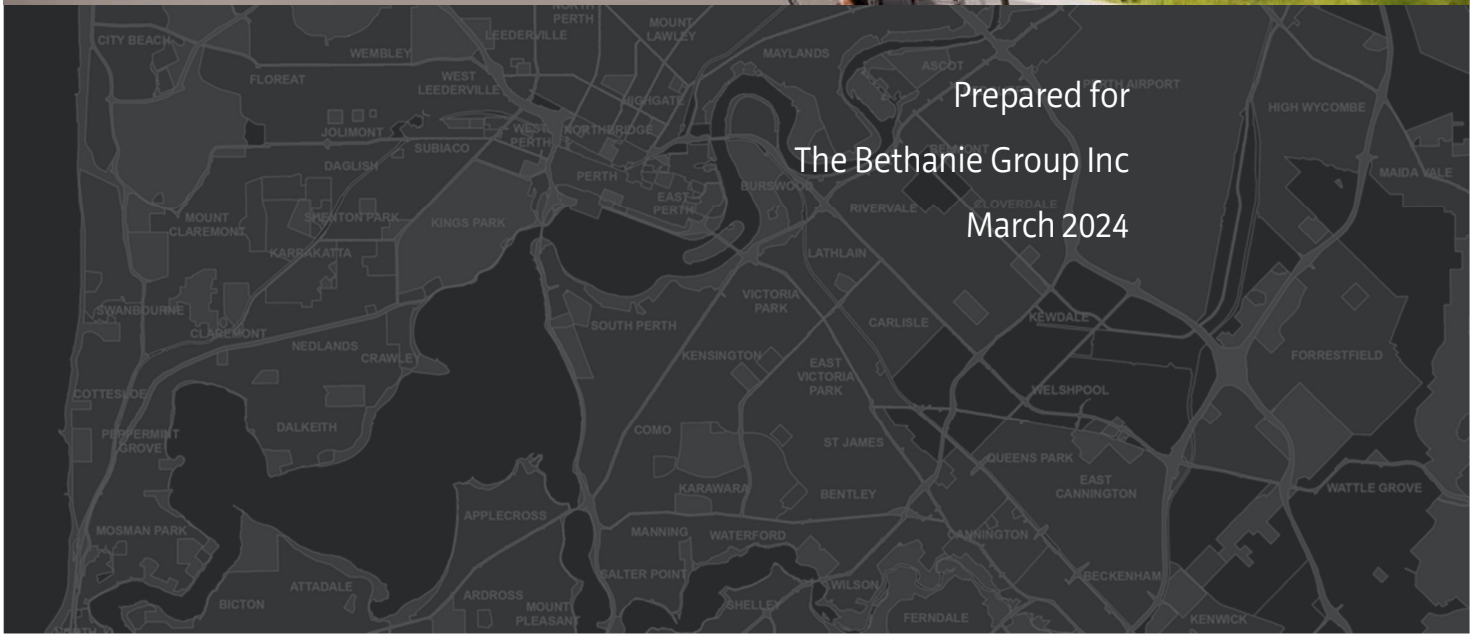
Development Application Report

Dalyellup Apartments

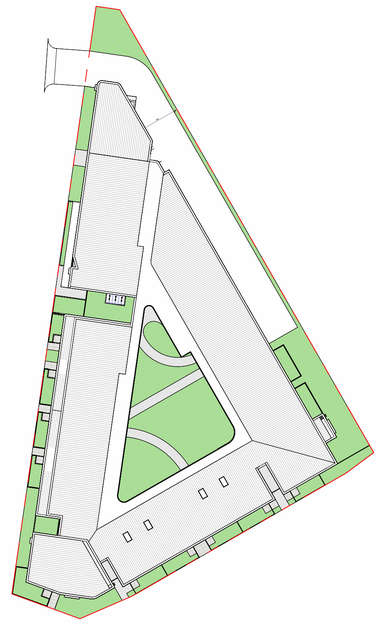
114 Norton Promenade
Dalyellup



Prepared for

The Bethanie Group Inc

March 2024



Drawing No.	Drawing Name
A0.00	Cover Page
A1.00	Site Plan
A1.01	Feature Survey Plan
A2.00	Ground Floor Plan
A2.01	Level 1 Plan
A2.02	Level 2 Plan
A2.03	Roof Plan
A3.00	Elevations
A4.00	Sections
A5.06	Solar Access Diagrams - Ground and Schedule
A5.07	Solar Access Diagrams - Level 01/02
A8.00	Apartment Types 01 & 02
A8.01	Apartment Type 03 & 04
A8.02	Apartment Type 05 & 06
A8.03	Apartment Type 07 & 08
A8.04	Apartment Type 09

N

PRELIMINARY

Architectural documents are to be read in conjunction with relevant structural, fire service, mechanical, hydraulic, electrical, civil and landscaping documents. Drawings are to be read in conjunction with the appropriate sections of technical applications.

Do not scale drawings. Use figured dimensions only. Inform Architect of any conflict between the site conditions and documents. Contractor to verify all dimensions on site before commencing work.

rev	date	title
A	09.02.24	Preliminary DA Issue
B	27.02.24	Medium Density Markups

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Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Cover Page

designed	Designer		
drawn	Author		
project no	scale	drawing no	rev
23010	1 : 500 @A1	A0.00	B

Apartment Schedule

Type	Occupancy	Area	Count
Type 01	1 x 1	47 m²	28
Type 02	1 x 1	<varies>	4
Type 03	2 x 1	77 m²	3
Type 04	2 x 1	73 m²	3
Type 05	2 x 1	69 m²	3
Type 06	2 x 1	68 m²	2
Type 07	2 x 1	68 m²	2
Type 08	2 x 1	74 m²	2
Type 09	2 x 1	67 m²	3
			50

PRELIMINARY

rev	date	title
A	06.02.24	Preliminary DA Issue
B	09.02.24	Preliminary DA Issue

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Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Site Plan

designed	Designer		
drawn	Author		
project no	scale	drawing no	rev
23010	1 : 500 @A1	A1.00	B

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Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Feature Survey Plan
designed: Designer
drawn: Author

project no	scale	drawing no	rev
23010	1 : 200 @A1	A1.01	A

Deep Soil Schedule	
Deep Soil Planting	772 m²

Site Area: 3089 m²
Min 10% Deep Soil: 309m²

1 Ground Floor Plan
1 : 200

Store Room Schedule		
Name	Area	Count
Store	3 m²	32
Store	4 m²	15
Store	5 m²	1
Store	6 m²	4
		52

Apartment Schedule			
Type	Occupancy	Area	Count
Type 01	1 x 1	47 m²	28
Type 02	1 x 1	<varies>	4
Type 03	2 x 1	77 m²	3
Type 04	2 x 1	73 m²	3
Type 05	2 x 1	69 m²	3
Type 06	2 x 1	68 m²	2
Type 07	2 x 1	68 m²	2
Type 08	2 x 1	74 m²	2
Type 09	2 x 1	67 m²	3
			50

PRELIMINARY

rev	date	title
A	06.02.24	Preliminary DA Issue
B	09.02.24	Preliminary DA Issue
C	27.02.24	Medium Density Markups
D	05.03.24	Medium Density Markups

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Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Ground Floor Plan
designed: Designer
drawn: Author
project no: 23010
scale: 1 : 200 @A1
drawing no: A2.00
rev: D

1 Level 1 Plan
1 : 200

Store Room Schedule

Name	Area	Count
Store	3 m²	32
Store	4 m²	15
Store	5 m²	1
Store	6 m²	4
		52

Apartment Schedule

Type	Occupancy	Area	Count
Type 01	1 x 1	47 m²	28
Type 02	1 x 1	<varies>	4
Type 03	2 x 1	77 m²	3
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Type 08	2 x 1	74 m²	2
Type 09	2 x 1	67 m²	3
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Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Level 1 Plan

designed	Designer		
drawn	Author		
project no	scale	drawing no	rev
23010	1 : 200 @A1	A2.01	D

2 Level 2 Plan

1 : 200

Store Room Schedule		
Name	**Area**	**Count**
Store	3 m²	32
Store	4 m²	15
Store	5 m²	1
Store	6 m²	4
		52

Apartment Schedule			
Type	**Occupancy**	**Area**	**Count**
Type 01	1 x 1	47 m²	28
Type 02	1 x 1	<varies>	4
Type 03	2 x 1	77 m²	3
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Type 08	2 x 1	74 m²	2
Type 09	2 x 1	67 m²	3
			50

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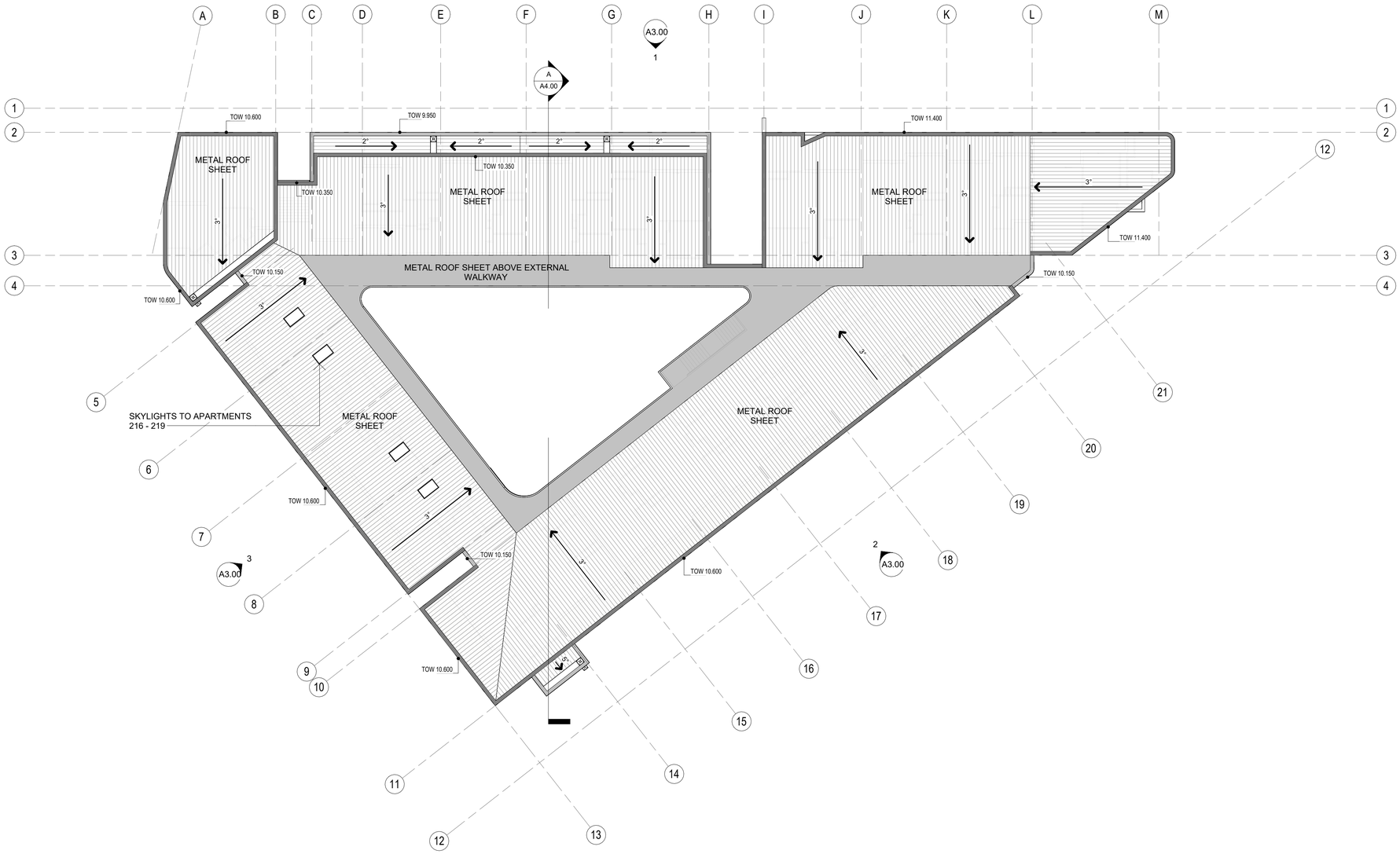
Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Level 2 Plan
designed: Designer
drawn: Author
project no: 23010
scale: 1 : 200 @A1
drawing no: A2.02
rev: D



1 Roof Plan

1 : 200

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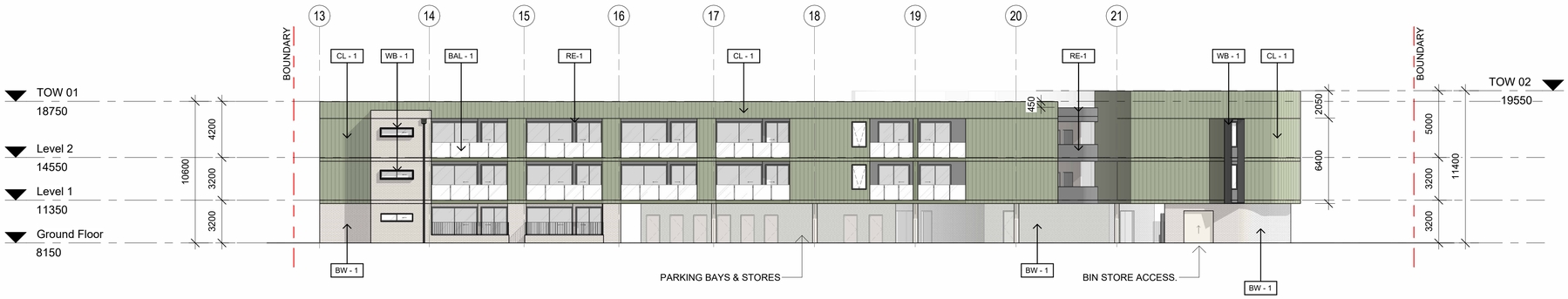
Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Roof Plan

designed: Designer
drawn: Author
project no: 23010
scale: 1 : 200 @A1
drawing no: A2.03
rev: D

1 West Elevation
1 : 200



2 North East Elevation
1 : 200

3 South East Elevation
1 : 200

Material Legend	
BAL - 1	Frameless Glass Balustrade
BW - 1	Face Brickwork
BW - 2	Face Brickwork - Perforated
CL - 1	Vertical Metal Wall Cladding - Green
FE - 1	1000h Powdercoated Metal Fencing
FE - 2	1600h Powdercoated Metal Fencing
RE-1	Render - Dark grey
SCN - 1	Perforated Metal Screening (AC Condensers)
SCN - 2	Vertical Metal Battens - Dark Grey
WB - 1	Metal Window Box - Dark Grey

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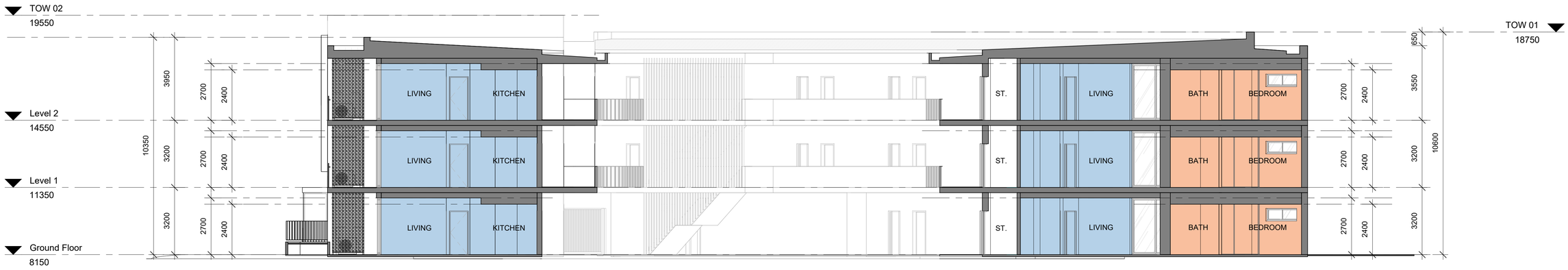
Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Elevations

designed	Designer		
drawn	Author		
project no	scale	drawing no	rev
23010	1 : 200 @A1	A3.00	B



A Typcial Section
1 : 100

PRELIMINARY

rev	date	title
A	27.02.24	Medium Density Markups

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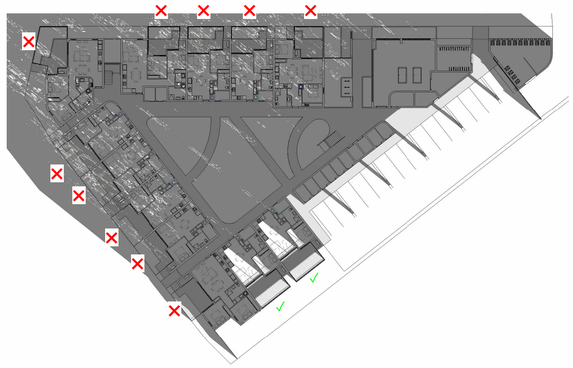
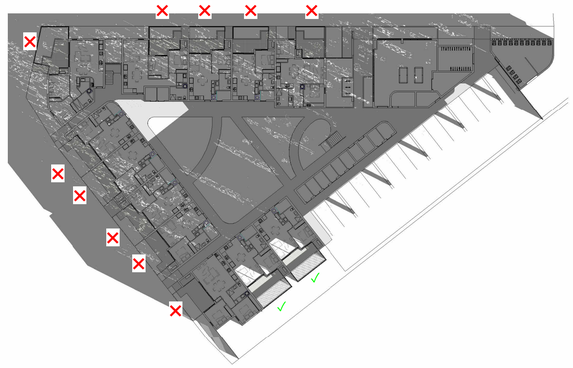
Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Sections

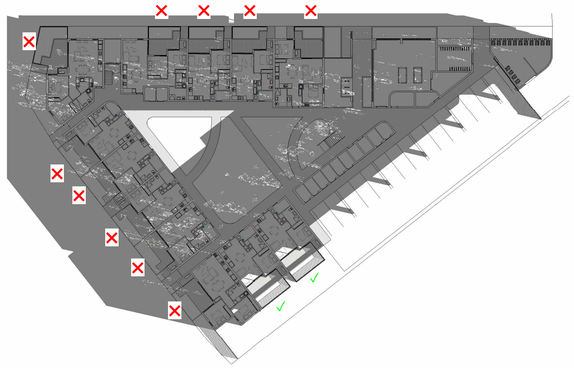
designed	Designer			
drawn	Author			
project no	scale		drawing no	rev
23010	1 : 100 @A1		A4.00	A



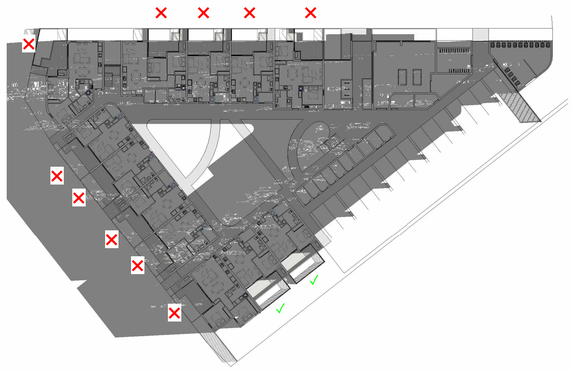
9 Solar Access - Ground - 9am



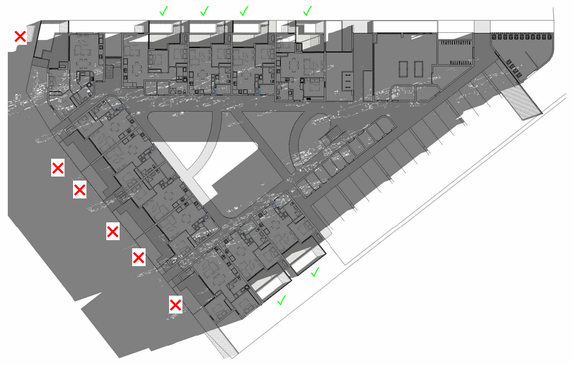
10 Solar Access - Ground - 10am



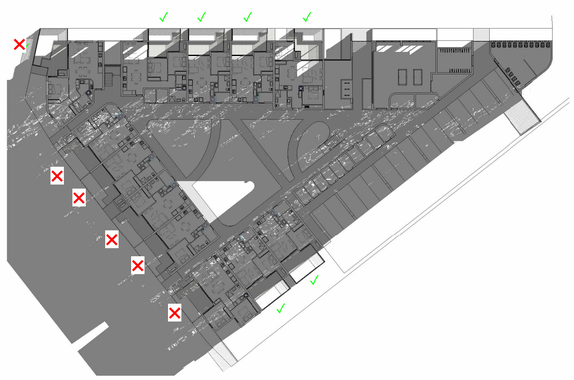
11 Solar Access - Ground - 11am



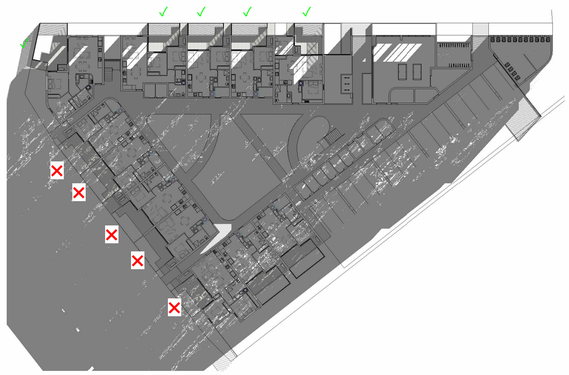
12 Solar Access - Ground - 12pm



1 Solar Access - Ground - 1pm



2 Solar Access - Ground - 2pm



3 Solar Access - Ground - 3pm

TOTAL APARTMENTS: 50

65% of total apartments recieve at least **2** hours of sunlight between **9am - 3pm** to **primary living area**

37 / 50

TOTAL: **74%.**

WINTER SOLSTICE 21 JUNE

9AM 10AM 11AM 12PM 1PM 2PM 3PM

APT	DIRECT SUN TO PRIMARY LIVING AREA
APT **G01**	| 2 HRS
APT **G02**	| 3 HRS
APT **G03**	| 2 HRS
APT **G04**	| 2 HRS
APT **G05**	| 2 HRS
APT **G06**	| 3 HRS
APT **G07**	| 3 HRS
APT **G08**	| 0 HRS
APT **G09**	| 0 HRS
APT **G10**	| 0 HRS
APT **G11**	| 0 HRS
APT **G12**	| 0 HRS
APT **101**	| 2 HRS
APT **102**	| 3 HRS
APT **103**	| 2 HRS
APT **104**	| 2 HRS
APT **105**	| 2 HRS
APT **106**	| 1 HRS
APT **107**	| 2 HRS
APT **108**	| 2 HRS
APT **109**	| 2 HRS
APT **110**	| 5 HRS
APT **111**	| 3 HRS
APT **112**	| 3 HRS
APT **113**	| 3 HRS
APT **114**	| 3 HRS
APT **115**	| 0 HRS
APT **116**	| 0 HRS
APT **117**	| 0 HRS
APT **118**	| 0 HRS
APT **119**	| 0 HRS
APT **201**	| 2 HRS
APT **202**	| 3 HRS
APT **203**	| 2 HRS
APT **204**	| 2 HRS
APT **205**	| 2 HRS
APT **206**	| 1 HRS
APT **207**	| 2 HRS
APT **208**	| 2 HRS
APT **209**	| 2 HRS
APT **210**	| 5 HRS
APT **211**	| 3 HRS
APT **212**	| 3 HRS
APT **213**	| 3 HRS
APT **214**	| 3 HRS
APT **215**	| 0 HRS
APT **216**	| 3 HRS
APT **217**	| 3 HRS
APT **218**	| 3 HRS
APT **219**	| 3 HRS

PRELIMINARY

rev	date	title
A	27.02.24	Medium Density Markups

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Project: Bethanie Dalyellup
Client: Bethanie
Drawing Title: Solar Access Diagrams - Ground and Schedule

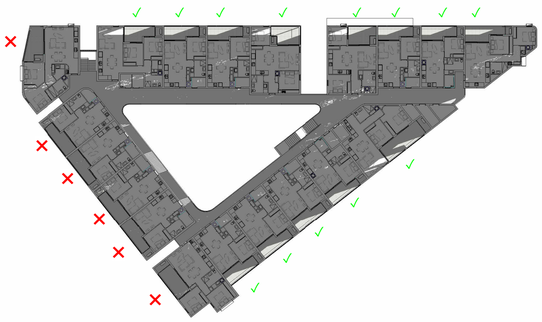
designed: Designer
drawn: Author
project no: 23010
scale: 1 : 100 @A1
drawing no: A5.06
rev: A

9 Solar Access - 01/02 - 9am

10 Solar Access - 01/02 - 10am

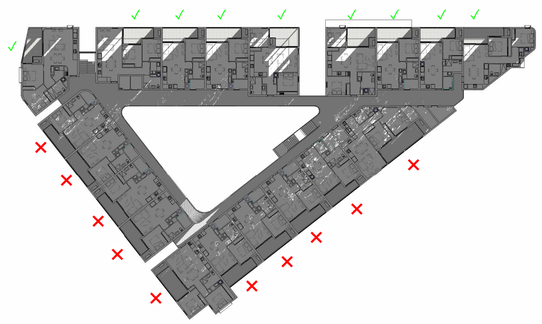
11 Solar Access - 01/02 - 11am

12 Solar Access - 01/02 - 12pm

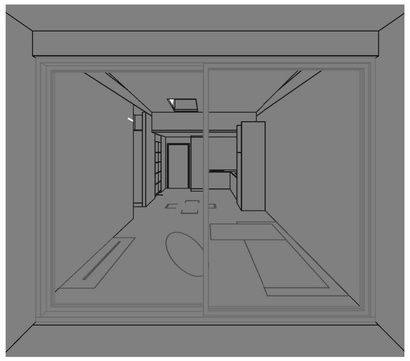


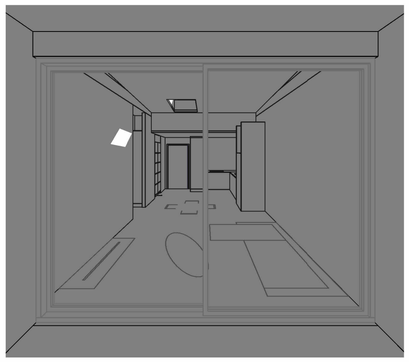
1 Solar Access - 01/02 - 1pm

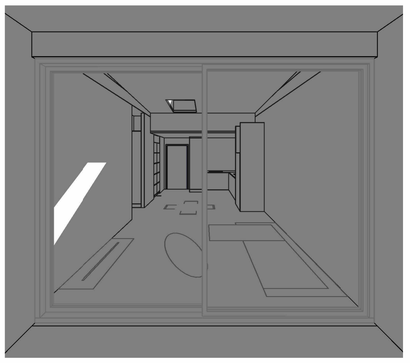
2 Solar Access - 01/02 - 2pm



3 Solar Access - 01/02 - 3pm







5 Solar Access - APT 216-219 - 11am-1pm

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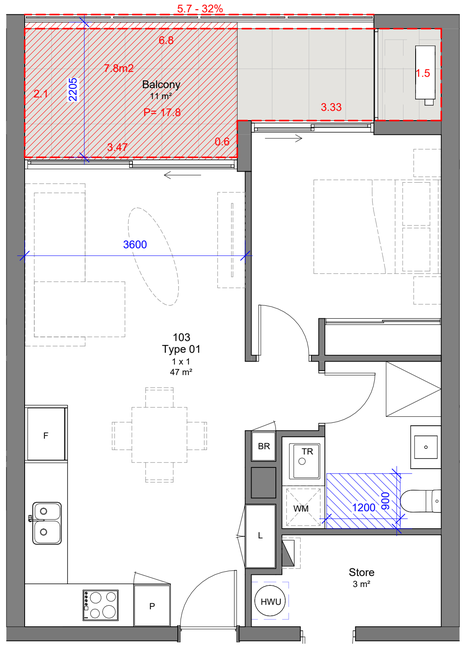
Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Solar Access Diagrams - Level 01/02

designed: Designer
drawn: Author

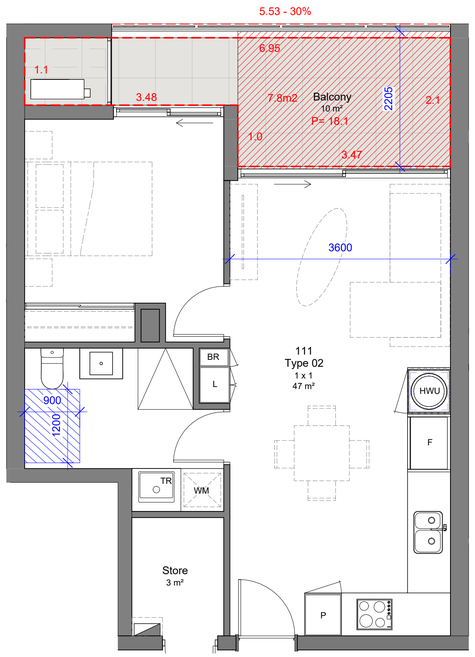
project no: 23010
scale: @A1
drawing no: A5.07
rev: A



01 Apt Type 01

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
103	Type 01	Level 1	1 x 1	47 m²	11 m²	3 m²



02 Apt Type 02

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
111	Type 02	Level 1	1 x 1	47 m²	10 m²	3 m²

Apartment Schedule

Type	Occupancy	Area	Count
Type 01	1 x 1	47 m²	28
Type 02	1 x 1	<varies>	4
Type 03	2 x 1	77 m²	3
Type 04	2 x 1	73 m²	3
Type 05	2 x 1	69 m²	3
Type 06	2 x 1	68 m²	2
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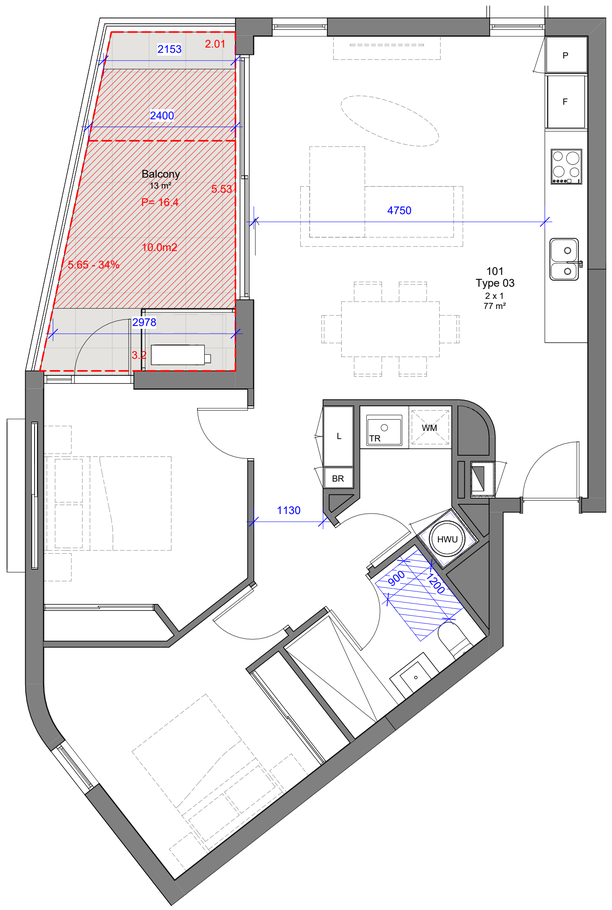
Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Apartment Types 01 & 02

designed: Designer
drawn: Author

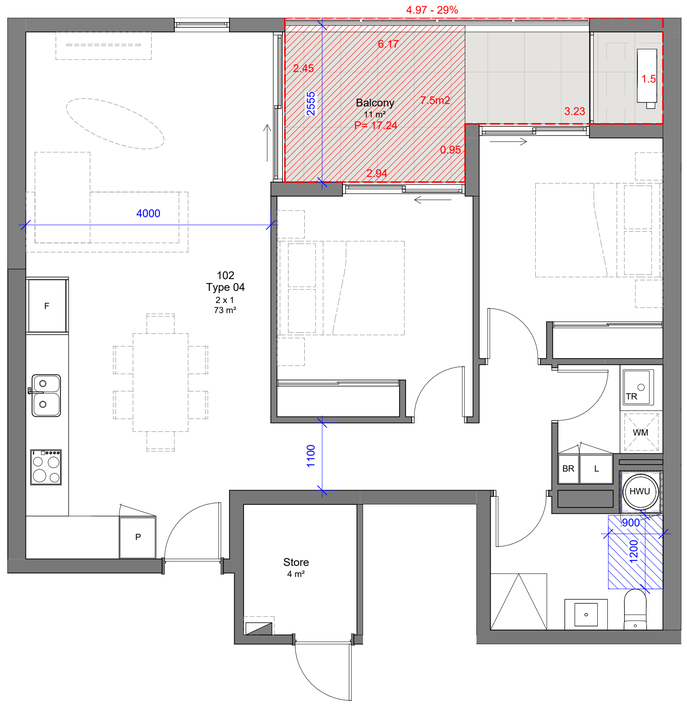
project no	scale	drawing no	rev
23010	1 : 50 @A1	A8.00	D



03 Apt Type 03

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
101	Type 03	Level 1	2 x 1	77 m²	13 m²	4 m² (TBC)



04 Apt Type 04

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
102	Type 04	Level 1	2 x 1	73 m²	11 m²	4 m²

PRELIMINARY

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rev	date	title
A	06.02.24	Preliminary DA Issue
B	09.02.24	Preliminary DA Issue
C	27.02.24	Medium Density Markups
D	05.03.24	Medium Density Markups

M&S MATTHEWS & SCAVALLI ARCHITECTS

e: info@mandsarchitects.com.au
a: PO Box 8084 Fremantle 6160 WA
p: (08) 9316 0531
f: (08) 9316 0498
w: www.mandsarchitects.com.au

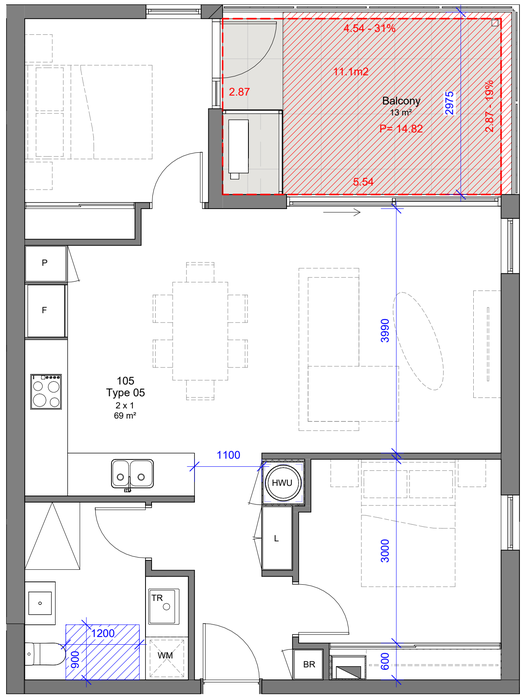
Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Apartment Type 03 & 04

designed: Designer
drawn: Author

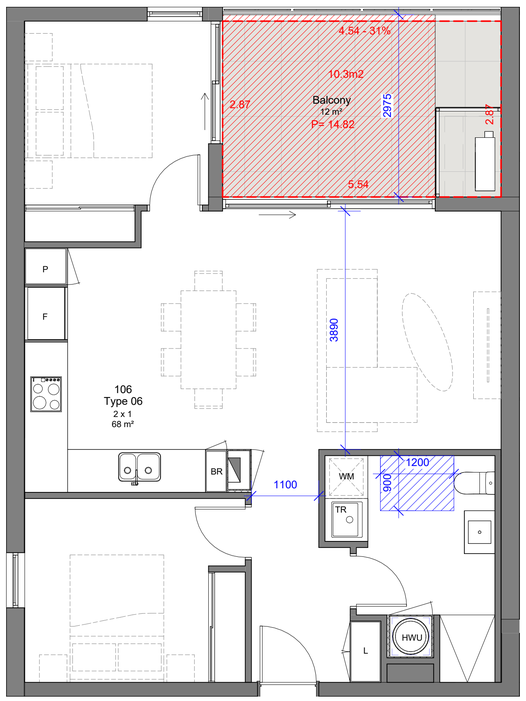
project no	scale	drawing no	rev
23010	1 : 50 @A1	A8.01	D



05 Apt Type 05

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
105	Type 05	Level 1	2 x 1	69 m²	13 m²	4 m² (TBC)



06 Apt Type 06

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
106	Type 06	Level 1	2 x 1	68 m²	12 m²	4 m² (TBC)

PRELIMINARY

rev	date	title
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B	09.02.24	Preliminary DA Issue
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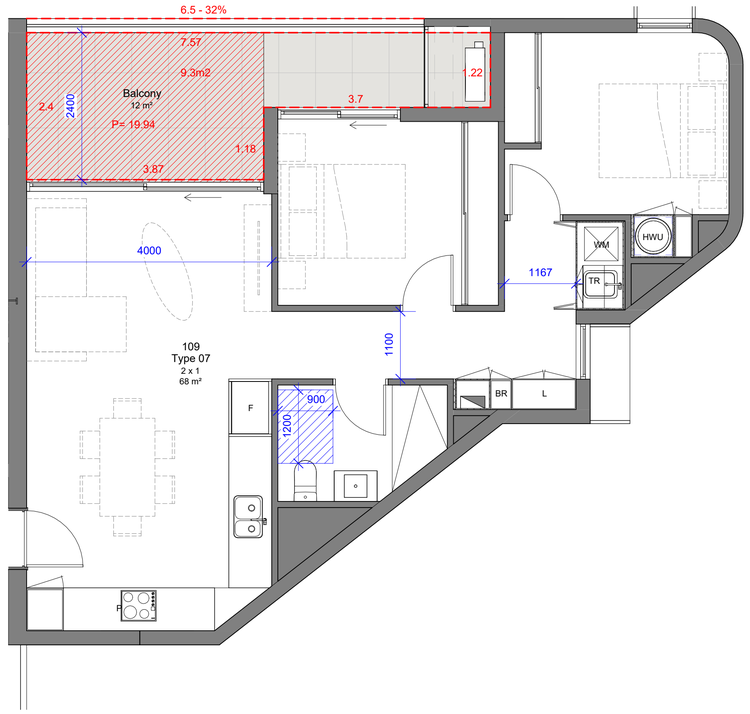
Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Apartment Type 05 & 06

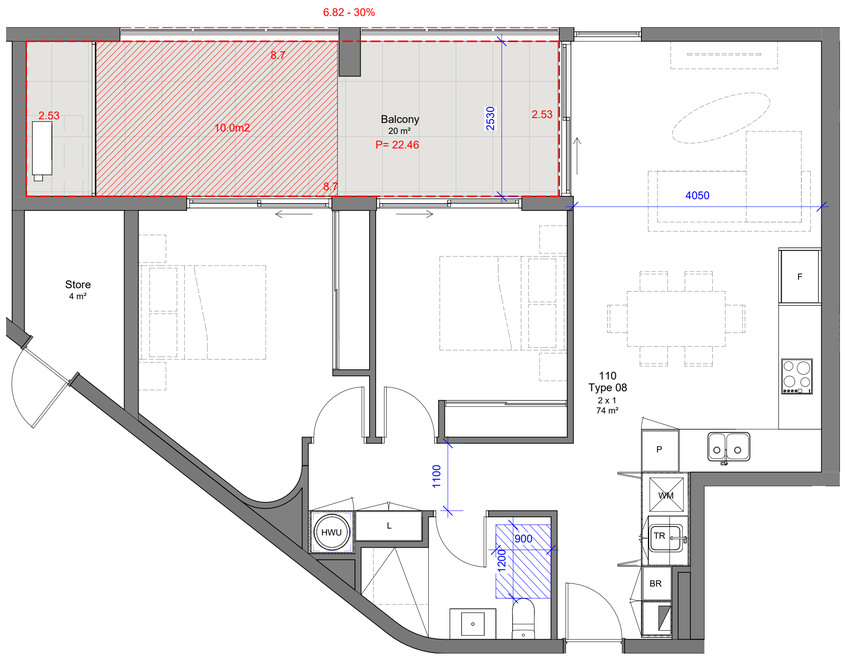
designed: Designer
drawn: Author
project no: 23010
scale: 1 : 50 @A1
drawing no: A8.02
rev: D



07 Apt Type 07

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
109	Type 07	Level 1	2 x 1	68 m²	12 m²	4 m² (TBC)



08 Apt Type 08

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
110	Type 08	Level 1	2 x 1	74 m²	20 m²	4 m² (TBC)

PRELIMINARY

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B	09.02.24	Preliminary DA Issue
C	27.02.24	Medium Density Markups
D	05.03.24	Medium Density Markups

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w: www.mandsarchitects.com.au

Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Apartment Type 07 & 08

designed: Designer

drawn: Author

project no	scale	drawing no	rev
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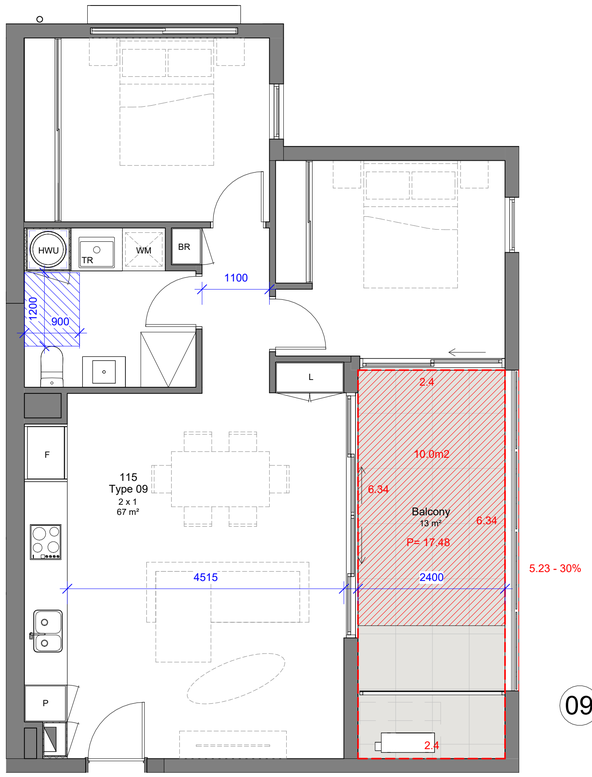

09 Apt Type 09

1 : 50

Lot Number	Apt Type	Level	Layout Type	Internal Area	Balcony	Store
115	Type 09	Level 1	2 x 1	67 m²	13 m²	4 m² (TBC)

PRELIMINARY

rev	date	title
A	06.02.24	Preliminary DA Issue
B	09.02.24	Preliminary DA Issue
C	27.02.24	Medium Density Markups
D	05.03.24	Medium Density Markups

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f: (08) 9316 0498
w: www.mandsarchitects.com.au

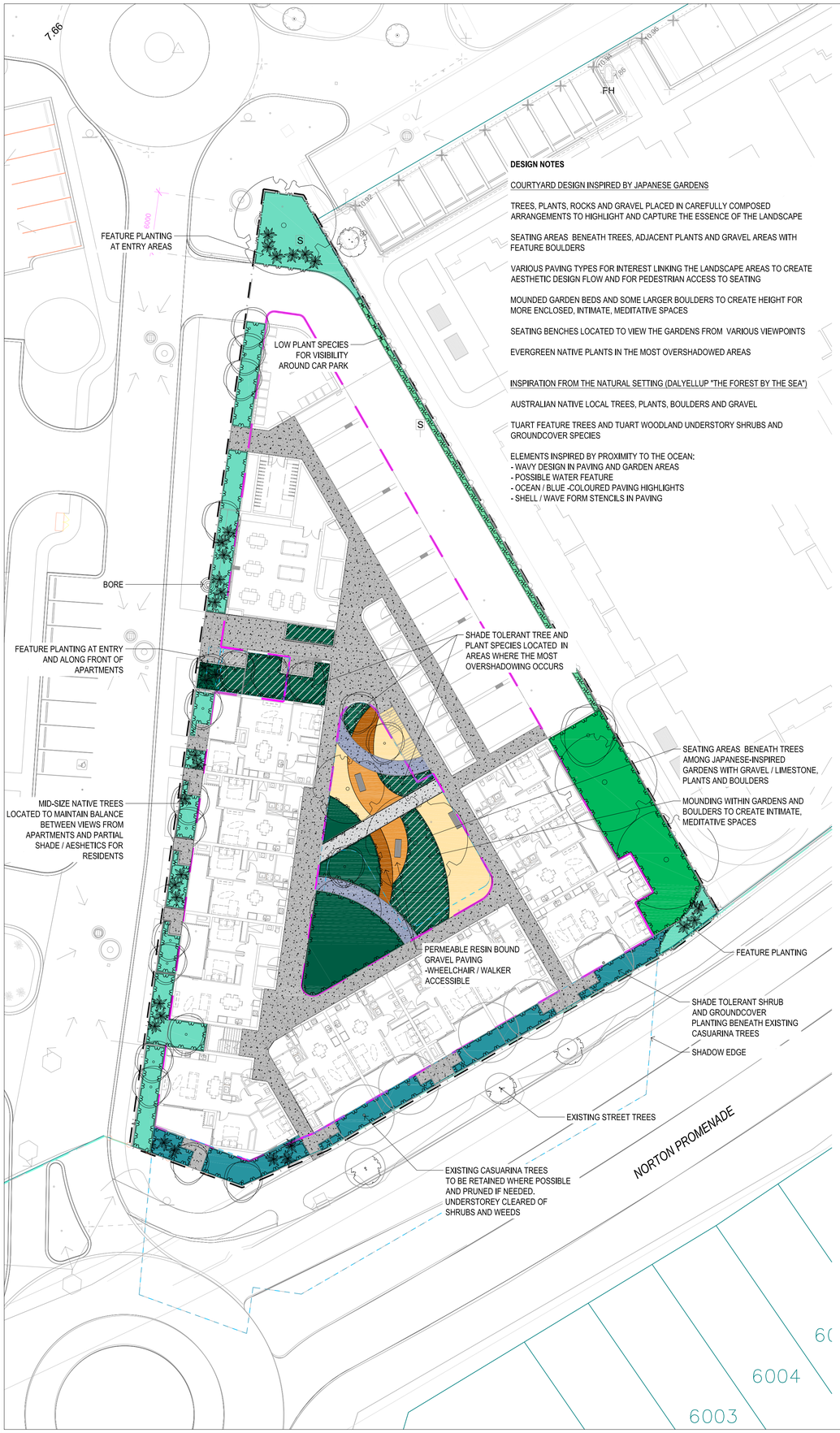
Project: Bethanie Dalyellup

Client: Bethanie

Drawing Title: Apartment Type 09

designed: Designer
drawn: Author

project no	scale	drawing no	rev
23010	1 : 50 @A1	A8.04	D



DESIGN NOTES

COURTYARD DESIGN INSPIRED BY JAPANESE GARDENS

TREES, PLANTS, ROCKS AND GRAVEL PLACED IN CAREFULLY COMPOSED ARRANGEMENTS TO HIGHLIGHT AND CAPTURE THE ESSENCE OF THE LANDSCAPE

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MOUNDED GARDEN BEDS AND SOME LARGER BOULDERS TO CREATE HEIGHT FOR MORE ENCLOSED, INTIMATE, MEDITATIVE SPACES

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EVERGREEN NATIVE PLANTS IN THE MOST OVERSHADOWED AREAS

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- POSSIBLE WATER FEATURE
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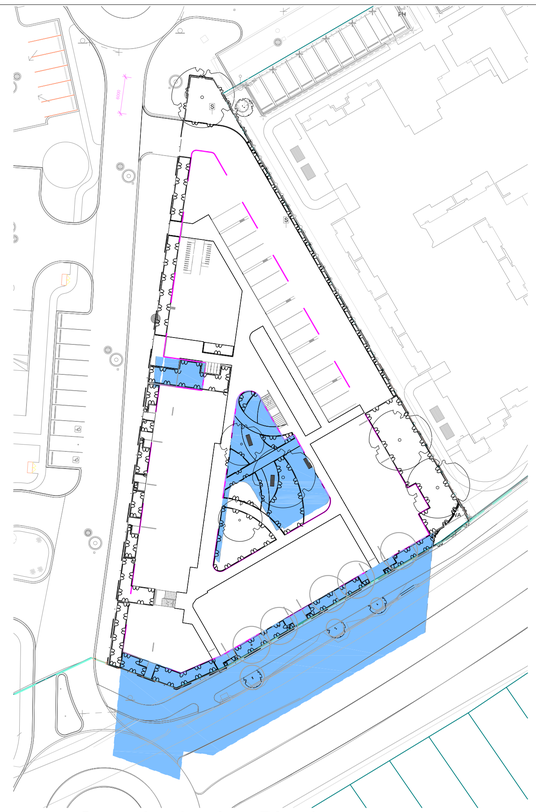
- SHELL / WAVE FORM STENCILS IN PAVING



1 **Overshadowing Plan***

(*reference M&S Architect's Site Plan 2023.12.18) Scale: 1:500

PLANT LIST

TREES	COURTYARD TREES AND LARGE SHRUBS	
AGONIS FLEXUOSA	HYMENOSPORUM FLAVUM	4-10m height
BANKSIA ATTENUATA	MELALEUCA HUEGLII	4m height
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MELALEUCA INCANA NANA	*PLANTING PALETTE IS INDICATIVE ONLY
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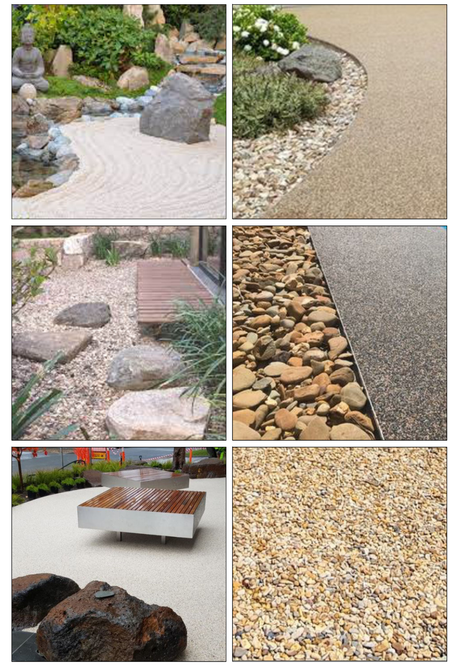
DESIGN EXAMPLE IMAGES

JAPANESE GARDEN-INSPIRED DESIGN USING NATIVE PLANTS AND LOCAL STONE

WHEELCHAIR / WALKER-ACCESSIBLE RESIN-BOUND PAVING AREAS WITH LOCAL GRAVEL / STONE OR SIMILAR



TREES AND PLANTS

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- CONCRETE PATHWAYS OR PAVING
- PERMEABLE RESIN BOUND GRAVEL PAVING
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- BENCH SEAT
- BUILDING ROOF LINE OVER
- OVERSHADOWING 21 JUNE 12PM

NOT FOR CONSTRUCTION

REV	DATE	DWN	DESCRIPTION
A	10.01.2024	IU	ISSUE FOR REVIEW
B	17.01.2024	IU	TREE HEIGHTS ADDED
C	07.02.2024	SP	AMENDED TO SUIT NEW BASE DRAWING

LD TOTAL
SANPOINT PTY LTD
172 BURSWOOD ROAD, BURSWOOD WA 6100 AUSTRALIA
TEL +61 8 6436 1111 FAX +61 8 9367 2034
www.ldtotal.com.au

PROJECT:
Dalyellup BHL Apartments

CLIENT:
Bethanie

TITLE
DA Landscape Plan

PROJECT NO	10.7192	DRAWN BY:	IU	APPROVED BY:	SP	REV:	C
SCALE:	1:250	SHEET NO	301	SHEET SIZE	A1		

2.5m 0m 2.5m 5m 12.5m
SCALE: 1:250

J:\PROJECTS\10.7192 Dalyellup BHL Apartments\02 CAD\4 Models\JBP-7192-DA-Rev B.dwg

Bethanie

Dalyellup Apartments

Design Report

M&S

Acknowledgement:

The Project Team acknowledges the Traditional Custodians of the land and pays respect to the Elders, past, present and future.

We honour Australian Aboriginal and Torres Strait Islander peoples' primary cultural and spiritual relationship to place and their rich contribution to our society.

To that end, all our work seeks to uphold that we care for Country, it will care for us.

CONTEXT & CHARACTER

LANDSCAPE QUALITY

BUILT FORM & SCALE

FUNCTIONALITY & BUILD QUALITY

SUSTAINABILITY

AMENITY

LEGIBILITY

SAFETY

COMMUNITY

AESTHETICS

The suburb was established in 1999 when the Department of Housing and Works entered into a joint venture with Satterley Property Group to develop Dalyellup Beach Estate, a master-planned community which was expected to yield 3,000 lots.

"A village in the Forest by the Sea"

Remnants of the unique Tuart Forest environment are scattered throughout the original sub division. North of Dalyellup and bordering South Bunbury, Maidens Reserve and associated walking trails offer a glimpse of the original forest.

Considering the nature of typical sub divisions, credit must be given to the precinct designers in the retention of areas of 'green' remnant forest connecting the Town Centre to the beach of the suburb.

BEACH ACCESS

PARKLANDS

BUSSELL HWY

The site is within comfortable walking distance of the Town Centre.

The site is located within a precinct containing pre-existing community housing and a recently completed aged care facility. The Housing Village to the north has approval and is awaiting funding.

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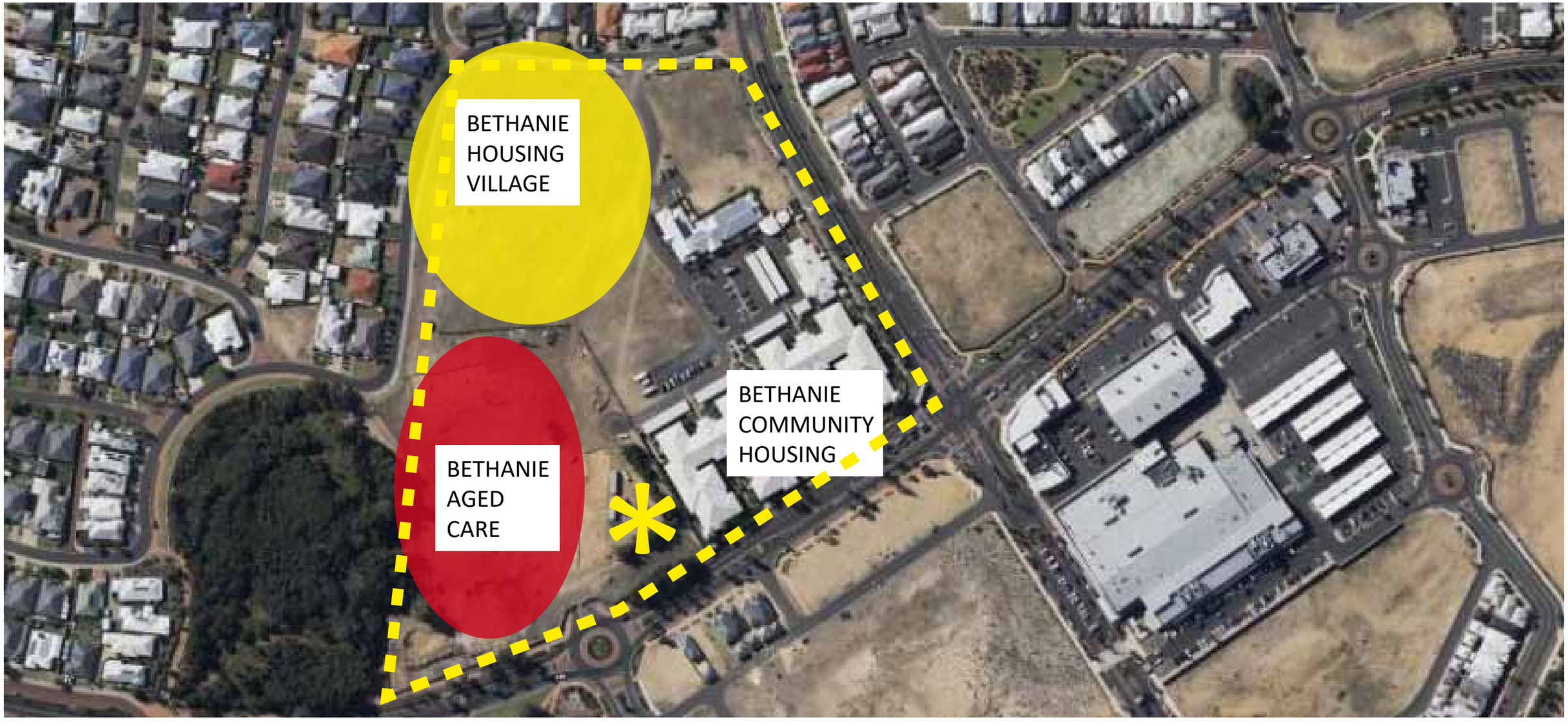

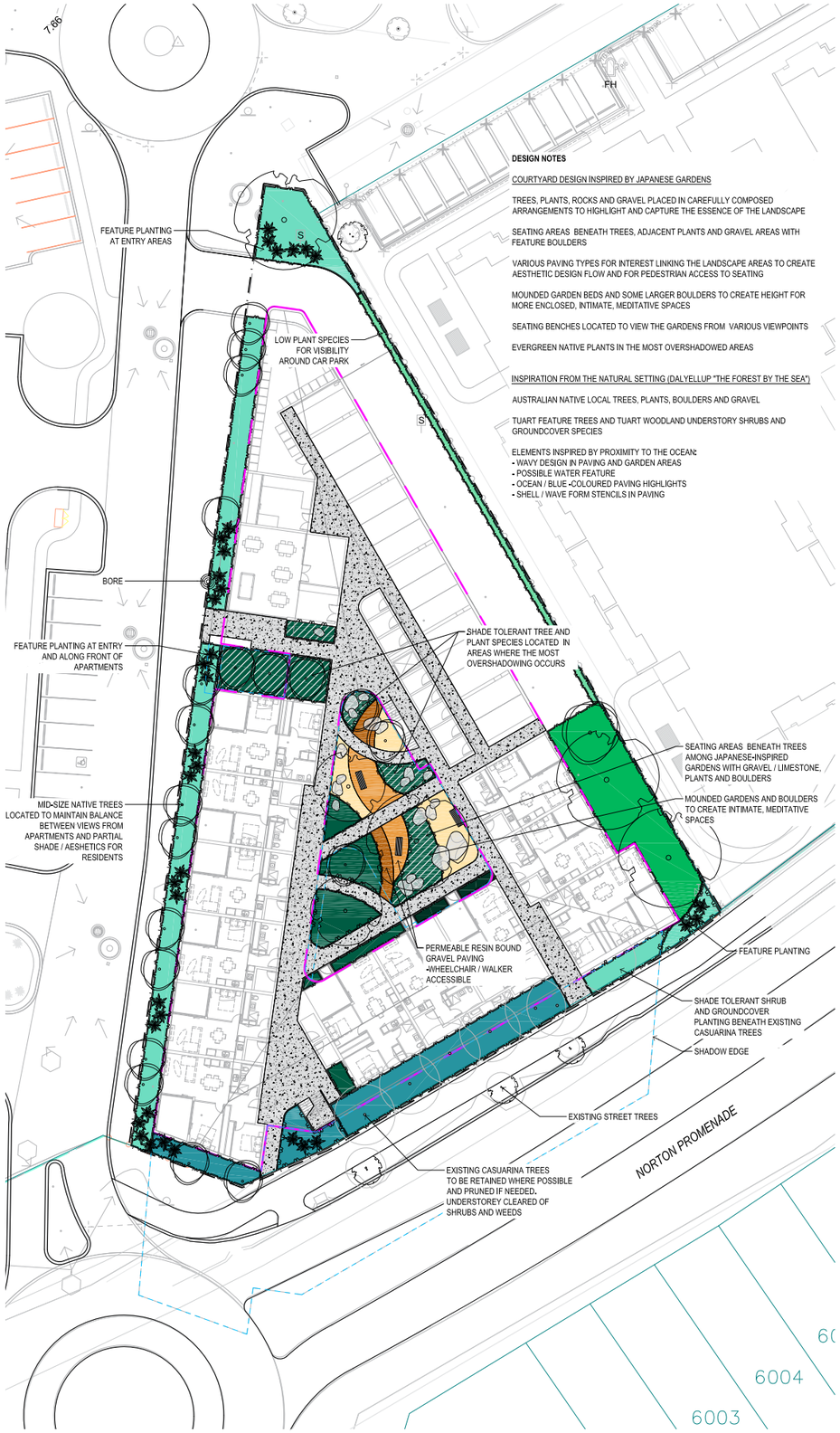

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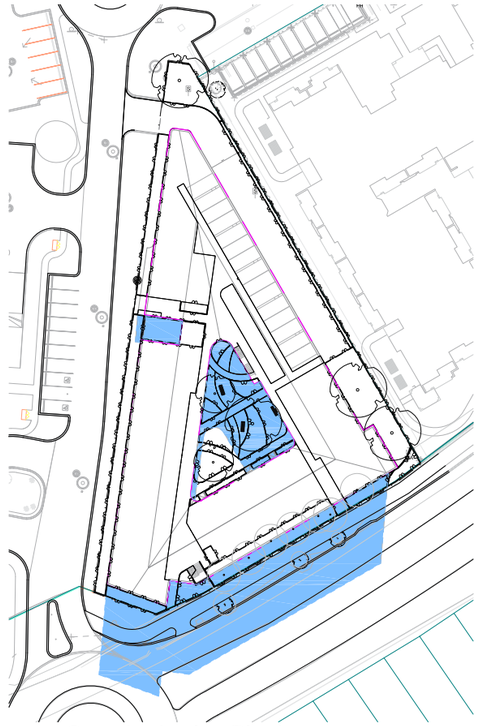

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FESTUCA GLAUCA		ORTHROSANTHUS POLYSTACHYUS	
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WHEELCHAIR / WALKER-ACCESSIBLE RESIN-BOUND PAVING AREAS WITH LOCAL GRAVEL / STONE OR SIMILAR

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REV	DATE	DWN	DESCRIPTION
A	10.01.2024	IU	ISSUE FOR REVIEW
B	17.01.2024	IU	TREE HEIGHTS ADDED

LD TOTAL
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DA Landscape Plan

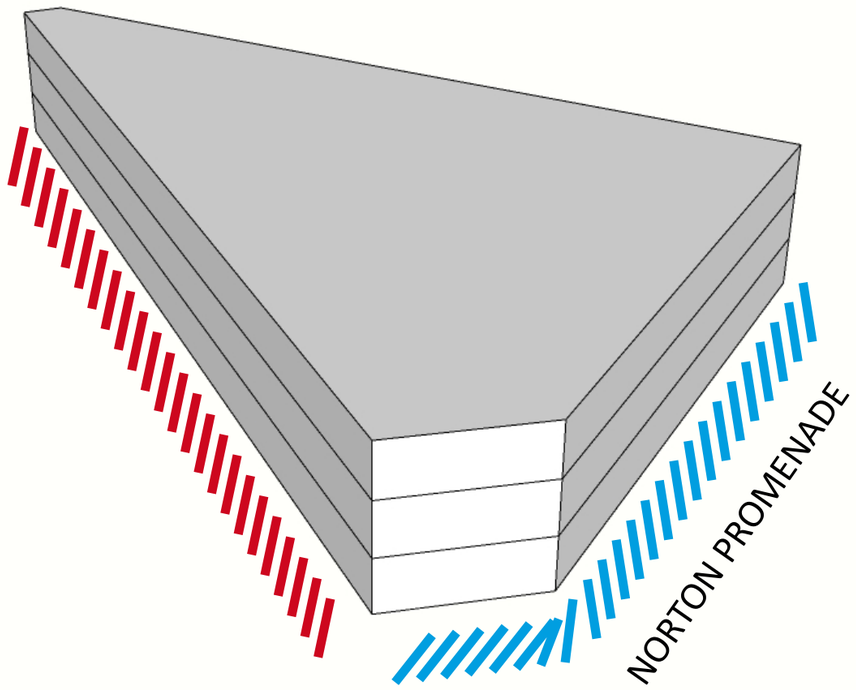
PROJECT NO	DRAWN BY	APPROVED BY	REV
10.7192	IU	SP	B
SCALE	SHEET NO	SHEET SIZE	
1:250	301	A1	

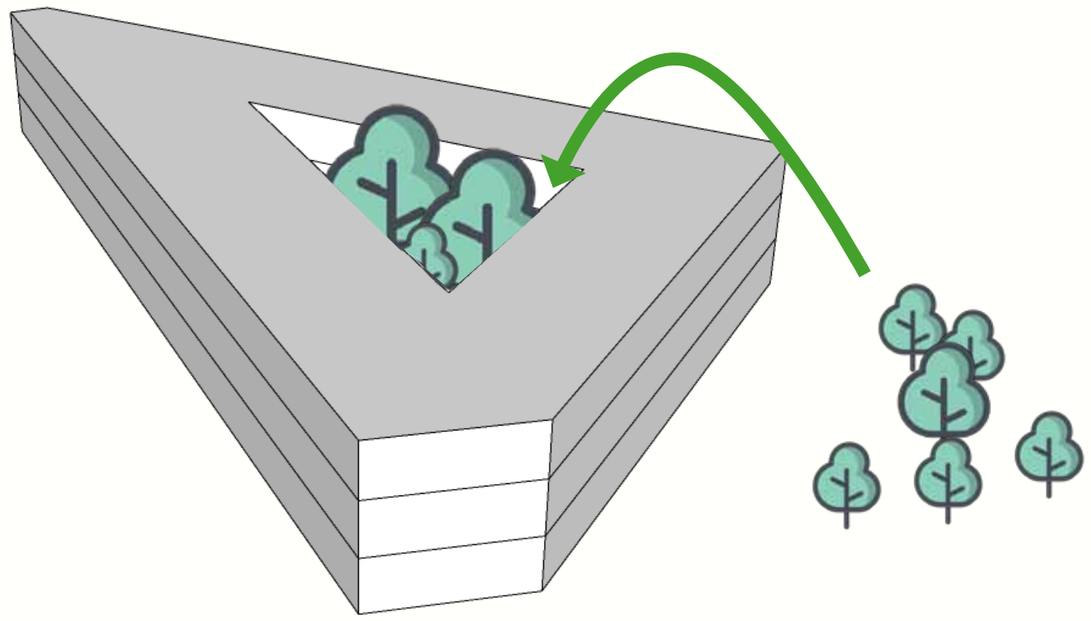
2.5m 0m 2.5m 5m 12.5m
SCALE: 1:250

DALYELLUP APARTMENTS
LANDSCAPE QUALITY

Bethanie

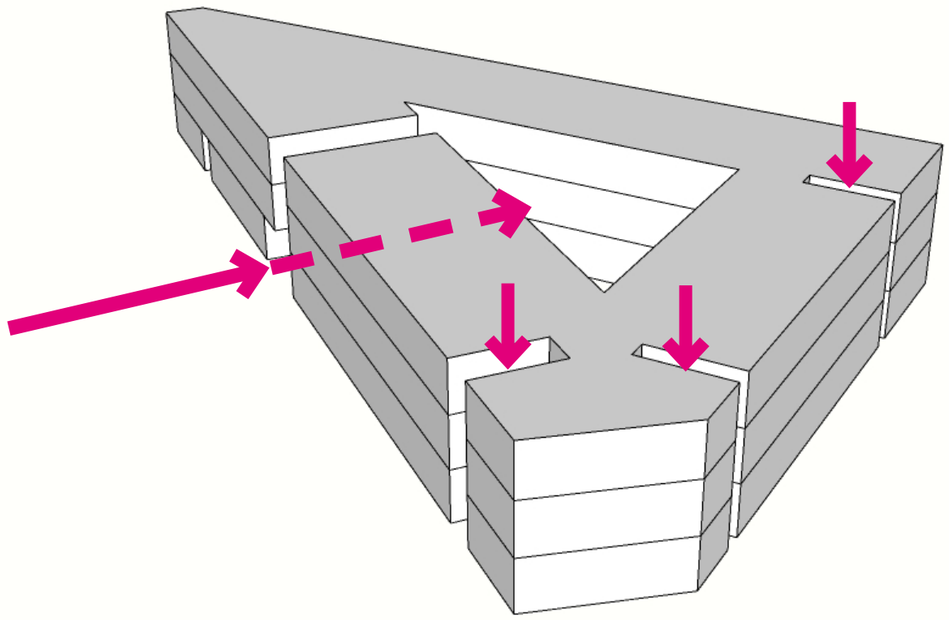
MATTHEWS & SCAVALLI ARCHITECTS
Febraury 2024



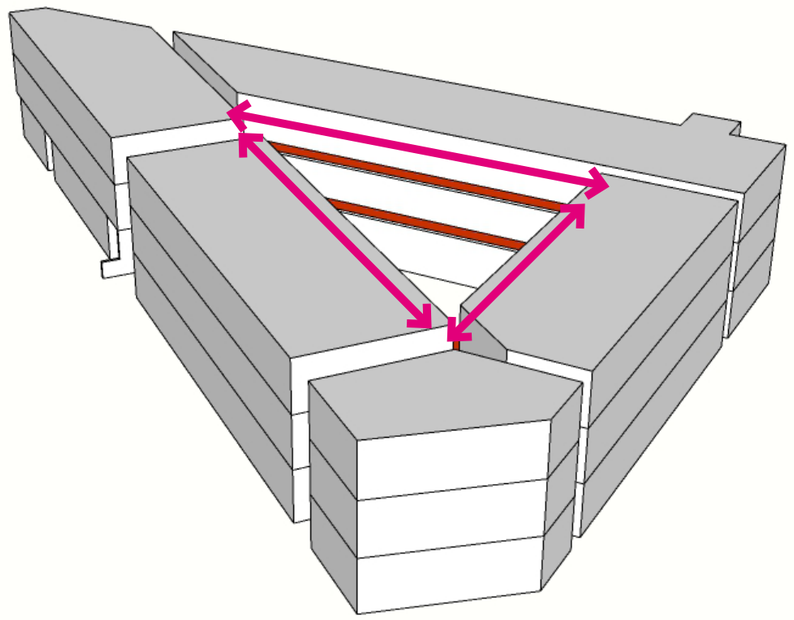


The Site is triangular in shape and addresses two main streets. To the South is the main east west linkage from Bussell Highway through Dalyellup. To the west of the site the main access road into the Bethanie 'precinct'

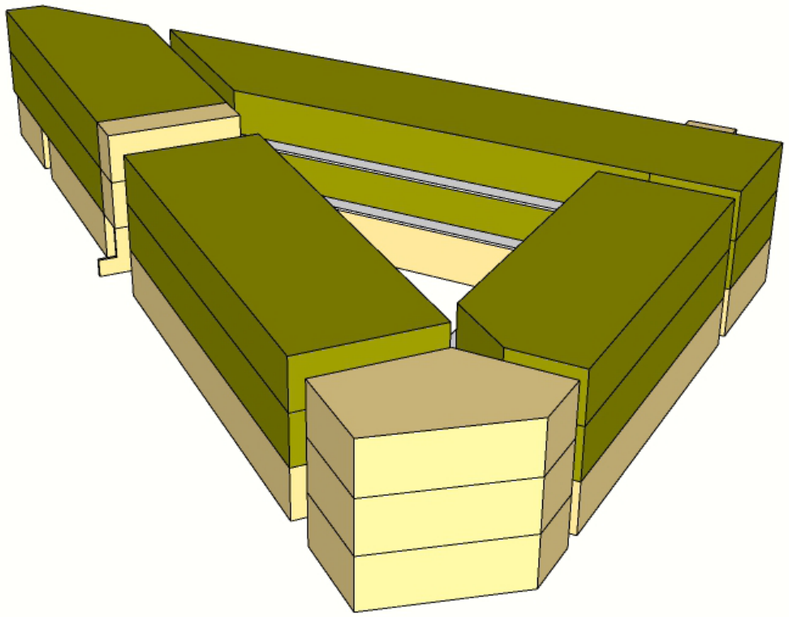
The form is then 'carved out' to create an internalised space. The core of the project provides an opportunity for a garden space unique to the residents.



The overall form is articulated with incisions into the building to provide light, ventilation and clearly defined entry points.



Circulation is internalised and faces the courtyard.



Simple, honest materials are used further articulate the form. Masonry is utilised around the base of the building, grounding the project into the landscape. A cream tone, hinting at the coastal limestone colours is offest by a green steel cladding that caps the building. Corners and entries into the building draw the masonry element vertically.

Dalyellup Apartments
Functionality and Build Quality

Bethanie

MATTHEWS & SCAVALLI ARCHITECTS
Febraury 2024

1. *The design meets solar access requirements being a minimum of 2hrs on the 21st of July.*
2. *Good x-ventilation is achieved throughout with single aspect dwellings satisfying the requirements under SPP 7.3.*
3. *Photovoltaics will be utilised in the development*
4. *Target 6 star NatHERS*
5. *WELS rated water fixtures throughout*
6. *Use of materials externally that require little or no finishing and maintenance*

ENTRY GARDEN -
LINKING THE DEVELOPMENT TO
THE PRECINCT

COMMUNAL FACILITY -
SHARED INTERNAL COMMON
ROOM

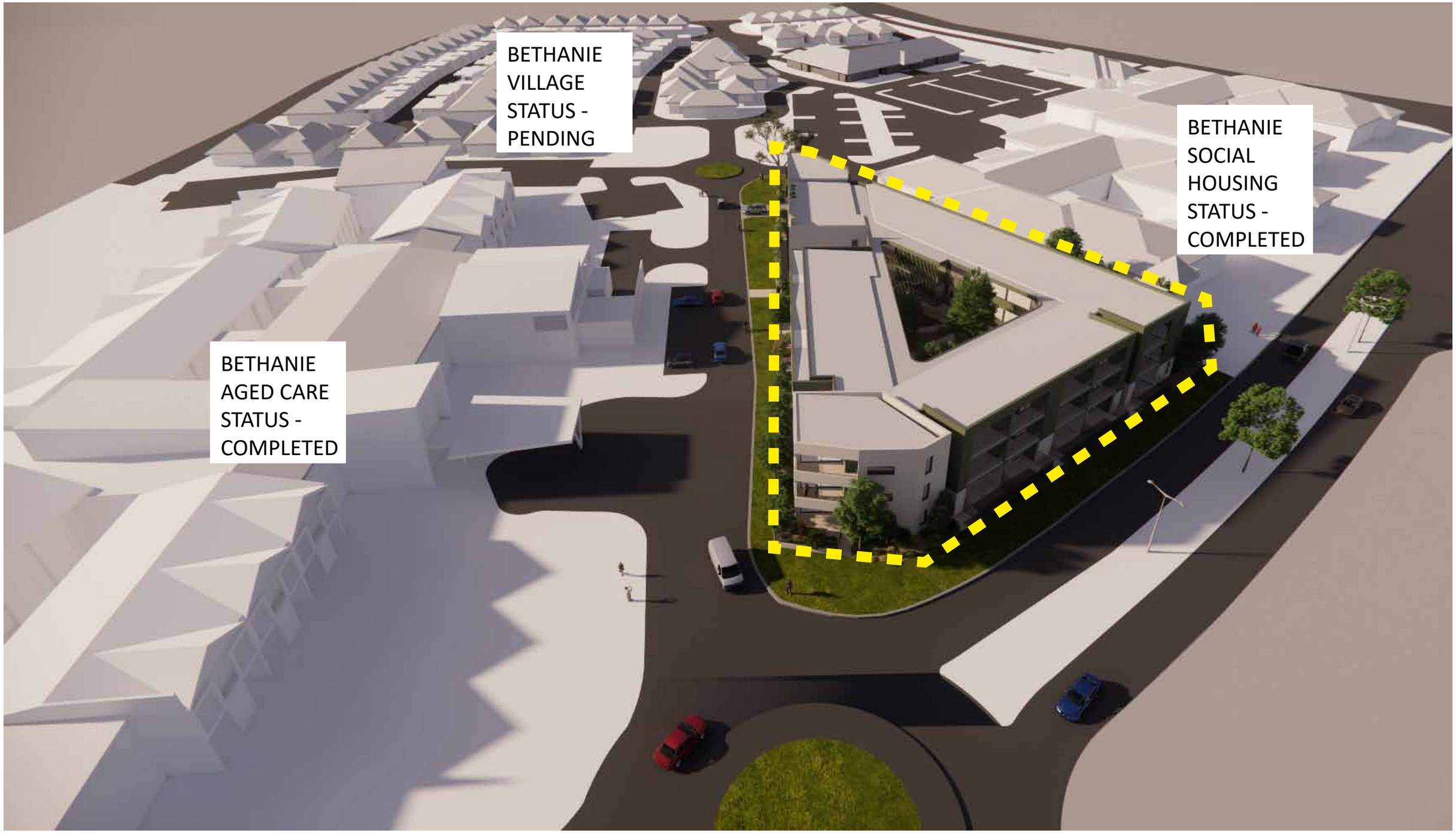
BIKE STORAGE

INTERNAL COURTYARD -
SEATING AND DEEP SOIL
PLANTING

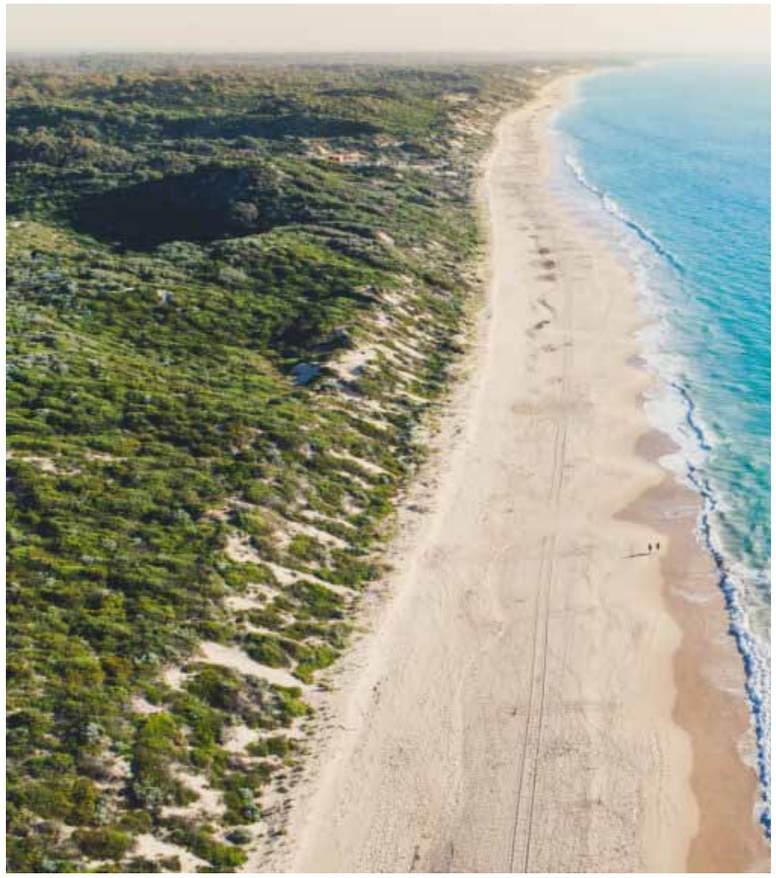
1. *The design ensures that a significant portion of the ground floor is active and can provide surveillance either at grade or from activated uses above.*
2. *Service spaces are secured from the street and only opened upon use/activation*
3. *Corners of the development are designed to be passively observed at street level.*

1. *The project clearly delineates the main pedestrian entry into the development, and*
2. *Separates the vehicle entry,*
3. *The building clearly 'signposts' the entry into the Bethanie 'precinct',*
4. *Within the development, the apartment entries and associated circulation are clearly defined and easily navigated.*

1. *The design provides active living and outdoor spaces at ground level to the majority of the frontage to promote passive surveillance of the street.*
2. *Access to the building is secured by gates.*



The proposal forms part of an 'ensemble' of buildings and facilities owned and operated by Bethanie, providing much needed Aged Care and housing in the area.



The proposal takes material and tonal inspiration from the immediate coastal context. Unique to much of the South West, the forest and dune-scape meeting the ocean provides a rich and relaxed colour palette.

1. *Vertical seam steel cladding in Colourbond finish.*
2. *Cream face brick.*
3. *CFC sheet*

Cream face brick grounds the proposal and sets up opportunities through vertical application to emphasise portions of the project.
A Green steel cladding to the balance of the project provides an over-arching finish to the proposal.
Internal spaces to the walkways are finished in a pre-finished robust board material

View from the North

Southern approach off Norton Promenade into the Bethanie precinct

View from the East approaching along Norton Promenade

View of the main entry

Entry, approaching the lift and stairs

View into the main courtyard

Proposed Apartment Dwellings, Lot 9001 Dalyellup, Shire of Capel

Transport Impact Statement

Prepared for: Bethanie Housing limited

Ref: 300305310 | Date: 5 February 2024

Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Independent Reviewer	Project Manager Final Approval
01	5 Feb 2024	For Issue	JD	DH	DH	DH

Disclaimer

The conclusions in the report are Stantec's professional opinion, as of the time of the report, and concerning the scope described in the report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The report relates solely to the specific project for which Stantec was retained and the stated purpose for which the report was prepared. The report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorised use or reliance is at the recipient's own risk.

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Contents

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1. Introduction

Stantec has been commissioned by Bethanie Housing Limited ("the Client") to prepare a Transport Impact Statement (TIS) in support of proposed residential apartment dwellings (the Development) as part of a masterplan to be located on Lot 9001 Dalyellup, within the Shire of Capel (the Site).

This TIS has been prepared in accordance with the Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016) and the checklist is included in **Appendix A**. This report aims to focus on traffic access, circulation, and safety of the proposed development. Discussion regarding pedestrian, cycle and public transport considerations are also provided.

2. Existing Situation

2.1 Site Description

The Site is located at located at Lot 9001 Dalyellup, within the Shire of Capel. The location of the proposed site is shown in **Figure 2-1**. The subject site is currently a parking lot and is located to the north of Norton Promenade. The Site is surrounded by other residential dwellings.

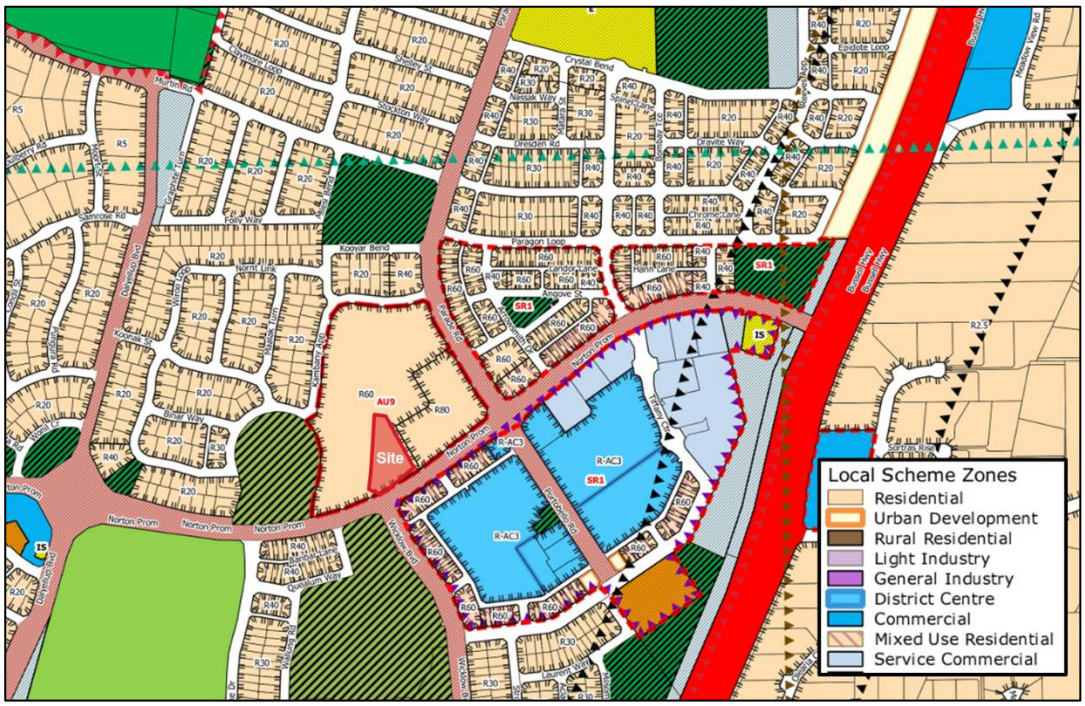
Figure 2-1 Site Layout

Source: Metromap (2023)

2.2 Surrounding Land Use

The Site is zoned as 'Residential under the *Shire of Capel Local Planning Scheme No.8* as shown in **Figure 2-2.** The Site is surrounded by residential and commercial zones.

Figure 2-2 Zoning



Source: Shire of Capel Local Planning Scheme No.8

2.3 Existing Road Network

Road classifications are defined in the Main Roads Functional Hierarchy as follows:

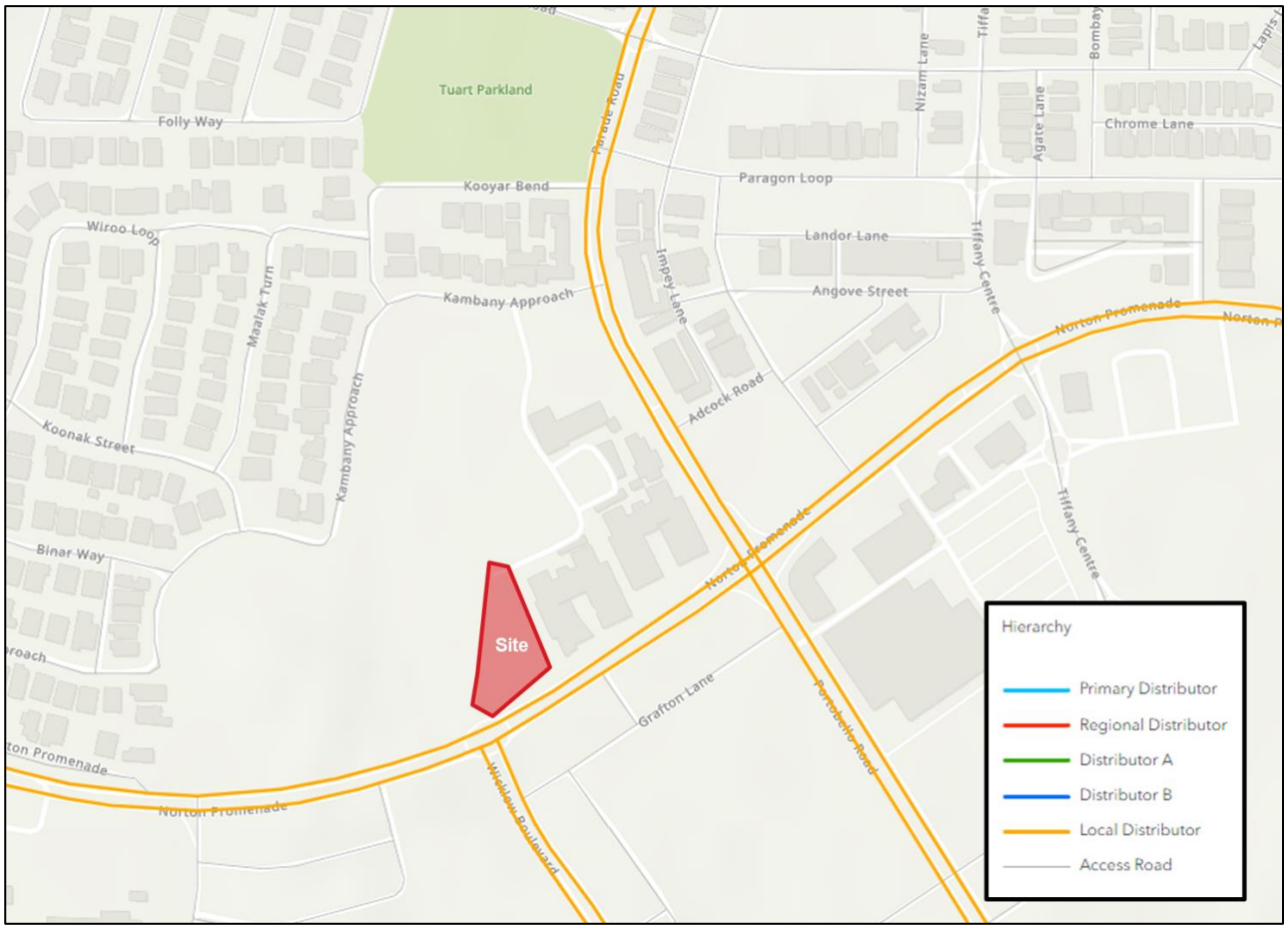
- **Primary Distributors (light blue):** Form the regional and inter-regional grid of Main Roads WA traffic routes and carry large volumes of fast-moving traffic. Some are strategic freight routes, and all are National or State roads. They are managed by Main Roads.
- **Regional Distributors (red):** 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.
- **District Distributor A (green):** These carry traffic between industrial, commercial, and residential areas and 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 (dark blue):** Perform a similar function to District Distributor A but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with traffic demand in excess of that originally intended. District Distributor A and B roads run between land-use cells and not through them, forming a grid that would ideally be around 1.5 kilometres apart. They are managed by Local Government.
- **Local Distributors (orange):** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages 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. They are managed by Local government.
- **Access Roads (grey):** 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.

The surrounding road network to the subject site is described in **Figure 2-3** and **Table 2-1** shows the road hierarchy as per the *Main Roads Road Information Mapping System.*

Table 2-1 Road Network Classification

Street Names	Road Hierarchy		Road Network			
	Road Hierarchy	**Jurisdiction**	**No. of Lanes**	**No. of Footpaths**	**Width (m)**	**Posted Speed (km/h)**
Norton Promenade	Local Distributor	Local Govt.	2	2	16m (including 2m cycle path on both sides +4.8m median)	50
Parade Road	Local Distributor	Local Govt.	2	2	16.3m (including 1.5m cycle path on both sides +6m median)	60
Kambany Approach	Access Road	Local Govt	2	1	6	50

Figure 2-3 Road Hierarchy



Source: MRWA Road Information Mapping System

2.4 Existing Intersections

- **Kambany Avenue/Parade Road** is located to the northeast of the Site. It is a T-junction full movement priority-controlled intersection as shown in **Figure 2-4.**

Figure 2-4 Kambany Approach / Parade Road Intersection

Source: Metromap

- **Norton Promenade//Parade Road/Portobello Road** is located to the east of the Site. It is a 4-legged signal-controlled intersection as shown in **Figure 2-5.**

Figure 2-5 Existing Norton Promenade / Parade Road / Portobello Road Intersection

Source: Metromap

- **Norton Promenade/Wicklow Boulevard** is located to the south of the Site. It is a 4-legged roundabout intersection as shown in **Figure 2-6.**

Figure 2-6 Norton Promenade/Wicklow Boulevard Intersection

2.5 Existing Traffic Volumes

The most recent traffic volumes for the roads in the vicinity of the Site were obtained from Main Roads Traffic Map and are summarised in **Table 2-2.**

Table 2-2 Traffic Volumes

Road Name	Source	Year	**Average Daily Traffic Volume**	AM Peak Hour (vph)	PM Peak Hour (vph)	Heavy Vehicle %
Parade Road (north of Norton Promenade)	MRWA	2021/22	10,098	947	935	5.0%

2.6 Crash Assessment

A crash assessment for the surrounding road network of the site has been completed using the Main Roads WA Reporting centre. The assessment covers all the recorded accidents for the 5-year period between 1 January 2018 to 31 December 2022 for the following intersections and sections of road**:**

- Norton Promenade / Portobello Road
- Norton Promenade / Wicklow Boulevard
- Norton Promenade / Quealum Way
- Norton Promenade / Wake Drive
- Parade Road / Kooyar Bend
- Midblock of Norton Promenade

Table 2-3 to Table 2-5 summarise the crash results and **Figure 2-7** shows the location and severity of the crashes.

Table 2-3 Total Crashes

Type of Crash (RUM Code)	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Rear End	-	-	1	4	3	8
Right Turn Thru	-	1	1	1	-	3
Right Angle	-	-	-	-	1	1
Hit Object	-	-	-	1	-	1
Collision	-	-	-	1	-	1
Sideswipe Same Direction	-	-	-	-	1	1
Total	-	1	2	7	5	15

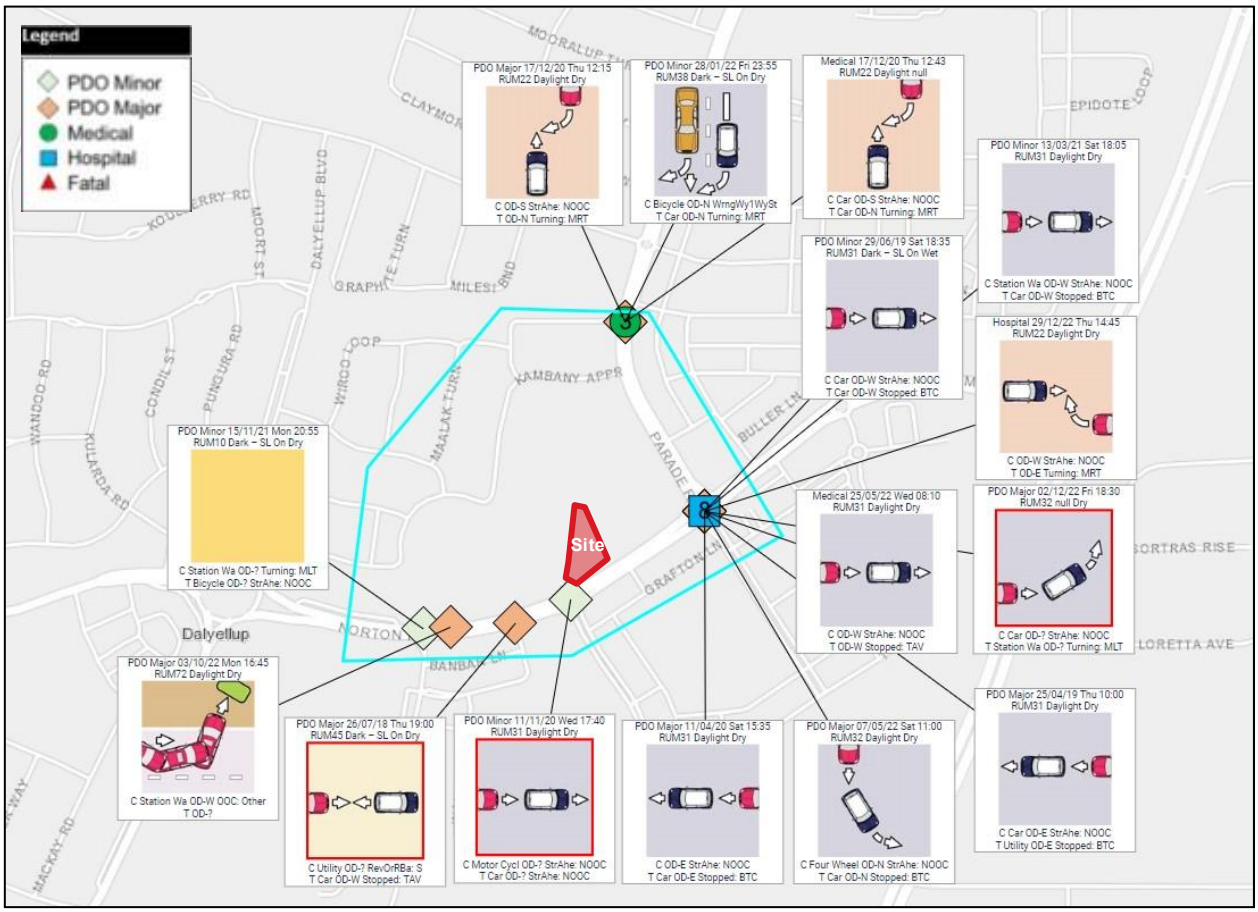
Table 2-4 Total Intersection Crashes

Intersection Name	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Norton Promenade / Portobello Road	-	1	1	4	2	8
Norton Promenade / Wicklow Boulevard	-	-	-	-	1	1
Norton Promenade / Quealum Way	-	-	-	1	-	1
Norton Promenade / Wake Drive	-	-	-	-	1	1
Parade Road / Kooyar Bend	-	-	1	1	1	3
Total	-	1	2	6	5	14

Table 2-5 Total Midblock Crashes

Road Name	Fatal	Hospital	Medical	Major Property Damage	Minor Property Damage	Total Crashes
Norton Promenade	-	-	-	1	-	1
Total	-	-	-	1	-	**1**

Figure 2-7 Crash Locations



Source: Main Roads Crash Map

The following was observed from the crash assessment conducted:

- One (1) right turn thru crash recorded at the intersection of Norton Promenade and Parade Road required hospital admission.
- Two (2) crashes which occurred at two separate intersections along Parade Road required medical attention.
- Of the crashes recorded, 47% resulted in major property damage while 33% resulted in minor property damage only.
- Within the assessment area, rear end crashes are the most common type followed by right turn thru crashes.
- The intersection of Norton Promenade and Parade Road had the greatest number of intersection crashes.

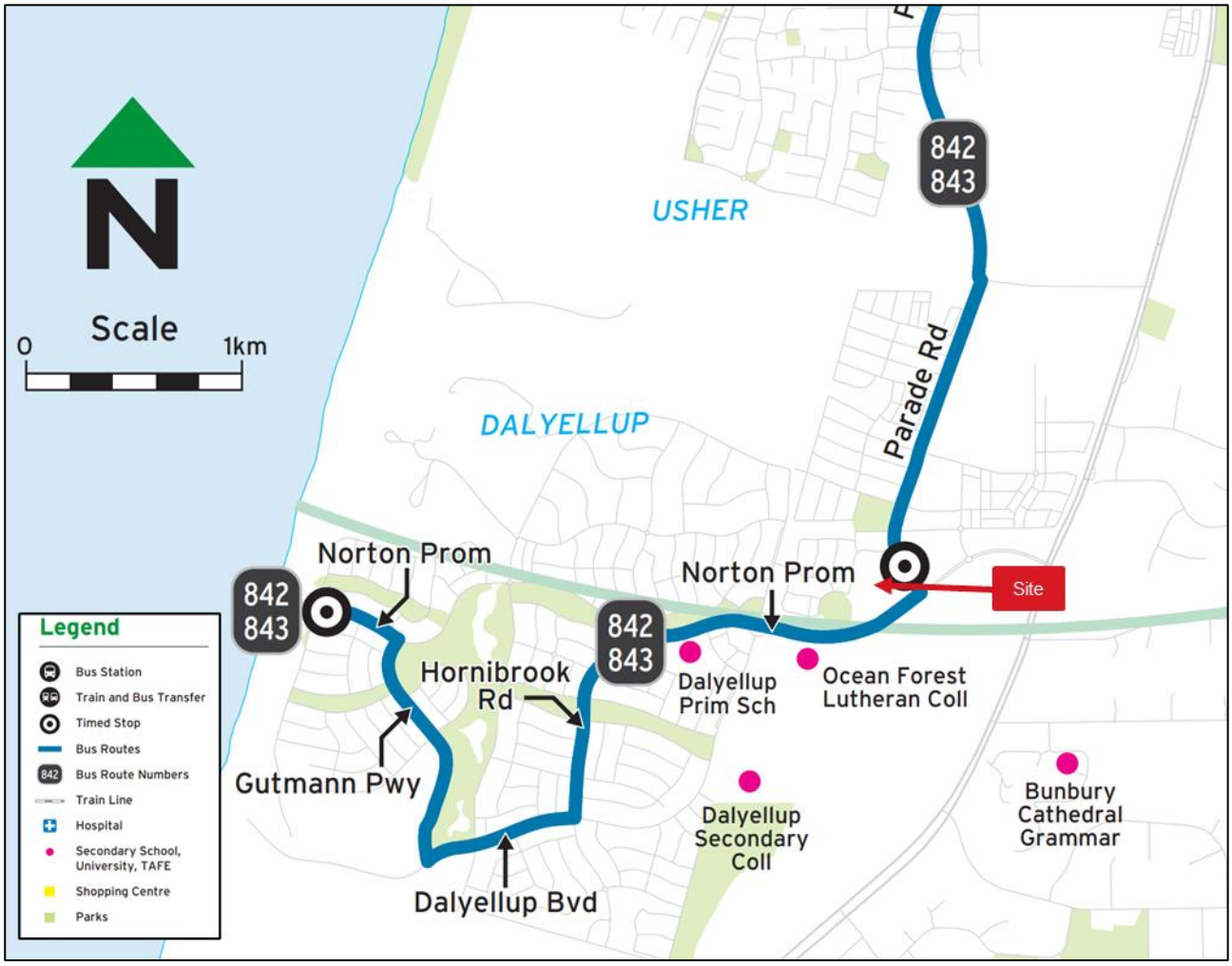
Overall, it is expected that the proposed development is unlikely to worsen safety in the area.

3. Public Transport Facilities

3.1 Existing Public Transport Facilities

The Site is currently served by good public transport services.. The closest public transport is associated with bus routes 842 and 843 that run along Norton Promenade and Parade Road. The bus routes and their frequencies are shown in **Figure 3-1** and **Table 3-1.**

Figure 3-1 Existing Bus Routes



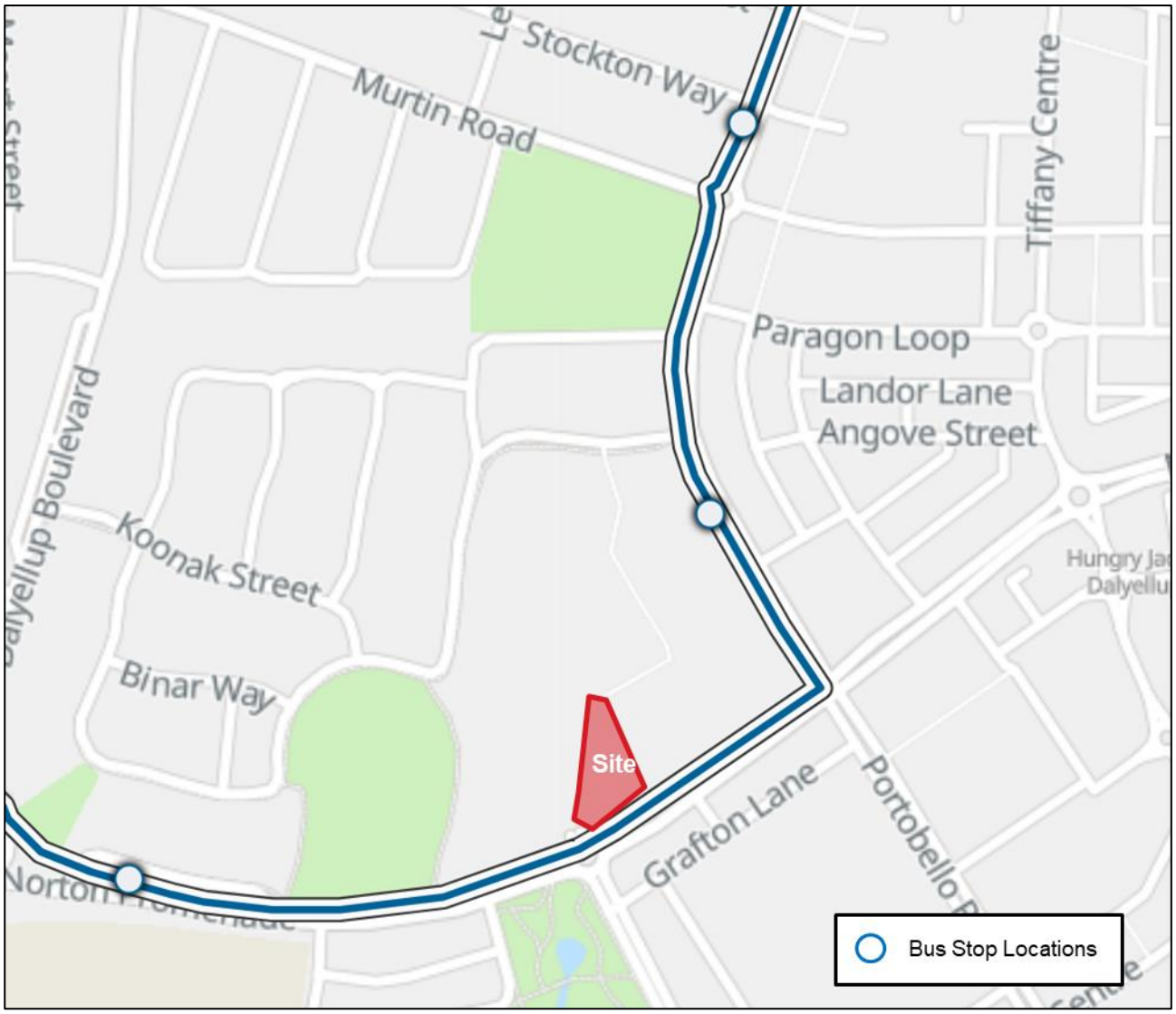
Source: Trans Bunbury

Table 3-1 Bus Route Frequency

Route No.	Route Description	Service Frequency (at nearest bus stop)	
		Weekdays	**Saturday**
842	Park Centre – Dalyellup Via Bunbury Health Campus	Every 20 minutes (between 8:43am and 12:47pm)	-
843	Bunbury – Dalyellup Via Bunbury Plaza	Every 28 minutes	Every 28 minutes

Figure 3-2 shows the existing bus stop locations along Norton Promenade and Parade Road. The nearest bus stop is located on Parade Road approximately 350m from the proposed site.

Figure 3-2 Existing Bus Stop Locations



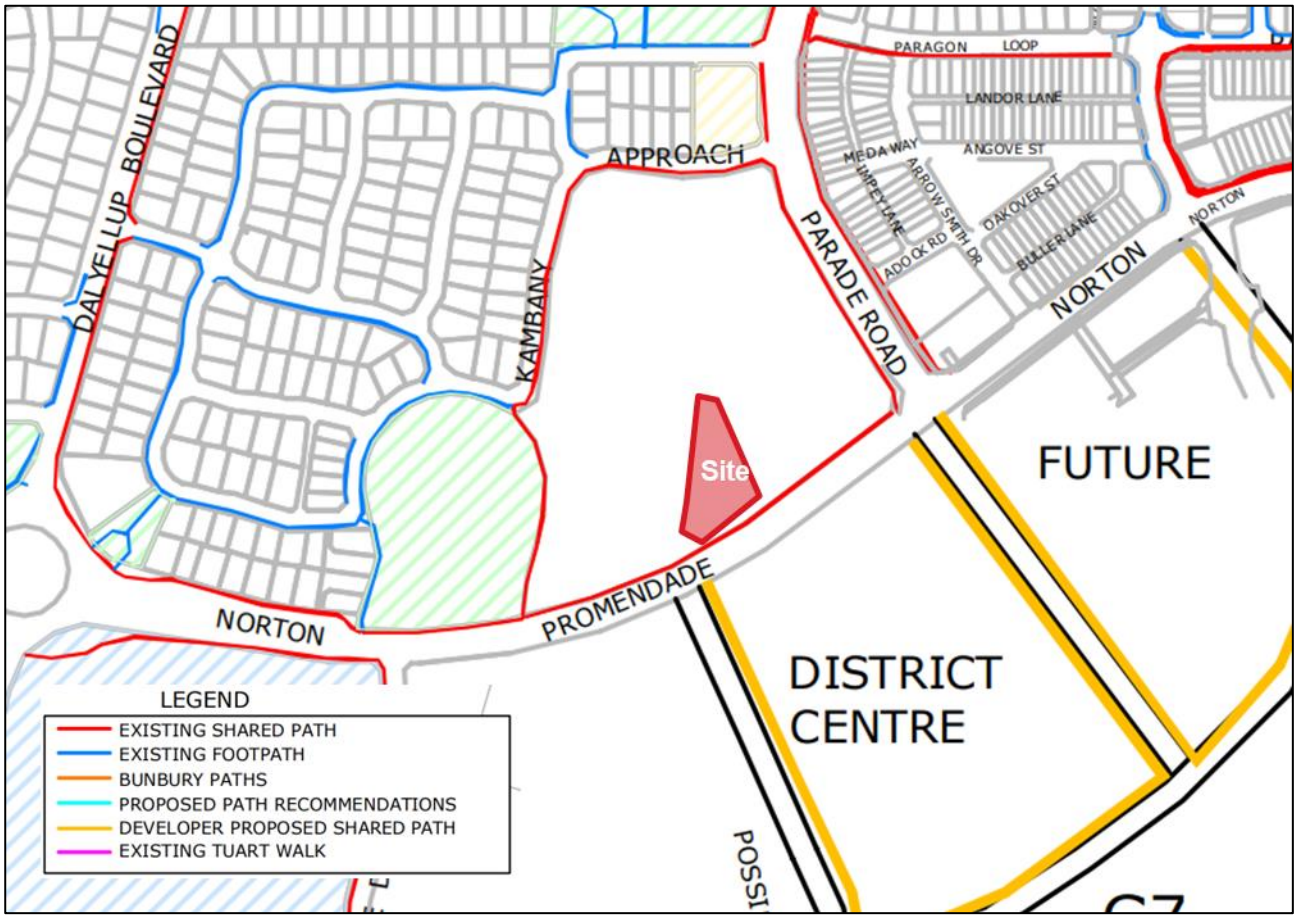
Source: Trans WA

4. Pedestrian and Cycling Network

4.1 Existing Pedestrian/Cycle Network Facilities

The Site is currently served by good pedestrian and cycle network facilities. The closest pedestrian and cycle network facilities run along Parade Road and Kambany Approach. The existing pedestrian and cycle network facilities near to the Site surrounding area are shown in **Figure 4-1.**

Figure 4-1 Existing Pedestrian/Cycling facilities



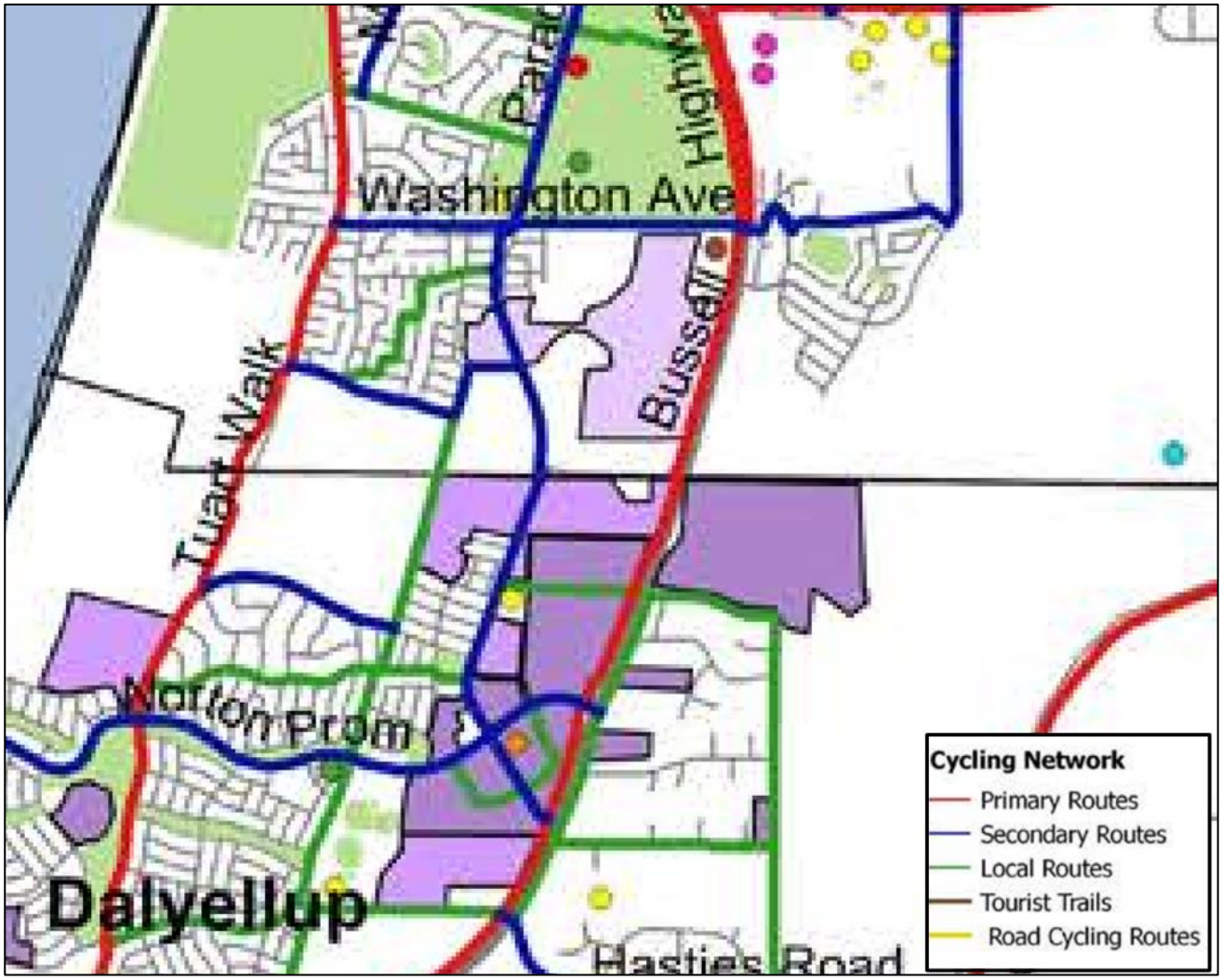
Source: Shire of Capel

4.2 Future Pedestrian/Cycle Network Facilities

4.2.1 Bunbury-Wellington 2050 Cycling Strategy

The aim of this strategy is to create a safe, direct, comfortable, and integrated cycling network. The proposed network, which connects people to activity centres and key attractions, has been developed to facilitate cycling for transport, recreation, and tourism purposes. Future cycling network for the area indicates that both Norton Promenade and Parade Road have been designated as Secondary Bicycle Routes in the City's 2050 Cycling Strategy. **Figure 4-2** provides an overview of the proposed 2050 cycling network for the Dalyellup area.

Figure 4-2 Bunbury – Wellington 2050 Cycling Strategy



Source: Bunbury Wellington 2050 Cycling Strategy

5. Development Proposal

5.1 Proposed Development

The proposal is to develop residential apartment dwellings comprising of the following site-specific components:

- 32 units of 1-bedroom units.
- 18 units of 2-bedroom units.
- 66 parking bays. (15 bays are on-Site, while 51 bays are located in the adjacent parking lot)

The general arrangement of the proposed precinct layout is illustrated in **Figure 5-1.** A larger version of the layout is provided in **Appendix B.**

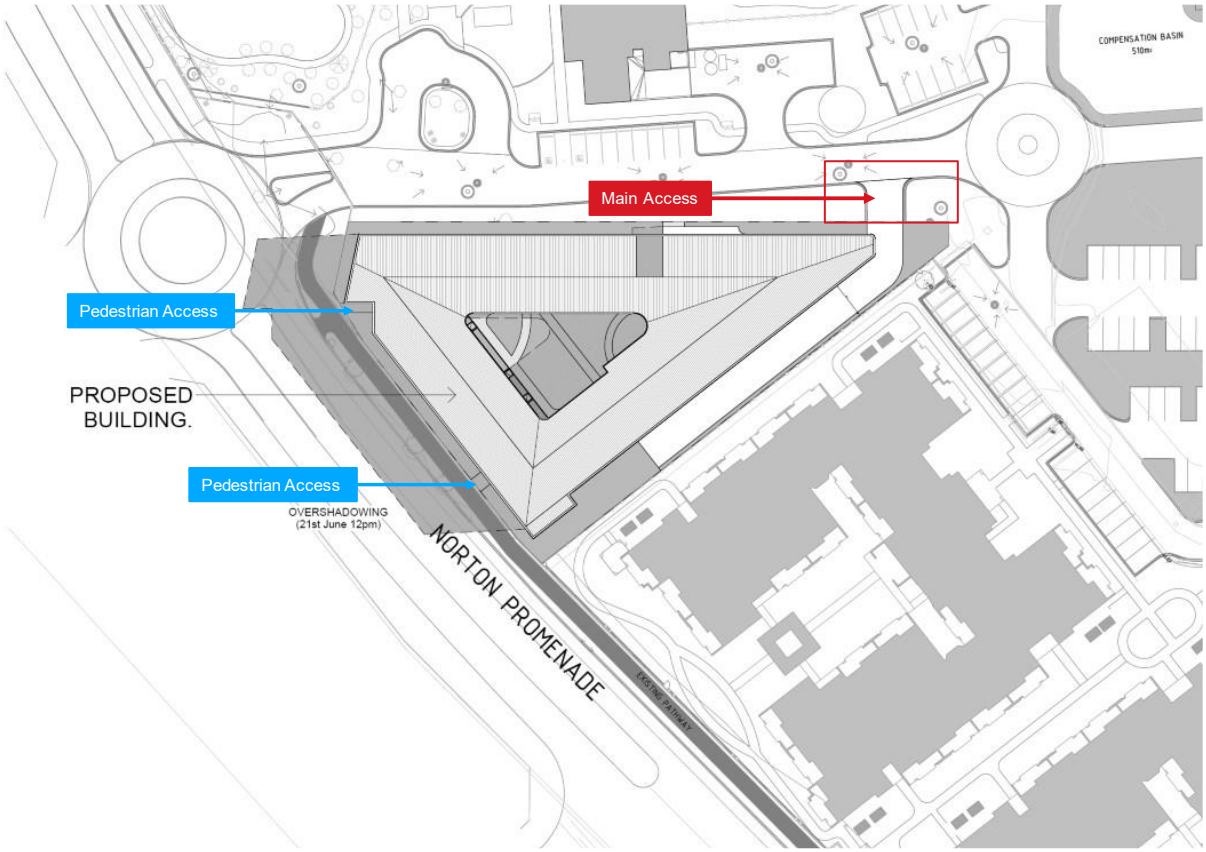
Figure 5-1 Site Plan

Source: Matthews & Scavalli Architects (January 2024)

5.2 Access Arrangements

Vehicle access to the Site is proposed to be via Wickham Road (north) on the western boundary as shown in **Figure 5-2**. Pedestrian access to the dwelling units is provided from Norton Promenade, as well as Wickham Road (north).

Figure 5-2 Vehicle an dpedestrain Access Locations



Source: Matthews & Scavalli Architects (January 2024)

5.3 Provision for Service Vehicles

A swept path analysis for a 10.25 m waste vehicle was undertaken as illustrated in **Figure 5-3.** The analysis indicates that a waste vehicle is able to adequately enter the site from Kambany Approach, collect the waste on the verge and exit at Norton Promenade.

Figure 5-3 Swept Path – Waste Collection

5.4 Development Traffic Generation

Estimated vehicular trips has been calculated for the Site utilising trip generation rates from the *Institute of Transportation Engineers (ITE) "Trip Generation" 10th Ed*. **Table 5-1** shows the trip generation rates, **Table 5-2** shows the directional distribution and **Table 5-3** summarises the estimated total trips to be generated by the proposed development.

Table 5-1 Trip Generation Rates

Land Use	ITE CODE	Yield	AM Peak Rate	PM Peak Rate
Residential (Mid-Rise)	ITE 221	50 dwellings	0.32 trips per dwelling	0.41 trips per dwelling

Table 5-2 Trip Distribution

Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Residential (Mid-Rise)	27%	73%	60%	40%

Table 5-3 Total Trips Generated by the Proposed Development

Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Residential (High-Rise)	4	12	12	8
Total	16		21	

The proposed development is expected to generate approximately 16 vehicular trips during the AM peak hour and 21 vehicular trips during the PM peak hour period. According to WAPC Transport Impact Assessment Guidelines, developments generating between 10 and 100 trips during the peak hour falls under the 'moderate impact' category and is not considered to have any substantial impact on the surrounding road network

6. Parking Requirements and Provision

6.1 Car Parking Requirements

The statutory car-parking requirements for the proposed development is set out in the *State Planning Policy 7.3 Residential Design Codes Volume 2 - Apartments*. The residential design code specifies the parking requirements according to the following criteria:

- Location A is defined as a development located within 800m walkable catchment of a train station and/or 250m of a transit stop (bus or light rail) of a high frequency route and/or within the defined boundary of an activity centre; and
- Location B is a location not within Location A.

The subject Site is not located near a high frequency bus route or in an activity centre, hence the parking requirements for Location B applies which is summarised in **Table 6-1**.

Table 6-1 Car Parking Provisions and Requirements

Premises	Yield		Requirements		Provisions
Residential Dwellings	1-bedroom	32	1.0 bay per dwelling	32 bays	66 bays
	2+-bedroom	18	1.25 bays per dwelling	23 bays	
Residential Visitors	50 dwellings		1 bay per four dwellings up to 12 dwellings	8 bays	
			1 bay per eight dwellings for the 12th dwelling and above		
Total				63 bays	66 bays

The development proposes to provide a total of 66 parking bays which exceeds the minimum parking requirement stipulated by the R-code.

6.2 Bicycle Space Provision

The bicycle space requirements as per the Residential Design Code 2 and the provisions is indicated in **Table 6-2**.

Table 6-2 Bicycle Parking Provisions and Requirements

Premises	Yield	Requirements		Provisions
Residential Dwellings	32	0.5 space per dwelling	25 spaces	25 spaces
Residential Visitors	18	1 space per 10 dwellings	5 spaces	5 spaces
Total			30 spaces	30 spaces

Based on the **Table 6-2**, the overall on-site bicycle spaces proposed for the development are adequate and meets the statutory requirements of the R-Code.

6.3 Parking Geometry Requirements

The parking bay geometry requirements set forth by AS2890.1 for User Class 1A (residential, domestic and employee parking) for 90˚ angled bays and the corresponding provisions in the proposed development are summarised in **Table 6-3.** It should be noted no non-compliance was identified.

Table 6-3 Parking Geometry Requirements

Parameter	Subcategory	Reference	Required	Provided	Remarks
Width, m	User Class 1A (residents)	AS2890.1-2004 (Figure 2.2)	2.4	2.4	No non-compliances identified
Width, m	User Class 1A (residents)	AS2890.1-2004 (Figure 2.2)	5.4	5.4	No non-compliances identified
Aisle Width, m	User Class 1A (residents)	AS2890.1-2004 (Figure 2.2)	5.8	5.8	No non-compliances identified
Blind aisle extension, m		AS2890.1-2004 (Section 2.4.2c)	1.0	1.2	No non-compliances identified
Circulation Roadway Width, m	Two- way	AS2890.1-2004 (2.5.2a item i)	5.5	5.8	No non-compliances identified
Access width, m	Category 1 (User Class 1A with <25, Local)	AS2890.1-2004 (Table 3.2)	3.0 to 5.5	5.8	No non-compliances identified
Design envelope		AS2890.1-2004 (Figure 5.2)	Design envelope around parked vehicle to be kept clear of columns, walls, and obstructions	None identified	No non-compliances identified

6.4 Swept Path Analysis

A swept path analysis has been undertaken for the B85 and B99 passenger vehicle as shown in **Figure 6-1** to **Figure 6-4**.

The analysis shows that the abovementioned design vehicles are able to adequately enter and exit the proposed access to the subject Site as shown in **Figure 6-1**. The swept path analysis also shows that passenger vehicles are able to adequately circulate through the car park as shown in **Figure 6-2**

Figure 6-1 Swept Path – Access

Figure 6-2 Swept Path – Circulation

A swept path analysis was also undertaken for the end bay using both the B85 and B99 design vehicles as shown in **Figure 6-3** and **Figure 6-4**. The swept path analysis shows that both vehicles are able to enter the parking bay but will require at least a 3-point turn to exit the bay. Larger versions of the swept path diagrams are provided in Appendix C.

Figure 6-3 Swept Path – B99 Passenger Vehicles

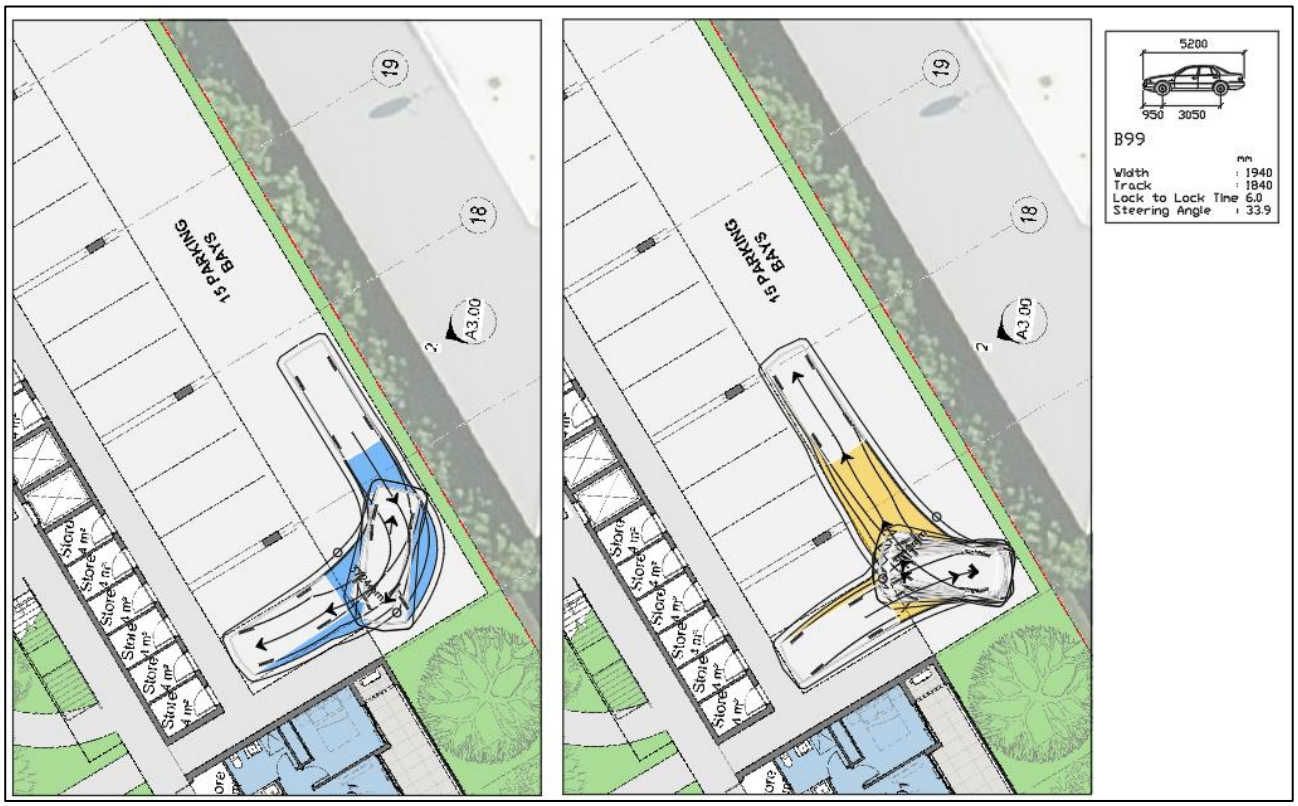
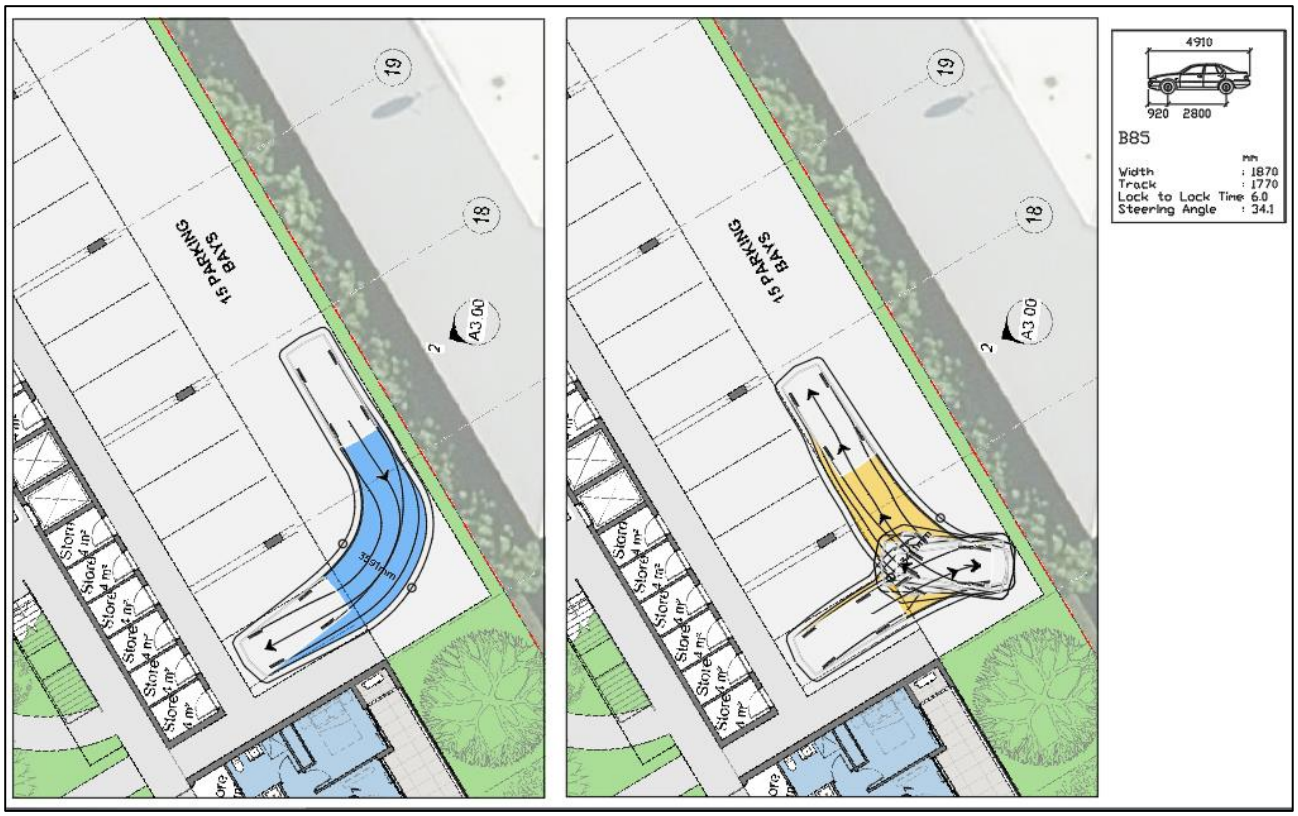


Figure 6-4 Swept Path – B85 Passenger Vehicles



7. Conclusions

This Transport Impact Statement outlines the transport aspects of the proposed development focusing on traffic operations, access and provision of car parking. Discussions regarding pedestrian, cycle, and public transport considerations are also provided.

This statement has been prepared in accordance with the *WAPC Transport Assessment Guidelines for Developments: Volume 4 – Individual Developments (2016).*

The following is concluded for the proposed development:

- The proposed development is located at Lot 9001 Dalyellup, within the Shire of Capel and is surrounded by commercial and residential land use. The proposed development is anticipated to comprise of 50 residential unit apartments.
- The nearest public transport (bus service 842 and 843) operates on Parade Road and Norton Promenade which is approximately 350m from the proposed Site.
- The estimated trips to be generated by the proposed development is minimal and according to WAPC Transport Impact Assessment Guidelines is anticipated to have a moderate impact on the surrounding road network.
- The car parking and bicycle parking requirements meets the requirements of the Residential Code.

Overall, it is considered unlikely that the proposed development will cause any material impact on traffic operations and safety to the surrounding road network.

Appendices

We design with community in mind

Appendix A WAPC Checklist

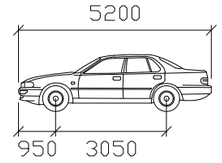
Item	Status	Comments/Proposals
Proposed development		
proposed land use	Section 1/5	
existing land uses	Section 2	
context with surrounds	Section 2	
Vehicular access and parking		
access arrangements	Section 5	
public, private, disabled parking set down / pick up	N/A	
Service vehicles (non-residential)		
access arrangements	Section 5	
on/off-site loading facilities	N/A	
Service vehicles (residential)		
Rubbish collection and emergency vehicle access	Section 5	
Hours of operation (non-residential only)	N/A	
Traffic volumes		
daily or peak traffic volumes	Section 2	
type of vehicles (e.g. cars, trucks)	Section 2	
Traffic management on frontage streets	N/A	
Public transport access		
nearest bus/train routes	Section 3	
nearest bus stops/train stations	Section 3	
pedestrian/cycle links to bus stops/train station	Section 3	
Pedestrian access/facilities		
existing pedestrian facilities within the development (if any)	Section 4	
proposed pedestrian facilities within development	Section 4	
existing pedestrian facilities on surrounding roads	Section 4	
proposals to improve pedestrian access	N/A	
Cycle access/facilities		
existing cycle facilities within the development (if any)	Section 4	
proposed cycle facilities within the development	N/A	
existing cycle facilities on surrounding roads	Section 4	
proposals to improve cycle access	Section 4	
Site specific issues	N/A	
Safety issues		

identify issues	N/A	
remedial measures	N/A	

Appendix B Site Plans

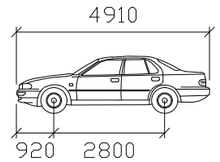

6M SETBACK FROM ROUNDABOUT TANGENT POINT.
LETTER BOXES.
CANOPY OVER SHOWN DASHED.
6000
ENTRY
LIFTS
15 PARKING BAYS
ENTRY GATE
LEVEL OVER SHOWN DASHED
15 x 240L BINS
WASH AREA
EXISTING STREET FOOTPATH
EXISTING TREE THICKET ALONG VERGE
NORTON PROMENADE

Appendix C Swept Paths



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9



B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	6.0
Steering Angle	: 34.1

DATE PLOTTED: 5 February 2024 4:11 PM BY : DESPABILADERAS, JIREH DANIEL
CAD File: C:\Users\jdespabiladeras\OneDrive - Stantec\ssi\Documents\Jireh\2024\300305310 - Dalyellup_WMP\2_CAD\231219\A2-00_Ground Floor Plan_JD.dwg

Stantec

Sydney Tel: 02 9496 7700

The Bethanie Group

Proposed Apartment Dwellings, Lot 9001 Dalyellup, Shire of Capel

Swept Path

Date	Scale	Size
5 February 2024		A3
01		A
Drawing Number		Revision

5200

950 3050

B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

4910

920 2800

B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

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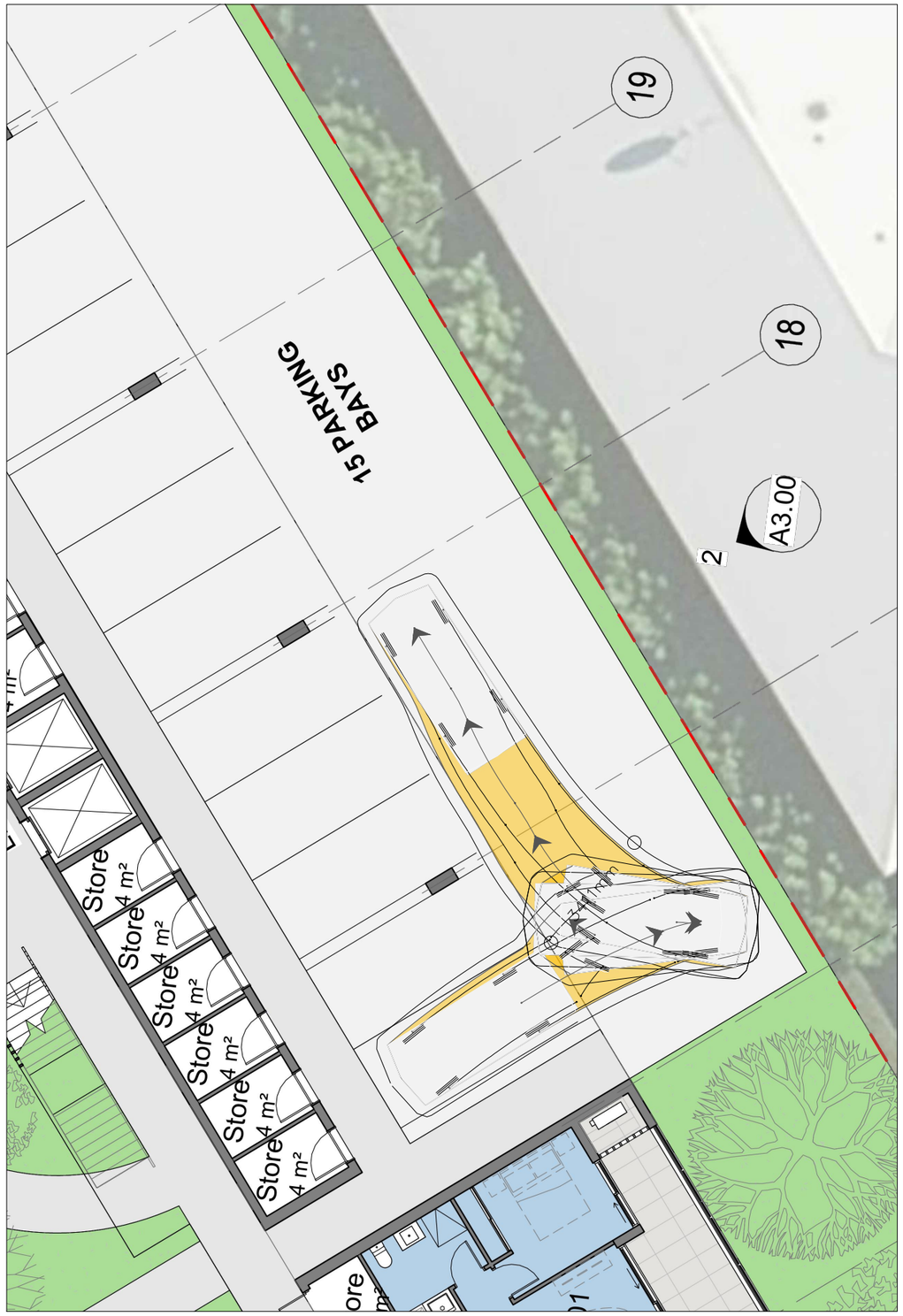
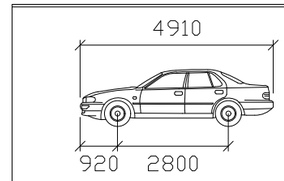
The Bethanie Group

Proposed Apartment Dwellings, Lot 9001 Dalyellup, Shire of Capel

Swept Path

Date	Scale	Size
5 February 2024		A3
02		A
Drawing Number		Revision





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Proposed Apartment Dwellings, Lot 9001 Dalyellup, Shire of Capel

Swept Path

Date	Scale	Size
5 February 2024		A3
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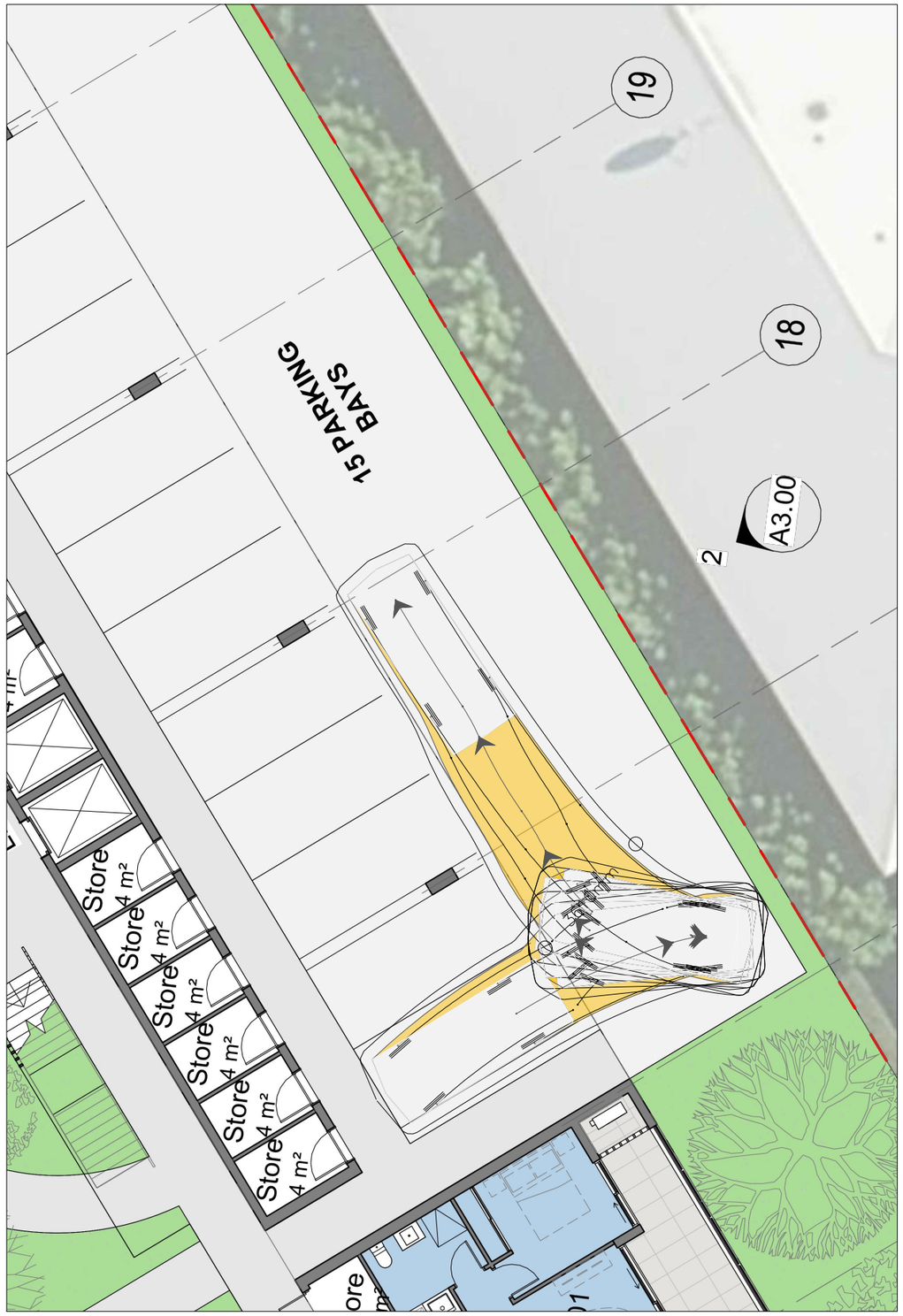
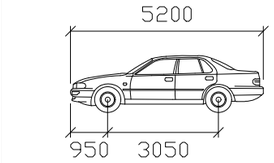
Drawing Number		Revision





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Proposed Apartment Dwellings, Lot 9001 Dalyellup, Shire of Capel

Swept Path

Date	Scale	Size
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Drawing Number

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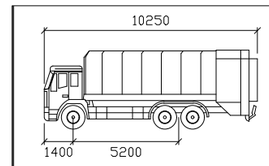
Revision



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Proposed Apartment Dwellings, Lot 9001 Dalyellup, Shire of Capel

Swept Path

Date	Scale	Size
5 February 2024		A3

05
Drawing Number

A
Revision

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Proposed Residential Dwellings, Lot 9001 Dalyellup, Shire of Capel

Waste Management Plan

Prepared for: Bethanie Housing Limited

Ref: 300305310 | Date: 5 February 2024

Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Independent Reviewer	Project Manager Final Approval
01	5 Feb 2024	For Issue	JD	DH	DH	DH

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1. Introduction

1.1 Background

Stantec has been commissioned by Bethanie Housing Limited ("the Client") to prepare a Waste Management Plan (WMP) in support of proposed residential apartment dwellings (the Development) as part of a masterplan to be located on Lot 9001 Dalyellup, within the Shire of Capel (the Site).

The scope of this WMP is limited to the waste strategy for the fifty-unit apartment as shown in **Figure 1-1** and includes recommendations for the appropriate collection, storage, handling, and transportation of general and recycling waste, in accordance with the requirements of the Shire of Capel and WALGA's Multi Dwelling Waste Management Plan Guidelines

1.2 Site Description

The Development is located at Lot 9001 Dalyellup, within the Shire of Capel as illustrated in **Figure 1-1**.

Figure 1-1 Site Description

Source: Metromap (2022)

Plans for the proposed development outlines 50 units of residential apartment as summarised in **Table 1-1**. The Development, applicable to this Waste Management Plan, is highlighted in **Figure 1-2** and will front Norton Promenade and is surrounded by other residential dwellings. Architectural plans outlining the usage of floor space are provided in **Appendix A**.

Figure 1-2 Site Layout

Source: Matthews & Scavalli Architects (December 2023)

Table 1-1 Land Uses

Premises	Yield
1-bedroom units	32 dwellings
2-bedroom units	18 dwellings

1.3 Waste and Recycling Collection Services

The proposed development will use the waste collection service provided by a private waste contractor for the collection of waste twice a week. Waste collections will be undertaken on-site and will be arranged to occur during off peak hours or after hours to minimise disruption to traffic operations as well as minimise any impacts to residential tenants and visitors.

1.4 Bin enclosure

The Mobile Garbage Bin (MGB) storage for the Development will be in an internal bin enclosure located on the ground floor.

1.4.1 Construction Considerations

The bin enclosures for the Development will be designed with the following considerations:

- The bin enclosures will have concrete slab floor with a graded floor to a waste drain that is connected to sewer. Floors to be even and flat for safe storage of bins.
- Access doors will be self-closing to prevent access to vermin.
- Adequate aisle width for easy manoeuvring of bins.
- No double stacking of rows of bins.
- All wall joins will be sealed to a height of 150 mm for ease of washing.
- Walls are to be painted with washable paint.
- A hose cock will also be included to facilitate washout of bins and washout of the area.
- Drainage of wastewater from washing facilities will drain to main sewers.
- Sufficient lighting for the bin enclosure should be provided by motion detected automatic artificial lighting to facilitate access to the bin enclosure.
- Adequate ventilation will be provided to the bin enclosures to ensure sufficient turnover of the air mass to prevent odour nuisance.
- Appropriate signage to be provided.
- To be designed to not permit stormwater to enter the drain.
- Bins not to be visible from the property boundary or areas trafficable by the public.
- Any external bin store greater than 20m is to be roofed as per Water Authority requirement; and
- Bins are reasonably secured from theft and vandalism.

2. Waste Generation and Management

In order to ensure that the waste from the development is properly managed, it was necessary to estimate the volume of waste that is likely to be generated on the premises. The Shire has advised that a waste management plan for a three-bin collection system i.e. general waste, recyclables and FOGO is required. The Shire does not have any waste generation rates and has advised to use the rates outlined in WALGA.

Using these general, recycling and FOGO waste generation rates, a broad estimation of daily waste generation for the development has been calculated.

2.1 Waste Streams

2.1.1 General, Recycling and FOGO

Waste and recyclables will be sorted on-site and as close to source as possible. Sorting will rely on appropriate education to tenants in addition to adequate signage for bins located in the bin enclosures. Waste and recycling will be based on the following streams:

- General Waste.
- Co-mingled Recycling, which includes clean aluminium foil and trays, glass bottles and jars, long-life milk and juice cartons, cardboard, plastic containers, tins, and cans.
- Food organics and garden organics (FOGO), which includes food and green waste, uncontaminated wood waste, forestry residues and other biodegradable organic residues. The Council will dictate what can be included in these bins.

2.1.2 Other Streams

It should be noted that the Shire provides two green waste and one hard waste verge collections to residential properties on an annual basis. Verge collection of green waste is undertaken twice a year and hard waste is undertaken once a year in residential areas. Hard waste includes white goods, general junk, lounges, furniture, and material less than 1.5m in length.

2.2 Waste Streams Estimates

The waste generation and bin requirements have been calculated using the waste generation rates detailed in **Table 2-1.**

Table 2-1 Waste Generation Rate

Premises	Yield	Source	General Waste*	Recycling	FOGO
1 Bedroom (unit)	32 dwellings	WALGA	60 L/unit/week	40L/fortnight = 20L/week	40L/fortnight = 20L/week
2 Bedroom (unit)	18 dwellings	WALGA	120 L/unit/week	80L/fortnight = 40L/week	80L/fortnight = 40L/week

**general waste is reduced where separate FOGO waste collection service is provided.*

A summary of the estimated weekly waste generated for each waste stream is provided in **Table 2-2** which is derived by way of calculations outlined in **Appendix B**.

Table 2-2 Weekly Waste

Premises	Yield	Weekly General Waste (L)	Weekly Recycling (L)	Weekly FOGO (L)
1 Bedroom (unit)	32 dwellings	1920	640	640
2 Bedroom (unit)	18 dwellings	2160	720	720
Total		**4080**	**1360**	**1360**

2.3 Bin Requirements

A summary of the breakdown of the anticipated MGB requirements for the proposed development, the proposed bin sizes, and the proposed collection frequencies are provided in **Table 2-3.**

Table 2-3 Bin Requirements for Enclosure of Proposed Site

	Size (L)	Collection	No of Bins
General Waste	240	twice a week	9
Co-mingled Recycling	240	twice a week	3
FOGO	240	twice a week	3
Total	15 x240L		

A layout of the anticipated bin enclosure is illustrated in **Figure 2-1**. The proposed bin enclosures are adequately sized for the storing and manoeuvring of the bins.

Figure 2-1 Bin Enclosure

Source: Matthews & Scavalli Architects (January 2024)

2.4 Bin Enclosure Layout

2.4.1 Design Considerations

A number of problems can arise from inadequate consideration of waste management in developments. Some of these problems include noise, odour, hygiene issues, vermin, negative impacts on the health, safety, environment and security. To avoid these issues, it is vital to consider waste management in the design and planning of the proposed Development.

2.4.1.1 Odour

The enclosure is located away from public areas which will prevent odour nuisance.

2.4.1.2 Noise

The bin enclosure is located away from public areas to limit noise that may otherwise disturb surrounding premises when materials are placed in the bins.

2.4.1.3 Vermin

The use of lidded MGBs will eliminate access by vermin. The use of bait stations will also be considered by the Development operator if required.

2.4.1.4 Aesthetics

The bin enclosure has been designed with the Development and as such will be consistent with the overall aesthetics, avoiding the placement of bins along the external faces of the building.

2.4.1.5 Protection from Vandalism

The bin enclosure will be closed off from public access and will use secured doors. No bins will remain or be stored outside of the enclosure.

2.4.1.6 Regular Washing of Bins and Enclosure

An assigned staff/cleaner will be responsible for the organisation of regular washing of bins and for maintenance of the storage area. The washing area will have graded floors that drain to the sewer which will allow for the cleaning of the store and bins.

2.5 Transfer of Waste, FOGO and Recycling

2.5.1 Waste Transfer

Residents will transfer waste to the dedicated communal bin enclosure located on the site as required. These wastes will be emptied into their respective bins.

2.5.2 Co-mingled Recycling Transfer

Residents will transfer waste to the dedicated communal bin enclosure located on the site as required. These wastes will be emptied into their respective bins.

2.5.3 FOGO Transfer

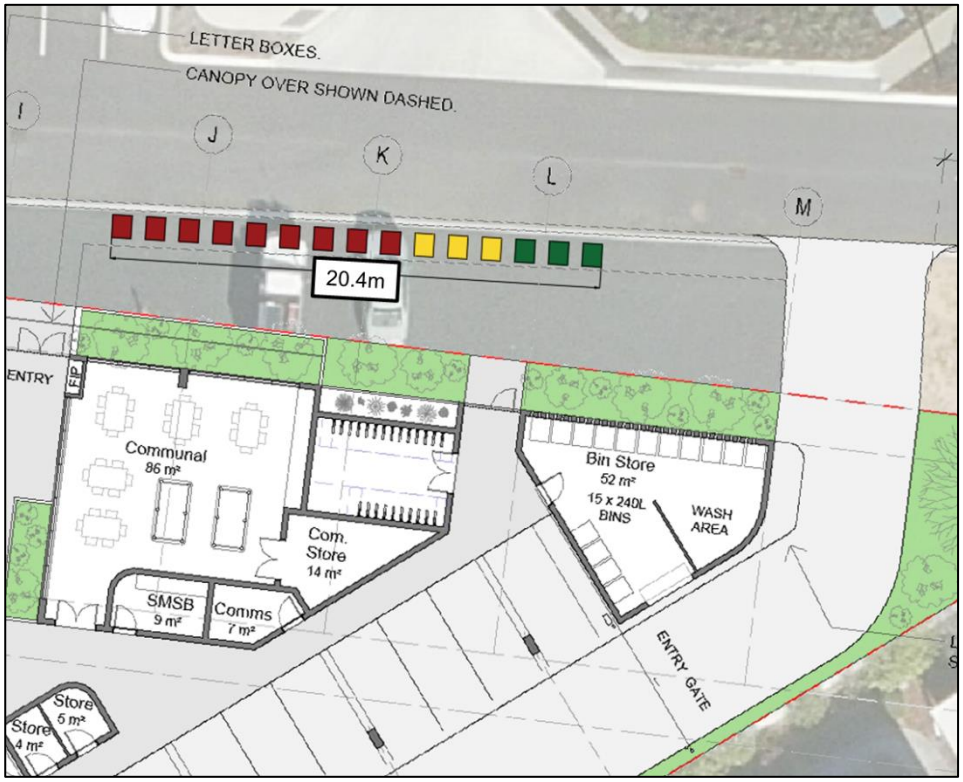
Residents will transfer waste to the dedicated communal bin enclosure located on the site as required. These wastes will be emptied into their respective bins.

2.6 Collection of waste and recycling

2.6.1 Waste Collection

It is anticipated that the general, FOGO and recycle waste will be collected by a private waste contractor during off peak hours or after hours as per the collection frequencies indicated in **Table 2-3**. Waste collection is proposed to be undertaken along the verge by a side lift waste vehicle and to be presented as illustrated in **Figure 2-2**.

Figure 2-2 Proposed Bin Presentation Area

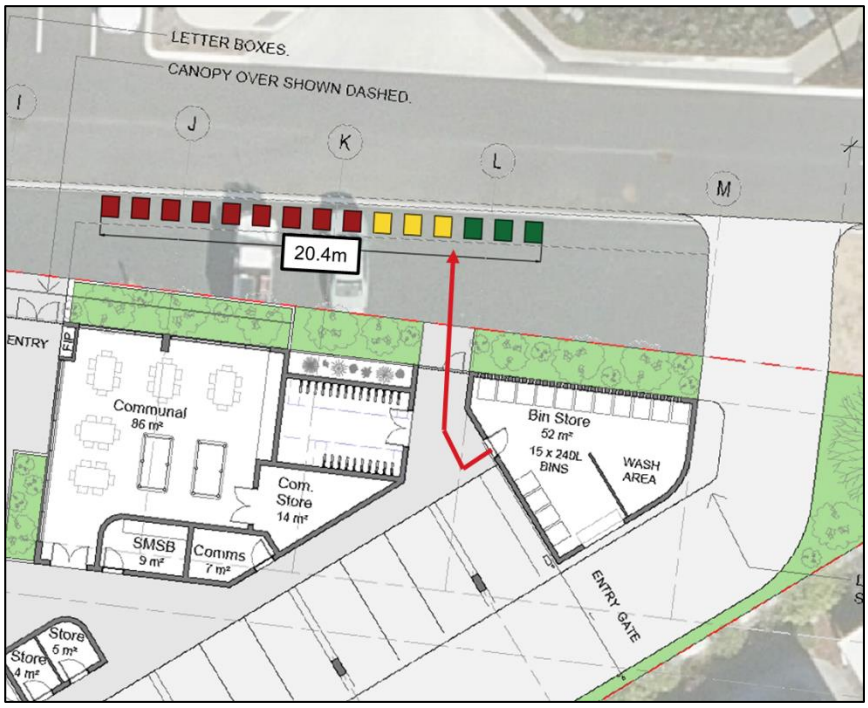


A nominated staff member will transfer the loaded 240L MGBs from the bin enclosures to the kerbside, on the evening before or on the day of collection, as illustrated in **Figure 2-3**. The empty MGBs would then be returned by the nominated staff member from the presentation area back to the respective bin enclosures after collection.

The nominated staff member will present the bins for collection as follows:

- Bins shall be placed with the wheels and handles facing away from the street.
- Bins shall be placed in a manner that does not obstruct footpaths for pedestrians or the mobility impaired.
- Bins shall not be placed beneath power poles, trees or signs.
- Bins will not be overfilled, containing contaminated material or loose items.
- Bins will not remain on the kerbside outside of collection times instead it will be returned to the bin enclosure once they have been emptied; and
- Bins will be presented for collection by 5.30am on collection days.

Figure 2-3 Access and Pathway



2.6.2 Provision of Service Vehicle

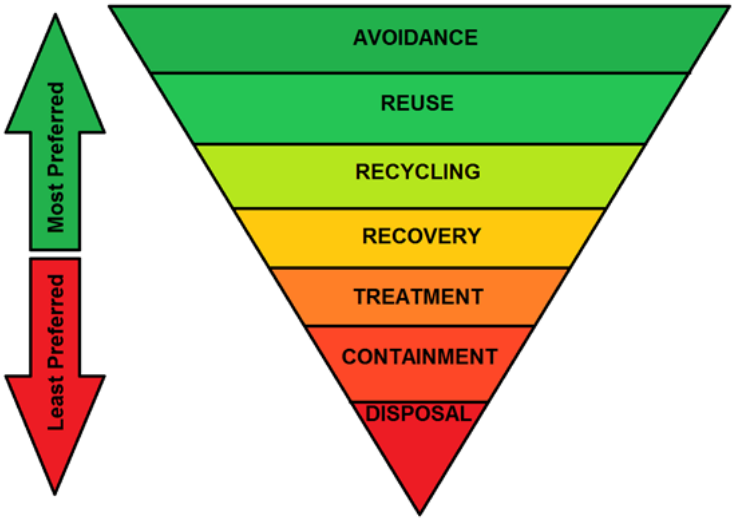
A swept path analysis for a 10.25 m waste vehicle was undertaken as illustrated in **Figure 2-4.** The analysis indicates that a waste vehicle is able to adequately enter the site from Kambany Approach, collect the waste along the verge and exit towards Norton Promenade.

Figure 2-4 Swept Path – Waste Collection

3. Waste Reduction and Management Strategy

This waste management plan has been developed with the strategic approach of reducing waste through best practices and education of residents. Best practices for waste minimisation will optimise the Development's use of the waste minimisation hierarchy, which seeks to encourage sustainable options for waste. The waste hierarchy is demonstrated below.

Figure 3-1 Waste Hierarchy



3.1 Provision of Information

Information dissemination is essential in order to communicate well the best practices of waste management. Suitable types of information which can be provided includes:

- Online information.
- Marketing materials such as posters and leaflets demonstrating procedures of waste segregation and waste collection days; and
- Sufficient labelling of bins to reinforce waste separation.

However, information on its own is not enough and it must be paired with initiatives to be effective.

3.2 Engagement

A regular engagement between all the stakeholders of the development should take place in order to remind the residents the proper and best practices of waste management. The engagement should include:

- Demonstration of waste management systems pertinent to an individual's role.
- Distribution of waste management strategy documents in relevant locations; and
- An explanation of the benefits of waste separation and recycling.

In the event that waste generation rates for the Development change, a waste audit may be required by the Shire or other regulatory bodies. Similarly, should a change to the waste regulations be implemented by the Shire or other regulatory bodies, a waste audit may be required in addition to further waste stream separation.

4. Conclusion

This Waste Management Plan demonstrates that the proposed Development provides a sufficiently sized Bin Enclosure Area for storage of general and recyclable waste based on the estimated waste generation and a suitable configuration of bins.

The collection of general and recyclable waste is achieved using:

- 9 x240L bins for general waste to be collected two times a week.
- 3 x240L bins for recycling waste to be collected two times a week.
- 3 x240L bins for FOGO to be collected two times a week.

The waste collection vehicle is anticipated to collect the general, recyclable and FOGO waste on the verge by a private waste contractor during off-peak or after hours. The Strata/Facility Manager, caretaker or staff will ferry the bins to the presentation area for collection and return the empty MGBs back to the respective bin enclosures once the bins have been emptied.

5. References

WALGA (n.d.), Multiple Dwelling Waste Management Plan Guidelines: A Resource for Western Australian Local Government and Developers, Perth.

Appendices

We design with community in mind

Appendix A Architectural Plans


6M SETBACK FROM ROUNDABOUT TANGENT POINT.
LETTER BOXES.
CANOPY OVER SHOWN DASHED.
6000
ENTRY
LIFTS
15 PARKING BAYS
ENTRY GATE
LEVEL OVER SHOWN DASHED
15 x 240L BINS
WASH AREA
EXISTING STREET FOOTPATH
EXISTING TREE THICKET ALONG VERGE
NORTON PROMENADE

Appendix B Waste Calculations

B.1 General Waste and Recycling Generation Rates

Premises	Yield	General Waste*	Recycling	FOGO
1 Bedroom (unit)	32 dwellings	60 L/unit/week	40L/fortnight = 20L/week	40L/fortnight = 20L/week
2 Bedroom (unit)	18 dwellings	120 L/unit/week	80L/fortnight = 40L/week	80L/fortnight = 40L/week

**general waste rate is reduce where separate FOGO waste collection service is provided.*

The following equation was used to calculate the anticipated weekly waste generation for residential waste in each building:

$$\boldsymbol{Total\ Amount\ of\ Waste\ Type = (Number\ of\ Units \times Waste\ Rate) \times 7\ days}$$

The total number of bins required for general waste for residential waste for a twice a week collection was calculated using the following equation:

$$\boldsymbol{Total\ Number\ of\ Bins\ Required = \frac{Total\ Weekly\ Waste\ Generated}{240\ L} \times \frac{1}{2}}$$

The total number of bins required for recycling waste for residential waste for a twice a week collection was calculated using the following equation:

$$\boldsymbol{Total\ Number\ of\ Bins\ Required = \frac{Total\ Weekly\ Waste\ Generated}{240\ L} \times \frac{1}{2}}$$

The total number of FOGO bins required for residential waste for a twice a week collection was calculated using the following equation:

$$\boldsymbol{Total\ Number\ of\ Bins\ Required = \frac{Total\ Weekly\ Waste\ Generated}{240\ L} \times \frac{1}{2}}$$

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