FACILITIES

One unisex accessible toilet is documented adjacent to the commercial tenancy that is located northeast of the building. At this early stage of design there is insufficient detail for assessment of sanitary facilities against accessibility requirements.

Recommendation

OHA will be pleased to review the sanitary facility design when it has been developed to ensure accessibility requirements are met, further, OHA would be pleased to review the statutory signage package.

9. LIVABLE HOUSING DESIGN ASSESSMENT

9.1 INTRODUCTION

As per the Livable Housing Design Guideline [LHDG] [Fourth Edition], a livable home is designed and built to meet the changing needs of occupants across their lifetime. Livable homes include key easy living features that make them easier and safer to use for all occupants including: people with disability, ageing Australians, people with temporary injuries, and families with young children.

As required for this Court Place Project, all dwellings are required to meet the LHDG Silver Level requirements [also called the seven core livable housing design elements].

The seven core design features elements in the silver level are:

(1) A safe continuous and step free path of travel from the street entrance and / or parking area to a dwelling entrance that is level.

(2) At least one, level (step-free) entrance into the dwelling.

(3) Internal doors and corridors that facilitate comfortable and unimpeded movement between spaces.

(4) A toilet on the ground (or entry) level that provides easy access.

(5) A bathroom that contains a hobless shower recess.

(6) Reinforced walls around the toilet, shower and bath to support the safe installation of grabrails at a later date.

(7) Stairways are designed to reduce the likelihood of injury and also enable future adaptation.

9.2 FINDINGS

9.2.1 LHDG Silver Level

Confirmation

At this stage of design, the apartment design types 1B 1b, 2B 1b, and 3B 2b across all floors within all towers have been assessed to and are confirmed to achieve the LHDG Silver Level requirements.

Recommendation

As design progresses, ensure:

- Doorways achieve a level transition and threshold (maximum vertical tolerance of 5mm between abutting surfaces is allowable provided the lip is rounded or beveled),
- Walls around the shower and toilet reinforced to provide the safe installation of grabrails as specified in the LHDG Section 6.