

SECTION 4 – SPECIALIST REPORTS



60 Dutton Street, Coolangatta

Acoustic Report
Engineering Services Report
Stormwater Management Plan
Traffic and Transport Assessment
Waste Management Plan
Arborist Report
Statement of Landscape Intent

ACOUSTIC REPORT



60 Dutton Street, Coolangatta

ENGINEERING SERVICES REPORT



60 Dutton Street, Coolangatta

STORMWATER MANAGEMENT PLAN



60 Dutton Street, Coolangatta

TRAFFIC AND TRANSPORT ASSESSMENT



60 Dutton Street, Coolangatta

WASTE MANAGEMENT PLAN



60 Dutton Street, Coolangatta

ARBORIST REPORT



60 Dutton Street, Coolangatta

STATEMENT OF LANDSCAPE INTENT



60 Dutton Street, Coolangatta



Proposed Residential Development
60 Dutton Street
Coolangatta

ACOUSTIC REPORT



Client:

Southern Cross Property Holdings
Pty Ltd

Reference:

2025002 R01B 60 Dutton Street, Coolangatta ENV

Date Issued:

21 May 2025

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1. Introduction

This report is in response to a request by Southern Cross Property Holdings Pty Ltd for an environmental noise assessment of the proposed residential development to be located at 60 Dutton Street, Coolangatta. To facilitate the assessment, previous unattended noise monitoring was utilised to establish the noise criteria for onsite activities. Based on the outcomes of the assessment, recommendations for acoustic treatments and management controls are specified in this report.

2. Site Description

2.1 Site Location

The proposed site is described by the following:

60 Dutton Street, Coolangatta
Lot 2 on RP86756

Refer to Figure 1 for site location.

Figure 1: Site Location (Not to Scale)



A site survey was conducted on 21 January 2025 and identified the following:

- a) The site is currently occupied by a two storey residential dwelling and will be demolished to make way for the development.
- b) Residential land uses bound the site to the north and south.
- c) Dutton Street bounds the site to the west and separating it from residential buildings.
- d) Goodwin Park bounds the site to the east.

2.2 Proposal

The proposal is to construct a 10-storey residential building as follows:

- Total site area: 703m².
 - 9 residential units from level 2 to level 9.
 - 2 private spa pools on roof level.
- Ground level parking will include 3 visitor bays and 20 residential parking bays including 10 car stackers.
- Site access is via Dutton Street.

2.3 Acoustic Environment

Noise levels in the surrounding area are primarily affected by local traffic noise.

3. Equipment

The following equipment was used to record noise levels:

- Rion NL42 Environmental Noise Monitor
- Pulsar Model 105 Sound Calibrator

The Rion NL42 Environmental Noise Monitor holds current NATA Laboratory Certification and was field calibrated before and after the monitoring period, with no significant drift from the reference signal recorded.

4. Receivers and Noise Monitoring

4.1 Receiver Locations

The nearest residential receiver locations were identified as follows;

1. A single storey residential dwelling is located to the north of the site at 58 Dutton Street.
2. A two-storey residential building is located to the south of the site at 62 Dutton Street.
3. Two and three storey residential buildings are located to the west of the site at 49-57 Dutton Street.

These locations were chosen as being representative of the nearest residential receivers to the proposed development.

Figure 2: Receivers and Noise Monitoring Locations



4.2 Unattended Noise Monitoring

Construction noise from 4 Carmichael Close was found to be audible at all the nearby receivers to the site. To minimise potential construction noise affecting the monitoring data previous ambient noise monitoring that was not affected by construction noise and has been utilised. The location of the monitor is detailed in the following sections.

A Rion NL42 environmental noise monitor was previously placed at 23 Dutton Street to measure ambient noise levels. The monitor was located in a free field position with the microphone approximately 1.4 metres above ground surface level. The noise monitor was set to record noise levels between 8 and 15 September 2021.

The environmental noise monitor was set to record noise levels in "A" Weighting, Fast response using 15-minute statistical intervals. Ambient noise monitoring was conducted generally in accordance with Australian Standard AS1055:2018 *Acoustics – Description and measurement of environmental noise*.

For the unattended noise monitoring location refer to Figure 2.

5. Measured Noise Levels

The following tables present the measured ambient noise levels from the unattended noise survey. Any periods of inclement weather or extraneous noise are excluded from the measured data prior to determining the results.

5.1 Ambient Noise Levels

The ambient levels measured at the monitoring location are as follows;

Table 1: Measured ambient noise levels – all time periods

Day	Date	L90 dB(A)		
		Day	Eve	Night
Wednesday	8/09/21	44	40	38
Thursday	9/09/21	44	42	39
Friday	10/09/21	43	40	41
Saturday	11/09/21	44	44	40
Sunday	12/09/21	47	43	43
Monday	13/09/21	47	40	42
Tuesday	14/09/21	43	38	36
Wednesday	15/09/21	44	-	37
Overall value		44	41	39

Refer to the appendix for a graphical representation of the noise monitoring.

6. Noise Criteria

6.1 Environmental noise

The noise criteria as applied by City of Gold Coast are as follows;

6.1.1 Acoustic Quality Objectives

Table below presents the acoustic quality objectives at noise sensitive receptors as detailed in Schedule 1 of the EPP (Noise) 2008.

Table 2: Acoustic Quality Objectives at Noise Sensitive Properties

Sensitive Receptor	Time of Day	Acoustic Quality Objectives, dBA		
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$
Dwelling (outdoors)	Day and Evening (7am – 10pm)	50	55	65
Dwelling (Indoors)	Day and Evening (7am – 10pm)	35	40	45
	Night (10pm - 7am)	30	35	40

6.1.2 Background Creep

The background creep noise criteria are as follows;

Time-varying noise:

$$L_{Aeq,adj,T} \leq \text{Ambient } L_{A90,T} + 5\text{dBA}$$

Steady-state noise:

$$L_{A90,T} \leq \text{Ambient } L_{A90,T}$$

The time period (T) is a time interval of at least 15 minutes, or if the noise continues for less than 15 minutes, the duration of the noise source.

Based on the results of ambient noise monitoring, the project specific background creep noise limits are shown in Table 3:

Table 3: Background creep noise limits

Time Period	Noise Level Limits SPL dBA	
	$L_{Aeq,T}$	$L_{A90,T}$
Day 7am – 6pm	49	44
Evening 6pm – 10pm	46	41
Night 10pm – 7am	44	39

6.1.3 Sleep Disturbance Criteria

Criteria for sleep disturbance under the WHO Guideline is addressed is as follows:

"As a rule for planning for short-term or transient noise events, for good sleep over 8 hours the indoor sound pressure level measured as a maximum instantaneous value should not exceed approximately 45 dB(A) $L_{A,(Max)}$ more than 10 or 15 times per night'.

'Where noise is continuous, the equivalent sound pressure level should not exceed 30 dB(A) indoors, if negative effects on sleep are to be avoided'."

7.1.2 Background Creep

The noise source levels and predicted levels at the receiver locations are shown as follows;

Table 5: Background Creep noise levels, 15-minute

Receiver	Receivers			Source Leq@1m dB(A)	Correction dB(A)*	Corrected Leq@1m dB(A)	No. of events per 15min Day	No. of events per 15min Eve	No. of events per 15min Nigl	Duration per event	Distance (m)	No Barrier (height (m))	Barrier screening dB	Building TL or shield dB	Building screening dB	Dist atten. @-6dB/dd	L _{Aeq} adj,T ext. dB(A) Day	L _{Aeq} adj,T int. dB(A) Day	L _{Aeq} adj,T ext. dB(A) Eve	L _{Aeq} adj,T int. dB(A) Eve	L _{Aeq} adj,T ext. dB(A) Night	L _{Aeq} adj,T int. dB(A) Night	L _{Aeq} 15 min Compliance			
	Description	Day	Eve																				Night			
	1. 58 Dutton St (N) 2. 62 Dutton St (S) 3. 49-57 Dutton St (W)																									
1	Criteria																							49	46	44
	Car passby (Visitor)	69		69	1	1	1	15	4							-13	38	28	38	28	38	28	Yes	Yes	Yes	
	Car door closure (Visitor)	75	2	77	1	1	1	2	12							-22	29	19	29	19	29	19	Yes	Yes	Yes	
	Car start (Visitor)	74	2	76	1	1	1	2	12							-22	27	17	27	17	27	17	Yes	Yes	Yes	
	Car passby (Residents)	69		69	5	2	1	15	4	1.8	-12					-13	33	23	29	19	26	16	Yes	Yes	Yes	
	Car door closure (Residents)	75	2	77	5	2	1	2	12	1.8	-11					-22	24	14	20	10	17	7	Yes	Yes	Yes	
	Car start (Residents)	74	2	76	5	2	1	2	12	1.8	-11					-22	23	13	19	9	16	6	Yes	Yes	Yes	
	Car stacker	74		74	2	1	1	90	12	1.8	-6					-22	39	29	36	26	36	26	Yes	Yes	Yes	
	Total																43	33	41	31	41	31	Yes	Yes	Yes	
2	Criteria																						49	46	44	
	Car passby (Visitor)	69		69	1	1	1	15	17							-25	26	16	26	16	26	16	Yes	Yes	Yes	
	Car door closure (Visitor)	75	2	77	1	1	1	2	9							-19	31	21	31	21	31	21	Yes	Yes	Yes	
	Car start (Visitor)	74	2	76	1	1	1	2	9							-19	30	20	30	20	30	20	Yes	Yes	Yes	
	Car passby (Residents)	69		69	5	2	1	15	17	3.9	-18					-25	16	6	12	2	9		Yes	Yes	Yes	
	Car door closure (Residents)	75	2	77	5	2	1	2	9	3.9	-18					-19	20	10	16	6	13	3	Yes	Yes	Yes	
	Car start (Residents)	74	2	76	5	2	1	2	9	3.9	-18					-19	19	9	15	5	12	2	Yes	Yes	Yes	
	Car stacker	74		74	2	1	1	90	9	3.9	-18					-19	30	20	27	17	27	17	Yes	Yes	Yes	
	Total																36	26	35	25	35	25	Yes	Yes	Yes	
3	Criteria																						49	46	44	
	Car passby (Visitor)	69		69	1	1	1	15	42							-33	18	8	18	8	18	8	Yes	Yes	Yes	
	Car door closure (Visitor)	75	2	77	1	1	1	2	42							-32	18	8	18	8	18	8	Yes	Yes	Yes	
	Car start (Visitor)	74	2	76	1	1	1	2	42							-32	17	7	17	7	17	7	Yes	Yes	Yes	
	Car passby (Residents)	69		69	5	2	1	15	42							-32	26	16	22	12	19	9	Yes	Yes	Yes	
	Car door closure (Residents)	75	2	77	5	2	1	2	49							-34	24	14	20	10	17	7	Yes	Yes	Yes	
	Car start (Residents)	74	2	76	5	2	1	2	49							-34	23	13	19	9	16	6	Yes	Yes	Yes	
	Car stacker	74		74	2	1	1	90	49							-34	33	23	30	20	30	20	Yes	Yes	Yes	
	Total																34	24	32	22	31	21	Yes	Yes	Yes	

*Correction due to tonality and impulsiveness as per AS1055:2018.

Compliance is predicted for background creep criteria on the condition the recommendations made in Section 8 are implemented.

7.1 Sleep Disturbance

The noise source levels and predicted levels of noise at the receiver locations are shown in Table Table 6.

Table 6: Maximum and average noise levels from site activities – Night-time

Receiver	Receivers	Source L _{Amax} @1m dB(A)	Correction dB(A)*	Corrected dB(A)	Distance (m)	No Barrier (height (m)	Barrier screening dB	Building TL or shield dB	Building screening dB	Dist atten. @-6dB/dd	L _{Amax} adj, T int. dB(A)	Complies Night dB(A)
	Description											
1	Criteria											45
	Car passby (Visitor)	74		74	4					-12	52	No
	Car door closure (Visitor)	79	2	81	12					-22	49	No
	Car start (Visitor)	78	2	80	12					-22	48	No
	Car passby (Residents)	74		74	4	1.8	-12			-12	40	Yes
	Car door closure (Residents)	79	2	81	12	1.8	-11			-22	38	Yes
	Car start (Residents)	78	2	80	12	1.8	-11			-22	37	Yes
	Car stacker	82		82	12	1.8	-6			-22	44	Yes
2	Criteria											45
	Car passby (Visitor)	74		74	17					-25	39	Yes
	Car door closure (Visitor)	79	2	81	9					-19	52	No
	Car start (Visitor)	78	2	80	9					-19	51	No
	Car passby (Residents)	74		74	17	3.9	-18			-25	21	Yes
	Car door closure (Residents)	79	2	81	9	3.9	-18			-19	34	Yes
	Car start (Residents)	78	2	80	9	3.9	-18			-19	33	Yes
	Car stacker	82		82	9	3.9	-18			-19	35	Yes
3	Criteria											45
	Car passby (Visitor)	74		74	42					-32	32	Yes
	Car door closure (Visitor)	79	2	81	42					-32	39	Yes
	Car start (Visitor)	78	2	80	42					-32	38	Yes
	Car passby (Residents)	74		74	42					-32	32	Yes
	Car door closure (Residents)	79	2	81	49					-34	37	Yes
	Car start (Residents)	78	2	80	49					-34	36	Yes
	Car stacker	82		82	49					-34	38	Yes

*Correction due to tonality and impulsiveness as per AS1055:2018.

Exceedances of the sleep disturbance criteria are predicted for the night-time period for receivers 1 and 2. WHO states that the maximum instantaneous value should not exceed 45dB(A) more the 10 to 15 times per night. As the development only has 3 visitor car parking spaces, the traffic movements are predicted to be infrequent and are not expected to occur more than a few times during the night-time period (10pm-7am).

8. Recommendations

8.1 Acoustic Barriers

Acoustic barriers are recommended to be constructed on ground level as shown in Figure 3. The barrier to the north of the site is recommended to be built to a height of 1.8 metres above the finished carpark level. The barrier to the south of the site is recommended to be constructed to the underside of soffit above.

The acoustic barriers shall be constructed using materials that achieve a minimum surface density of at least 11kg/m². Suitable materials may include lapped 19mm thick pine palings with 40% overlap, 9mm fibre cement sheet, masonry, aerated concrete, 6.38mm laminate glass or other materials which satisfy the minimum surface density requirement. The barriers shall be free of gaps and holes.

Refer to Figure 3 for a visual representation of the acoustic barriers and Table 7 for the height requirements.

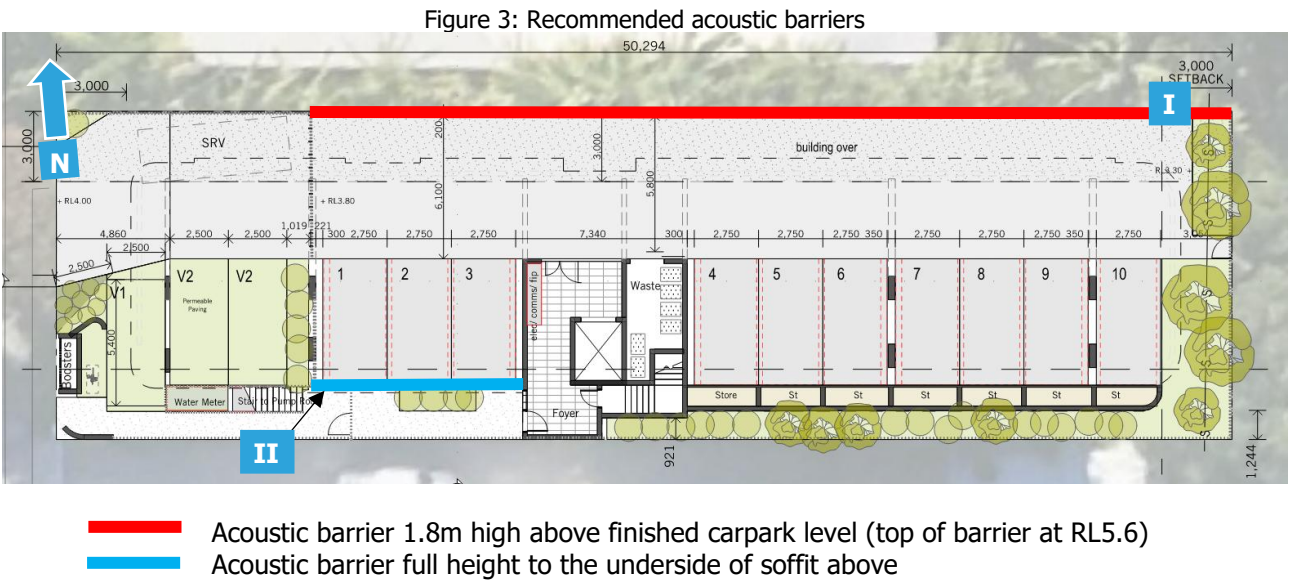


Table 7: Recommended Acoustic Barrier Height

Reference Point	Approximate Finished Level (m)	Approximate Barrier Height (m)	Approximate Finished Barrier Level (m)
I	3.8	1.8	5.6
II	3.8	3.9	7.7

8.2 Onsite Activities

Based on the predicted noise levels of the site and surrounds for all time periods, noise impacts at the residential receiver locations are predicted to comply on the condition the following acoustic treatments are implemented:

- We recommend waste collection be conducted in accordance with existing residential collections in the area to reduce the potential for disturbance.
- Carpark finished surfaces should consist of materials which provides low tyre squeal characteristics. Any traversable drainage grates must be securely fastened.

8.3 Onsite Mechanical Plant

No information regarding mechanical services was available at the time of the assessment. We recommend that any new mechanical plant is designed to comply with the criteria stated and an assessment by qualified acoustic consultant to be conducted prior to installation.

9. Conclusion

An environmental noise assessment was conducted for the proposed residential development to be located at 60 Dutton Street, Coolangatta. Based on the predicted noise levels and subjective assessment of the site and surrounds for all time periods, compliance is predicted with City of Gold Coast assessment criteria.

If you should have any queries please do not hesitate to contact us.

Report prepared by;

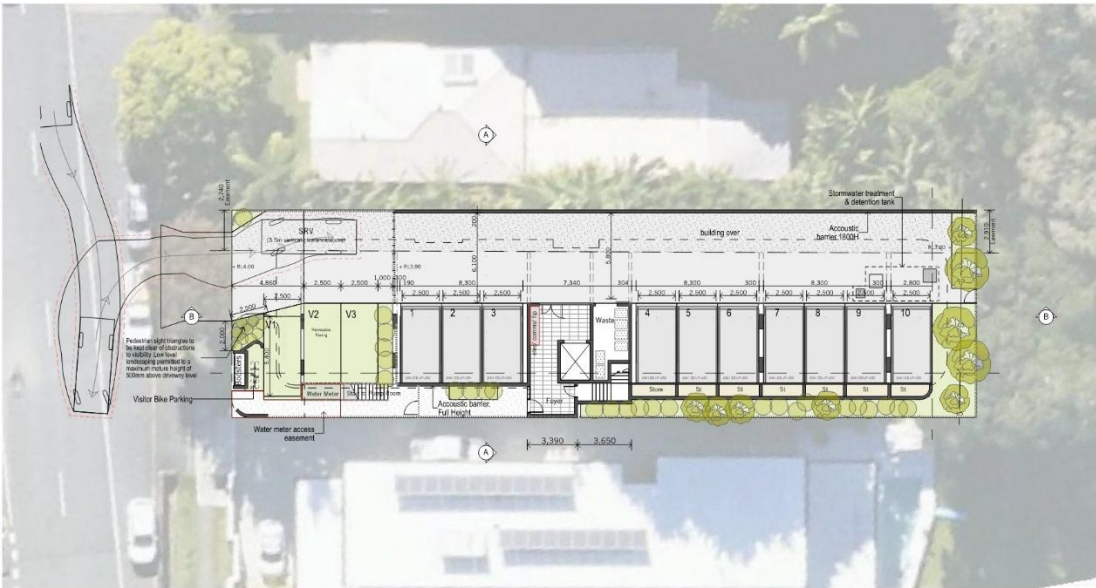


Khoi Phan
Acoustic Consultant

acousticworks)))

10. Appendices

10.1 Development Plans



Site Plan
1:200 (B A3)

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NSWARS No. 6829 | BODAQD No. 7854

DA10.01.1
20/5/2025

LU

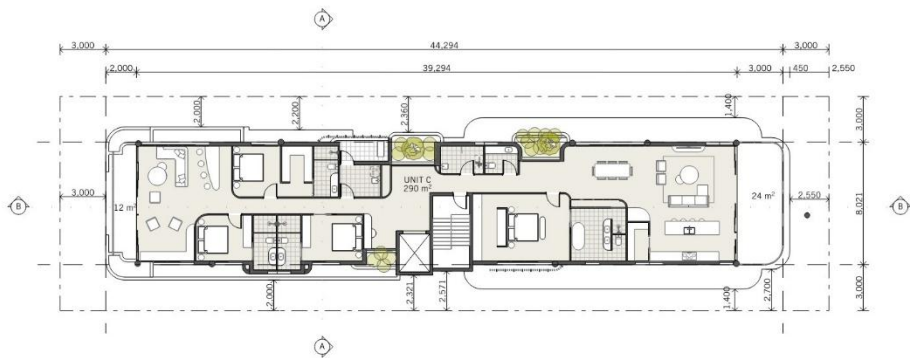


Level 2 Site Plan
1:200 (B A3)

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NSWARS No. 6829 | BODAQD No. 7854

DA10.01.2
20/5/2025

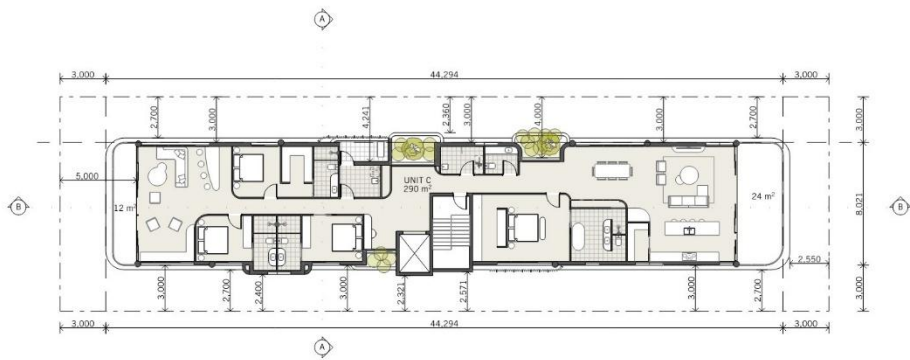
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Levels 3 Site Plan
1:200 @ A3

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NEWARS No. 9829 | BEAQUEL No. 2554

DA10.01.3
20/5/2025



Levels 4-9 Site Plan
1:200 @ A3

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NEWARS No. 9829 | BEAQUEL No. 2554

DA10.01.4
20/5/2025





Level 1 Part 1
1:100 @ A3

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NEVARIS No. 6629 | BEAQUE No. 2654

DA10.02
20/5/2025

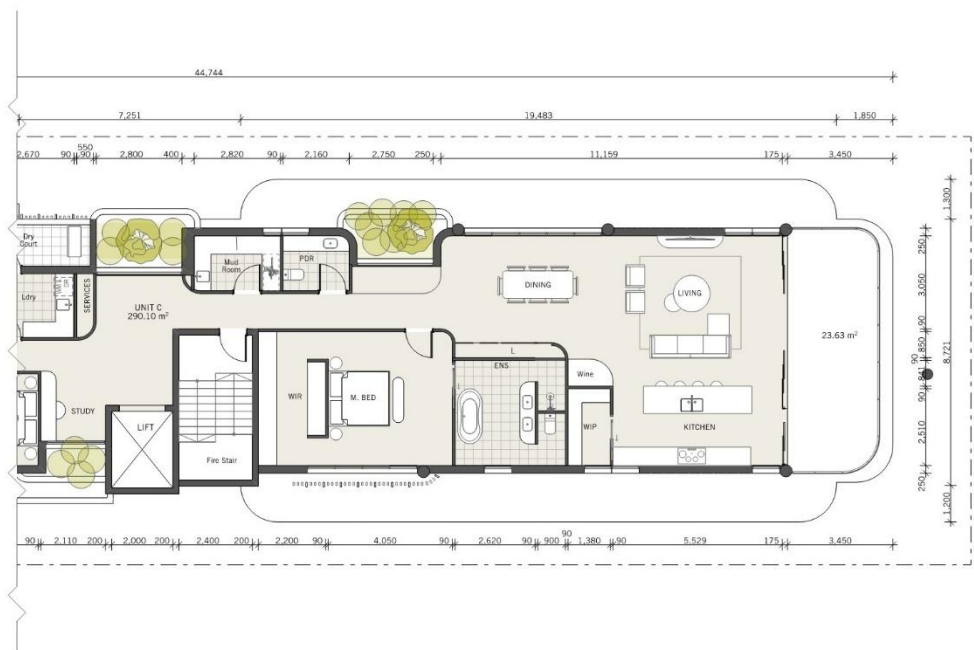


Level 1 Part 2
1:100 @ A3

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NEVARIS No. 6629 | BEAQUE No. 2654

DA10.03
20/5/2025





Levels 3 Part 1
1:100 @ A3

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NEWARS No. 6829 | BEAQUE No. 2854

DA10.04
20/5/2025



Levels 3 Part 2
1:100 @ A3

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NEWARS No. 6829 | BEAQUE No. 2854

DA10.05
20/5/2025





Levels 4-9 Part 1
1:100 @ A3

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NEWARS No. 6029 | BEAQUEL No. 2554

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20/5/2025

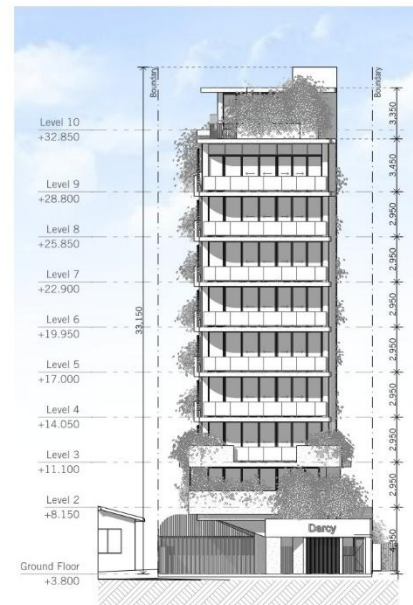


Levels 4-9 Part 2
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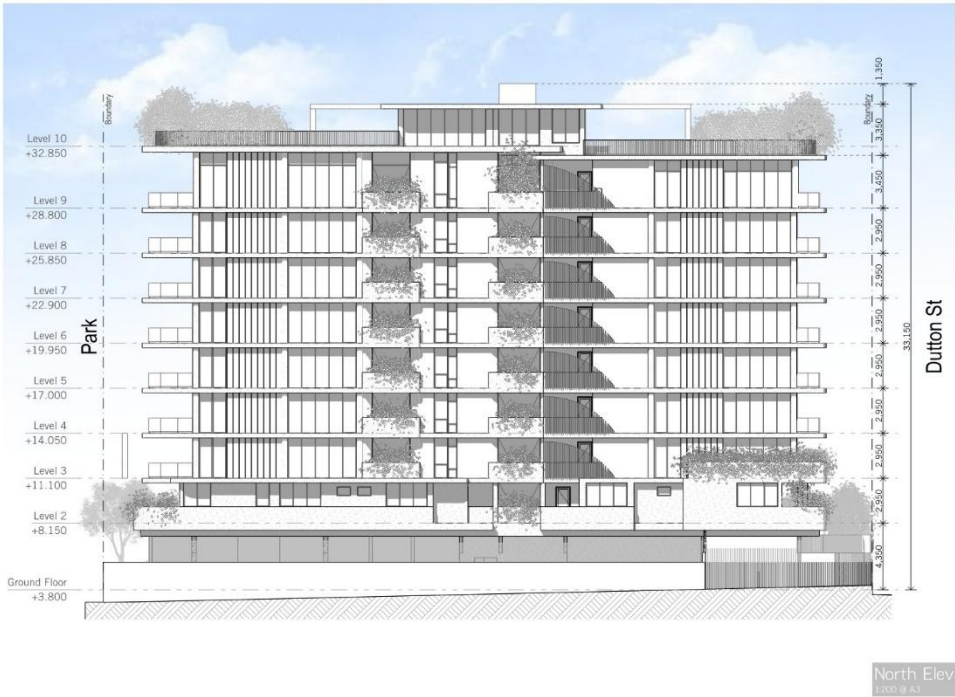
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DA10.07
20/5/2025



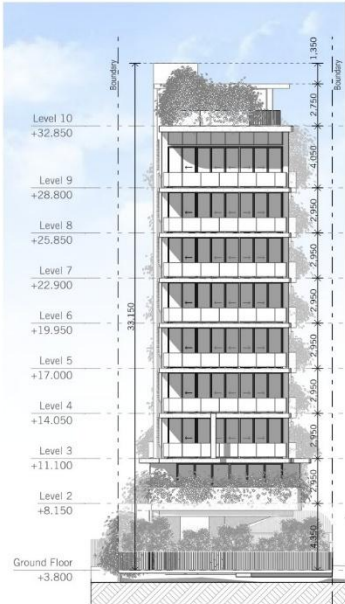


West Elevation
1:200 @ A3



WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore

DA20.02
20/5/2025



WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore

DA20.03
20/5/2025





South Elevation
1:200 1:213.31 @ A3

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NEWARS No. 9829 | BEAQUE No. 2854

DA20.04
20/5/2025



Section A
1:200 @ A3

WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
NEWARS No. 9829 | BEAQUE No. 2854

DA30.01
20/5/2025





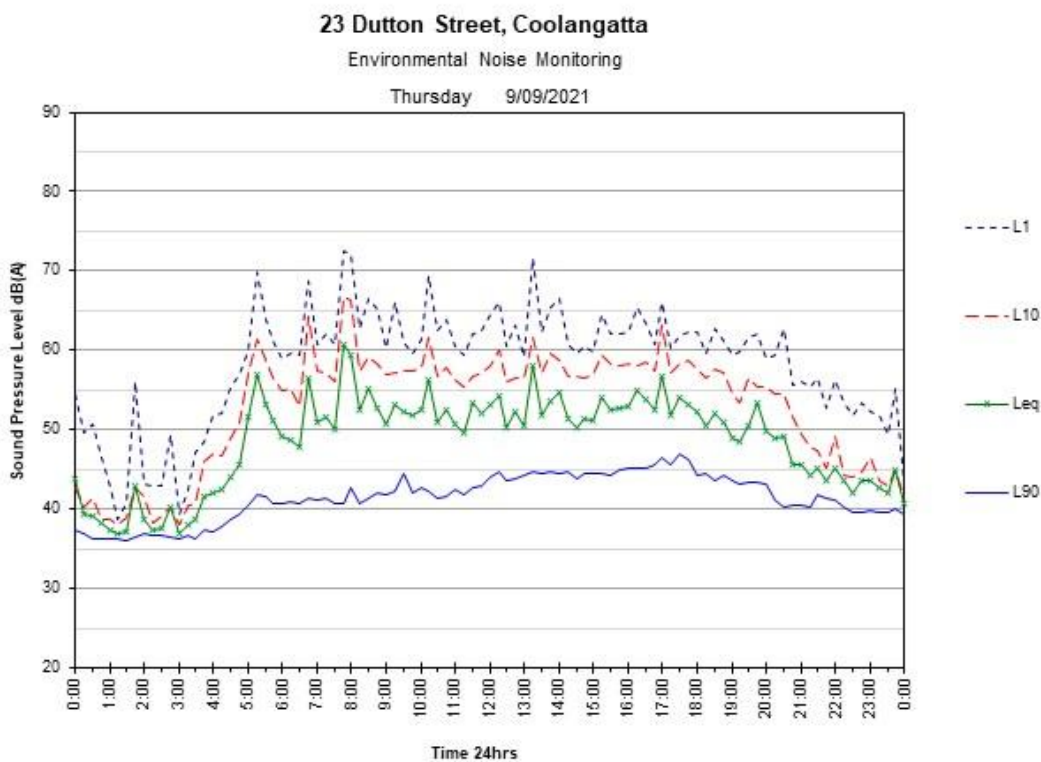
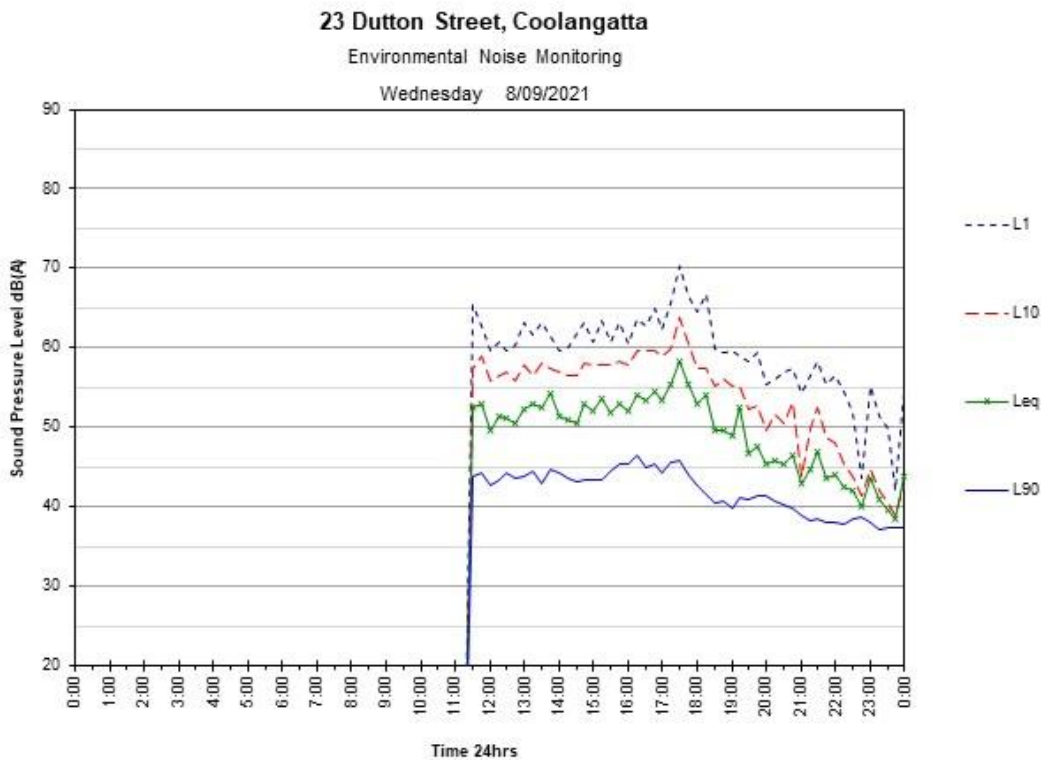
Section B
1:100 @ A1

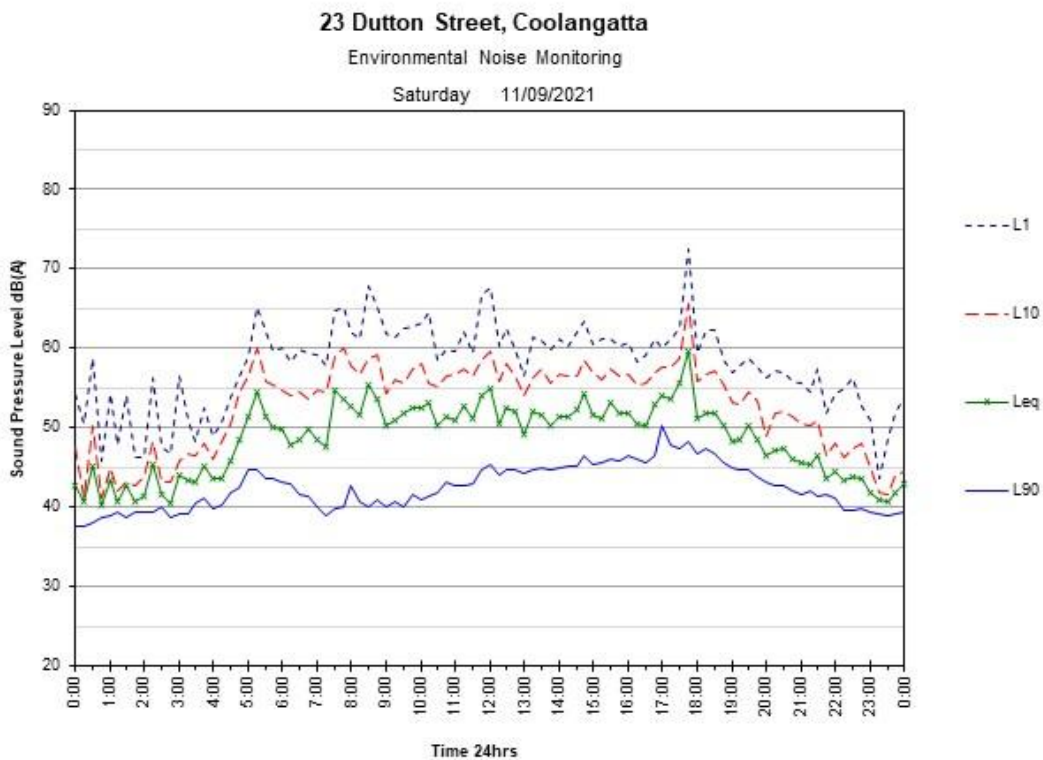
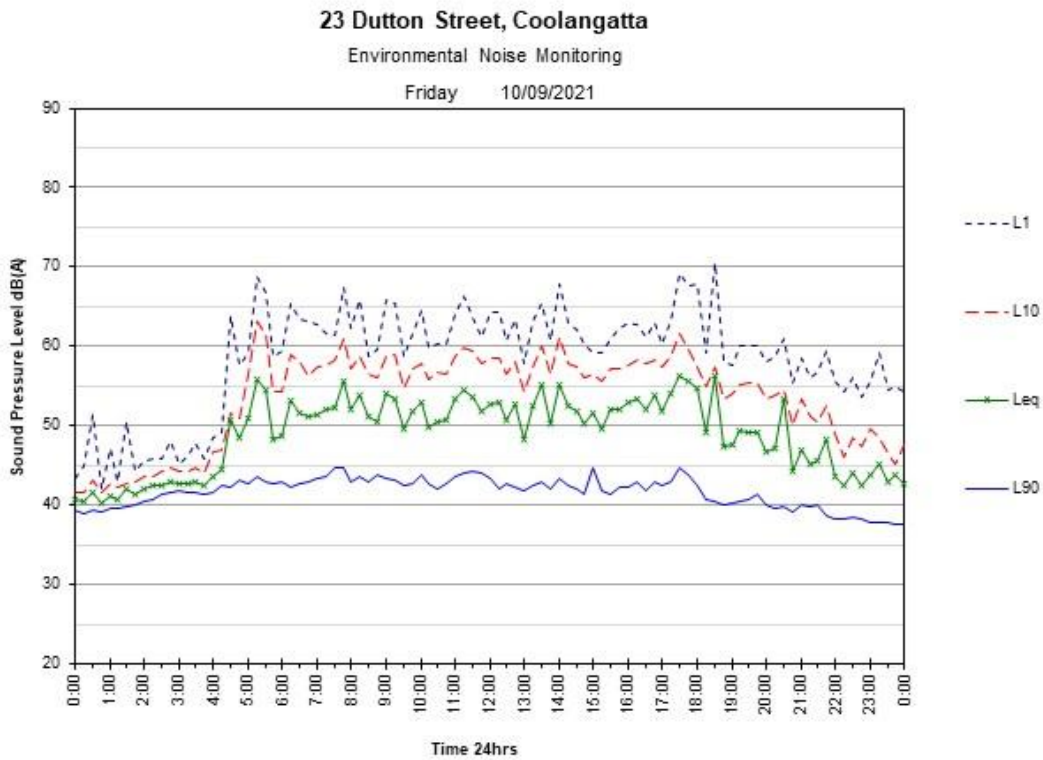
WWW.LIGHTWAVE.COM.AU | 60 Dutton Street | Lot 2 on RP86756 | Lattimore
DRAWING No. 0029 | BOULEVARD No. 2654

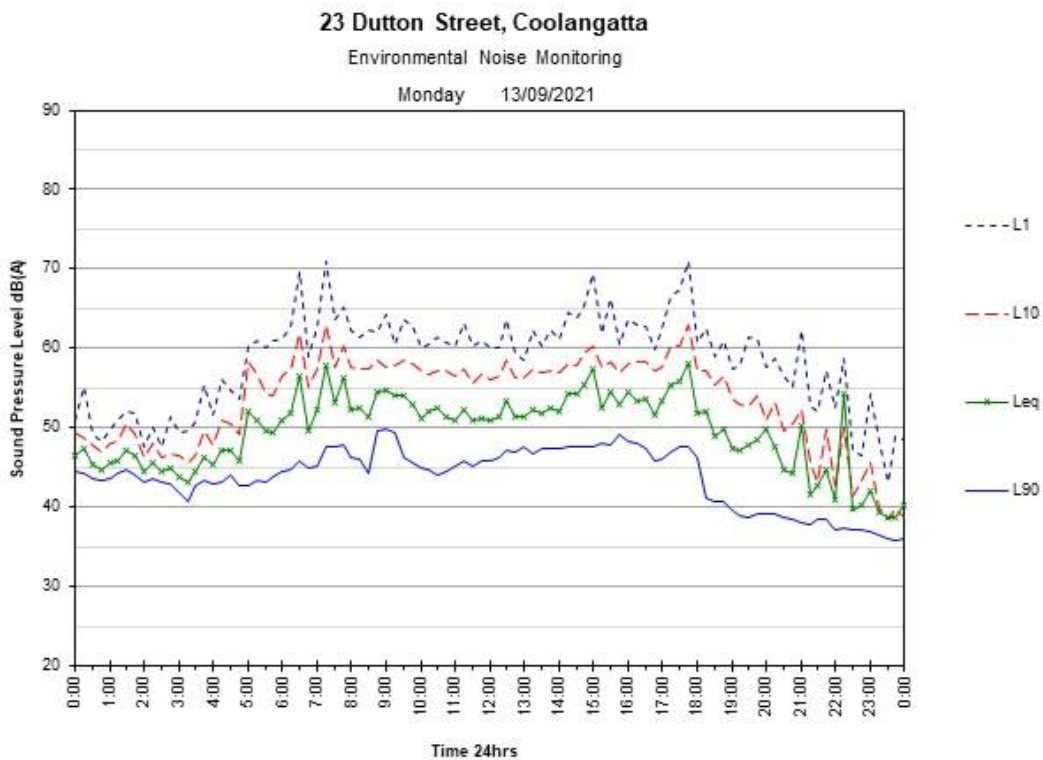
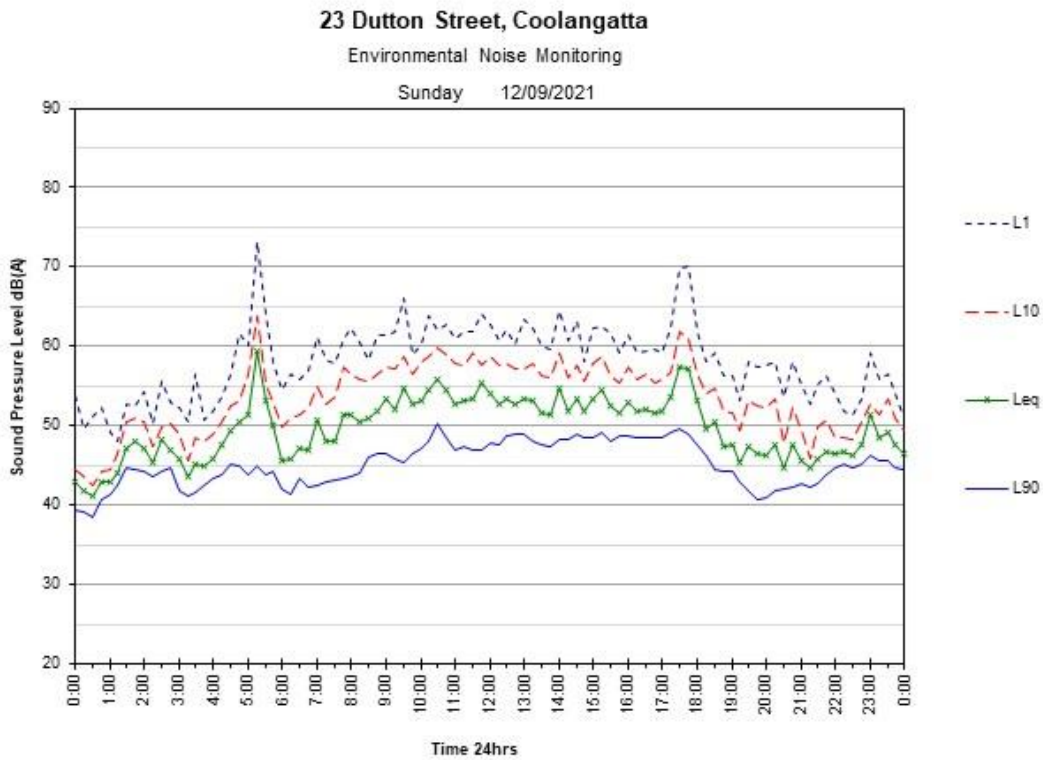
DA30.02
20/5/2025

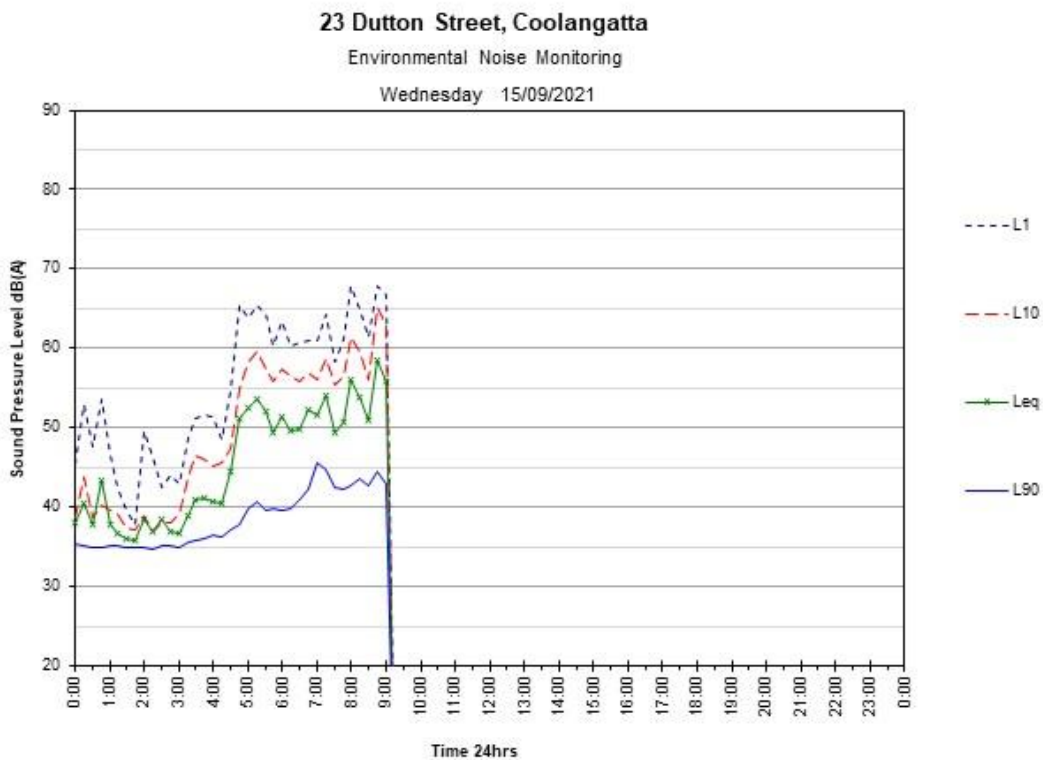
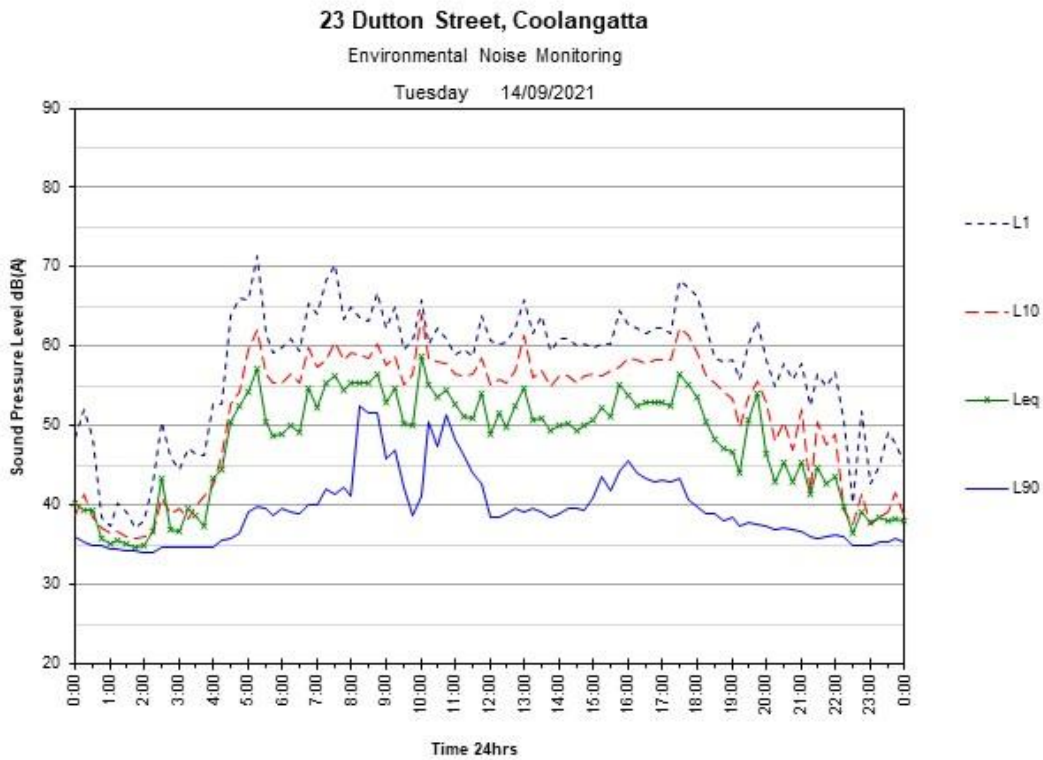


10.2 Noise Monitoring Charts









RESIDENTIAL DEVELOPMENT

60 DUTTON STREET, COOLANGATTA

ENGINEERING SERVICES REPORT

FOR: SOUTHERN CROSS PROPERTY HOLDINGS

REPORT NUMBER: R002-G24095



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1. Introduction

This report has been prepared to support the lodgement of a development application involving the construction of a new development, comprising of a nine (9) storey residential development. The development is proposed to take place over the following parcel of land:

Property Address: 60 Dutton Street, Coolangatta

Property Description: Lot 2 on RP86756

Council: City of Gold Coast

Site Area: 703m²

The report describes the civil engineering issues associated with the development of the proposed land and includes discussion on the following engineering items;

- Earthworks;
- Erosion and Sediment Control;
- Flooding;
- Stormwater Drainage;
- Water Connection; and
- Sewer Connection.

This report demonstrates that the proposed development can be suitably serviced with all engineering services described and supports the type and scale of development that is proposed.

1.1 Related Reports

This report is intended to be read in conjunction with the associated development submission documents, current as of the date of this report.

A Stormwater Management Plan (Ref: R001-G24095) has been prepared for the proposed development and should be read in conjunction with this report.

2. Property Description

The proposed development is situated on the existing lot located at 60 Dutton Street, Coolangatta described as Lot 2 on RP86756. The property is located within the City of Gold Coast Local Government Area.

The site is located in the suburb of Coolangatta and is in close proximity to local commercial and retail centres.

The proposed development site is bounded by Dutton Street to the west, existing residential allotments to the north and south and Goodwin Park to the east. The registered area of the existing allotment for this proposal is 703m².

A general locality plan is presented in Figure 2.1 below:



Figure 2.1 - Site Locality

2.1 Land Usage

The development site is currently occupied by a residential dwelling. The existing development contains impervious land uses, including roof, driveway, and other hardstand areas. The existing impervious areas have been estimated from the survey to cover approximately 57% of the site area, as displayed on the pre-developed catchment plan attached within Appendix A of this report.

The existing development is currently assessable via an existing VXO from Dutton Street.

2.2 Topography and Drainage

The detailed survey obtained for the project site indicates that majority of the surface grades towards the eastern boundary of the site towards Goodwin Park. A stormwater culvert traverses the proposed development site, running in parallel alignment with the northern boundary of the development site. Approximate levels on the site vary from 4.19m (AHD) in the northwest corner of the site to 2.99m (AHD) located in the southeast corner of the site. The average grade of the site has been calculated to be approximately 1.5%.

The development site contains existing internal stormwater infrastructure capturing runoff generated from the roof area, and discharges flows towards Goodwin Park to the east.

A copy of the detailed survey by Usher and Company has been attached within Appendix A of this report.

2.3 Upstream Catchment

The site survey indicates that the development site contains existing stormwater infrastructure that conveys an upstream catchment through the site, it is proposed that this stormwater infrastructure will remain to convey the upstream catchment through the development site, and the proposed development will comply with MP1.4. As a result, this development is expected not to be impacted by an upstream catchment and no allowance for upstream catchment flows have been considered in this report.

3. Proposed Development

3.1 Development Description

The proposed development consists of:

- The demolition of existing structures; and
- The construction of a new nine (9) storey residential tower; and
- The construction of access driveways and other hardstand surfaces associated with the proposed development.

A copy of the proposed architectural layout plans has been included in Appendix A of this report.

Additional works on site shall include the construction of water reticulation, sewer reticulation, electrical and telecommunications services and stormwater management works.

External works for the development will consist of verge works with Dutton Street to facilitate the construction of the vehicle crossover and service connections. No further external civil works are proposed as part of this development.

4. Earthworks

The earthworks associated with the proposed development will predominantly involve minor earthworks and general lot shaping

The development is shown as being within a potential acid sulfate soils problem area in City of Gold Coast's Interactive Mapping, shown in Figure 4.1 below.

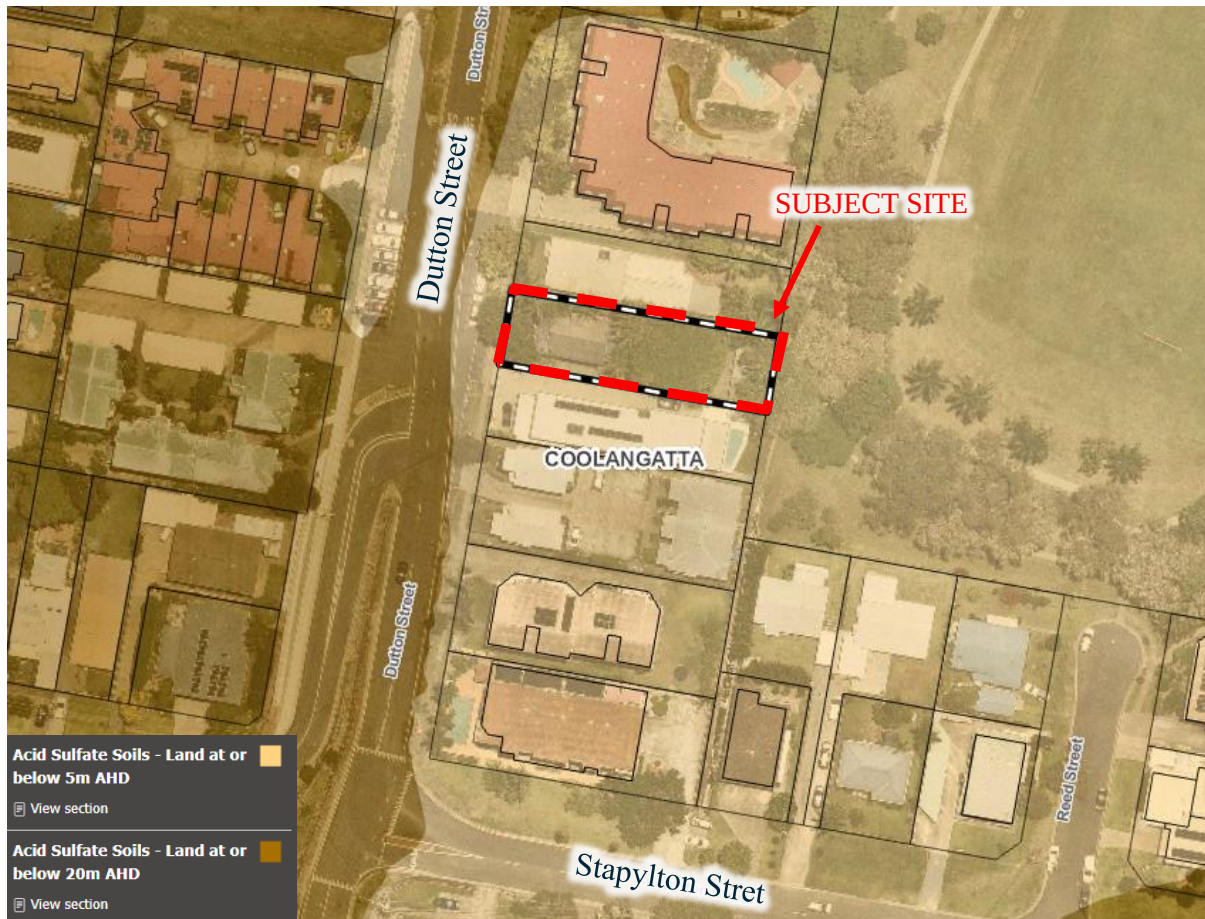


Figure 4.1: Acid Sulfate Soils Overlay Map (OM14)

A site-specific Acid Sulfate Soils assessment may therefore be required for the site. This is to be prepared by a suitably qualified geotechnical engineer. It is expected that the preparation of this report is to be included in the development application conditions, to be completed prior to construction of the development site.

5. Erosion and Sediment Control

The development has the potential to cause erosion and sedimentation runoff. The information presented in this section is relevant to the City of Gold Coast's Erosion Hazard Assessment table.

The average slope across the development site is estimated to be approximately 5%. Geoscience Australia Portal (GAP) data surrounding the subject site suggests that the soil type is a clay. The estimated duration of soil disturbance will likely be more than six months, considering the development type and average construction times.

The average rainfall for the Gold Coast area was taken from the bureau of meteorology for a three-month period from January to the end of March. This resulted in an expected mean rainfall of 186mm per month. There are currently no off-site sediment control measures serving the development site and analysis of the site survey and surrounding properties shows it is unlikely that stormwater from upstream catchments will discharge into the development area.

The results of the Erosion Hazard Assessment presented in City Plan / Part 9 Development codes / 9.4 Other development codes / 9.4.5 Healthy waters code / Table 9.4.5-3 of the City of Gold Coast City Plan are shown in table 5.1 below. If the development scores more than 11 points or greater, or five in any factor, a detailed erosion and sedimentation control plan will be required.

Table 5.1: Erosion Hazard Assessment

Controlling Factor	Result	Points
Average Slope	Slope less than 2%	0
Soil Type	Clay	3
Duration of Disturbance	More than 6 months	5
Rainfall Risk	High (101-225mm)	2
Off-Site Sediment Control	No	1
Run-off Entering the Site	No	0
Extent of Site Disturbance	Yes	2
	Total	12

As the total score for the proposed development is above 11 points and has scored 5 in a controlling factor, erosion and sediment control measures shall be undertaken in accordance with the Best Practice Erosion and Sediment Control: International Erosion Control Association. Detailed erosion and sediment control plans are to be prepared and lodged to Council during Operational Works phase of the development.

6. Flooding

The site has been identified on City of Gold Coast's mapping system as being unaffected by flooding levels, as shown in Figure 6.1 below.



Figure 6.1: Potential Flooding Inundation Overlay Map (OM17)

The development site is shown to not be flood affected by the flood overlay of the City of Gold Coast Flood Planning Map. Therefore, no further assessment of flood management is required for the proposed development site.

7. Water and Sewer Connection and Capacity

7.1 Sewer Connection

An existing Ø225 mm sewer main is located within the development site, located near the southern boundary. The precise location of the existing sewer property connection is currently unknown and will need to be identified and inspected as part of the development.

Subject to the findings of the inspection, it may be necessary to upgrade the existing sewer property connection. If required, the property connection will be upgraded to a new Ø150 mm sewer connection, which will directly tie into the existing Ø225 mm sewer main located within the development site.

Location of the proposed sewer property connection is detailed in the Engineering Drawings attached as Appendix B.

7.2 Water Connection

The development site is currently serviced via an existing ø100 water main located within the Dutton Street western verge. It is proposed the existing ø20 water property connection is to be decommissioned and removed and the existing water meter is to be returned to council.

It is proposed that the development site is to be serviced via a ø100mm above ground water meter and property connection, connecting directly into the existing ø100 water main located within the western verge of Dutton Street. The final size of the connection is to be confirmed by the hydraulic engineer at the detailed design stage. Location of the proposed water property connection is detailed in the Engineering Drawings attached as Appendix B.

7.3 Capacity Assessment

The proposed development has been assessed under the requirements of the Gold Coast City Plan and the South-East Queensland Code (SEQ Code), providing a comparison between the planned intent for the subject site and the proposed development with regards to sewer and water demand rates.

An estimation of the Equivalent Persons (EP) to be used for the water demand and effluent discharge calculations for the proposed development site are presented in Table 7.1.

The impact of the proposed development has been compared to the planned demand in the City of Gold Coast City Plan.

The resulting impact on the existing water and sewer infrastructure has been calculated using the CoGC Water and Sewerage Demand Table and is presented in Table 7.2.

Table 7.1: Proposed Developments Equivalent Persons (EP)

Development Schedule	Dwellings	EP/Dwelling	Equivalent Persons (EP)
Apartments/Attached Dwellings - 3+ Bedrooms	9	2.51	22.59
Total EP			22.59

Table 7.2: Water and Sewer Capacity Summary

	Current City Plan (RD5)	Proposed Development
<i>Demand Conversion</i>	206.00 EP/Ha	See above EP calc
<i>Demand EP</i>	14.48 EP	22.59 EP
Water Demand		
<i>Average Day Demand (240L/EP/d)</i>	3475.63 L/d	5,421.60 L/d
<i>Peak Conversion</i>	PH = 2.97AD M.Residential	PH = 2.97AD M.Residential
<i>Peak Hour Demand</i>	10,322.63 L/d - or	16,102.15 L/d - or
	0.12 L/s	0.19 L/s
Sewer Demand		
<i>Average Dry Weather Flow (210L/EP/d)</i>	3,186.00 L/d	4,969.80 L/d
<i>Peak Wet Weather Flow (5xADWF)</i>	15929.98 L/d - or	24,849.00 L/d - or
	0.18 L/s	0.29 L/s

7.4 Summary

Results from Table 7.2 indicate that the proposed development does increase the water and sewer demand flows beyond what has been allowed for within the City of Gold Coast City Plan.

Therefore, a detailed W&S capacity assessment may be required for the proposed development site. It is requested that Council confirm the requirement of this assessment.

8. Stormwater Drainage

In the existing case, the majority of the stormwater runoff generated from the development site discharges towards the eastern boundary via overland sheet flow, towards Goodwin Park. Flows will enter council stormwater network via a stormwater headwall located within Goodwin Park. The captured stormwater runoff, discharges from the site without any on-site detention or water quality treatment.

In the developed case, it is proposed that the development site is to connect into the existing stormwater infrastructure located within Goodwin Park. The flows generated from the site are to be detained and treated within a combined belowground stormwater treatment and detention tank, and discharge to an existing council headwall located within Goodwin Park via a proposed Ø300 stormwater pipe. This arrangement is outlined in the Engineering Drawings attached within Appendix B.

A separate report has been prepared for submission with this application to address stormwater drainage in specific detail.

The report prepared by Michael Bale & Associates (Ref: R001-G24063) describes the process of managing stormwater quality and quantity.

9. Conclusion

This report has been prepared to support the lodgement of a development application involving the construction of a new development, comprising of a nine (9) storey residential development. The development is proposed to take place over the following parcels of land:

Property Address: 60 Dutton Street, Coolangatta

Property Description: Lot 2 on RP86756

Council: City of Gold Coast

Site Area: 703m²

There are no apparent significant constraints on the execution of earthworks, sediment and erosion control, provision of vehicular access, or the drainage of stormwater from the site.

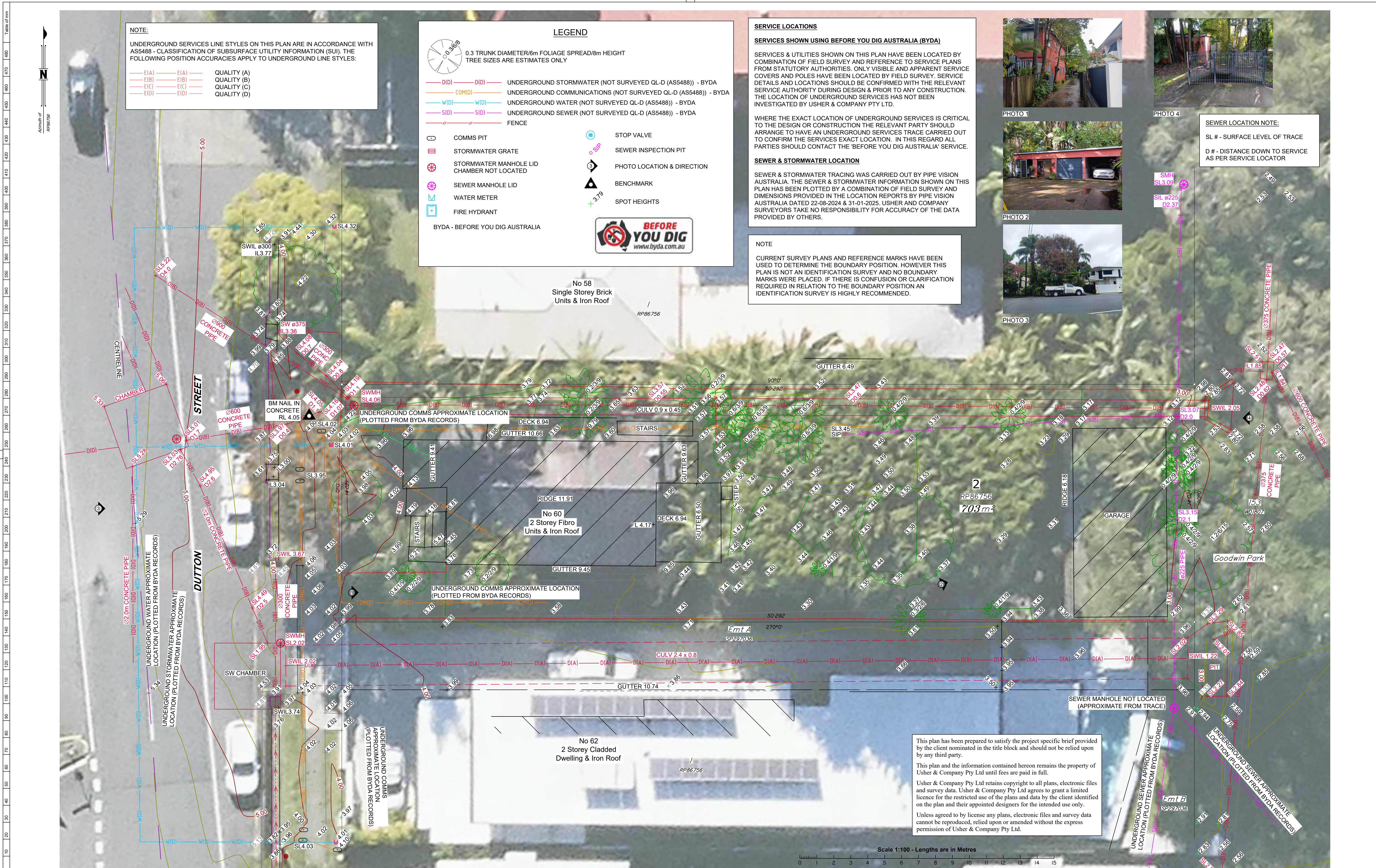
A summary of the proposed water and sewer connection strategy has been presented for Council's consideration. It has been assumed that surrounding infrastructure has sufficient capacity to service the proposed development.

This report demonstrates that the proposed development can be suitably serviced with all engineering services described and supports the type and scale and development that is proposed.

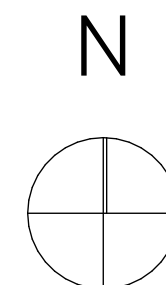


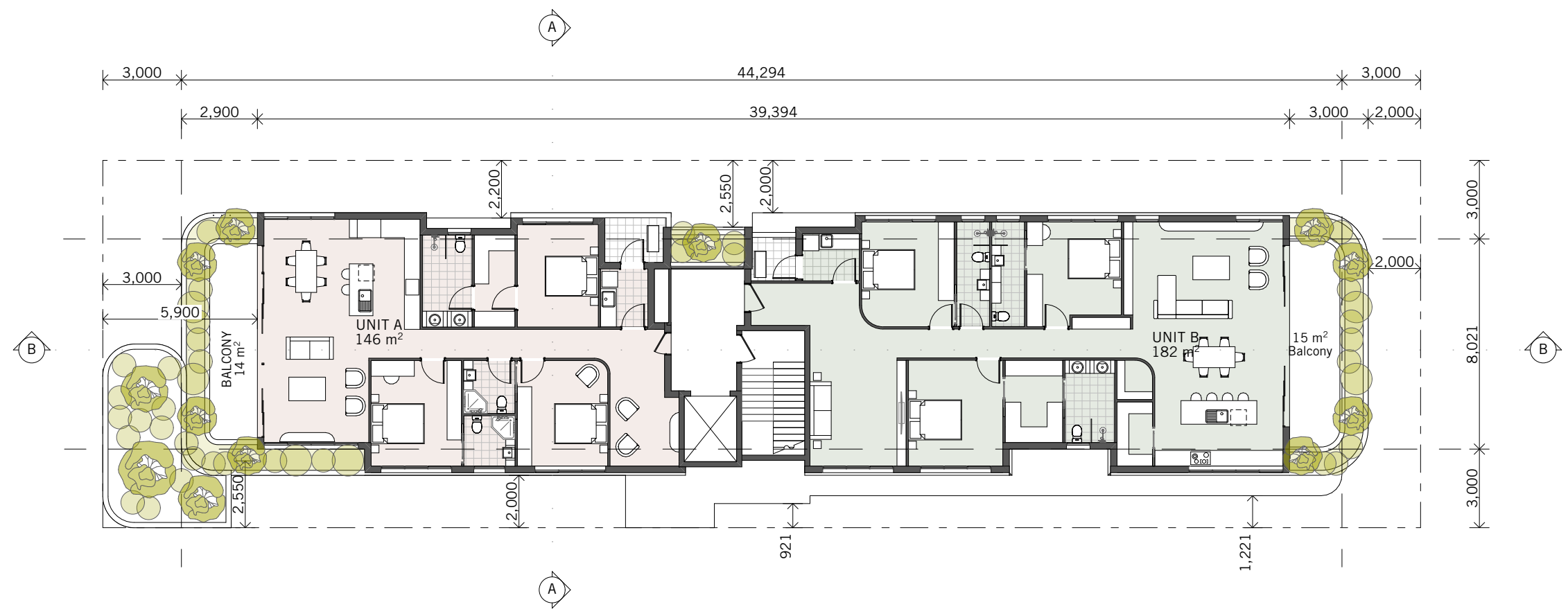
Appendix A

Site Survey & Architectural Plans



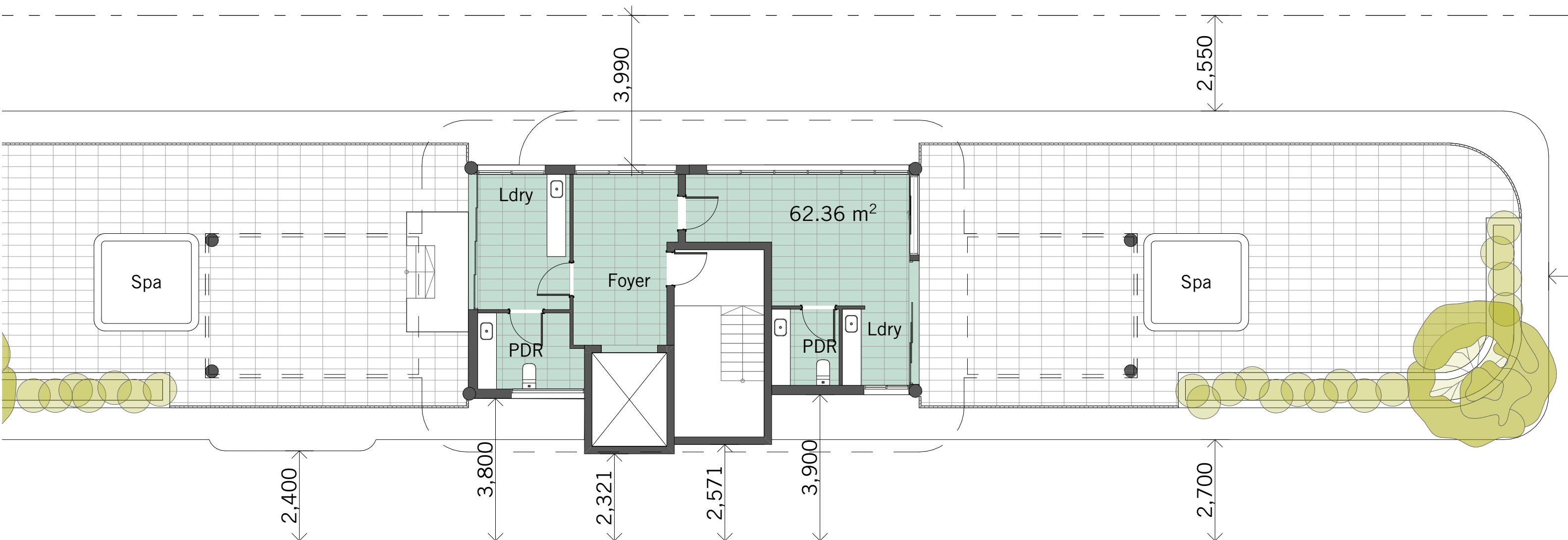
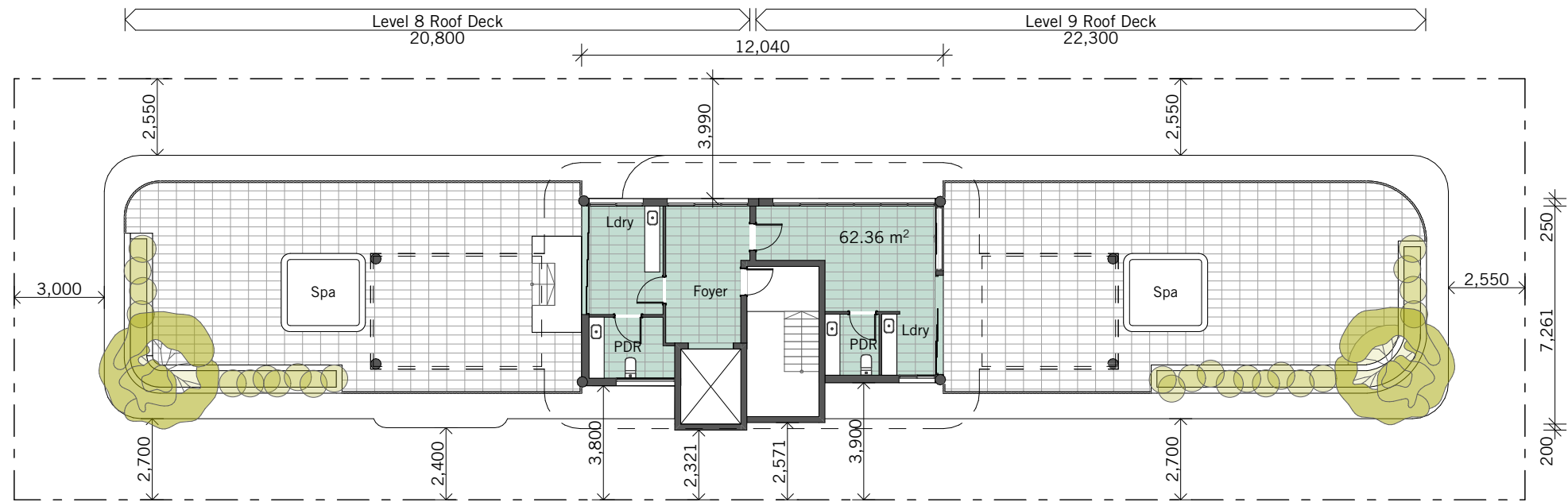
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<i>A</i>	<i>20-01-2025</i>	<i>Original Issue</i>
<i>B</i>	<i>05-02-2025</i>	<i>Additional Survey of Services</i>





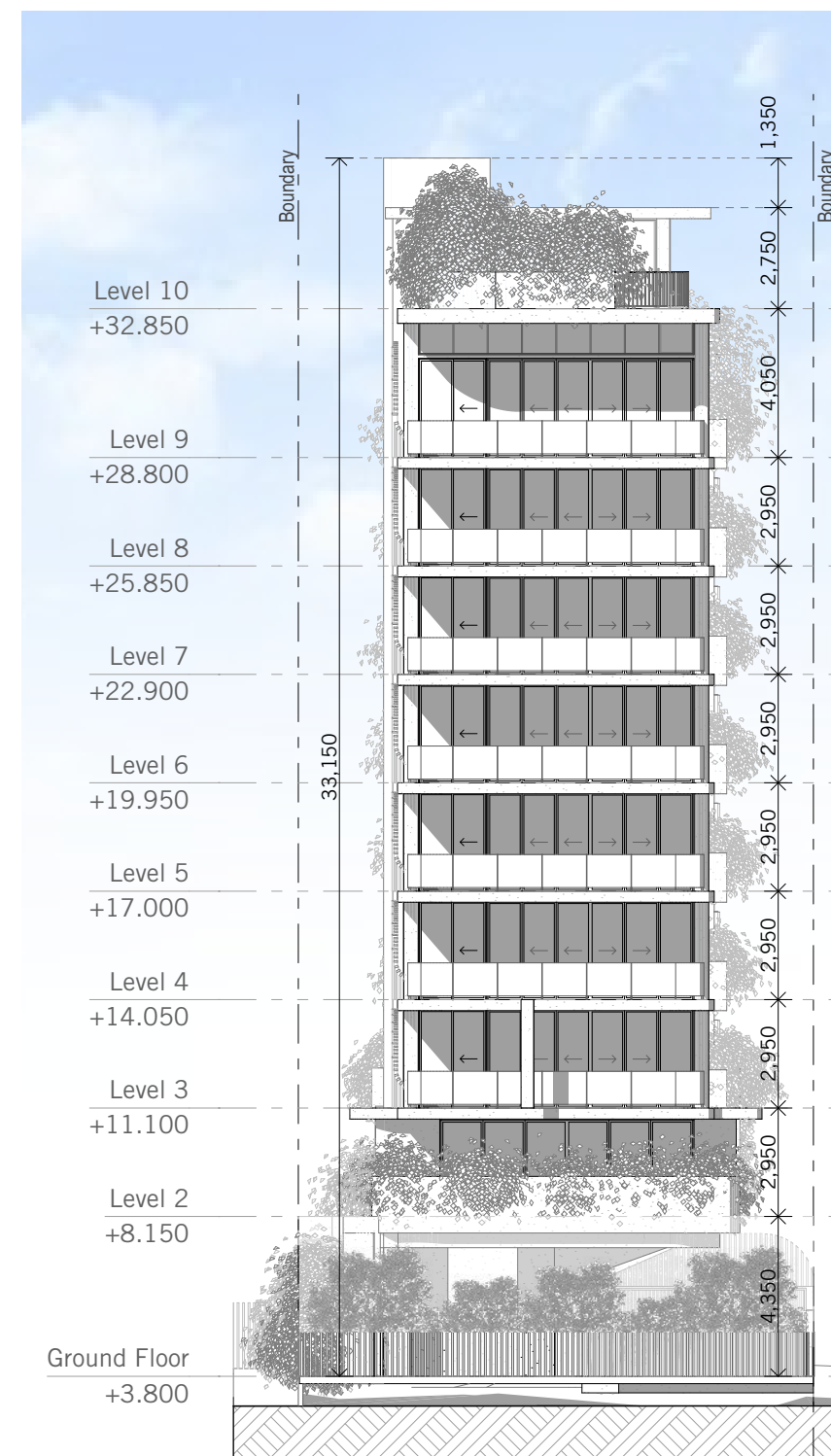
Level 2 Site Plan
1:200 @ A3





Roof Plan
1:100, 1:200 @ A3



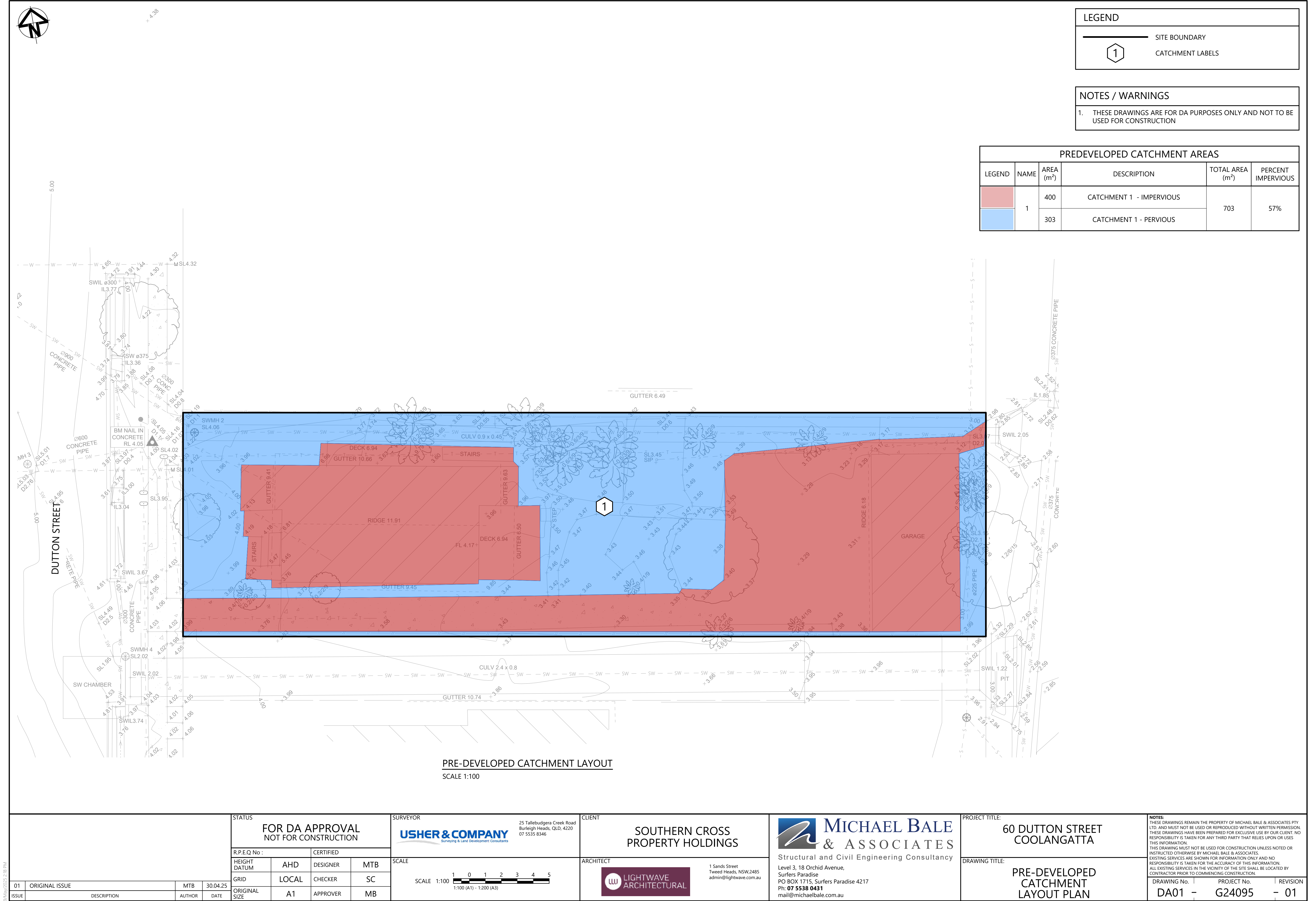


East Elevation
1:200 @ A3



Appendix B

Engineering Drawings



LEGEND

SITE BOUNDARY

1

CATCHMENT LABELS

NOTES / WARNINGS

1. THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION

PREDEVELOPED CATCHMENT AREAS				
LEGEND	NAME	AREA (m²)	DESCRIPTION	TOTAL AREA (m²)
	1	400	CATCHMENT 1 - IMPERVIOUS	703
		303	CATCHMENT 1 - PERVIOUS	

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STATUS				FOR DA APPROVAL NOT FOR CONSTRUCTION			
R.P.E.Q No:		CERTIFIED					
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012345

1:100 (A1) - 1:200 (A3)

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PROJECT TITLE:

60 DUTTON STREET
COOLANGATTA

DRAWING TITLE:

PRE-DEVELOPED
CATCHMENT
LAYOUT PLAN

NOTES:

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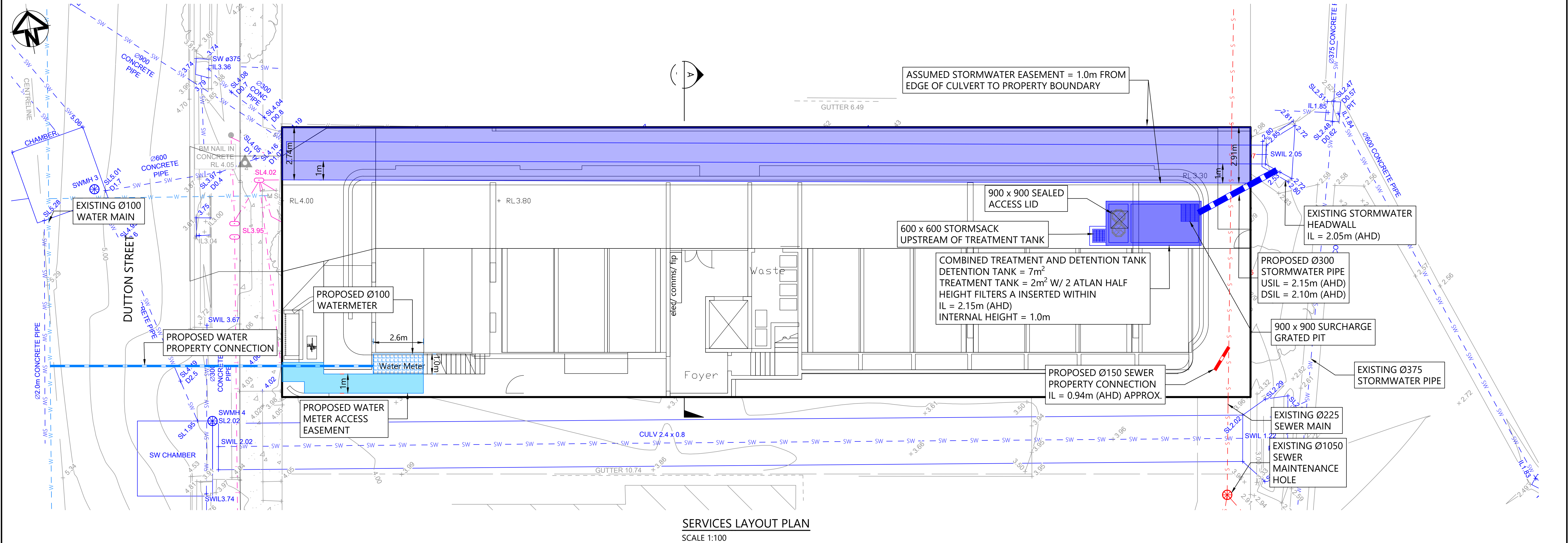
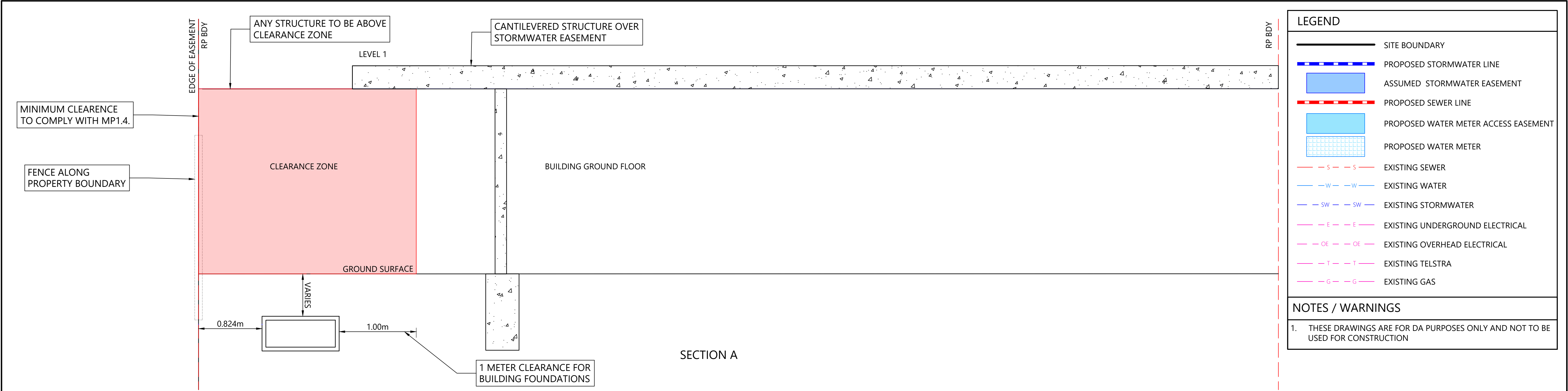
 SITE BOUNDARY
 POST-DEVELOPED CATCHMENT BOUNDARY
 CATCHMENT LABELS

1. THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION

POST-DEVELOPED CATCHMENT AREAS					
LEGEND	NAME	AREA (m²)	DESCRIPTION	TOTAL AREA (m²)	PERCENT IMPERVIOUS
	1	54	CATCHMENT 1 - LANDSCAPING	672	92%
	2	35	CATCHMENT 1 - HARDSTAND		
	3	474	CATCHMENT 1 - ROOF		
	4	109	CATCHMENT 1 - DRIVEWAY		
	5	28	BYPASS - LANDSCAPING	31	10%
	6	3	BYPASS - HARDSTAND		
TOTAL				703	88%

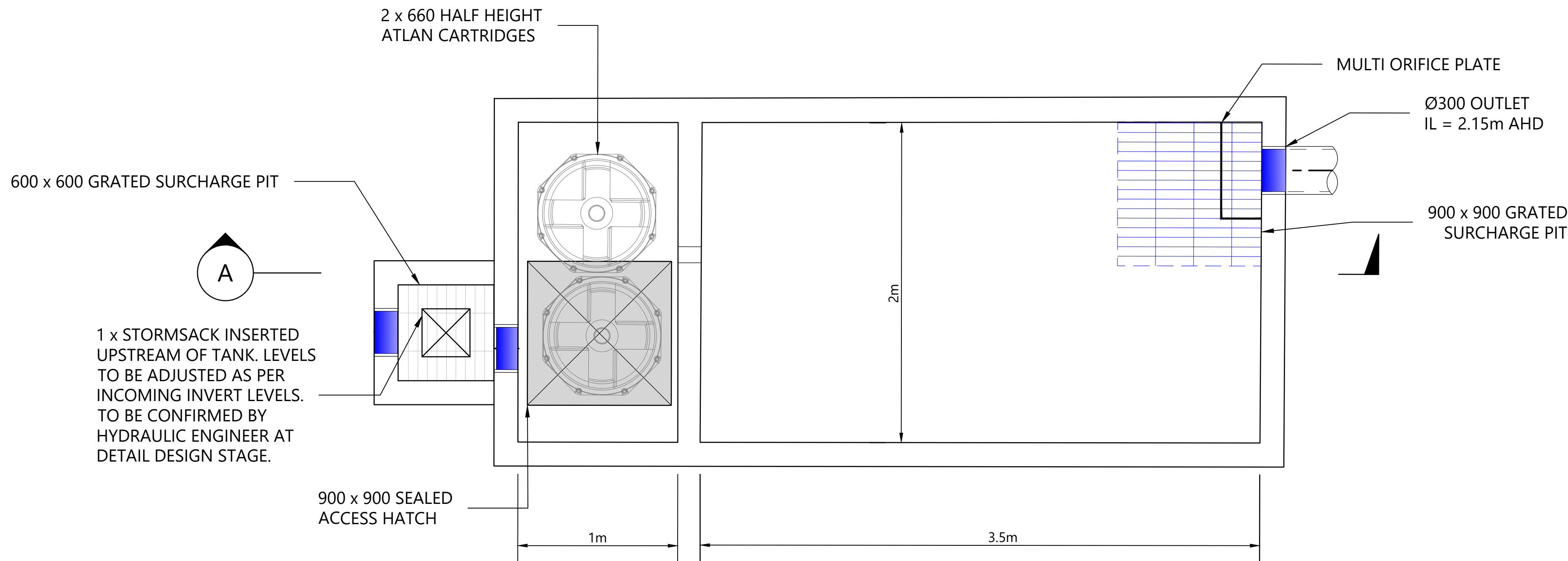


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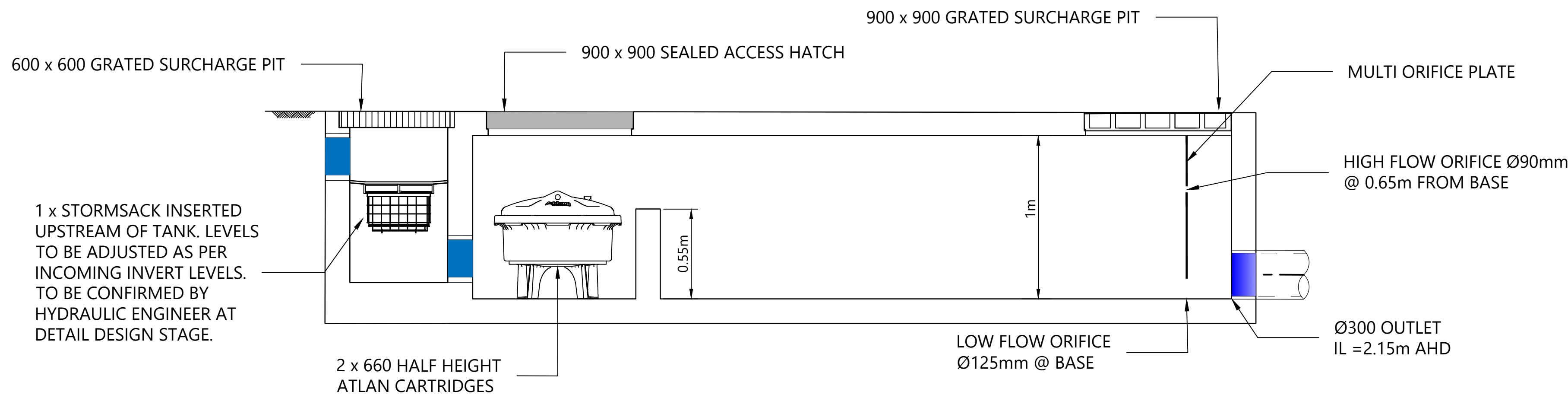


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PLAN VIEW



SECTION A

STORMWATER TANK PLAN
SCALE 1:20

<table><tr><td>01</td><td>ORIGINAL ISSUE</td><td>MTB</td><td>09.05.25</td></tr><tr><td>ISSUE</td><td>DESCRIPTION</td><td>AUTHOR</td><td>DATE</td></tr></table>				01	ORIGINAL ISSUE	MTB	09.05.25	ISSUE	DESCRIPTION	AUTHOR	DATE	STATUS FOR DA APPROVAL NOT FOR CONSTRUCTION		SURVEYOR USHER & COMPANY Surveying & Land Development Consultants 25 Tallebudgera Creek Road Burleigh Heads, QLD, 4220 07 5535 8346		CLIENT SOUTHERN CROSS PROPERTY HOLDINGS		 MICHAEL BALE & ASSOCIATES Structural and Civil Engineering Consultancy		PROJECT TITLE: 60 DUTTON STREET COOLANGATTA		NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.	
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RESIDENTIAL DEVELOPMENT

60 DUTTON STREET, COOLANGATTA

STORMWATER MANAGEMENT PLAN

FOR: SOUTHERN CROSS PROPERTY HOLDINGS

REPORT NUMBER: R001-G24095



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1. Introduction

This report has been prepared to support the lodgement of a development application involving the construction of a new development, comprising of a nine (9) storey residential development. The development is proposed to take place over the following parcel of land:

Property Address: 60 Dutton Street, Coolangatta

Property Description: Lot 2 on RP86756

Council: City of Gold Coast

Site Area: 703m²

The purpose of this report is to address the management of stormwater quantity and quality to ensure that the proposed development complies with all necessary state and local government policies.

This report intends to assess the likely impact of the proposed development in relation to stormwater quantity, and the adequacy of the existing stormwater infrastructure to accommodate the proposed development.

1.1 Related Reporting

This report is intended to be read in conjunction with the associated development submission documents, current as of the date of this report.

An Engineering Service Report (Ref: R002-G24095) has been prepared for the proposed development and should be read in conjunction with this report.

2. Property Description

The proposed development is situated on the existing lot located at 60 Dutton Street, Coolangatta described as Lot 2 on RP86756. The property is located within the City of Gold Coast Local Government Area.

The site is located in the suburb of Coolangatta and is in close proximity to local commercial and retail centres.

The proposed development site is bounded by Dutton Street to the west, existing residential allotments to the north and south and Goodwin Park to the east. The registered area of the existing allotment for this proposal is 703m².

A general locality plan is presented in Figure 2.1 below:



Figure 2.1 - Site Locality

2.1 Land Usage

The development site is currently occupied by a residential dwelling. The existing development contains impervious land uses, including roof, driveway, and other hardstand areas. The existing impervious areas have been estimated from the survey to cover approximately 57% of the site area, as displayed on the pre-developed catchment plan attached within Appendix A of this report.

The existing development is currently assessable via an existing VXO from Dutton Street.

2.2 Topography and Drainage

The detailed survey obtained for the project site indicates that majority of the surface grades towards the eastern boundary of the site towards Goodwin Park. A stormwater culvert traverses the proposed development site, running in parallel alignment with the northern boundary of the development site. Approximate levels on the site vary from 4.19m (AHD) in the northwest corner of the site to 2.99m (AHD) located in the southeast corner of the site. The average grade of the site has been calculated to be approximately 1.5%.

The development site contains existing internal stormwater infrastructure capturing runoff generated from the roof area, and discharges flows towards Goodwin Park to the east.

A copy of the detailed survey by Usher and Company has been attached within Appendix A of this report.

2.3 Upstream Catchment

The site survey indicates that the development site contains existing stormwater infrastructure that conveys an upstream catchment through the site, it is proposed that this stormwater infrastructure will remain to convey the upstream catchment through the development site, and the proposed development will comply with MP1.4. As a result, this development is expected not to be impacted by an upstream catchment and no allowance for upstream catchment flows have been considered in this report.

3. Proposed Development

The proposed development consists of:

- The demolition of existing structures; and
- The construction of a new nine (9) storey residential tower; and
- The construction of access driveways and other hardstand surfaces associated with the proposed development.

A copy of the proposed architectural layout plans has been included in Appendix A of this report.

Additional works on site shall include the construction of water reticulation, sewer reticulation, electrical and telecommunications services and stormwater management works.

External works for the development will consist of verge works with Dutton Street to facilitate the construction of the vehicle crossover and service connections. No further external civil works are proposed as part of this development.

4. Lawful Point of Discharge

In the existing case, the majority of the stormwater runoff generated from the development site discharges towards the eastern boundary via overland sheet flow, towards Goodwin Park. Flows will enter council stormwater network via a stormwater headwall located within Goodwin Park. The captured stormwater runoff, discharges from the site without any on-site detention or water quality treatment.

In the developed case, it is proposed that the development site is to connect into the existing stormwater infrastructure located within Goodwin Park. The flows generated from the site are to be detained and treated within a combined belowground stormwater treatment and detention tank, and discharge to an existing council headwall located within Goodwin Park via a proposed Ø300 stormwater pipe. This arrangement is outlined in the Engineering Drawings attached within Appendix B.

The proposed discharge arrangement is considered to comply with the requirements of a lawful point of discharge and will be maintained following the development of the site. It is not anticipated that any stormwater will be directed towards any adjacent properties.

QUDM (2017) provides a three-part framework for the identification of a lawful point of discharge for a development site. The first assessment item is to consider if the proposed development will alter the site's stormwater discharge characteristics in a manner that may substantially damage a third-party property. As the proposed development is not considered likely to worsen the flows received by the stormwater infrastructure within Goodwin Park, the proposed point of discharge is considered to satisfy the requirements set out in Section 3.9.1 – Lawful Point of Discharge Test.

This compliance is further demonstrated in the following pages where it is shown that the proposed development will result in no worsening of peak flows from the development site.

.

5. Site Specific Hydrology

5.1 Introduction

The proposed development will involve the construction of a new residential apartment building, access driveway and other associated hardstand surfaces. These changes in site layout have the potential to change the coefficient of discharge for the site and thereby may affect the peak stormwater discharge rates of the development site.

This section of the report presents an assessment of the peak stormwater discharge resulting from the site and identifies whether attenuation measures are necessary to ensure “no-worsening” of the peak flows from the site.

5.2 Methodology

The methodology of the hydrologic analysis involves the use of both the Rational Method and DRAINS runoff-routing software. The Rational Method, as described by the Queensland Urban Drainage Manual (QUDM 2017), provides a simple means for the assessment of the peak discharge rate for design storms. The rational method does not provide a reliable basis for the determination of runoff volume or hydrograph shape.

DRAINS software (by Watercom) is a computer-based model that incorporates time-area routing processes to more accurately determine the volume and shape of the hydrograph during a storm event. DRAINS also includes storage-routing processes that can simulate the effect of stormwater detention systems.

The Rational Method is used in the hydrologic analysis to calibrate and verify the results of the DRAINS software modelling, in lieu of the availability of gauged information.

Once calibrated and verified, the DRAINS software modelling is used to calculate all the pre and post development hydrographs that are used in the assessment, and for the design of the proposed stormwater detention system.

5.3 Catchment Definition

In the existing case, the site has been modelled as singular catchment, with the Fraction Imperviousness measured from the site survey. In the developed case, the development site is represented by two (2) catchments, a highly developed catchment and a small bypass catchment with the fraction imperviousness measured from the current architectural plans. Table 5.1 below summarises the catchment properties used for the stormwater modelling.

Table 5.1: Catchment Definition

Catchment	Catchment Size	Fraction Impervious (f_i)
Pre-Developed Site	703m ²	0.57
Post-Developed Site	672m ²	0.92
Post-Developed (Bypass)	31m ²	0.10

Hydrologic Parameters

Time of Concentration

The time of concentration for the pre- and post-development catchments have been calculated in accordance with QUDM. The Friends sheet flow equation has been used to determine the time of concentration (t_c) for the ground catchments. The time of concentration for the catchment have been estimated using standard inlet times in combination with expected length of piped flows. Refer to Table 5.2 for the calculated time of concentration for each catchment.

Table 5.2: Time of Concentration Summary

Catchment	Catchment Size	Time of Concentration
Pre-Developed Site	703m ²	9.0 minutes
Post-Developed Site	672m ²	5.0 minutes
Post-Developed (Bypass)	31m ²	5.0 minutes

C10 Value

The C₁₀ values for the existing and proposed site conditions have been calculated in accordance with the Queensland Urban Drainage Manual (QUDM), Table 4.5.3: Table of C₁₀ values. A summary of the C₁₀ values adopted for the site are presented in Table 5.3 below.

Table 5.3: C₁₀ Values

	Area	Rainfall Intensity, ¹ I ₁₀ / Fraction Impervious	C ₁₀
Pre-development	703m ²	70.50mm/hr /57%	0.814
Post-development	672m ²	70.50mm/hr /92%	0.844
Post-Developed (Bypass)	31m ²	70.50mm/hr /10%	0.700

Summary of Flow – Rational Method

The Rational Method was used to calculate runoff from the site in the pre-developed and post developed scenario. The anticipated peak discharge is detailed in Table 5.4 below.

Table 5.4: Rational Method Calculation Summary

AEP	39% (m ³ /s)	18% (m ³ /s)	10% (m ³ /s)	5% (m ³ /s)	2% (m ³ /s)	1% (m ³ /s)
Pre-Developed	0.016	0.024	0.029	0.035	0.045	0.052
Post-Developed	0.018	0.028	0.034	0.042	0.054	0.062
Bypass	0.001	0.001	0.001	0.002	0.002	0.002
Flow Increase	+0.003	+0.005	+0.006	+0.009	+0.011	+0.012

Table 5.4 above shows that the development will result in an increase in peak estimated flow rates for all AEPs. As it has been demonstrated that the proposed development will result in increased flows from the development site, the development **will** need to provide on-site detention to mitigate peak flows.

5.4 Detention Design Process

DRAINS hydrologic software has been utilised to undertake the assessment of pre-development and post-development stormwater discharge for the purposes of the on-site detention specification process.

DRAINS version 2025.01 has been utilised in this assessment.

DRAINS Parameters

Calibration

The total pre-development flow has been calculated using DRAINS software and compared to the Rational Method Calculations. The times of concentration and fractions impervious used in DRAINS are identical to the ones used in the Rational Method calculations. The pre-development flow calculated in the DRAINS Model is presented in Table 5.5 below.

Table 5.5: Pre-Development Runoff Calculations Comparison

	39% (m ³ /s)	18% (m ³ /s)	10% (m ³ /s)	5% (m ³ /s)	2% (m ³ /s)	1% (m ³ /s)
Pre-development Rational Method	0.016	0.024	0.029	0.035	0.045	0.052
Pre-development DRAINS	0.019	0.024	0.030	0.035	0.042	0.047

As shown in Table 5.5 above, the peak flows determined by DRAINS generally compare well against the peak flows calculated by the Rational Method, with conservative values. Therefore, the DRAINS model is considered appropriate for this site.

Rainfall (Temporal Patterns)

Rainfall data used in the DRAINS model has been sourced from the Bureau of Meteorology for the Coolangatta region. The model has assessed all temporal patterns between 5 minutes and 120 minutes (2 hours) for all standard design storms.

Modifiable Inputs

The DRAINS software package has several inputs that can be used to manipulate the hydraulic behaviour of the model. The values adopted in this model are all default values, and are presented in Table 5.6 below:

Table 5.6: DRAINS Modifiable Inputs

Input	Modelled Value
Antecedent Moisture Condition	3
Paved Depression Storage (mm)	1
Supplementary Depression Storage (mm)	1
Grassed (Pervious) Depression Storage (mm)	5
Soil Type	3

Depression Storage values of 1mm for paved/supplementary and 5mm for grassed (pervious) areas were adopted in this model as is recommended in the DRAINS user manual.

An Antecedent Moisture Condition (AMC) of 3.0 has been adopted for this site. This is a default value for DRAINS. A soil type classification type of 3 is representative of soil with slow infiltration rates (may have layers that impede downward movement of water). This value is the default (conservative) value adopted by DRAINS and is considered to represent the existing site conditions well.

Detention Design Parameters

It is proposed to provide detention for the development site within a singular detention tank that is underneath the ground floor slab. The detention system is proposed to mitigate peak flows from the proposed development. Details of the proposed detention systems are presented in Table 5.7 below.

Table 5.7– Detention System Design Parameters

Detention Tank Parameters	
Detention Base	7.0m ²
Detention Height	1.0m
Total Detention Volume	7.0m³
Low-Flow Orifice Size/Level	Ø125mm @ Base
High-Flow Orifice Size/Level	Ø90mm @ 0.65m above Base
Emergency Overflow Weir	900 x 900 Grate @ Top of Tank
Outlet Size/Level	Ø300mm @ Base

Figure 5.1 below shows a screenshot of the DRAINS model used to represent the subject site.

Pre-Developed

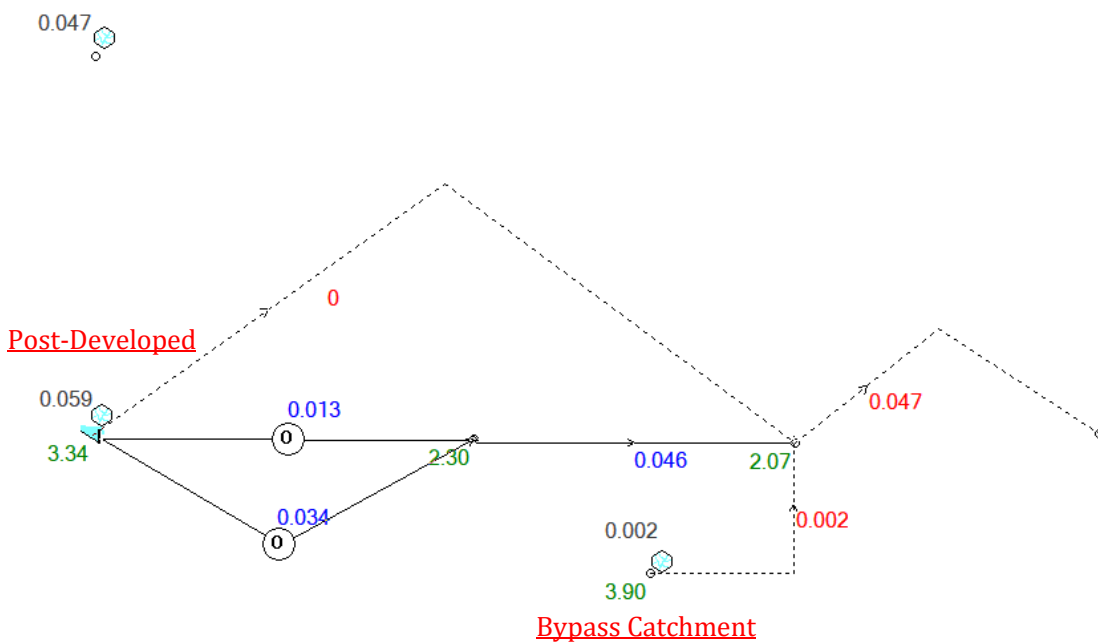


Figure 5.1 – DRAINS Model Screenshot 1% AEP

DRAINS Hydrologic Modelling Results

The on-site stormwater detention arrangement described in Table 5.7 has been designed to demonstrate that the proposed on-site detention strategy is effective in reducing developed peak stormwater discharge to a rate that is less than the existing, pre-development scenario.

The results of the assessment and confirmation of the achievement of the on-site detention objectives at all lawful points of discharge are provided in Table 5.8 below:

Table 5.8 – Development Runoff Calculations with Detention – DRAINS Model

	39% (m³/s)	18% (m³/s)	10% (m³/s)	5% (m³/s)	2% (m³/s)	1% (m³/s)
Q Pre-Developed (m³/s)	0.019	0.024	0.030	0.035	0.042	0.047
Q Detention (m³/s)	0.019	0.024	0.030	0.035	0.040	0.047
Peak Flow Reduction (m³/s)	0.000	0.000	0.000	0.000	-0.002	-0.000

The comparison of pre-developed and attenuated post-developed with detention conditions shows that non-worsening of peak discharges in the 39%, 18%, 10%, 20%, 50% and 1% AEP storm events is achievable with the detention system described in previous sections.

6. Stormwater Quality

6.1 Introduction

This section of the report aims to identify the requirements for stormwater quality management resulting from the proposed development and identify suitable stormwater treatment devices to comply with relevant requirements of the State Planning Policy and the City of Gold Coast City Plan Policy – Land Development Guidelines.

6.2 State Planning Policy Assessment

An assessment has been undertaken to determine whether the development proposal necessitates compliance with the State Planning Policy (SPP) objectives. The following trigger questions are used to determine whether SPP compliance is required.

Table 6.1: State Planning Policy Trigger Questions

Trigger Question	Development Response
Material Change of Use for Urban Purposes with a land area greater than 2,500m ² and:	No
a) Will result in an impervious area greater than 25% of the net developable area; or	N/A
b) Will result in 6 or more dwellings.	N/A
Reconfiguration of Lot for Urban Purposes that involves a land area greater than 2,500m ² , and will result in 6 or more lots	No

The above table indicates that the development does not trigger compliance with the SPP, and the proposed development will adopt local authority stormwater quality assessment.

6.3 Local Authority Assessment

As compliance with the SPP objectives has been shown not to be required, an assessment has been undertaken to determine whether the development proposal necessitates compliance with City of Gold Coast (CoGC) objectives. The following trigger questions are used to determine whether CoGC compliance is required.

Table 6.2: City of Gold Coast Trigger Questions

Trigger Question	Development Response
Greater than 850m ² of land and results in an increased number of allotments	No
3 or more dwellings (attached or detached)	Yes
Includes newly constructed road (previously unformed road) exceeding 30m in total length	No
Includes 200m ² or more uncovered new or refurbished car park area including parking bays and circulation driveway	No

As the above trigger questions are applicable to this development, the site **is** required to achieve the design objectives of the City of Gold Coast City Plan Policy.

6.4 Water Quality Objectives and Methodology

Table 6.2 indicates that the proposed development triggers the requirement for the development to achieve the Water Quality Objectives outlined in the State Planning Policy. As such, the development must demonstrate the following minimum reductions in mean annual pollutant loads from the unmitigated development:

Table 6.3-Water Quality Objectives

Pollutant	Minimum Reduction in Mean Load (%)
Total Suspended Solids (kg/yr)	80
Total Phosphorus (kg/yr)	60
Total Nitrogen (kg/yr)	45
Gross Pollutants (kg/yr)	90

To design and assess the achievement of these stormwater quality objectives the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) Version 6.4.0 has been utilised to size suitable stormwater quality improvement devices as described in the following sections.

6.5 Catchment Areas & Source Nodes

The catchment areas used in the MUSIC model for the site are limited to the net developable area of the development site and are outlined in Table 6.4 below:

Table 6.4-Pollutant Export Parameters

Catchment	Area
Roof Area (100% Impervious)	474m ²
Landscape Area (100% Pervious)	54m ²
Hardstand Area (100% Impervious)	35m ²
Driveway Area (100% Impervious)	109m ²
Bypass Landscape Area (100% Pervious)	28m ²
Bypass Hardstand Area (100% impervious)	3m ²

The hardstand bypass area has been excluded from the modelling due to the size of the catchment area which would have minimal affected on the development.

6.6 Recorded Rainfall Data – Gold Coast South

Rainfall data for the site was taken from the City of Gold Coast (South) Elanora Treatment Plant (ID 40609) using the dates 1/1/1989 – 31/12/1998 in accordance with the Water By Design – MUSIC Modelling Guidelines (2010) using a 6 minute time step.

The mean average rainfall over the period is 1,436mm.

Rainfall over this time period was modelled using MUSIC to calculate the pollutant generation and treatment effectiveness of the proposed systems.

6.7 Rainfall-Runoff Parameters

Rainfall-runoff parameters were taken in accordance with the Water By Design – MUSIC Modelling Guidelines (2010) using *Urban Residential* land use, as tabulated in Table 6.5 below:

Table 6.5-MUSIC Modelling Parameters

Parameter	Value
Rainfall threshold (mm)	1.00
Soil storage capacity (mm)	500
Initial storage (%)	10
Field capacity (mm)	200
Infiltration capacity coefficient a	211
Infiltration capacity exponent b	5.0
Initial depth (mm)	50
Daily recharge rate (%)	28
Daily baseflow rate (%)	27
Daily deep seepage rate	0

6.8 Pollutant Export Parameters

Pollutant export parameters were taken in accordance with Water By Design – MUSIC Modelling Guidelines (2010) using *Urban Residential* land use.

The split catchment approach was utilised for each surface type, with the input parameters shown in Table 6.6 below:

Table 6.6-Pollutant Export Parameters

Flow Type	Surface Type	TSS log ¹⁰ values		TP log ¹⁰ values		TN log ¹⁰ values	
Baseflow	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	1.00	0.34	-0.97	0.31	0.20	0.20
	Ground	1.00	0.34	-0.97	0.31	0.20	0.20
Stormflow	Roof	1.30	0.39	-0.89	0.31	0.26	0.23
	Roads	2.43	0.39	-0.30	0.31	0.26	0.23
	Ground	2.18	0.39	-0.47	0.31	0.26	0.23

6.9 Proposed Treatment Device Details

The proposed stormwater quality treatment train includes an Atlan Environmental cartridge system to treat stormwater flows from the development site. This system is to provide primary treatment of stormwater flows. Flows from majority of the development site are to be directed towards the treatment tank. The proposed development will contain a singular treatment chamber located towards the north boundary of the site, as shown on the engineering drawing attached within Appendix B.

Proprietary Treatment Device (Atlan Environmental Products)

The Atlan treatment train is a compact implementation of multiple stormwater treatment elements. It is comprised of Atlan StormSack gully pit inserts which act as a pre-treatment device and AtlanFilter cartridge filters which provide primary treatment for the site. The Atlan treatment train is typically designed to provide stormwater treatment in ultra-urban environment by meeting water quality standard whilst increasing yield and hence cost effectiveness for developers.

ATLAN StormSack filtration solutions are water quality devices that are installed within stormwater inlet pits to capture contaminants close to the surface for ease of maintenance. ATLAN StormSack

filtration offers a decentralised approach to stormwater treatment which assists in achieving site water quality goals.

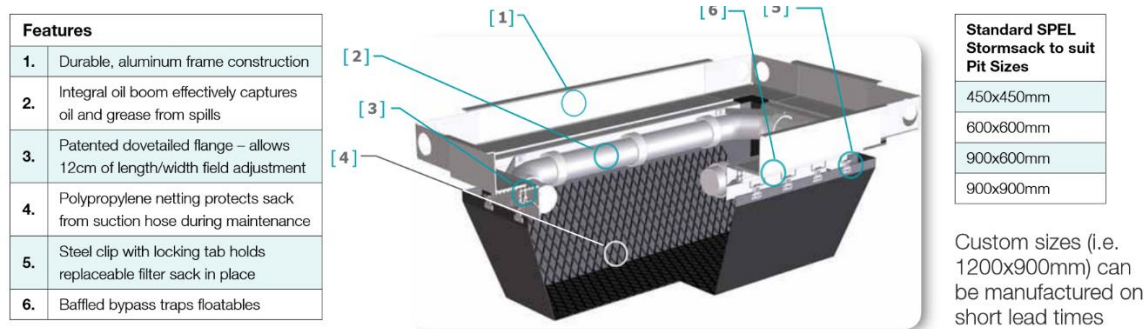


Figure 6.1: ATLAN Stormsack Gully Insert Pre-Treatment Filters

The AtlanFilter cartridge system provides a significantly greater surface contact area to footprint ratio than other filters. With a flow rate of 3.00L/s per cartridge and underground installation, the AtlanFilter provides excellent removal efficiency whilst maintaining site surface yield.

The high flow capacity and modular cartridge design means the AtlanFilter system can be effectively deployed in a variety of structures including manholes, precast vaults, or cast-in-place structures.



Figure 6.2: AtlanFilter Cartridge Filter

The Atlan Treatment Train system has proven compliance with the South-East Queensland Water by Design Music Modelling Guidelines requirements (2010) and has been accepted for use by the City of Gold Coast Council. The total requirement for treatment devices for the subject site is presented in Table 6.7 below:

Table 6.7 - Site Specific Atlan Treatment Train Requirements

Device Type	Treatment Tank
AtlanFilter Half Height Cartridges	2
Stormsack Inserts	1

The AtlanFilter cartridge is to be located within an underground tank that is to be constructed at the near the eastern boundary of the site alongside the Atlan Stormsack Insert which is to be constructed upstream of the treatment chamber.

6.1 MUSIC Model Diagrams

A diagrammatic layout of the MUSIC model interface used to model the proposed development with the proposed treatment devices incorporated for the development is presented in Figure 6.3 below:

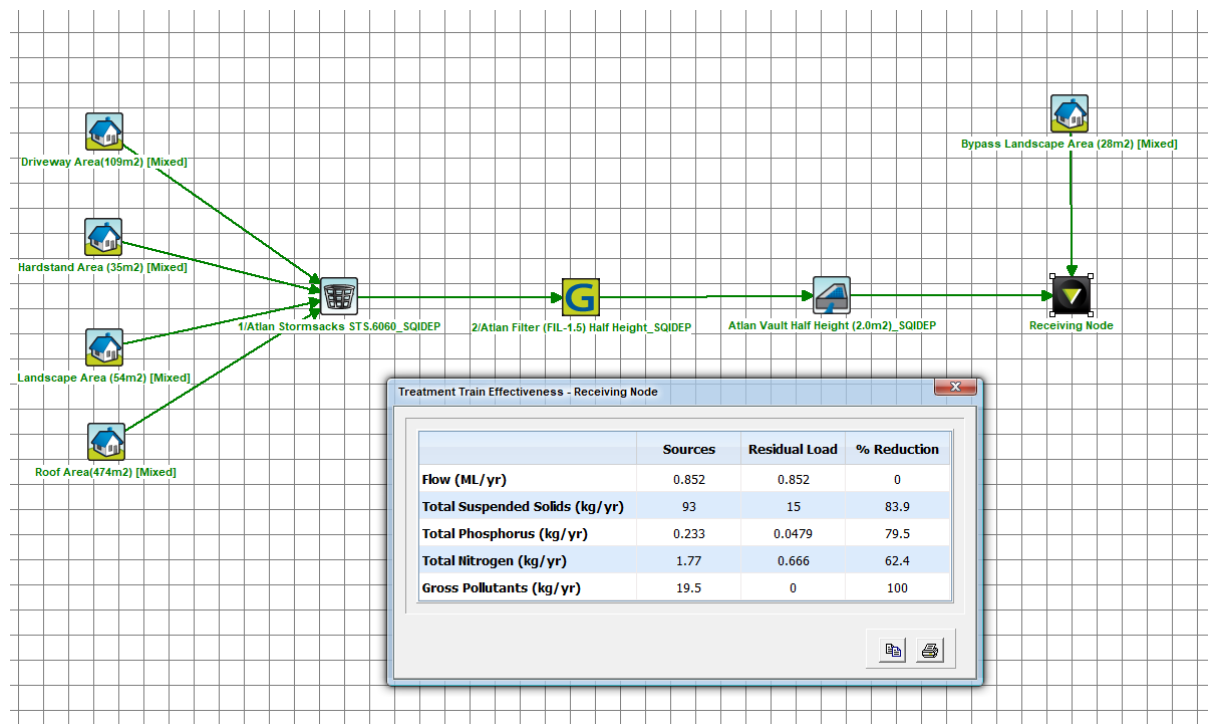


Figure 6-3: MUSIC Modelling Results

6.2 MUSIC Modelling Results

MUSIC was used to model the treatment train effectiveness in terms of the percentage of pollutants being removed from the system using the proposed treatment devices.

The results of the MUSIC modelling compared to the stated Water Quality Objectives (WQO's) are presented below:

Table 6.8: MUSIC Modelling Results

Potential Pollutant	Target WQO's	MUSIC Results
Total Suspended Solids (kg/yr)	80%	83.9%
Total Phosphorus (kg/yr)	60%	79.5%
Total Nitrogen (kg/yr)	45%	62.4%
Gross Pollutants (kg/yr)	90%	100%

The results indicate that the proposed treatment devices are efficient in achieving the water quality objectives and exceeds the minimum required pollutant reduction targets.

7. Conceptual Erosion and Sediment Control Plan

7.1 Introduction

During construction, it shall be the responsibility of the Principal Contractor to ensure that the development complies with the relevant erosion and sediment control objectives, as outlined in the State Planning Policy and the City of Gold Coast Planning Scheme.

This section of the report provides suggested inclusions in an erosion and sediment control plan for the proposed development site. This plan includes recommendations for monitoring & reporting responsibilities and the construction of site-specific sedimentation and erosion control measures. Detailed drawings specifying the proposed erosion and sediment control measures are to be provided at the Operational Works stage of the development.

7.2 General Erosion and Sediment Control Measures

It shall be the responsibility of the Principal Contractor to ensure the following erosion and sediment control measures are implemented on site:

- Clean stormwater runoff from upstream allotments is to be directed away from the development site using earth bunds or cut-off drains, as deemed appropriate by a suitable supervisor;
- The prevention of sediment runoff towards other allotments via the effective implementation of silt fences, sediment basins or other mitigation devices as deemed appropriate by a suitable supervisor;
- Sediment runoff shall also be prevented from entering the Council stormwater drainage system via the implementation of control measures such as gully pit sediment barriers;
- Erosion shakedown points shall be established at all vehicular access points, with shakedown areas regularly swept clean and sediment removed; and
- Erosion and sediment control measures are not to be removed from the development site until the site is completely rehabilitated and the surface is capable of resisting erosion.

7.3 Spoil and Stockpile Management Measures

It shall be the responsibility of the Principal Contractor to ensure the following spoil and stockpile management measures are implemented on site:

- Where the stockpiling of spoil and excess earthworks is necessary on the development site, stockpiles shall be established as far away as possible from stormwater inlets and pipelines to reduce the likelihood of sediment runoff; and
- Stockpiles are to be established within a designated zone of fill material and should be surrounded with appropriate erosion and sediment control measures.

7.4 Training Requirements

It shall be the responsibility of the Principal Contractor to ensure the following training protocols are implemented on the development site:

- Site induction courses shall include details of an environmental management reporting system, through which personnel will be able to report perceived erosion and sediment control issues on site.

8. Conclusion

This report has been prepared to support the lodgement of a development application involving the construction of a new development, comprising of a nine (9) storey residential development. The development is proposed to take place over the following parcels of land:

Property Address: 60 Dutton Street, Coolangatta

Property Description: Lot 2 on RP86756

Council: City of Gold Coast

Site Area: 703m²

This report has addressed the management of stormwater quantity and quality to ensure that the proposed development complies with all necessary state and local government policies.

This report describes the design process for specifications of the following key infrastructure elements that will ensure the management of stormwater to achieve necessary standards.

- Stormwater detention for the proposed development,
 - The construction of a 7.0m² stormwater detention tank (refer to Section 5 of this report for outlet arrangements).
- Stormwater quality treatment for the proposed development,
 - The installation of a two (2) half height Atlan filters to be located within a 2.0m² treatment chamber to treat flows generated from the proposed development site.
 - The installation of one (1) Atlan Stormsack pit insert to be located within a pit upstream of the treatment tank to treat flows generated from the proposed development site.

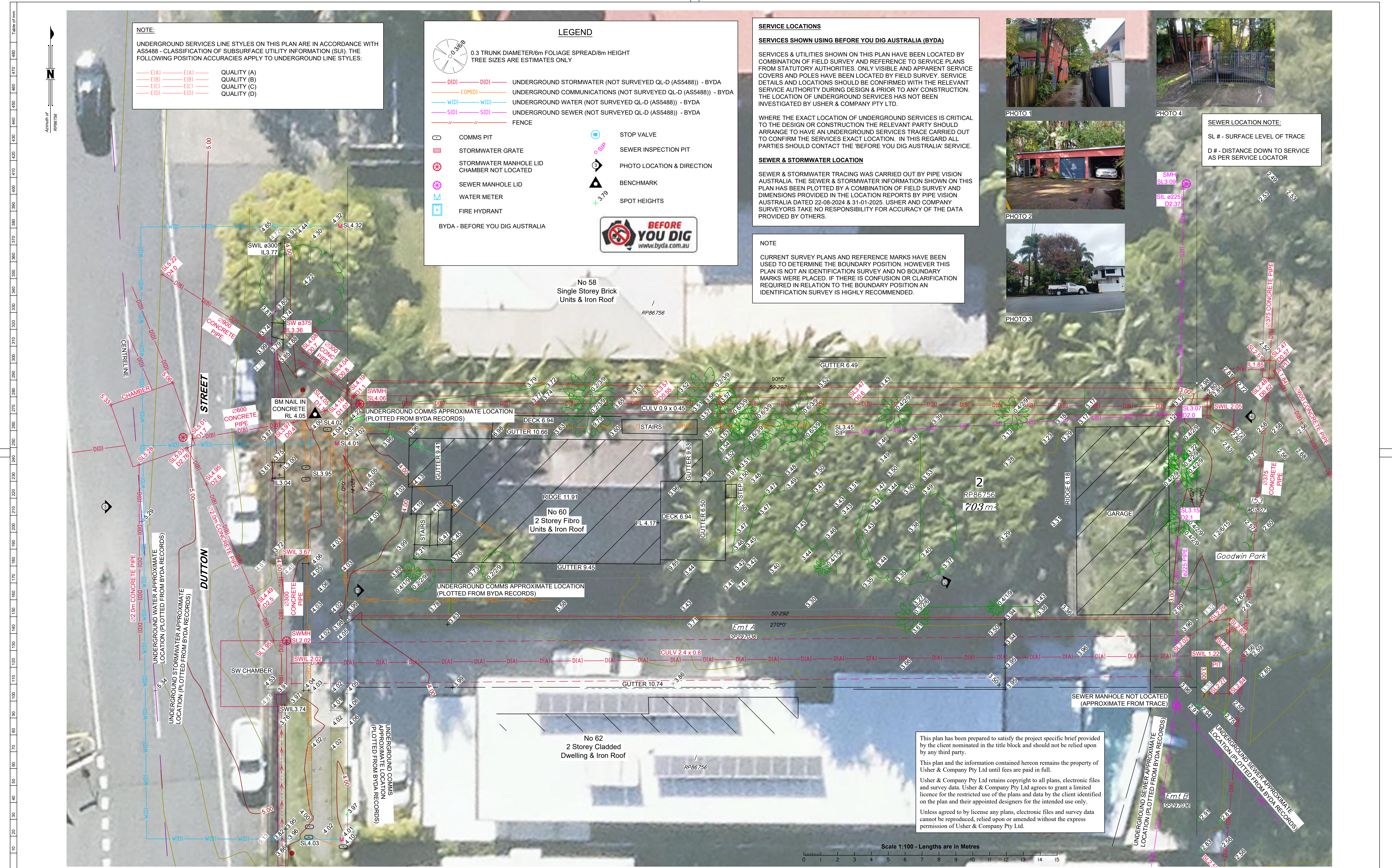
This report has addressed the management of stormwater quantity and demonstrated that no additional works are required to ensure that the proposed development complies with all necessary state and local government policies.

It is the opinion of this report that the proposed stormwater quantity management systems are suitable for a development of this scale and potential impacts.



Appendix A

Site Survey & Architectural Layout



NOTE:

UNDERGROUND SERVICES LINE STYLES ON THIS PLAN ARE IN ACCORDANCE WITH AS5488 - CLASSIFICATION OF SUBSURFACE UTILITY INFORMATION (SUI). THE FOLLOWING POSITION ACCURACIES APPLY TO UNDERGROUND LINE STYLES:

LINE STYLE	QUALITY
— E(A) —	QUALITY (A)
— E(B) —	QUALITY (B)
— E(C) —	QUALITY (C)
— E(D) —	QUALITY (D)

LEGEND

0.3 TRUNK DIAMETER/6m FOLIAGE SPREAD/8m HEIGHT
TREE SIZES ARE ESTIMATES ONLY

— D(D) —	— D(D) —	UNDERGROUND STORMWATER (NOT SURVEYED QL-D (AS5488)) - BYDA
— COM(D) —	— COM(D) —	UNDERGROUND COMMUNICATIONS (NOT SURVEYED QL-D (AS5488)) - BYDA
— W(D) —	— W(D) —	UNDERGROUND WATER (NOT SURVEYED QL-D (AS5488)) - BYDA
— S(D) —	— S(D) —	UNDERGROUND SEWER (NOT SURVEYED QL-D (AS5488)) - BYDA
— FENCE —	— FENCE —	FENCE

COMMS PIT	STOP VALVE
STORMWATER GRATE	SEWER INSPECTION PIT
STORMWATER MANHOLE LID CHAMBER NOT LOCATED	PHOTO LOCATION & DIRECTION
SEWER MANHOLE LID	BENCHMARK
WATER METER	SPOT HEIGHTS
FIRE HYDRANT	

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SERVICES & UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED BY COMBINATION OF FIELD SURVEY AND REFERENCE TO SERVICE PLANS FROM STATUTORY AUTHORITIES. ONLY VISIBLE AND APPARENT SERVICE COVERS AND POLES HAVE BEEN LOCATED BY FIELD SURVEY. SERVICE DETAILS AND LOCATIONS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN & PRIOR TO ANY CONSTRUCTION. THE LOCATION OF UNDERGROUND SERVICES HAS NOT BEEN INVESTIGATED BY USHER & COMPANY PTY LTD.

WHERE THE EXACT LOCATION OF UNDERGROUND SERVICES IS CRITICAL TO THE DESIGN OR CONSTRUCTION THE RELEVANT PARTY SHOULD ARRANGE TO HAVE AN UNDERGROUND SERVICES TRACE CARRIED OUT TO CONFIRM THE SERVICES EXACT LOCATION. IN THIS REGARD ALL PARTIES SHOULD CONTACT THE 'BEFORE YOU DIG AUSTRALIA' SERVICE.

SEWER & STORMWATER LOCATION

SEWER & STORMWATER TRACING WAS CARRIED OUT BY PIPE VISION AUSTRALIA. THE SEWER & STORMWATER INFORMATION SHOWN ON THIS PLAN HAS BEEN PLOTTED BY A COMBINATION OF FIELD SURVEY AND DIMENSIONS PROVIDED IN THE LOCATION REPORTS BY PIPE VISION AUSTRALIA DATED 22-08-2024 & 31-01-2025. USHER AND COMPANY SURVEYORS TAKE NO RESPONSIBILITY FOR ACCURACY OF THE DATA PROVIDED BY OTHERS.

NOTE

CURRENT SURVEY PLANS AND REFERENCE MARKS HAVE BEEN USED TO DETERMINE THE BOUNDARY POSITION. HOWEVER THIS PLAN IS NOT AN IDENTIFICATION SURVEY AND NO BOUNDARY MARKS WERE PLACED. IF THERE IS CONFUSION OR CLARIFICATION REQUIRED IN RELATION TO THE BOUNDARY POSITION AN IDENTIFICATION SURVEY IS HIGHLY RECOMMENDED.

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

SEWER LOCATION NOTE:

SL # - SURFACE LEVEL OF TRACE

D # - DISTANCE DOWN TO SERVICE AS PER SERVICE LOCATOR

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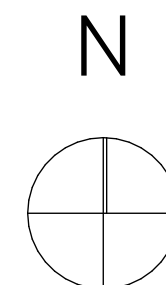
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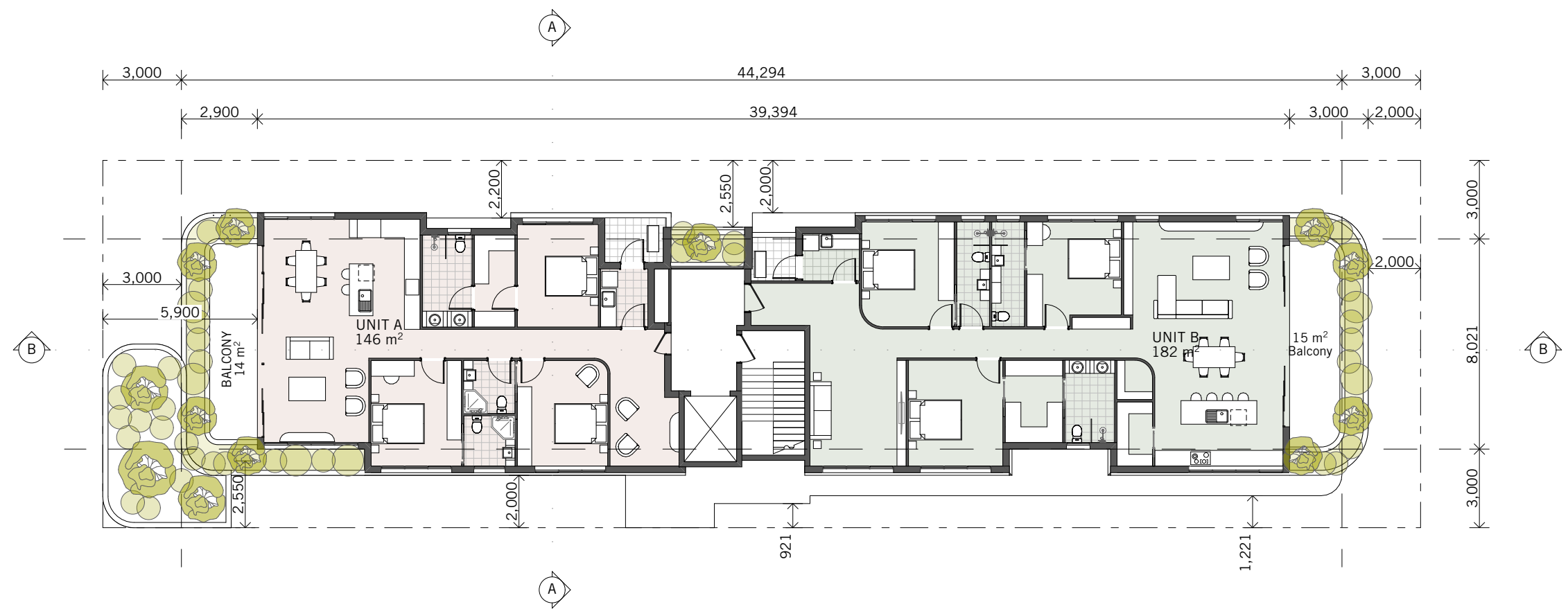
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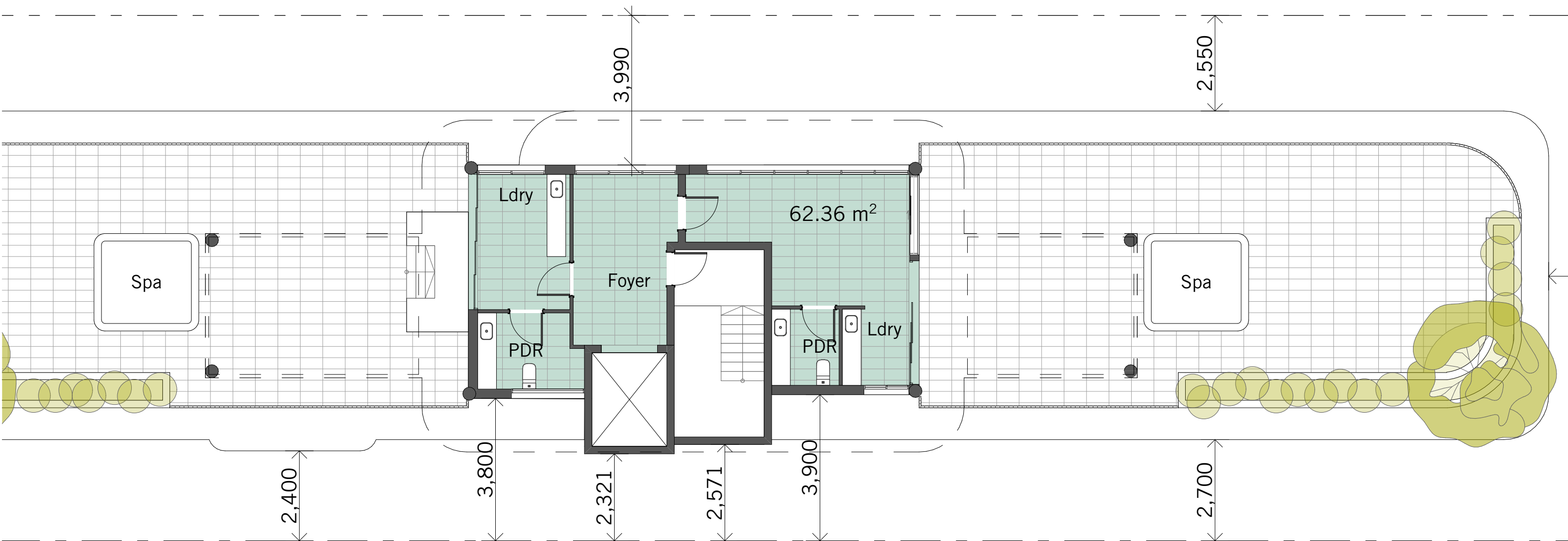
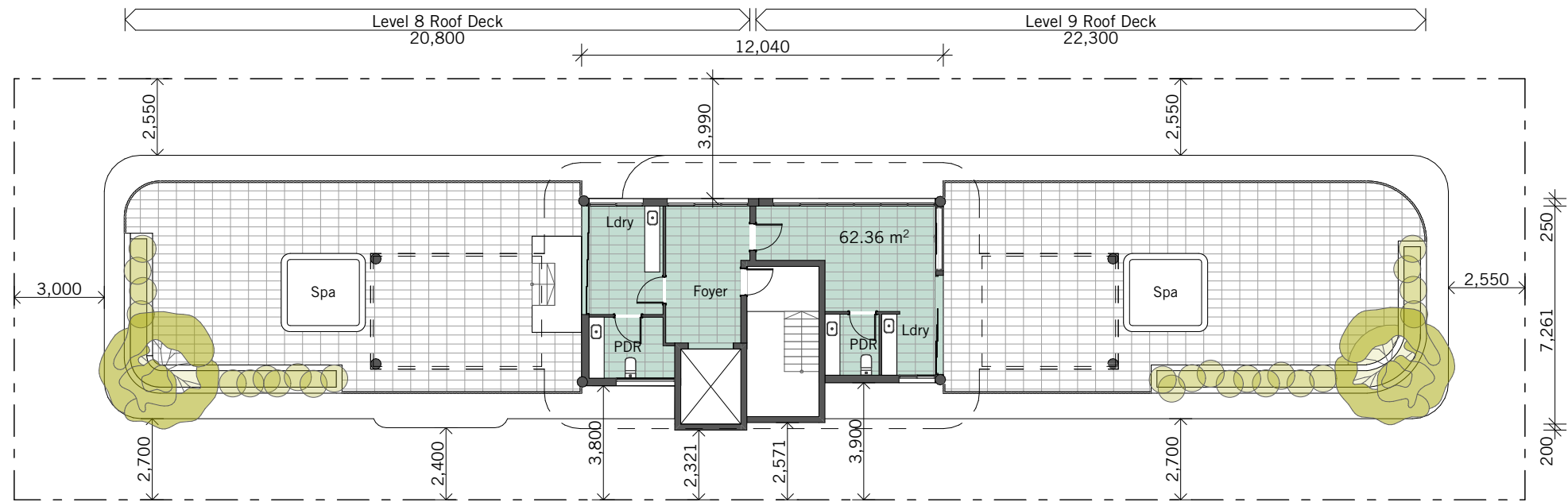
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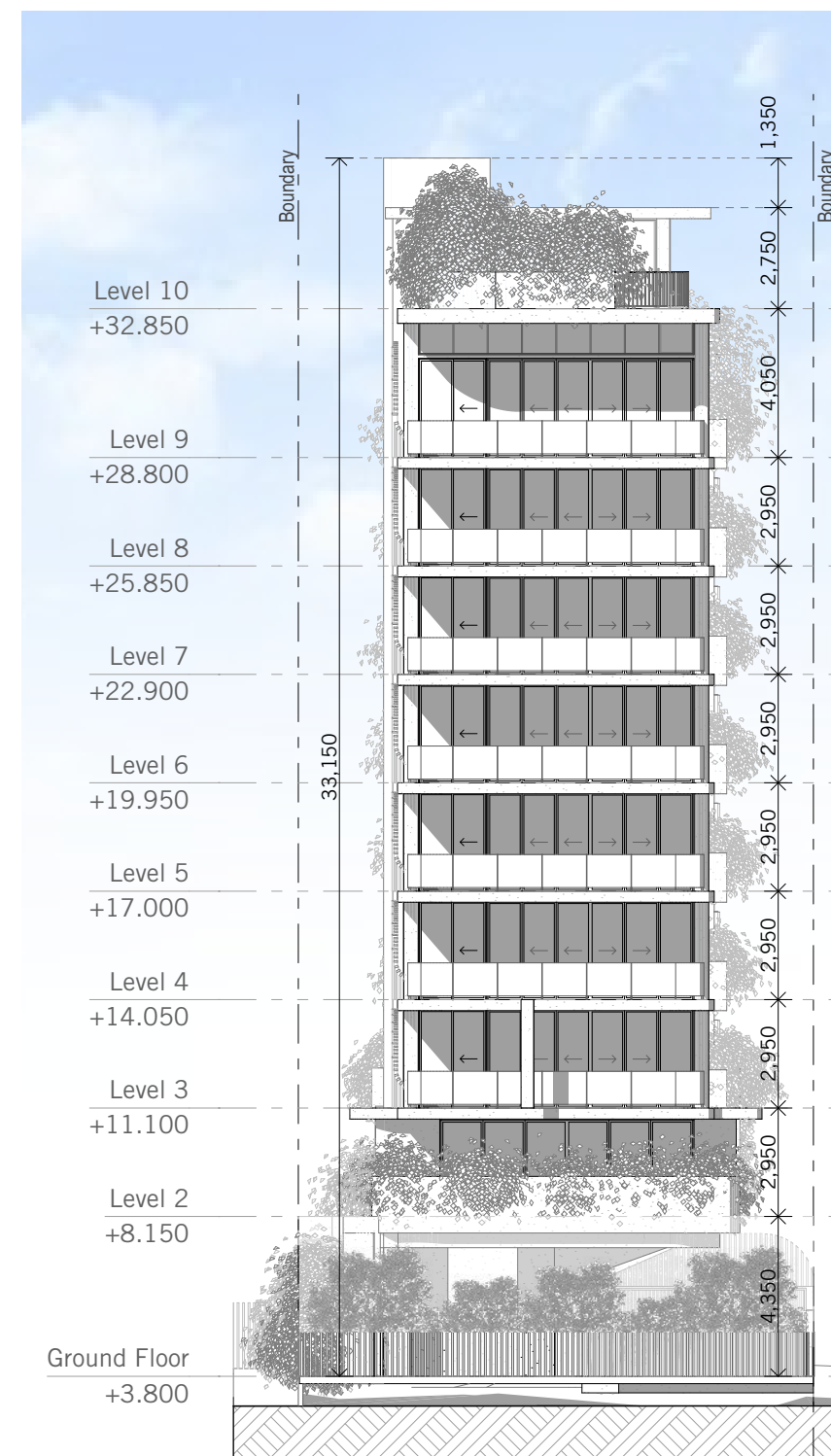
Level 2 Site Plan
1:200 @ A3





Roof Plan
1:100, 1:200 @ A3



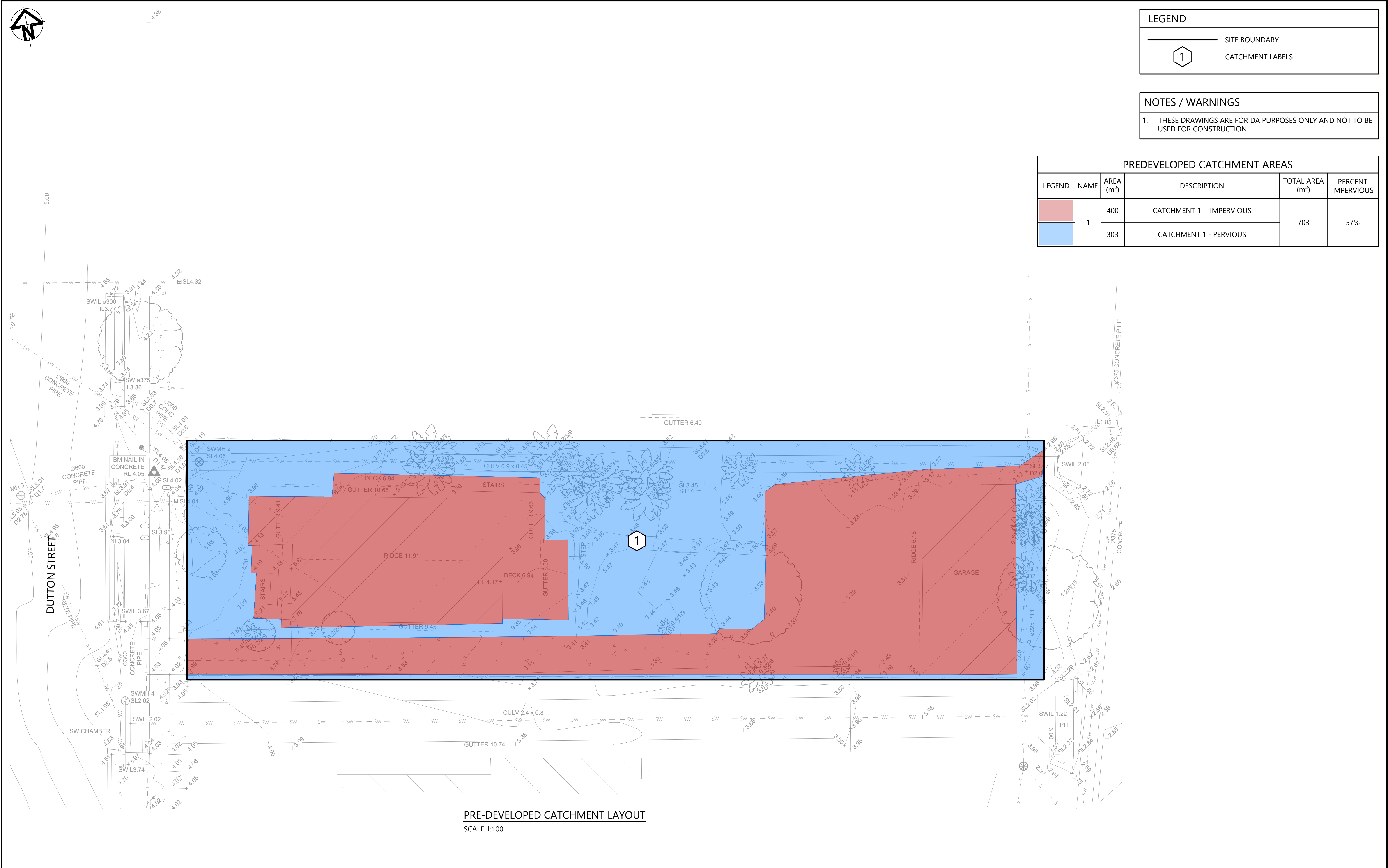


East Elevation
1:200 @ A3



Appendix B

Engineering Drawings



LEGEND

SITE BOUNDARY

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CATCHMENT LABELS

NOTES / WARNINGS

1. THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION

PREDEVELOPED CATCHMENT AREAS					
LEGEND	NAME	AREA (m²)	DESCRIPTION	TOTAL AREA (m²)	PERCENT IMPERVIOUS
	1	400	CATCHMENT 1 - IMPERVIOUS	703	57%
		303	CATCHMENT 1 - PERVIOUS		

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01 ORIGINAL ISSUE MTB 30.04.25				STATUS FOR DA APPROVAL NOT FOR CONSTRUCTION R.P.E.Q No: CERTIFIED HEIGHT DATUM AHD DESIGNER MTB GRID LOCAL CHECKER SC ORIGINAL SIZE A1 APPROVER MB				SURVEYOR USHER & COMPANY Surveying & Land Development Consultants 25 Tallebudgera Creek Road Burleigh Heads, QLD, 4220 07 5535 8346				CLIENT SOUTHERN CROSS PROPERTY HOLDINGS ARCHITECT LIGHTWAVE ARCHITECTURAL 1 Sands Street Tweed Heads, NSW 2485 admin@lightwave.com.au				MICHAEL BALE & ASSOCIATES Structural and Civil Engineering Consultancy Level 3, 18 Orchid Avenue, Surfers Paradise PO BOX 1715, Surfers Paradise 4217 Ph: 07 5538 0431 mail@michaelbale.com.au				PROJECT TITLE: 60 DUTTON STREET COOLANGATTA DRAWING TITLE: PRE-DEVELOPED CATCHMENT LAYOUT PLAN				NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. DRAWING No. PROJECT No. REVISION DA01 G24095 - 01			
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 SITE BOUNDARY
 POST-DEVELOPED
CATCHMENT BOUNDARY
 CATCHMENT LABELS

1. THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION

POST-DEVELOPED CATCHMENT AREAS					
LEGEND	NAME	AREA (m²)	DESCRIPTION	TOTAL AREA (m²)	PERCENT IMPERVIOUS
	1	54	CATCHMENT 1 - LANDSCAPING	672	92%
	2	35	CATCHMENT 1 - HARDSTAND		
	3	474	CATCHMENT 1 - ROOF		
	4	109	CATCHMENT 1 - DRIVEWAY		
	5	28	BYPASS - LANDSCAPING	31	10%
	6	3	BYPASS - HARDSTAND		
TOTAL				703	88%

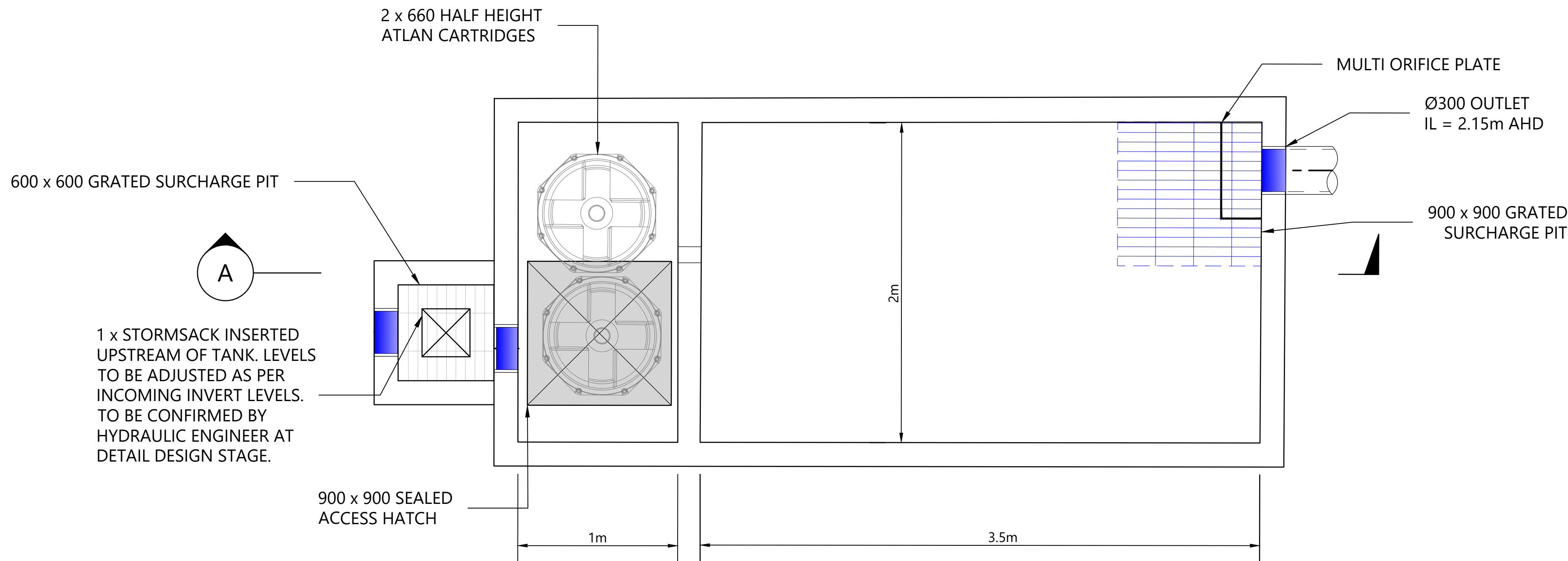


STATUS FOR DA APPROVAL NOT FOR CONSTRUCTION				SURVEYOR USHER & COMPANY Surveying & Land Development Consultants 25 Tallebudgera Creek Road Burleigh Heads, QLD, 4220 07 5535 8346				CLIENT SOUTHERN CROSS PROPERTY HOLDINGS				MICHAEL BALE & ASSOCIATES Structural and Civil Engineering Consultancy Level 3, 18 Orchid Avenue, Surfers Paradise PO BOX 1715, Surfers Paradise 4217 Ph: 07 5538 0431 mail@michaelbale.com.au				PROJECT TITLE: 60 DUTTON STREET COOLANGATTA				NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.									
R.P.E.Q No :				CERTIFIED				SCALE 1100 1012345 1:100 (A1) - 1:200 (A3)				ARCHITECT LIGHTWAVE ARCHITECTURAL 1 Sands Street Tweed Heads, NSW, 2485 admin@lightwave.com.au				DRAWING TITLE: POSTDEVELOPED CATCHMENT LAYOUT PLAN				<table><tr><td>DRAWING No.</td><td>PROJECT No.</td><td>REVISION</td></tr><tr><td>DA02</td><td>G24095</td><td>01</td></tr></table>				DRAWING No.	PROJECT No.	REVISION	DA02	G24095	01
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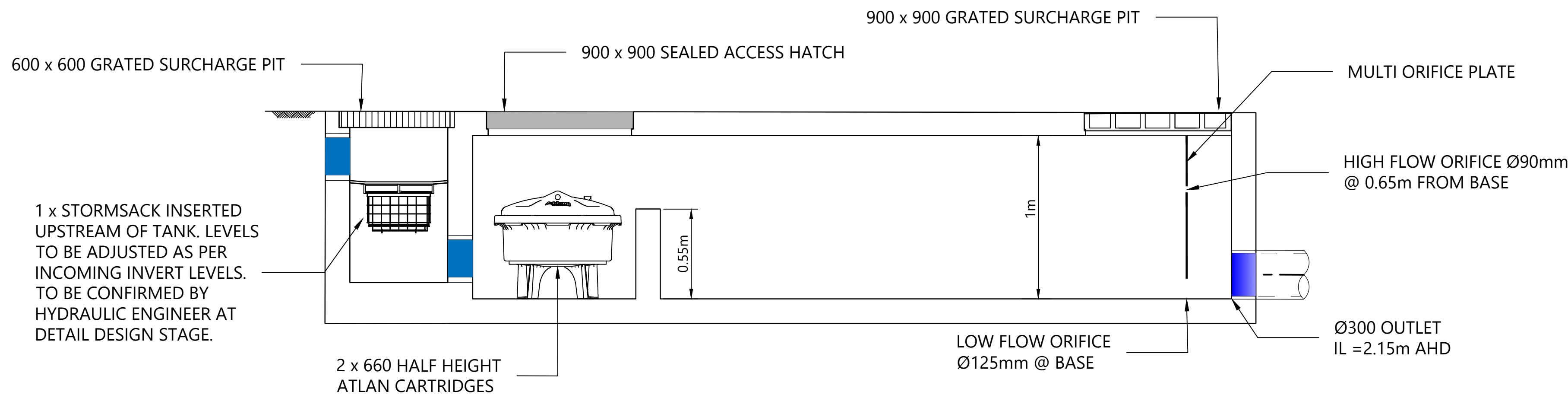
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NOTES / WARNINGS	
1.	THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION

NOTE - PROVIDE MAXIMESH RH3030 FOR ORIFICES WITH A DIAMETER OF 100mm OR LESS, WITH A MINIMUM AREA OF 50 TIMES THE ORIFICE AREA AND WELDLOK F40/203 FOR ORIFICE WITH A 150mm DIAMETER OR MORE, WITH A MINIMUM AREA OF 20 TIMES THE ORIFICE AREA



PLAN VIEW



SECTION A

STORMWATER TANK PLAN
SCALE 1:20

<table><tr><td>01</td><td>ORIGINAL ISSUE</td><td>MTB</td><td>09.05.25</td></tr><tr><td>ISSUE</td><td>DESCRIPTION</td><td>AUTHOR</td><td>DATE</td></tr></table>				01	ORIGINAL ISSUE	MTB	09.05.25	ISSUE	DESCRIPTION	AUTHOR	DATE	STATUS FOR DA APPROVAL NOT FOR CONSTRUCTION		SURVEYOR USHER & COMPANY Surveying & Land Development Consultants 25 Tallebudgera Creek Road Burleigh Heads, QLD, 4220 07 5535 8346		CLIENT SOUTHERN CROSS PROPERTY HOLDINGS		PROJECT TITLE: 60 DUTTON STREET COOLANGATTA		NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.															
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Traffic and Transport Assessment

Proposed Multiple Dwelling Development
60 Dutton Street, Coolangatta



21 May 2025

Prepared for:

Southern Cross Property Holdings Pty Ltd

Report: 50952-RP01-A

GELEON

Document Control Information

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Document Reference: 50952-RP01-A
Prepared for: Southern Cross Property Holdings Pty Ltd
Prepared by: Jarrod Pregun
Reviewed by: James Goodman
Project Reference: 50952

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Authorised for issue

Version	Issue date	Purpose of issue	Details	Name / position	Signature
A	21 May 2025	To support development application	Original issue	Luke Seeney RPEQ 23542 Principal Engineer	

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1. Introduction

1.1 Project background

Geleon has been engaged by Southern Cross Property Holdings Pty Ltd (the **Applicant**) to prepare a Traffic and Transport Assessment (**TTA**) to accompany a Development Application (**DA**) to establish a multi-storey residential apartment building (multiple dwelling land use) at 60 Dutton Street, Coolangatta (Lot 2 on RP86756) (**Figure 1.1**). The existing 703m² site is currently occupied by a residential apartment building comprising four dwellings.

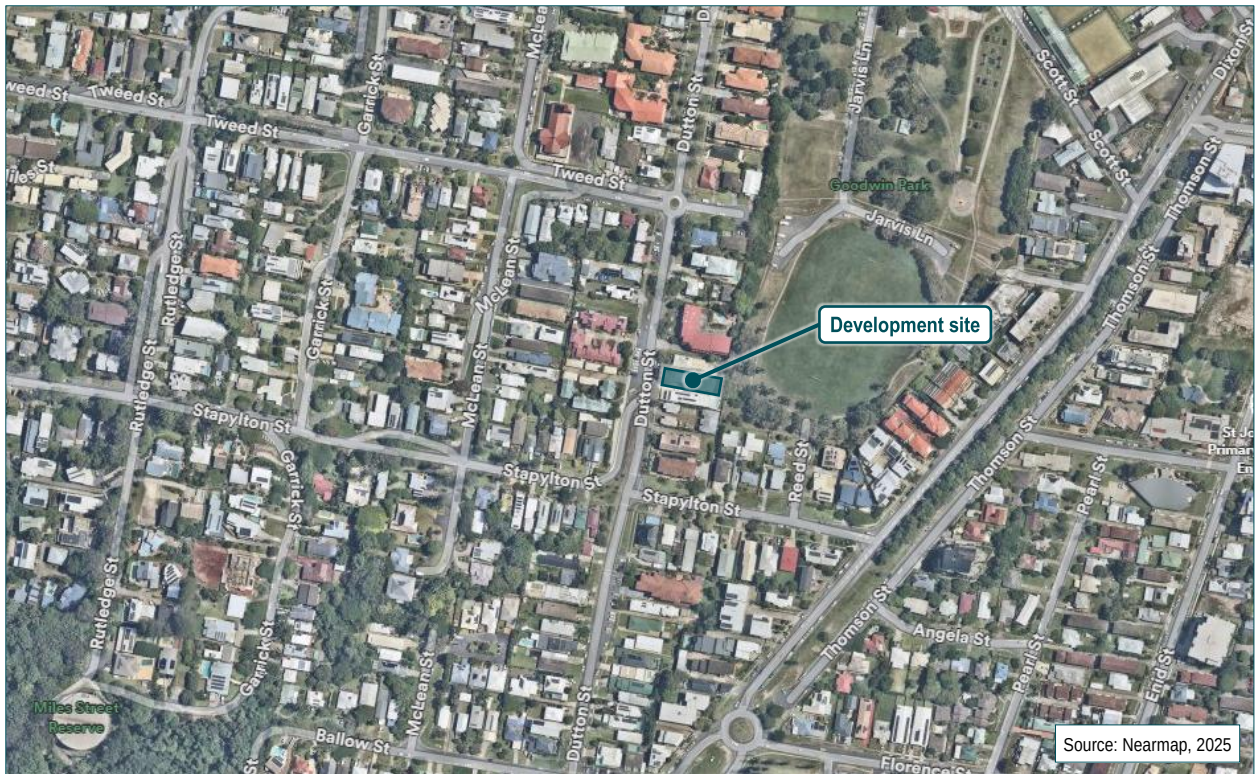


Figure 1.1 Locality plan

1.2 Development details

The development proposes a multiple dwelling land use to establish a multi-storey residential apartment building on the subject site. Access to and from the development is proposed via a single two-lane, two-way vehicle crossing on Dutton Street that will provide access to the ground floor level car park.

Details of the proposed development are provided in **Table 1.2**, with the ground floor shown in **Figure 1.2**. Relevant plans of development have been included in **Appendix A**.

Table 1.2 Development details

Land use	3-bedroom units	4-bedroom units
Multiple dwelling	2	7

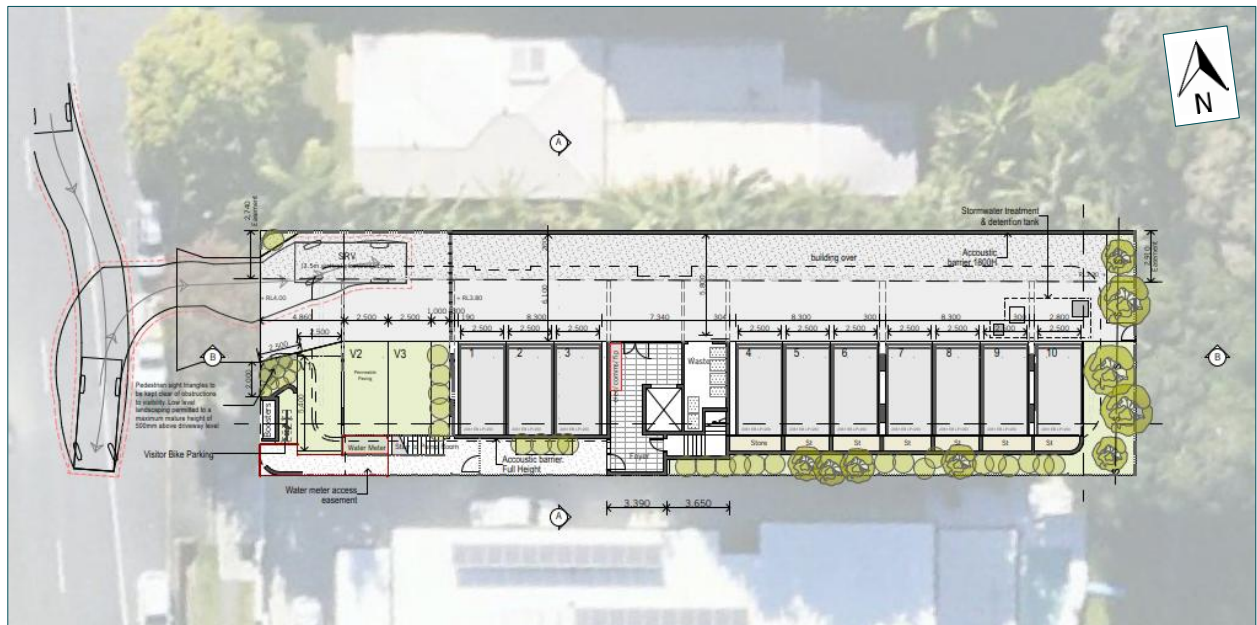


Figure 1.2 Plans of development – ground floor

1.3 Applicable planning scheme

The proposed development site falls under the jurisdiction of the City of Gold Coast (**Council**) and is governed by the *City Plan – Version 11 (February 2024)*.

1.4 Scope

The scope of the assessment presented in this report is as follows:

- assess public transport, pedestrian and cycling accessibility to / from site and on-site
- calculate the anticipated development traffic generation and its impact to the external road network
- assess proposed car and bicycle parking supply against relevant Council requirements
- review design of on-site traffic and transport operations against Australian Standards and Council's requirements
- assess site access and access configuration against Council requirements
- assess servicing arrangements, and
- complete Council development code templates to accompany the development application.

2. Existing conditions

2.1 Road network

The hierarchy of the road network surrounding the development is shown in **Table 2.1**.

Table 2.1 Surrounding road network

Road name	Jurisdiction	No. of lanes (two-way)	Posted speed limit	Median divided	Hierarchy	Footpath / bicycle lanes	On-street parking
Dutton Street	Council	2	50km/h	No	Local road	Footpaths on both sides / no bicycle lanes	Formal parking both sides
Stapylton Street	Council	2	50km/h	No	Local road	Generally, no footpaths or bicycle lanes	Informal parking on both sides

2.2 Public transport

The development is not located within walking distance (<400m) of any public transport stops. The closest stop, known as 'Coolangatta Central, Coolangatta' (Stop ID: 300218) is located approximately 700m walking distance north of the development site (**Figure 2.2**). This stop is serviced by four public bus routes, known as '600', '700', '760' and '768', which have an average frequency of 15-30 minutes.

Locations of all stops within proximity to the development site are provided in **Figure 2.2**.



Figure 2.2 Public transport in proximity to site

2.3 Active transport

The subject site is serviced by a reasonable network of pedestrian footpaths as shown in **Figure 2.3.1** which illustrates the active transport network surrounding the proposed development.



Figure 2.3.1 Active transport network

The subject site is in proximity to Tweed Street which forms part of TMR's *Southeast Queensland Principal Cycle Network*. The principal cycle network surrounding the proposed development and route priorities are illustrated in **Figure 2.3.2** and **Figure 2.3.3**.



Figure 2.3.2 Principal cycle network

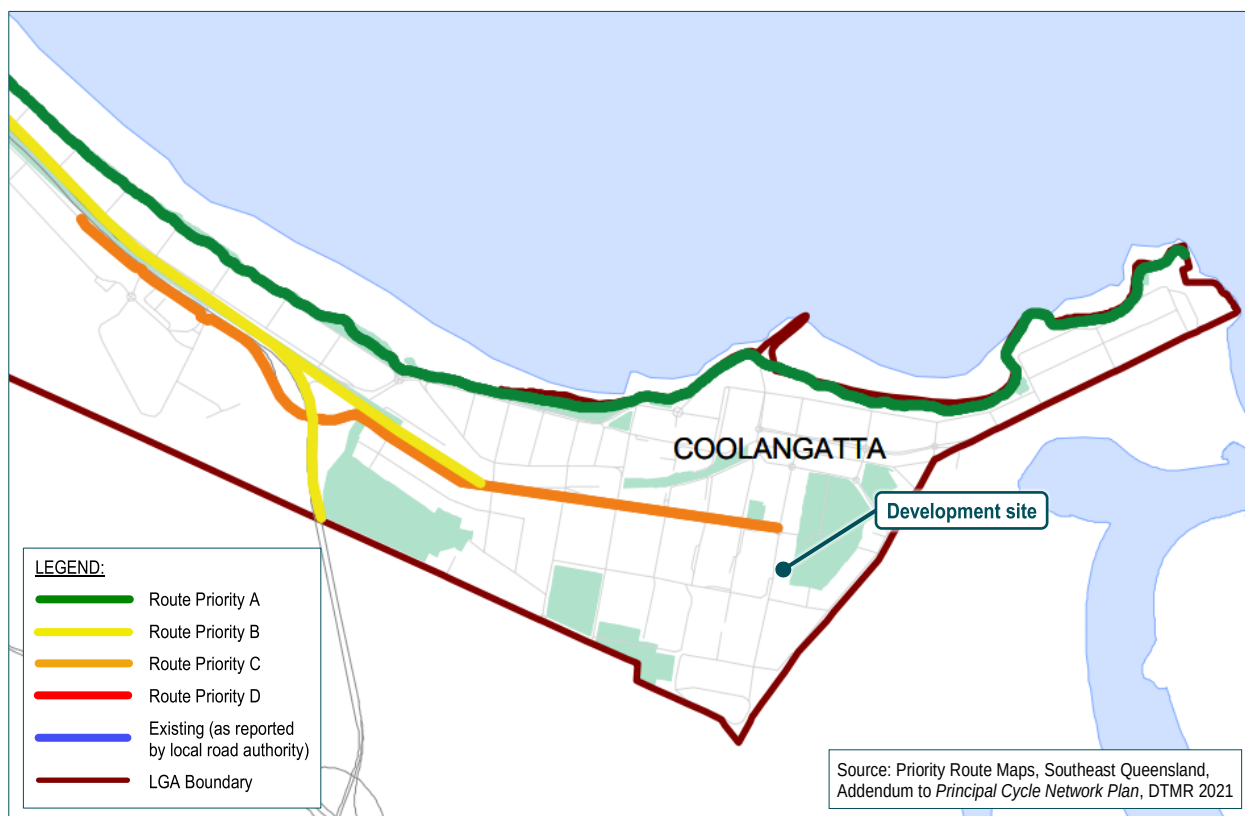


Figure 2.3.3 Priority route map

3. Traffic impact assessment

3.1 Traffic generation

The development site is currently occupied by a residential apartment building with four dwellings that generate traffic. Accordingly, traffic generation from the existing use has been taken into consideration when determining the net increase in trip generation for the proposed development. A review of Council's *City Plan – Transport code (V11)* has not identified traffic generation rates for the proposed land use. In lieu of Council specific traffic generation rates, traffic generation rates for the existing and proposed developments have been based on the rates for a multiple dwelling land use as provided in the *RMS Guide to Traffic Generating Developments – Technical Direction (TDT 2013/04)*.

A summary of the expected development traffic generation is shown in **Table 3.1**.

Table 3.1 Development traffic generation

Table 012

Development traffic generation

Land use	Quantity	Peak period	Traffic generation rate	Traffic generation volume
Existing development				
Multiple dwelling	4 units	AM peak	0.53 trips per unit	3
		PM Peak	0.32 trips per unit	2
Proposed development				
Multiple dwelling	23 car spaces	AM Peak	0.35 trips per car space	9
		PM Peak	0.26 trips per car space	6
Total (net) AM peak hour trips				+6
Total (net) PM peak hour trips				+4

3.2 Trip distribution

3.2.1 In / Out directional splits

TMR's guide to Traffic Impact Assessment (GTIA) stipulates:

"Peak hour development-generated traffic volumes need to be split into entry (IN) and exit (OUT) volumes for assignment of this traffic to the access intersection and to the surrounding road network."

Typical In / Out traffic splits were utilised for the residential components (i.e. 30% In / 70% Out in the AM peak hour, and 60% In / 40% Out during the PM peak hour). The AM and PM In / Out traffic splits of the net increase in vehicle trips are provided in **Table 3.2**.

Table 3.2.1 Development traffic splits

Land use	Traffic generation (trips)	Peak period	IN%	IN trips	OUT%	Out trips
Multiple dwelling	6	AM peak	30%	2	70%	4
	4	PM peak	60%	3	40%	1

3.3 Traffic impacts

Given the geographical location of the development, all inbound and outbound development generated traffic will use Dutton Street to turn into / out of the development. The total net traffic generation in the AM peak hour is six trips, which equates to one vehicle movement every 10 minutes. For the PM peak hour, the total net traffic generation is four trips, which equates to one external vehicle movement every 15 minutes.

Considering the low volume of traffic expected to be generated by the proposed development it can be concluded that the development will not result in worsening of operating conditions on the external road network.

4. Parking assessment

4.1 Car parking requirements

The car parking requirements for the development have been calculated in accordance with the land use requirements stipulated in Council's *City Plan – Transport code (V11)* as shown in **Table 4.1**.

Table 4.1 Car parking requirements

Land use	No. of units	Component	Car parking rate	Car parking requirement
Multiple dwelling	2	Resident	1.5 spaces per 3-bedroom unit or dwelling	3
	7	Resident	2 spaces per 4-bedroom unit or dwelling	14
	9	Visitor	where 7 to 9 dwellings, 3 spaces for visitor parking	3
Total car parking requirement				20

The total car parking requirement for the development is 20 car parking spaces comprising 17 resident spaces and three visitor spaces. In accordance with the *National Construction Code (NCC) – Volume 1* for a Class 2 building, there is no requirement to provide parking spaces for People with Disabilities (PWD).

4.2 Car parking provision

The development provides a total of 23 car parking spaces comprising 20 resident spaces via ten car stacker systems and three visitor spaces and therefore complies with Council requirements. Car parking design for the proposed development has been undertaken generally in accordance with Australian Standard *AS2890.1 – Parking Facilities*. **Table 4.2** shows design parameters for each user class in accordance with *AS2890.1*.

Table 4.2 Car parking design requirement

User class	Minimum parking bay width (m)	Minimum parking bay length (m)	Minimum aisle width (m)	Use
1A	2.4	5.4	5.8	Residents
2	2.5	5.4	5.8	Visitor

Other specific design parameters relating to the parking and internal road layout design have been developed generally in accordance with Australian Standard *AS2890.1 – Parking Facilities* and Council's *City Plan – Transport code (V11)*.

No turnaround bays are provided for the visitor parking area as the length of the blind aisle does not exceed the width of six 90-degree parking spaces plus 1.0m as stipulated in *Clause 2.4.2 (C) AS2890.1*. This is further supported by the fact that visitors arriving to site will have line of sight to visitor parking bays and will be able to determine whether the space is available for use before entering the site. Additionally, it's important to note that at this location, Dutton Street comprises approximately a 4.0m wide shoulder which, in the unlikely event a visitor needs to reverse out of the site, they will be able to do so utilising the shoulder and not reverse directly into the travel lane.

4.3 Bicycle parking

Bicycle parking for the development has been calculated in accordance with the land use requirements stipulated in Council's *City Plan – Transport code (V11)* as shown in **Table 4.3**. There are no requirements for end of trip facilities for the proposed land use.

Table 4.3 Bicycle parking requirements

Land use	No. of units	Class	Bicycle parking rate	Parking requirement
Multiple dwelling	9	Residents - Class 2	1 per dwelling	9
		Visitor - Class 3	1 per 12 dwellings, to a maximum of 20 spaces	1
Total spaces				10

4.4 Bicycle parking provision

The development provides a total of 10 bicycle parking spaces comprising 10 resident spaces (Class 2) and one visitor space (Class 3) and therefore complies with Council requirements. The visitor space (Class 3) is provided near the Dutton Street frontage, and the resident spaces (Class 2) will be provided within the individual units (**Appendix A**).

Bicycle parking will be appropriately signed in accordance with relevant Council requirements. Bicycle parking for the proposed development has been designed to comply with AS2890.3 as shown in **Table 4.4**.

Table 4.4 Bicycle parking design requirements

User	Security Level	Min. Parking envelope width (m)	Min. Parking envelope length	Min. Aisle width (m)
Residents	B	0.5	1.8	1.5
Visitors	C ¹	0.5	1.8	1.5
Notes				
1. Parking requirements based on a horizontal parking layout with floor mounted rails.				

4.5 Car stacker

The development proposes the use of dependent car stacker systems to maximise the number of resident spaces on the ground floor. A *Klaus Single Vario 2061* car stacker is proposed for use by the development, generally as shown in **Figure 4.5**. Spatial requirements to accommodate the car stackers will comply with the specifications stipulated by Klaus and generally AS2890.1 requirements. The car parking spaces, car stackers, and parking aisles comply with the design requirements of AS2890.1 and therefore, the proposed car parking layout is considered deemed to comply and a swept path assessment is not required to demonstrate entry and exit manoeuvres.

The width of the platform is 2.5m and can be accommodated within the 2.77m width provided for each parking space. It is recommended that the structural elements are clear of the design envelope and installed within 1.75m of the wall behind the parking bays to ensure compliance with *Figure 5.2* of AS2890.1. A suitable outcome will be confirmed at the detailed design stage where structural, mechanical and electrical engineering investigations are undertaken.

The car stackers have been selected to ensure a floor to ceiling height clearance of at least 2.0m for a B99 in one of the stacker spaces and a clearance of at least 1.8m for a B85 in the other car stacker space.

Specific details of the car stackers are provided in **Appendix C**.

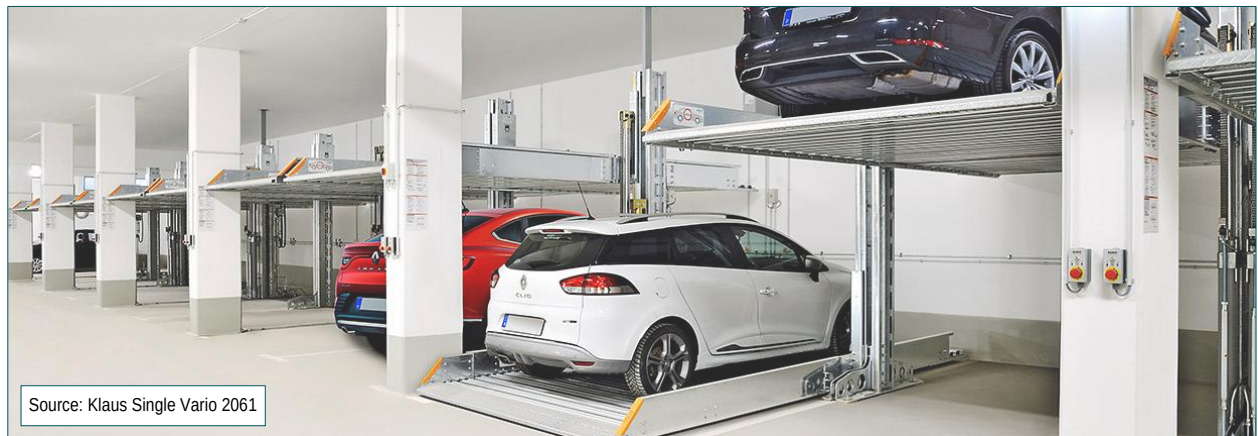


Figure 4.5 Klaus Single Vario 2061 car stacker system

5. Access and servicing assessment

5.1 Access arrangement

The development proposes access from Dutton Street via a single two-lane, two-way 6m wide vehicle crossing designed generally in accordance with IPWEA *Standard Drawing RSD-100 – Vehicle crossings, residential driveways* positioned on the western side of the development site. While typically a ‘General Wide’ vehicle crossing designed in accordance with IPWEA *Standard Drawing RSD-102 – Vehicle crossings, heavy duty* is provided for a multiple dwelling development, to address other development outcomes including offsets to neighbouring properties, kerbside collection for wheelie bins and minimising the loss of on-street parking, a residential driveway is proposed. However, despite the smaller vehicle crossing wings, the functionality of the vehicle crossing is maintained (**Appendix B**).

The proposed vehicle crossing will result in a loss of one formally marked on-street car parking bay and the relocation of another, equating to a net loss of one on-street car parking bay.

5.2 Sight distance assessment

A sight distance assessment has been undertaken in accordance with AS2890.1 and AS2890.2 to ensure that the location of the vehicle crossing provides sufficient sight distance for road users to find a safe gap in oncoming traffic when leaving the site. The minimum gap sight distance requirements (**MGSD**) for a vehicle departing the site are provided in **Table 5.2**.

The required sight distance has been calculated based on a frontage road speed along Dutton Street of 50km/h. With respect to vehicles turning into Dutton Street from Stapylton Street, it is expected that vehicles would be travelling at no more than 30km/h while traversing the Dutton Street / Stapylton Street priority-controlled intersection.

Table 5.2 Sight distance requirements

Frontage road	Vehicle speed assessed (km/h)	Sight distance requirement
Dutton Street	50km/h	69m
Vehicle entering Dutton Street from Stapylton Street	30km/h	42m

Figure 5.2 shows the required sight distance and associated sight lines for vehicles travelling along Dutton Street and Stapylton Street to vehicles departing the development site, demonstrating compliance with specified requirements.

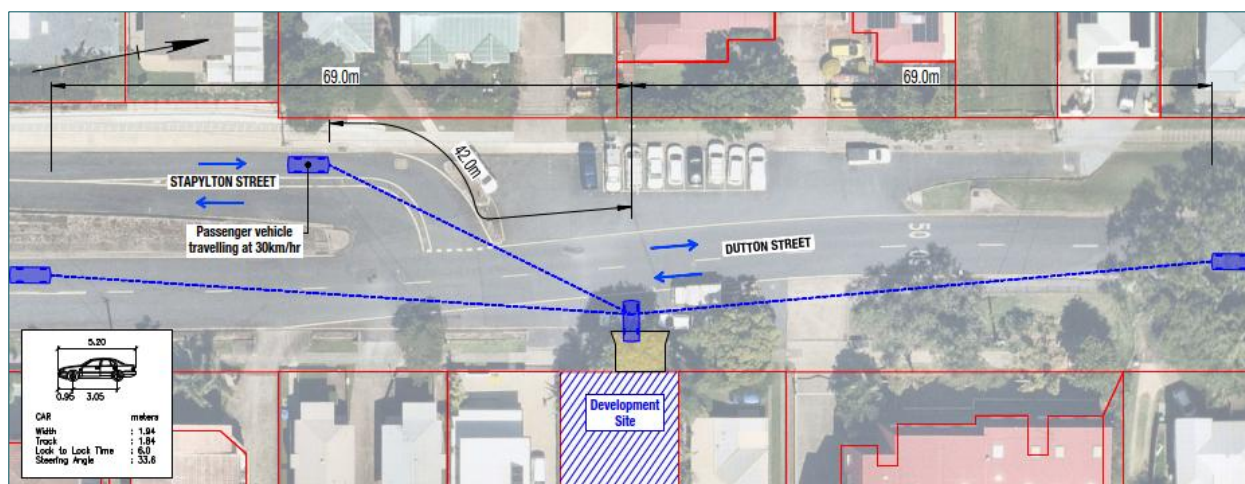


Figure 5.2 Sight distance assessment

5.3 Servicing

Council's *City Plan – Transport code (V11)* stipulates service vehicle requirements for the proposed development as shown in **Table 5.3**.

Table 5.3 Service vehicle requirements

Land use	Service vehicle requirement
Multiple dwelling (more than 3 dwellings)	Standing area for an MRV on-site

Issues associated with providing a 4.5m vertical clearance for a MRV mean that an on-site standing area for an MRV cannot be accommodated. Therefore, compliance with AO3 and PO3 of the Transport Code cannot be achieved. However, the proposed development can comply with the overall outcomes, specifically OO2(e)(ii) which states “A road network is provided that ensures development impacts on amenity caused by traffic and parking is consistent with the communities reasonable expectations for the intended use” for the following reasons:

- for multiple dwelling units, groceries and large retail goods will typically be delivered by a van or SRV, while removalist activities will generally utilise a van, SRV or MRV. Therefore, provision has been made for an SRV on the ground floor level on the northern side of the driveway. Above the ground floor level driveway, a minimum 3.5m vertical clearance is achieved. A swept path assessment has been undertaken using AutoTURN software to demonstrate that an SRV can reverse into the standing area from Dutton Street, stand in the servicing area, and exit the development site in a forward gear (**Appendix B**). The swept path assessment also demonstrates that B99 passenger vehicles can enter and exit the development site in a forward gear if an SRV is parked on the ground floor level
- it is known that removalist / delivery companies generally ask their customers at the time of quoting about on site and on-street parking restrictions and availability. Given the site constraints, it is expected that residents undertaking full moves will consult with removalist companies regarding the parking availability in the vicinity prior to moving and recommend that an alternative smaller removalist vehicle be used
- the nature of these units will be high-end owner occupier where residents are less likely to move frequently
- the frequency of vehicles attending the site to deliver goods and undertake maintenance could occur weekly, however the demand for larger removalist vehicles is based on how often residents move. A review of census data from 2011 identified that approximately 8.34% of Australian residents move each year. When applied to all 9 units this equates to approximately one movement every 16 months (assuming all residents in each dwelling move together). Therefore, the demand for large removalist vehicles will be low, and
- if in the rare occasion MRV servicing is required, this can be accommodated along Dutton Street however is likely to only be required once every 16 months. It is important to note that Council has recently approved an extensive list of multiple dwelling development's with MRV servicing on-street and SRV servicing on site e.g. PDA/2024/8, MCU/2023/348.

Based on the above justification, the proposed development has a servicing arrangement consistent with what the community has come to expect from a development of this type and nature in this area, achieving compliance with OO2(e)(ii) of Council's *City Plan – Transport Code (V11)*. Infrequent disruptions associated with full dwelling moves by large removalist vehicles and associated short-term impacts would not be of any significance that would create long lasting amenity issues considered unreasonable by the community.

6. Response to development codes

A detailed review of the proposed development against Council's *Driveways and vehicle crossings code (V11)* and *Transport code (V11)* is provided in **Appendix D**.

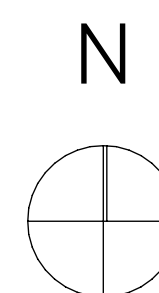
7. Conclusion

This report presents the findings related to assessment of traffic and transport related matters for a proposed development located at 60 Dutton Street, Coolangatta. Based on the assessment undertaken, it can be concluded that the proposed development will not introduce any adverse traffic or transport impacts which would prevent its approval with appropriate conditions.

8. References

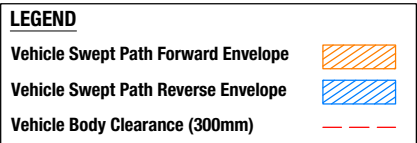
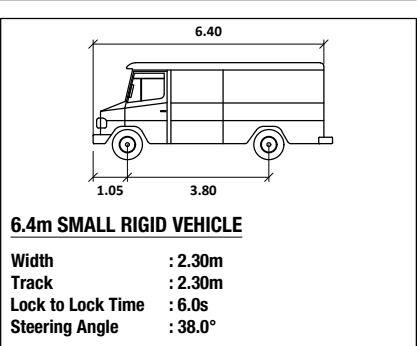
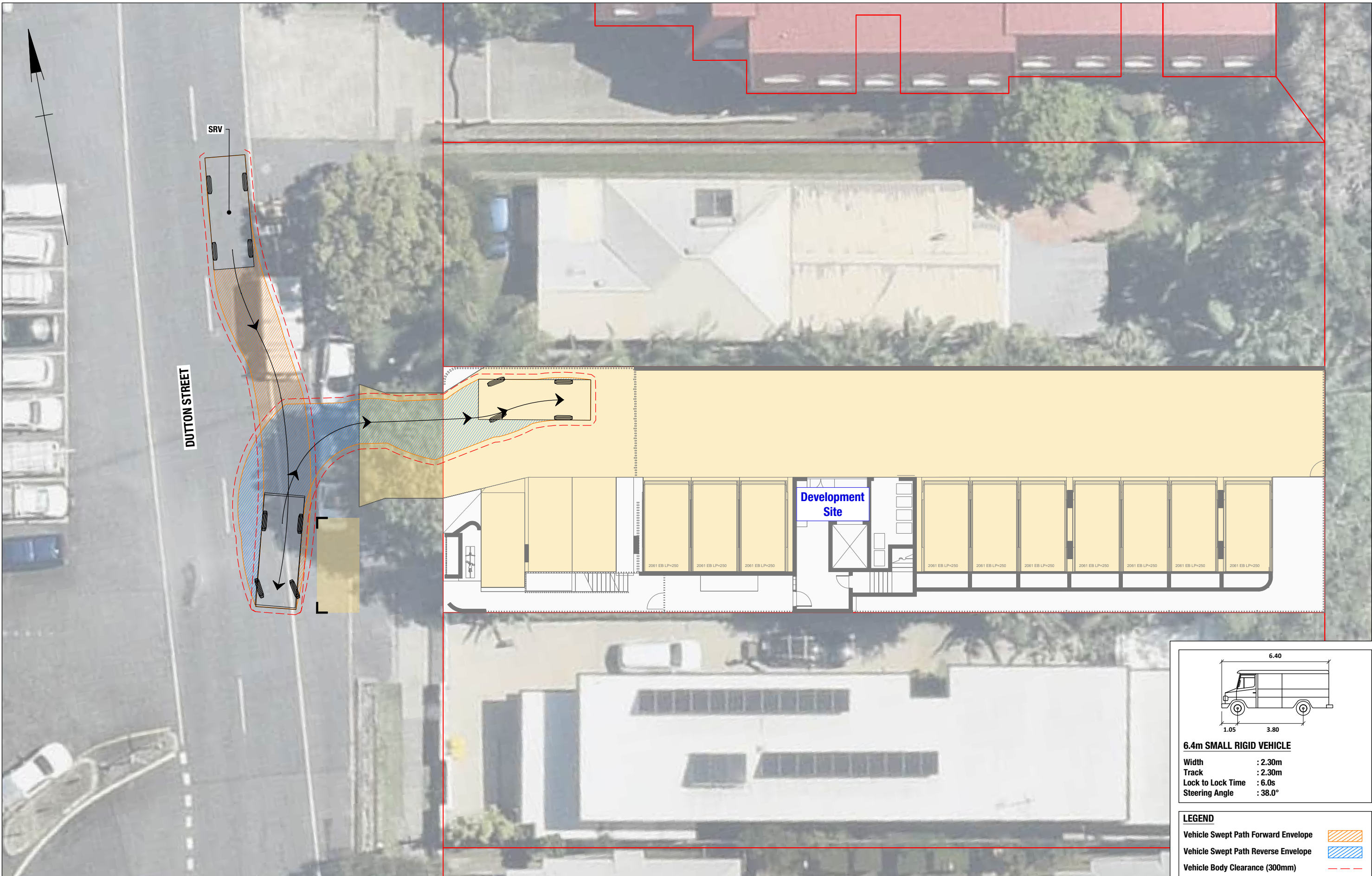
1. City of Gold Coast, *City Plan – Version 11 (February 2024)*, Gold Coast.
2. Queensland Government (Department of Transport and Main Roads), *Guide to Traffic Impact Assessment*, December 2018, Brisbane.
3. New South Wales Government (Roads and Traffic Authority), *Guide to Traffic Generating Developments – Issue 2.2*, 2002, Sydney.
4. New South Wales Government (Roads and Maritime Services), *Guide to Traffic Generating Developments - Technical Direction (TDT2013/04)*, Sydney, 2014.
5. Australian Building Codes Board, *National Construction Code (NCC) Volume 1*, May 2023.
6. Standards Australia/Standards New Zealand 2004, *AS2890.1: Off-street Car Parking Facilities*.
7. Standards Australia/Standards New Zealand 2018, *AS2890.2: Off-street Commercial Vehicle Facilities*.
8. Standards Australia/Standards New Zealand 2015, *AS2890.3: Bicycle Parking*.

Appendix A Plans of development



1:200 @ A3

Appendix B Swept path assessment



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0 1 2 3 4m

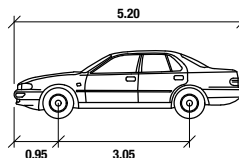
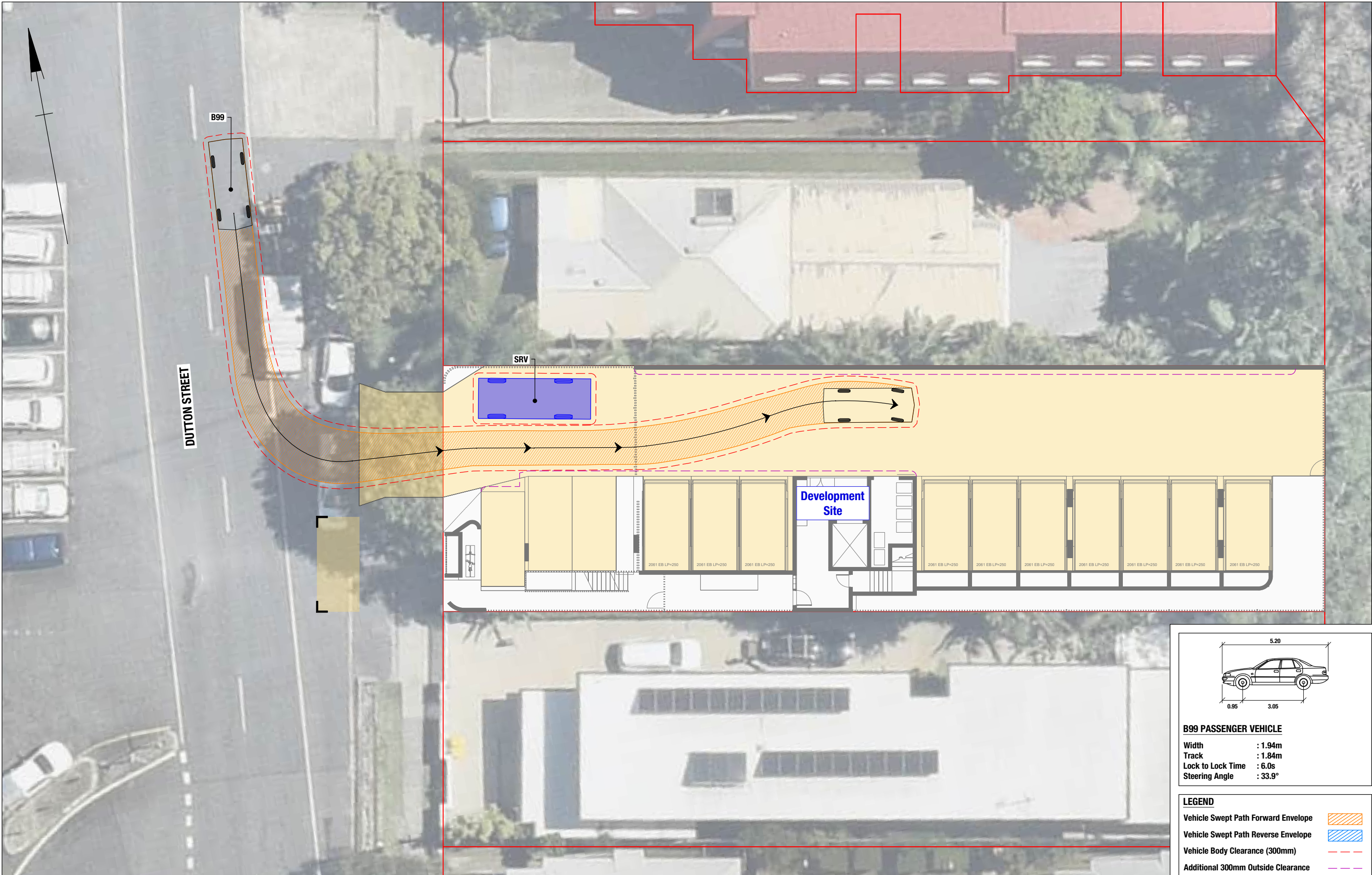
60 DUTTON STREET, COOLANGATTA
PROPOSED MULTIPLE DWELLING DEVELOPMENT

SWEPT PATH ASSESSMENT
6.4m SMALL RIGID VEHICLE (SRV)
ENTRY INTO DEVELOPMENT SITE

Project No.
50952 Issue Date
21/05/25

Drawing No.
50952-SP001-A

Series No. 1 of 4



B99 PASSENGER VEHICLE

Width : 1.94m
Track : 1.84m
Lock to Lock Time : 6.0s
Steering Angle : 33.9°

LEGEND

- Vehicle Swept Path Forward Envelope
- Vehicle Swept Path Reverse Envelope
- Vehicle Body Clearance (300mm)
- Additional 300mm Outside Clearance



ABN 58 668 001 303
Suite 12, Level 1, 3029 The Boulevard
Emerald Lakes, Carrara
PO Box 454 Nerang Qld 4211
tel +61 7 5594 4473

0 1 2 3 4m

60 DUTTON STREET, COOLANGATTA
PROPOSED MULTIPLE DWELLING DEVELOPMENT

SWEPT PATH ASSESSMENT
B99 PASSENGER VEHICLE
ENTRY INTO DEVELOPMENT SITE

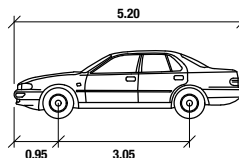
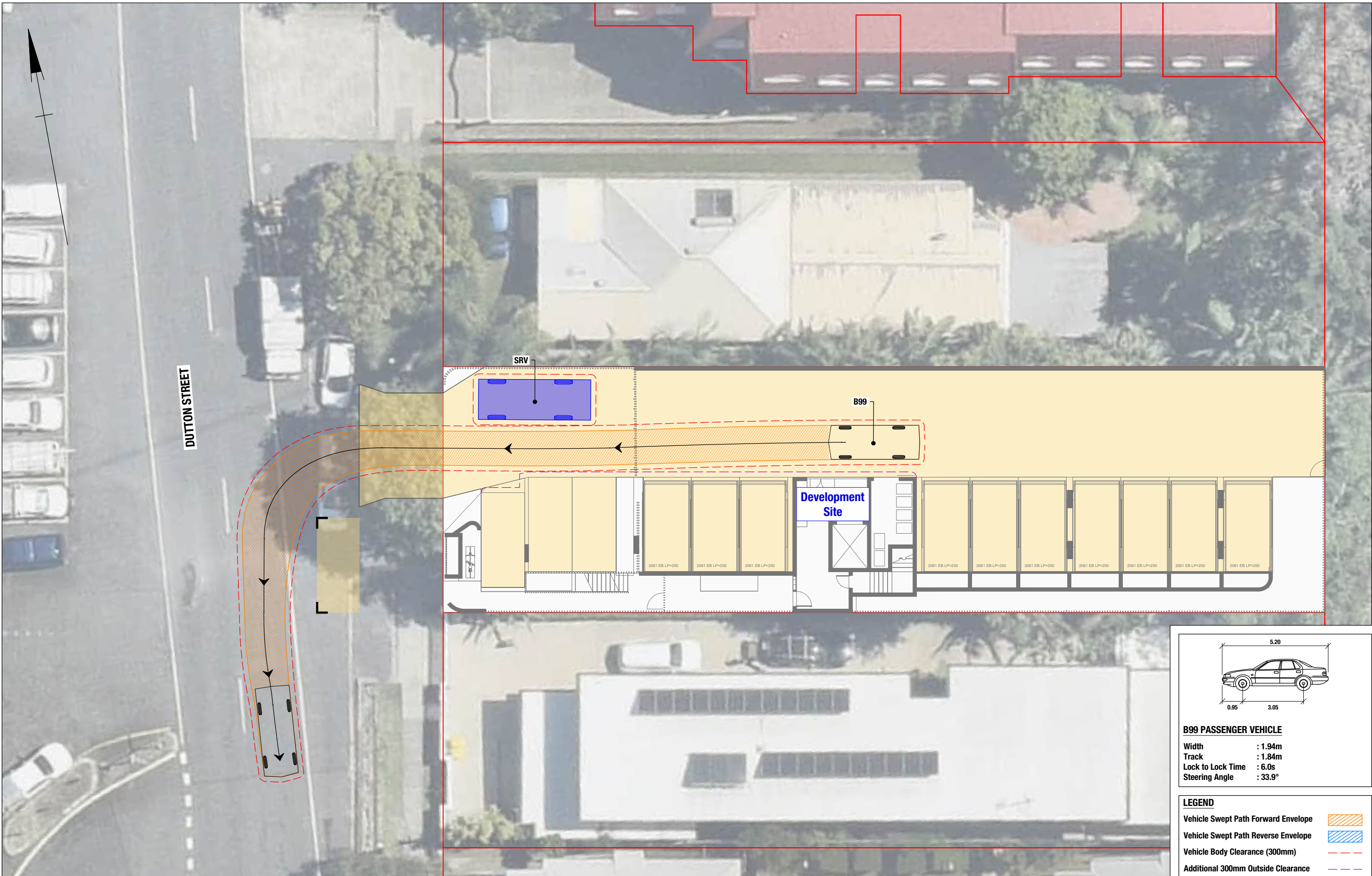
Project No.
50952

Issue Date
21/05/25

Drawing No.

50952-SP002-A

Series No. 2 of 4



B99 PASSENGER VEHICLE

Width	: 1.94m
Track	: 1.84m
Lock to Lock Time	: 6.0s
Steering Angle	: 33.9°

LEGEND

Vehicle Swept Path Forward Envelope	
Vehicle Swept Path Reverse Envelope	
Vehicle Body Clearance (300mm)	
Additional 300mm Outside Clearance	



ABN 58 668 001 303
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Emerald Lakes, Carrara
PO Box 454 Nerang Qld 4211
tel +61 7 5594 4473

0 1 2 3 4m

60 DUTTON STREET, COOLANGATTA
PROPOSED MULTIPLE DWELLING DEVELOPMENT

**SWEPT PATH ASSESSMENT
B99 PASSENGER VEHICLE
EXIT FROM DEVELOPMENT SITE**

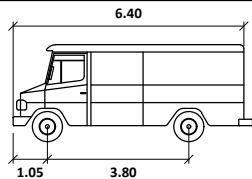
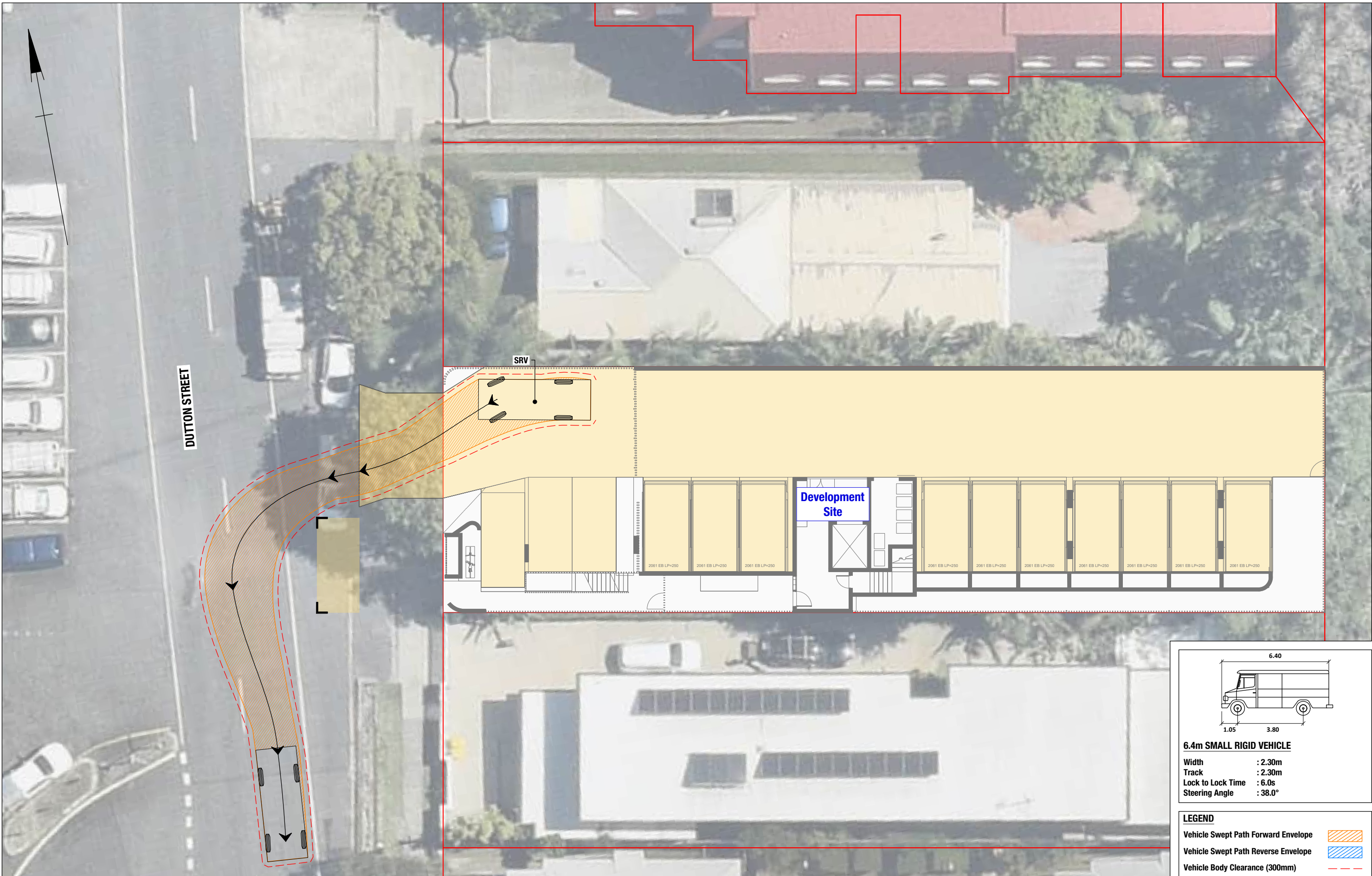
Project No.
50952

Issue Date
21/05/25

Drawing No.

50952-SP003-A

Series No. 3 of 4



6.4m SMALL RIGID VEHICLE

Width	: 2.30m
Track	: 2.30m
Lock to Lock Time	: 6.0s
Steering Angle	: 38.0°

LEGEND

Vehicle Swept Path Forward Envelope	
Vehicle Swept Path Reverse Envelope	
Vehicle Body Clearance (300mm)	

GELEON

ABN 58 668 001 383
Suite 12, Level 1, 3029 The Boulevard
Emerald Lakes, Carrara
PO Box 454 Nerang Qld 4211
tel +61 7 5594 4473

0 1 2 3 4m

60 DUTTON STREET, COOLANGATTA
PROPOSED MULTIPLE DWELLING DEVELOPMENT

SWEPT PATH ASSESSMENT
6.4m SMALL RIGID VEHICLE (SRV)
EXIT FROM DEVELOPMENT SITE

Project No. 50952	Issue Date 21/05/25
Drawing No. 50952-SP004-A	
Series No. 4	of 4

Appendix C Car stacker specifications



PRODUCT DATA

DIMENSIONS, TECHNICAL INFORMATION AND PERFORMANCE SPECIFICATION

singlevario 2061



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Explanation of symbols



Platforms accessible horizontally.



max. load per parking space in kg.
Upweighting over 2000 kg possible with surcharge (see "Vehicle data", page 3).



Height can be subsequently adjusted (see "Overview of system types and ceiling heights", page 4).
Parking space load can be subsequently upweighted (see "Vehicle data", page 3).



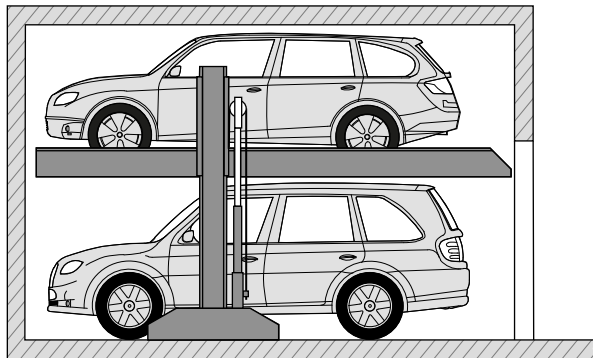
The systems provided are consistent with DIN EN 14010 and the EC Machinery Directive 2006/42/EC.



This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

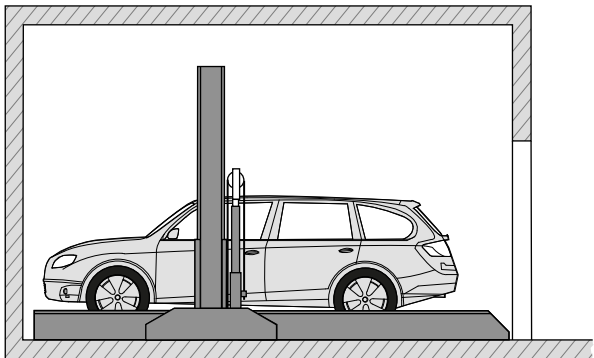
Parking positions

Lower parking space



The lower vehicle can park in or leave the parking space.

Upper parking space



The upper vehicle can park in or leave the parking space.

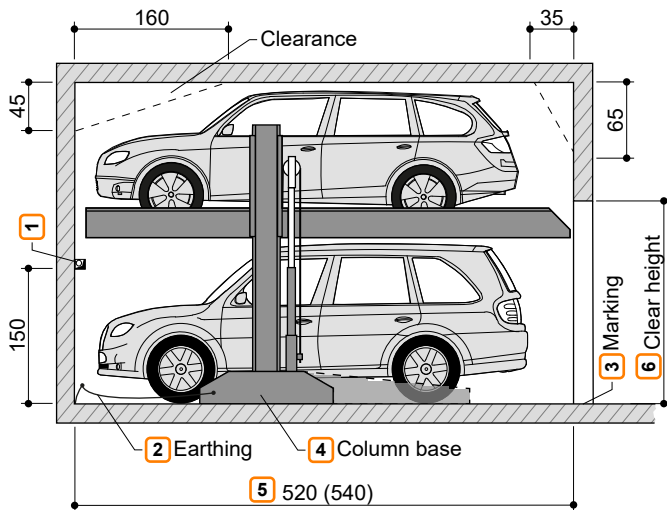
Dimensions and tolerances



All dimensions and minimum final dimensions.
Tolerance for dimensions +3/-0. Dimensions in cm.
In order to adhere to the minimum final dimensions, the tolerances in accordance with the German Construction Tendering and Contract Regulations [VOB], Part C (DIN 18330 and 18331) and DIN 18202 must also be taken into account.

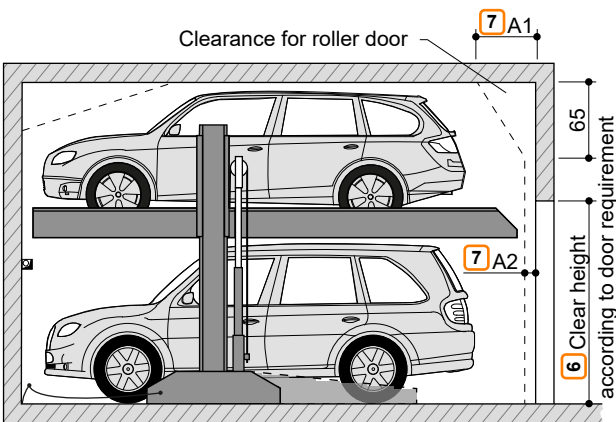
Overview of building configuration

Building configuration without door



- 1 If there are dividing walls: Wall opening 10 x 10 cm.
- 2 Equipotential bonding from foundation earth connection to system (to be provided by the customer).
- 3 In accordance with DIN EN 14010, the customer must provide 10 cm wide, yellow/black marking in accordance with DIN ISO 3864, in the access area in front of the contact area of the upper platform edge to identify the hazard area. (see "Loading schedule", page 7).
- 4 Variable column in two sizes (see "Loading schedule", page 7).

Building configuration with door



- 5 ■ 520 cm for vehicles up to 5.0 m long
■ 540 cm for vehicles up to 5.2 m long
Shorter versions are possible on request - observe local regulations on parking space lengths.
We recommend a length of 540 cm for comfortable use of your parking space and increasingly longer vehicles.
- 6 Clear height in accordance with local regulations. Maximum vehicle height + 10 cm.
- 7 Dimensions A1 and A2 must be coordinated between the door manufacturer and the customer.



The lower vehicle must exit before the platform is lowered.

Vehicle data

Version

SP (single platform) = 2 vehicles

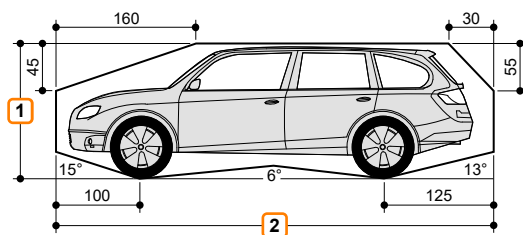
Parking options

Series vehicles:
saloon, estate, SUV, van in accordance with clearance gauge and maximum parking space load.

	SP	
Weight 3	2000 kg	2600 kg
Wheel load	500 kg	650 kg

- 1 Vehicle height (see "Overview of system types and ceiling heights", page 4)
- 2 Vehicle length (see "Overview of building configuration", page 3)
- 3 Space load can be subsequently upweighted to 2600 kg.

Clearance gauge

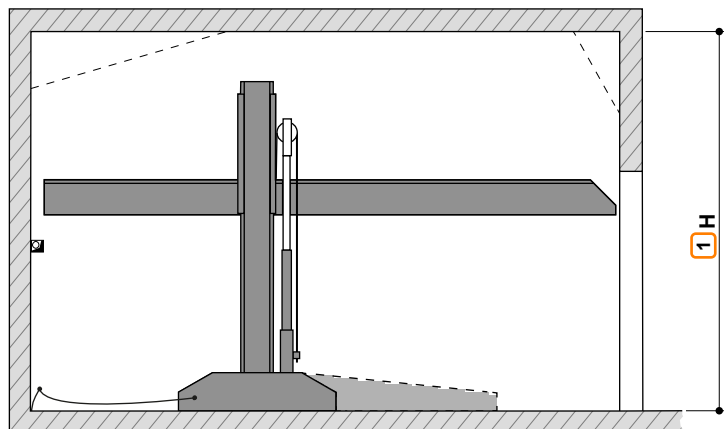


Vehicle width 190 cm with platform width 230 cm.
Correspondingly wider vehicles can be parked with wider platforms.

Overview of system types and ceiling heights



Heights can be subsequently adjusted.



H: Ceiling height

1 If the ceiling is higher, correspondingly higher vehicles can be parked on the top.

Type	Vehicle height, lower	Vehicle height, upper														H - Ceiling height
		150	155	160	165	170	175	180	185	190	195	200	205	210	215	
2061-160	150	320	325	330	335	340	345	350	355	360	365	370	375	380	385	
2061-170	160	330	335	340	345	350	355	360	365	370	375	380	385	390	395	
2061-180	170	340	345	350	355	360	365	370	375	380	385	390	395	400	405	
2061-190	180	350	355	360	365	370	375	380	385	390	395	400	405	410	415	
2061-200	190	360	365	370	375	380	385	390	395	400	405	410	415	420	425	
2061-210	200	370	375	380	385	390	395	400	405	410	415	420	425	430	435	

Example configuration



Example: Vehicle height, lower 170 cm and vehicle height, upper 190 cm.

Type: 2061-180

Ceiling height: 380 cm

Type	Vehicle height, lower	Vehicle height, upper														H
		150	155	160	165	170	175	180	185	190	195	200	205	210	215	
2061-160	150	320	325	330	335	340	345	350	355	360	365	370	375	380	385	
2061-170	160	330	335	340	345	350	355	360	365	370	375	380	385	390	395	
2061-180	170	340	345	350	355	360	365	370	375	380	385	390	395	400	405	
2061-190	180	350	355	360	365	370	375	380	385	390	395	400	405	410	415	

Width dimensions

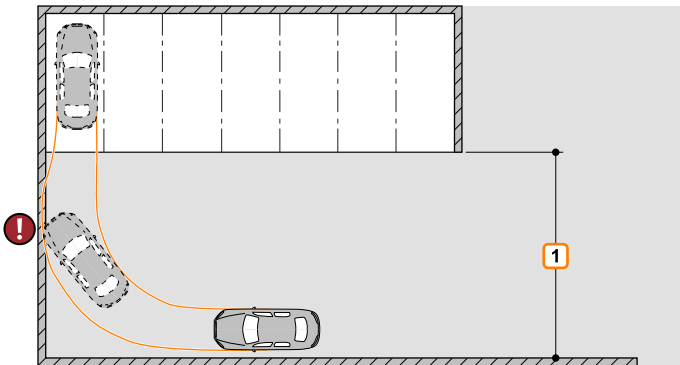


We recommend platform widths of minimum 250 cm and driving lane widths of 650 cm in order that vehicles can comfortably access the Multiparking system and enter and leave without difficulty.

Narrower platforms may impede parking according to the following criteria.

- Driving lane width
- Entrance conditions
- Vehicle dimensions

1 Observe minimum driving lane width in accordance with local regulations.

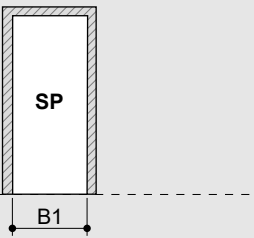
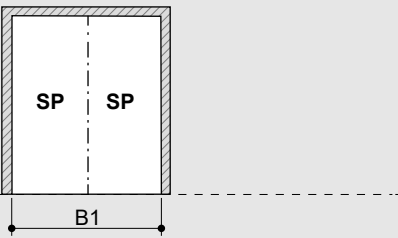
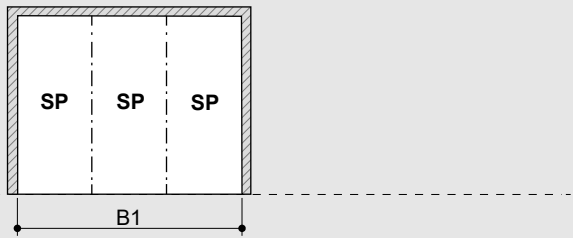
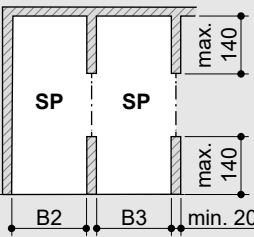
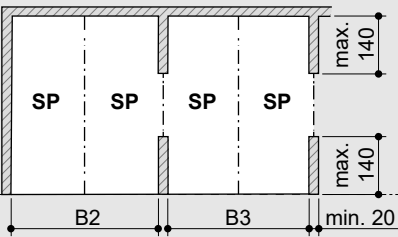
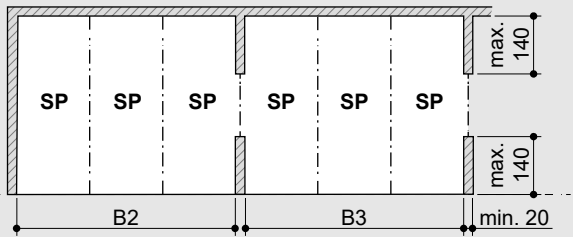
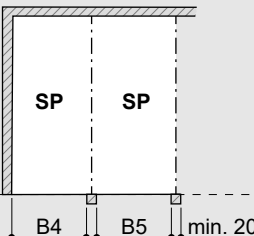
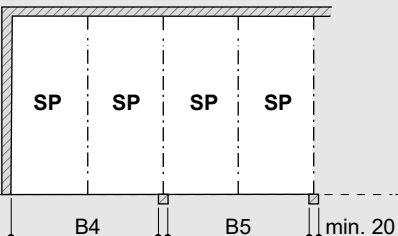
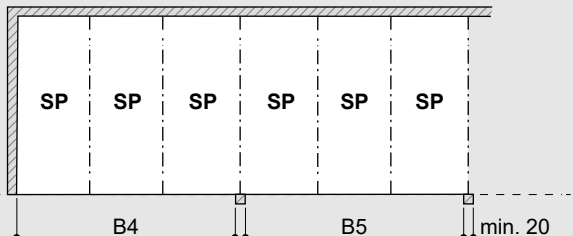


Width dimension with door

	Single platform - SP		Double arrangement - 2x SP	
Support outside of the system area				
	Clear platform width	Passage width B6		
SP	230	230	2x SP	230
	240	240		490
	250	250		510
	260	260		530
	270	270		550
				570

1 Door section (dimension A3 must be agreed on-site with the door manufacturer). With lateral closing doors, coordination between the door manufacturer and KLAUS Multiparking is required.

Width dimension without door

	Single platform - SP	Double arrangement - 2x SP	Triple arrangement - 3x SP			
Dividing walls						
Support in the system area						
Support outside of the system area						
	Clear platform width	Dividing walls B1	Support in the system area		Support outside of the system area	
			B2	B3	B4	B5
SP	230	260	255	245	250	240
	240	270	265	255	260	250
	250	280	275	265	270	260
	260	290	285	275	280	270
	270	300	295	285	290	280
2x SP	230	520	515	510	510	500
	240	540	535	530	530	520
	250	560	555	550	550	540
	260	580	575	570	570	560
	270	600	595	590	590	580
3x SP	230	780	775	770	770	760
	240	810	805	800	800	790
	250	840	835	830	830	820
	260	870	865	860	860	850
	270	900	895	890	890	880

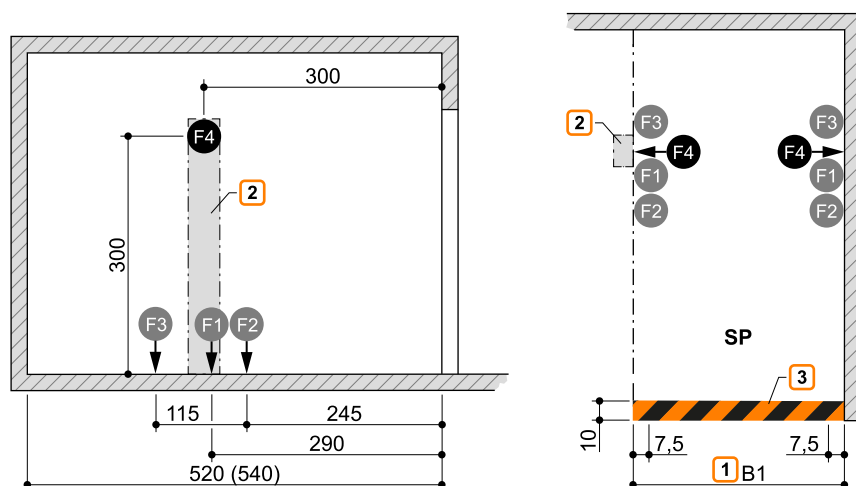
Loading schedule



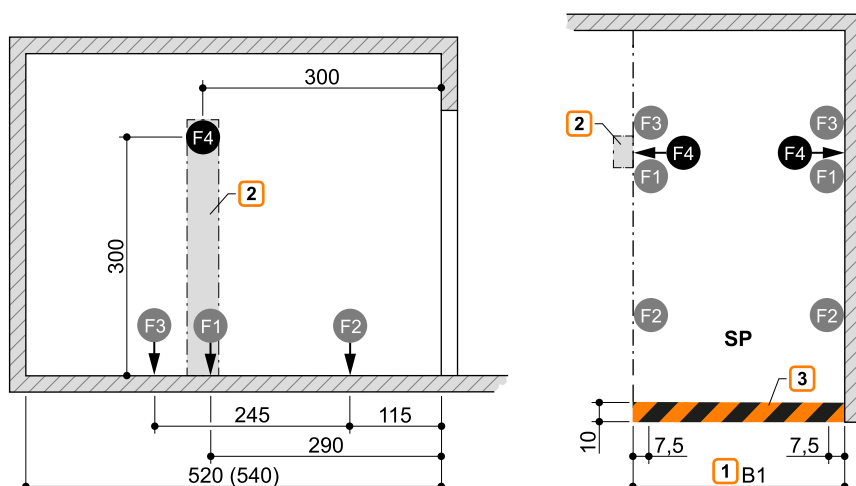
The systems are dowelled into the ground. The drill hole depth in the floor plate is approx. 15 cm, in the walls approx. 12 cm.
 The floor plate and walls must be from concrete (quality min. C20/25).
 The dimensions for the bearing points have been rounded. If the precise figures are required, please consult KLAUS Multiparking.

Column bases can be variably selected (short or long configuration). Always observe the corresponding forces.

Variant 1 (V1): short column bases



Variant 2 (V2): long column bases



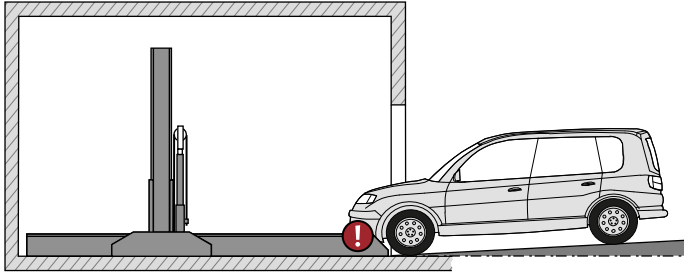
Parking space load		F1	F2	F3	F4
V1	2000 kg	+ 30.0 kN	+ 1.1 kN	- 7.4 kN	± 1.0 kN
	2600 kg	+ 36.0 kN	+ 1.4 kN	+ 9.3 kN	± 1.0 kN
V2	2000 kg	+ 30.0 kN	+ 0.5 kN	+ 7.7 kN	± 1.0 kN
	2600 kg	+ 36.0 kN	+ 0.7 kN	+ 9.8 kN	± 1.0 kN

- ① Width dimension B1 (see "Width dimension without door", page 6)
- ② The system must be supported on both sides. An additional stand may be installed if there are no walls at the sides. A floor area of 50 x 30 cm is required for these stands (concrete quality min. C20/25, drill hole depth approx. 15 cm).
- ③ Marking in accordance with DIN ISO 3864 (illustration colour not consistent with DIN ISO 3864)

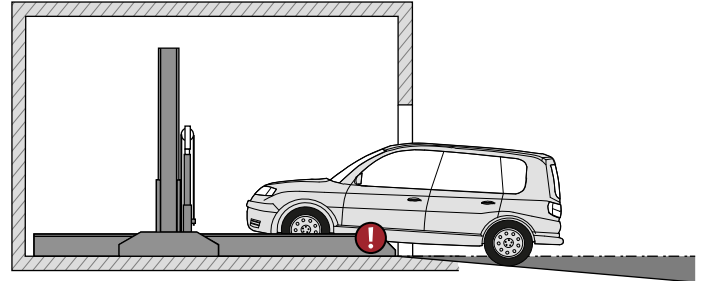
Access incline



The maximum access inclines specified in the symbol sketch must not be exceeded. Improper configuration can lead to extreme difficulty accessing the system, for which KLAUS Multiparking cannot be held liable.



max. 4% slope

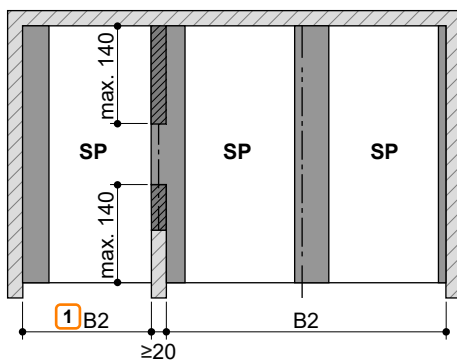
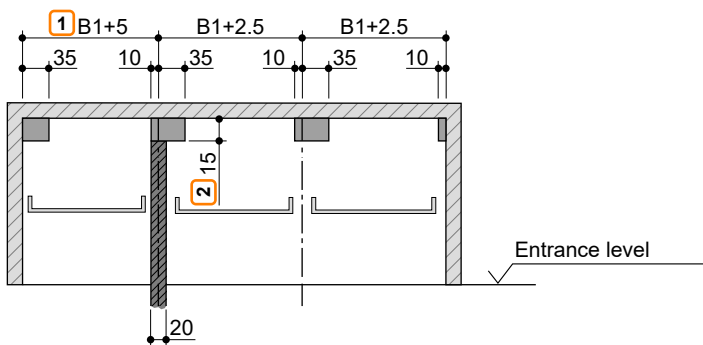


max. 14% gradient

Clearance for installations



These clearances apply to vehicles parked forwards only, with exit on the left. The clearances must be adjusted for vehicles with exit on the right or parked in reverse.



1 Dimensions B1 and B2 (see "Width dimension with door", page 5, "Width dimension without door", page 6)

2 Dimension 15 is reduced to 5 cm on type 2061-160.

■ Clearance for lengthways cable routing

■ Clearance for vertical pipes, air ducts, etc.

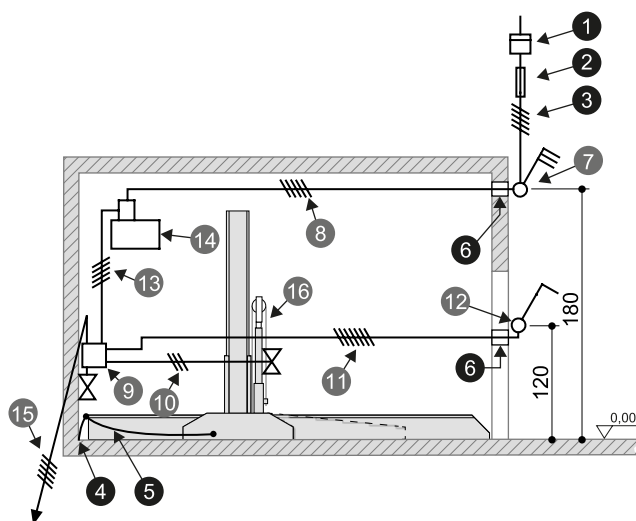
CE conformity

The systems provided are consistent with DIN EN 14010 and the EC Machinery Directive 2006/42/EC. This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

ZERTIFIKAT ♦ CERTIFICATE ♦ 認証証書 ♦ CERTIFICADO ♦ CERTIFICAT	 Industrie Service	
	Certificate concerning the examination of conformity	
	Certificate no:	CA 527
	Certification body:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München – Germany
	Applicant / Certification holder:	KLAUS Multiparking GmbH Hermann-Krum-Str. 2 88319 Aitrach – Germany
	Manufacturer:	KLAUS Multiparking GmbH Hermann-Krum-Str. 2 88319 Aitrach – Germany
	Product:	Equipment for power driven parking of motor vehicles
	Type:	SingleVario 2061EB 2.000 kg SingleVario 2061EB 2.600 kg
	Directive:	2006 / 42 / EC, Annex I
	Test specifications:	DIN EN 14010:2003+A1:2009
Date and number of the test report / mark of conformity:	No. CA 527 from 2022-05-10	
Result:	The equipment fulfills the requirements of the test specifications for the respective scope of application stated in the annex (page 1) of this certificate, keeping the mentioned conditions.	
Date of issue:	2022-05-16	
Validity:	2027-05-15	
 Bernd Gründling Zertifizierstelle der Fördertechnik		
 TÜV®		

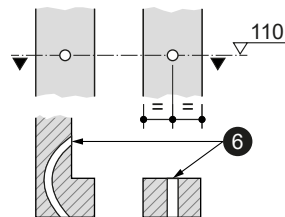
Electrical installation

Electrical installation diagram



On-site facilities for operating element

Surface-mounted operating element



Electrical specifications (services to be provided by the customer)

Nr.	Quantity	Designation	Position	Frequency
1	1	Power meter	in the supply cable	
2	1	Pre-fuse: 3x safety fuse 16 A (slow-blow) or Circuit breaker 3x 16 A (trip characteristic K or C)	in the supply cable	1x per unit
3	1	Supply cable 5 x 2.5 mm ² (3 PH+N+PE) with marked wires and protective earth	to master switch	1x per unit
4	every 10 m	Foundation earth connection	Corner of the floor plate	
5	1	Equipotential bonding in accordance with DIN EN 60204 from foundation earth connection to system		1x per system
6	2	Empty pipe EN 25 (M25)		

Electrical specifications (KLAUS Multiparking scope of supply)

Nr.	Designation
7	Lockable master switch
8	Supply cable 5 x 2.5 mm ² (3 PH+N+PE) with marked wires and protective earth
9	Unit junction box
10	Control cable 3 x 0.75 mm ² (PH+N+PE)
11	Control cable 7 x 1.5 mm ² with marked wires and protective earth
12	Operating element
13	Control cable 5 x 1.5 mm ² with marked wires and protective earth
14	Hydraulic unit 3.0 kW, three-phase current 230/400 V / 50 Hz
15	Control cable 5 x 1.5 mm ² with marked wires and protective earth to next system
16	Chain monitoring

Technical information

Usage area

The system is suitable for a fixed group of users as standard. Where users change - in the upper parking spaces only - (e.g. short-term parking in office buildings or hotels), structural modifications to the Multiparking system are required. Please request a consultation if required.

Units

Low-noise, bearing-mounted hydraulic units are installed on rubber-metal blocks. Consequently, we recommend separating the garage body from the residential building.

Ambient conditions

Ambient conditions for the areas around Multiparking systems: Temperature range -20 to +40° C. Relative humidity 50 % for a maximum outside temperature of +40° C. If ascent/descent times are specified, these relate to an ambient temperature of +10° C and with the system positioned immediately adjacent to the hydraulic unit. These times are increased at lower temperatures or with longer hydraulic lines.

Building application documents

Multiparking systems generally require approval. Please observe local regulations and stipulations.

Care

To prevent corrosion damage, please observe our special cleaning and care instructions and ensure that your garage is well ventilated.

Corrosion protection

In accordance with the 'Corrosion protection' supplement.

Railings

If there are roadways immediately adjacent to or behind the systems, the customer must provide barriers in accordance with DIN EN ISO 13857. This also applies during the construction stage.

Noise protection

Standard noise protection:

In accordance with DIN 4109-1 Noise protection in high-rise - Section 9: Maximum sound pressure level in living and sleeping areas 30 dB (A). User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:

- Noise protection package in accordance with quote/order (KLAUS Multiparking)
- Sound insulation dimension of the building structure of min. $R'w = 57$ dB (service to be provided by the customer)

Increased sound protection (special agreement):

In accordance with DIN 4109-5 Increased noise protection in high-rise - Section 8:

Maximum sound pressure level in living and sleeping areas 25 dB (A). User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:

- Noise protection package in accordance with quote/order (KLAUS Multiparking)
- Sound insulation dimension of the building structure of min. $R'w = 62$ dB (service to be provided by the customer)

Note:

User noise is noise that can be influenced individually by the user of our Multiparking systems. This includes, e.g., accessing the platform, the slamming of vehicle doors, engine and brake noise.

Performance specification

Description

Multiparking system for dependent parking of 2 vehicles one on top of the other. The lower vehicle parks directly on the floor plate. The lower vehicle must exit before the platform is lowered.

The height of the platform can be flexibly adjusted (including subsequently). Upweighting to 2600 kg can be performed retrospectively.

Dimensions in accordance with the underlying building, width and height dimensions.

Access to the parking spaces horizontally (installation tolerance $\pm 1\%$).

Vehicle positioning in the upper parking space by positioning aid mounted on one side (to be adjusted in accordance with the operating instructions).

Control via an operating element with automatic reset by means of simultaneous key.

Operating element usually installed in front of the support or on the outside of the door reveal.

Concise instructions at each operating point.

Special dimensions must be observed in buildings with door.

Multiparking system comprising:

- 2 columns with column bases secured to the floor (short or long base configuration can be variably selected)
- 2 sliders (with sliding guides secured to the columns)
- 1 platform
- 1 mechanical synchronisation system (for synchronised operation of the hydraulic cylinders when lifting and lowering)
- 1 hydraulic cylinder
- Dowels, screws, connectors, bolts, etc.
- The platforms/parking spaces are continuously accessible.

Platform comprising:

- Platform profiles
- Adjustable positioning aid
- Chamfered ramp
- Side beams
- Crossbeams
- Screws, nuts, washers, spacers, etc.

Hydraulic system comprising:

- Hydraulic cylinders
- Magnetic valves
- Hydraulic lines
- Bolted connections
- High-pressure hoses
- Attachments

Electrical system comprising:

- Operating element (emergency-stop, key, 1 simultaneous key per parking space)
- Junction box on wall valve
- Electrical locking
- Chain monitoring

Hydraulic unit comprising:

- Hydraulic unit (low-noise, fitted to bracket and bearing mounted on rubber-metal block)
- Hydraulic oil tank
- Oil filling
- Internal gear pump
- Pump holder
- Coupling
- Three-phase motor
- Circuit protection (with thermal overload relay and control fuse)
- Test pressure gauge
- Pressure relief valve
- Hydraulic hoses (to attenuate noise transmission to the hydraulic pipes)

Services to be provided by the customer

Barriers

Barriers that may be required in accordance with DIN EN ISO 13857 where there are roadways immediately in front of, adjacent to or behind the systems. This also applies during the construction stage.

Parking space numbering

Parking space numbering, if required.

Building services systems

Any lighting, ventilation, fire-extinguishing and fire-alarm systems that may be required, plus clarification and compliance with corresponding official documentation.

Lighting

The customer must observe local regulations pertaining to the illumination of parking spaces and roadways. In accordance with DIN EN 12464-1 'Light and lighting - Lighting of work places', an illumination level of min. 200 lx is recommended for the parking spaces and operating area of the system.

Warning marking

In accordance with DIN EN 14010, the customer must provide 10 cm wide, yellow/black marking in accordance with DIN ISO 3864, in the access area in front of the contact area of the upper platform edge to identify the hazard area.

Wall openings

Any wall openings that may be required should be in accordance with the sectional drawings (see "Overview of building configuration", page 3).

Supply cable to master switch - foundation earth

The customer must lay the supply cable to the master switch during assembly. Functional capability can be checked by our engineers on site, in conjunction with the electronics engineer. If this is not possible during assembly for reasons attributable to the customer, the customer must commission an electronics engineer.

The customer must earth the steel structure with a foundation earth connection (earthing distance max. 10 m) and equipotential bonding in accordance with DIN EN 60204.

Operating element

Empty conduits and recesses for the operating element (see "Electrical installation", page 10). Consultation with KLAUS Multiparking is required when using folding doors.

Subject to technical changes

In the course of technical progress, KLAUS Multiparking shall be entitled to use newer or different technologies, systems, processes or standards to provide the services than initially offered, provided that this does not disadvantage the customer in any way.

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www.multiparking.com



PARK
& SMILE

Appendix D Development code responses

City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note:

For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

9.4.2 Driveways and vehicle crossings code

9.4.2.1 Application

This code applies to assessing operational work for vehicle access works and material change of use for any development involving vehicle access works where indicated within **Part 5 Tables of assessment**.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

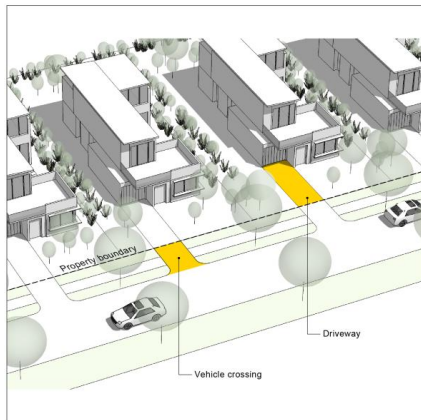


Figure 9.4.2-1

Illustration showing the driveway and vehicle crossing components of vehicle access works

9.4.2.2 Purpose

- (1) The purpose of the Driveways and vehicle crossings code is to provide design standards for the construction, repair or modification to a driveway and/or a vehicle crossing.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Vehicle crossings are designed to a standard in accordance with **SC6.12 City Plan policy – Land development guidelines** or with RPEQ certification to provide safe access for vehicles required to access the site from the edge of the road carriageway to the property boundary.
 - (b) Driveways provide safe access for all vehicles required to access the site from the property boundary to the on-site vehicle accommodation or standing area.
 - (c) Vehicle crossings avoid adverse impacts on City or utility infrastructure.
 - (d) Driveways and vehicle crossings are of an appropriate standard to meet the needs of the development.
 - (e) Vehicle crossings ensure that there is minimal loss of on-street car parking spaces.
 - (f) Driveways and vehicle crossings are designed and sited to maintain streetscape elements and retain space for the future planting of street trees.
 - (g) Vehicle crossings allow for the safety of all users of the existing and planned road and active transport networks.
 - (h) Driveways and vehicle crossings are designed such that vertical and horizontal alignments provide a continuous, smooth access of good rideability and clearance for all vehicles required to access the site.
 - (i) Driveways and vehicle crossings are designed and sited to mitigate stormwater drainage impacts.

9.4.2.3 Specific benchmarks for assessment

PART B – ASSESSABLE DEVELOPMENT BENCHMARKS

Table 9.4.2-2: Driveways and vehicle crossings code – assessable development

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use	
Design				
PO1 The driveway is designed in accordance with the applicable requirements in <i>AS2890:2009 – Parking Facilities</i> .	AO1 No acceptable outcome provided.	COMPLIES WITH PO1 The proposed driveway meets the requirements of <i>AS2890.1:2004</i> and <i>AS2890.2:2018</i> . For further details in this regard refer to Section 5 of Geleon Traffic and Transport Assessment report 50952-RP01-A .		
PO2 Design of the vehicle crossing is certified by a RPEQ confirming compliance with: (a) <i>Disability Discrimination Act 1992</i> ; (b) Applicable requirements in <i>AS2890: 2009 – Parking Facilities</i> ; and (c) <i>QUDM (Queensland Urban Drainage Manual)</i> .	AO2 The vehicle crossing is designed in accordance with SC6.12 City Plan policy – Land development guidelines, Section 2 – Transport network standards .	COMPLIES WITH AO2 The proposed vehicle crossing has been designed generally in accordance with IPWEA Standard Drawing No. ‘ <i>RSD-100 – Vehicle crossings, residential driveways</i> ’ as stipulated in SC6.12 City Plan policy – Land development guidelines. For further details in this regard refer to Section 5 of Geleon Traffic and Transport Assessment report 50952-RP01-A .		
PO3 The vehicle crossing avoids damage to utility services, pathways, kerbs, road pavement and seal and other city infrastructure.	AO3 Vehicle crossings are separated from:	COMPLIES WITH AO3 The vehicle crossing has been located to avoid damage to utility services, pathways, kerbs, road pavement and seal and other city infrastructure. Where required, utility services will be relocated. The proposed vehicle crossing will require the removal of kerb and channel along the Dutton Street frontage. The vehicle crossing servicing the existing		
	Instance			Minimum distance
	Traffic management devices and transport services, stormwater management devices, power supply services and			1m

Performance outcomes	Acceptable outcomes		Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	telecommunication supply services		properties will be demolished and the kerb and channel reinstated.	
	Water and sewerage service assets on the surface (including water meter enclosures, sewerage inspection or maintenance pits, fire hydrants and valves)	300mm (horizontal distance)	For further details in this regard refer to Section 5 of Geleon Traffic and Transport Assessment report 50952-RP01-A .	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets either the performance outcome or overall outcome	Internal use										
Maximum number of vehicle crossings													
PO4 The number of vehicle crossings are minimised to avoid loss of streetscape elements and on-street car parking spaces and to prevent adverse interference with: (a) the safety, capacity and operations of the existing or planned road network; and (b) cycleways or pedestrian footpaths.	AO4 The maximum number of vehicular crossings per site, for the following land uses, is as follows:	COMPLIES WITH AO3 The development proposes one access from Dutton Street. The vehicle crossing servicing the existing residential properties will be demolished and the kerb and channel reinstated. For further details in relation to the location and form of the proposed vehicle crossing, refer to Section 5 of Geleon Traffic and Transport Assessment report 50952-RP01-A .											
	<table><tr><th>Land use</th><th>Maximum number of vehicle crossings</th></tr><tr><td>Dwelling house</td><td>1 OR 2 - when the road frontage at the kerb is at least 40m subject to achieving a minimum of 7m between the crossings</td></tr><tr><td>Dual occupancy Multiple dwelling</td><td>1 OR 2 - where the road frontage at the kerb is greater than 20m subject to achieving a minimum of 7m between the crossings</td></tr><tr><td>Non-residential use</td><td>2</td></tr></table>			Land use	Maximum number of vehicle crossings	Dwelling house	1 OR 2 - when the road frontage at the kerb is at least 40m subject to achieving a minimum of 7m between the crossings	Dual occupancy Multiple dwelling	1 OR 2 - where the road frontage at the kerb is greater than 20m subject to achieving a minimum of 7m between the crossings	Non-residential use	2		
	Land use			Maximum number of vehicle crossings									
	Dwelling house			1 OR 2 - when the road frontage at the kerb is at least 40m subject to achieving a minimum of 7m between the crossings									
	Dual occupancy Multiple dwelling			1 OR 2 - where the road frontage at the kerb is greater than 20m subject to achieving a minimum of 7m between the crossings									
	Non-residential use	2											
Note: the maximum number of vehicle crossings and separation distance is shown above unless otherwise approved in a current development approval.													
Separation distances													
PO5 Vehicle crossings are appropriately separated from other vehicle crossings and side property boundaries to prevent interference	AO5 Vehicle crossings are separated from:	COMPLIES WITH AO5 A separation of greater than 1.0m is achieved to the nearest vehicle crossing and property boundary. For further details in relation to the location and form of the proposed vehicle crossing, refer to Section 5											
	<table><tr><th>Instance</th><th>Minimum distance (m)</th></tr><tr><td>Vehicle crossings on adjoining</td><td>1m</td></tr></table>			Instance	Minimum distance (m)	Vehicle crossings on adjoining	1m						
	Instance			Minimum distance (m)									
Vehicle crossings on adjoining	1m												

Performance outcomes	Acceptable outcomes		Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
with: (a) the safety, capacity and operations of the existing or planned road network; (b) adjoining properties; and (c) cycleways or pedestrian footpaths.	properties		of Geleon Traffic and Transport Assessment Report 50952-RP01-A.	
	Any side property boundary:			
	for residential development with approved built-to-boundary setback	0.5m		
	for all other developments	1m		

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Location			
PO6 Vehicle access to a public roadway is safe and does not compromise the efficiency, function, convenience of use or capacity of the road network.	AO6.1 The location of the vehicle crossing to a public roadway is consistent with the applicable requirements in <i>AS/NZS 2890.1:2004 Parking facilities Part 1: Off-street car parking</i> and <i>AS 2890.2-2002 Parking facilities Part 2: Off-street commercial vehicle facilities</i> .	COMPLIES WITH AO6.1 The location of the vehicle crossing is consistent with <i>AS2890.1:2004</i> . For further details in relation to the proposed vehicle crossing, refer to Section 5 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
	AO6.2 No new vehicle crossings are created on roads identified on the Functional road hierarchy as shown on the Zone maps or the Pacific motorway service road types overlap map .	COMPLIES WITH PO6 The development proposes one access from Dutton Street which is the development's only road frontage and not listed on Council's Functional road hierarchy.	
PO7 Driveways and vehicle crossings: (a) ensure existing street trees within the verge are retained; (b) provide an appropriate separation distance to existing street trees within the verge in accordance with <i>AS4970:2009 – Protection of trees on development site</i>; and (c) retain space for the future planting of street trees within the verge in accordance with SC6.13 City Plan policy – Landscape work. Note: The location of the driveway and vehicle crossing is considered at the design stage of the development.	AO7 No acceptable outcome provided.	COMPLIES WITH PO7 The proposed vehicle crossing location has been designed to ensure existing street trees within the verge are retained, provide an appropriate separation distance to existing street trees within the verge in accordance with <i>AS4970:2009 – Protection of trees on development site</i> and retain space for the future planting of street trees within the verge in accordance with SC6.13 City Plan policy – Landscape work . For further details in relation to the proposed vehicle crossing, refer to the plans of development and Section 5 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
Sight distances and lines			

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
PO8 Vehicle crossings are designed to provide safe travel for vehicles, cyclists and pedestrians.	AO8 Vehicle crossings are designed to provide sight distances and lines in accordance with <i>AS 2890.2-2002 Parking facilities Part 2: Off-street commercial vehicle facilities</i> .	COMPLIES WITH AO8 At the proposed access, Minimum Gap Sight Distance (MGSD) requirements can be achieved. For further details in this regard, refer to Section 5 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	

City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note:

For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

9.4.13 Transport code

9.4.13.1 Application

This code applies to assessing a material change of use where indicated within **Part 5 Tables of assessment** unless the development is listed as accepted subject to requirements and is:

- (a) establishing in an existing lawful non-residential premises; and
- (b) involving:
 - (i) no building work (other than an internal fit-out); or
 - (ii) only minor building work; and
- (c) the development results in no loss of car parking spaces.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

9.4.13.2 Purpose

- (1) The purpose of the Transport code is to ensure transport needs associated with the development of land are met.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Development ensures that:
 - (i) on-site access, parking and facilities, manoeuvring and servicing areas are designed to:
 - (A) meet the needs of the development;

- (B) result in a functional and efficient site layout that minimises impacts on surrounding areas and traffic movement;
 - (C) create a safe pedestrian and cyclist focussed environment; and
 - (D) promote a high quality public realm.
- (ii) the function and capacity of the road network is not compromised and impacts on amenity, safety and operation of existing and planned roads are appropriately mitigated.
- (b) An integrated transport system is provided that:
 - (i) is convenient, efficient and flexible, being able to accommodate major events and provide a high level of connectivity between all activity centres, urban neighbourhoods, mixed use and industrial areas, inclusive of all modes, including active transport networks;
 - (ii) supports well designed urban development, which is concentrated within activity centres and urban neighbourhoods, that is easy to access via frequent public transport, walking and cycling, thereby reducing the need to travel by car;
 - (iii) supports community and privately operated transport services as viable alternatives to the private car;
 - (iv) reduces congestion and car dependency and significantly increases levels of walking, cycling and public transport use; and
 - (v) ensures existing and future transport corridors are protected.
- (c) Active transport networks are provided that:
 - (i) are direct, safe, pleasant and comfortable to make walking and cycling an attractive alternative to the car;
 - (ii) ensure development within centres and urban neighbourhoods, including the light rail corridor have access to high quality active transport infrastructure including paths, bicycle parking and end of trip facilities;
 - (iii) are directly connected to local attractions and services;
 - (iv) are clear and easily accessed; and
 - (v) ensure the active transport infrastructure are completed in the early stages of development.
- (d) Public transport networks are provided that:
 - (i) are of a standard and quality to provide an attractive alternative to the car;
 - (ii) ensure district and regional level community uses are within walking distance of public transport facilities; and
 - (iii) are clear and easily accessed.
- (e) A road network is provided that:
 - (i) is developed and managed efficiently and meets the city's needs for the movement of people and goods, and can be safely shared by all users;

- (ii) ensures development impacts on amenity caused by traffic and parking is consistent with the community's reasonable expectations for the intended use;
- (iii) develops local road networks that are permeable and legible to facilitate a high level of connectivity, are safe and are shared with active and public transport;
- (iv) ensures developments are designed for safe and efficient waste collection, carried out with minimal disruption or impact to the road network; and
- (v) within the Coomera Town Centre area, provides an integrated network of predominantly public streets to ensure efficient movement of pedestrians, cyclists, vehicles and strong public transport connections that is guided by the indicative access and mobility outcomes in Figure 9.4.13-2 Coomera Town Centre Indicative Access and Mobility.
- (f) Major freight corridors and haulage routes:
 - (i) are protected from incompatible uses and ensure their safe and efficient operation.
- (g) Navigable waterways:
 - (i) support active and public transport facilities in waterfront locations for public water transport and enhance access to the city's waterways.

9.4.13.3 Specific benchmarks for assessment

PART B – ASSESSABLE DEVELOPMENT BENCHMARKS

Table 9.4.13-2: Transport code – for assessable development

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Car parking and travel demand			
PO1 Development provides off-street car parking to accommodate the parking demand and allows for various modes of travel to reduce dependency on private vehicle usage. OR Where located in the Centre zone or the Southport Priority Development Area,	AO1 Off- street car parking spaces are provided in accordance with the identified relevant table as follows:	COMPLIES WITH AO1 The total car parking requirement for the development is 20 car parking spaces comprising 17 resident spaces and three visitor spaces. In accordance with the National Construction Code – Volume 1 for a Class 2 building, there is no requirement to provide parking spaces for People with Disabilities. The development provides a total of 23 car parking spaces comprising 20 resident spaces via ten car stacker systems and three visitor spaces and therefore	

Performance outcomes	Acceptable outcomes		Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
development: (a) maximises the efficiency of car parking provided; (b) reduces congestion and car dependency; and (c) encourages alternative transport options such as walking, cycling and the use of public transport. Note: For an increase in scale or intensity of an existing lawful use, this PO and AO applies to the extent of the increase, provided existing car parking areas are not reduced or disturbed.			complies with Council requirements. Refer to Section 4.0 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
	Location	Off-street car parking rate		
	Centre zone and High density residential zone where nominated in the Transport hub area in Figure 9.4.13-1: Transport hub area	Table 9.4.13-4: Car parking rates – Centre zone and High density residential zone – Transport hub		
	Centre zone not nominated in the Transport hub area in Figure 9.4.13-1: Transport hub area	Table 9.4.13-5: Car parking rates – Centre zone – outside Transport hub area		
	Special purposes zone – Special development area precinct – Southport Priority Development Area	Table 9.4.13-6: Car parking rates – Southport Priority Development Area		
	All other zones	Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority		

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	Development Area		
PO2 Car parking spaces for employees and visitors to the development are maximised and allow for efficient functioning of the site and surrounding traffic network.	AO2 Car parking spaces for employees and visitors to the development are accessible at all times and not restricted by allocation of spaces, gateways, doors or similar devices.	COMPLIES WITH PO2 Access to the ground floor level car park will be restricted by a security gate. Visitor parking is provided in front of the security gate. For further details in this regard, refer to the plans of development.	
Servicing			
PO3 Development accommodates the required design service vehicle (including waste collection) in accordance with: (a) Table 9.4.13-8: Service vehicle requirements ; and (b) Table 9.4.13-9: Minimum class of service vehicle ; and (c) <i>AS2890.2: Parking facilities Part 2: Off-street commercial vehicle facilities</i> to allow for: (i) loading and unloading of service vehicles wholly within the site; (ii) pathways from service areas to tenancies at a width and grade that allows for unimpeded manoeuvring of goods (i.e. clear of doors, gates or landscaping); (iii) waste collection vehicles to appropriately service the development; (iv) safe pickup and set-down of passengers on-site; (v) unobstructed access to off-street	AO3 No acceptable outcome provided.	COMPLIES WITH OO(a)(I) & (e)(II) Issues associated with providing a 4.5m vertical clearance for a MRV mean that an on-site standing area for an MRV cannot be accommodated. Therefore, compliance with AO3 and PO3 of the Transport Code cannot be achieved. However, the proposed development can comply with the overall outcomes, specifically OO(a)(I) & (e)(II) for the following reasons: for multiple dwelling units, groceries and large retail goods will typically be delivered by a van or SRV, while removalist activities will generally utilise a van, SRV or MRV. Therefore, provision has been made for an SRV on the ground floor level on the northern side of the driveway. Above the ground floor level driveway, a minimum 3.5m vertical clearance is achieved. A swept path assessment has been undertaken using AutoTURN software to demonstrate that an SRV can reverse into the standing area from Dutton Street, stand in the servicing area, and exit the development site in a forward gear. The swept path assessment also demonstrates that B99 passenger vehicles can enter and exit the development site in a forward gear if an SRV is parked on the ground floor level	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
parking areas; and (vi) an efficient and safe traffic network.		- it is known that removalist / delivery companies generally ask their customers at the time of quoting about on site and on-street parking restrictions and availability. Given the site constraints, it is expected that residents undertaking full moves will consult with removalist companies regarding the parking availability in the vicinity prior to moving and recommend that an alternative smaller removalist vehicle be used - the nature of these units will be high-end owner occupier where residents are less likely to move frequently - the frequency of vehicles attending the site to deliver goods and undertake maintenance could occur weekly, however the demand for larger removalist vehicles is based on how often residents move. A review of census data from 2011 identified that approximately 8.34% of Australian residents move each year. When applied to all 9 units this equates to approximately one movement every 16 months (assuming all residents in each dwelling move together). Therefore, the demand for large removalist vehicles will be low, and - if in the rare occasion MRV servicing is required, this can be accommodated along Dutton Street however is likely to only be required once every 16 months. It is important to note that Council has recently approved an extensive list of multiple dwelling development's with MRV servicing on-street and SRV servicing on site e.g. PDA/2024/8, MCU/2023/348. For further details in this regard, refer to Section 5.3 of Geleon Traffic and Transport Assessment Report 50952-RP01-A.	
PO4 Development ensures that service vehicle	AO4 No acceptable outcome provided.	COMPLIES WITH PO4 A designated standing area for an SRV is provided	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
routes to and from the development minimise impacts on residential safety and amenity.		within the ground floor car park to service the proposed development. For further details in this regard, refer to Section 5.3 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
Public transport network			
PO5 Development that attracts large numbers of people, integrates the provision of on-site public transport facilities which are connected to: (a) adjoining uses; (b) the existing road network; (c) existing or future public transport facilities; and (d) public areas.	AO5.1 On-site public transport facilities (including stops) are integrated with the following land uses: (a) Air services; (b) Educational establishment (new and existing); (c) Hospital; (d) Major sport, recreation and entertainment facility; (e) Shop (2,000m ² or greater); and (f) Tourist attraction.	Not applicable - the development does not attract a high proportion of people using high frequency public transport.	
	AO5.2 Development provides safe, attractive and convenient pedestrian and cycle pathways connected to: (a) adjoining uses; (b) the existing road network; (c) existing or future public transport facilities; and (d) public areas.	Not applicable - the development does not attract a high proportion of people using high frequency public transport.	
PO6 Development within 400m walking distance of a high frequency public transport stop or rail station provides attractive, safe and convenient linkages to this infrastructure.	AO6 No acceptable outcome provided.	COMPLIES WITH AO5.3 Refer to the plans of development.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Active transport network			
PO7 Off-street bicycle parking and off-street end-of-trip facilities are provided to encourage active transport and are: (a) designed to meet the needs and volumes of pedestrians and cyclists; and (b) located in safe, convenient and highly accessible areas. Note: This PO does not apply to the following uses: • Dwelling house; • Dual occupancy; or • Multiple dwelling (where there are 3 dwellings)	AO7.1 Development provides off-street bicycle parking and off-street end-of-trip facilities in accordance with Table 9.4.13-10: Bicycle parking rates and Table 9.4.13-11: End-of-trip facilities for active travel users .	COMPLIES WITH AO7.1 The total bicycle parking requirement for the development is 10 spaces including nine Class 2 spaces and one Class 3 space. The development provides a total of 10 bicycle parking spaces comprising nine resident spaces (Class 2) and one visitor space (Class 3). For further details in this regard, refer to Section 4 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
	AO7.2 Location of off-street, end-of-trip facilities are: (a) within 50m to off-street bicycle parking; and (b) clearly signed off-street bicycle parking areas.	Not applicable - end-of-trip facilities are not required for a multiple dwelling land use.	
	AO7.3 Signage indicating location of off-street bicycle parking is: (a) clearly identifiable within the site; (b) at ground level, external to buildings; and (c) in accordance with <i>AS2890.3: Parking facilities Part 3: Bicycle parking</i> .	COMPLIES WITH AO7.3 Bicycle parking will be appropriately signed in accordance with relevant Council requirements.	
	AO7.4 Off-street bicycle parking areas are: (a) clear of pedestrian movement paths; (b) visible from the street to allow casual surveillance; (c) located clear of vehicle movement;	COMPLIES WITH AO7.4 Refer to plans of development and Section 4 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	(d) well lit; (e) protected from the weather; (f) connected from the road via direct pathways/ramps; and (g) in accordance with the cycling aspects of austroads and <i>AS2890.3: Parking facilities Part 3: Bicycle parking</i> .		
PO8 Development provides pedestrian and cyclist pathways to all street frontages and set down areas, and: (a) allows for safe movement; (b) is convenient and direct; (c) is clearly identifiable; and (d) is clear of potential vehicle movements.	AO8.1 Development provides a pathway from the primary street frontage and car parking set-down areas, to connect to the main entry of the building. OR For development with 21 dwellings or more, a pathway is provided for each road frontage and car parking set-down area(s) to the main entry of the building.	COMPLIES WITH AO8.1 Refer to the plans of development.	
	AO8.2 Pathways are to be designed and constructed in accordance with AS <i>1428.1: Design for access and mobility Part 1: General requirements for access – New building work</i> .	COMPLIES WITH AO8.2 Pathways will be designed and constructed in accordance with AS1428.1.	
	AO8.3 Pathways are separated from vehicle movements.	COMPLIES WITH AO8.3 Refer to the plans of development.	
PO9 Public pathways are provided: (a) within the road reserve, adjacent to, and for the full length of, the sites road frontage; and (b) in accordance with SC6.12 City Plan policy – Land development	AO9 No acceptable outcome provided.	COMPLIES WITH PO9 Dutton Street is the only public road that fronts the development. Existing pathways are provided along the Dutton Street road frontage. No changes to active transport facilities are proposed by the development.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
guidelines. Note: This PO does not apply to the following uses: - Dwelling house; - Dual occupancy; or - Multiple dwelling (where there are 3 dwellings).			
PO10 Development contributes to the safe and efficient provision and operation of the bicycle and pedestrian network.	AO10.1 Pathways and on-road cycle lanes are designed and constructed in accordance with SC6.12 City Plan policy – Land development guidelines, Section 2 – Transport network standards.	Not applicable – public pathways and cycle lanes are not proposed along the road reserve.	
	AO10.2 Development does not remove or compromise existing on-road and off-road bicycle and pedestrian infrastructure and facilities.	COMPLIES WITH AO10.2 Refer to the plans of the development.	
Roads and freight			
PO11 Public roads including upgrades are designed to an appropriate standard and are designed to: - prevent the need for traffic calming devices to manage vehicle design speed; - deter through traffic if the roads function is primarily for access; and - create safe conditions for pedestrians and cyclists.	AO11 New roads and upgrades to roads are designed and constructed in accordance with SC6.12 City Plan policy – Land development guidelines, Section 2 – Transport network standards.	Not applicable – no new roads or upgrades are proposed.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
PO12 Corner lots include truncations at each roadway intersection to ensure the intersection and sight lines are safe and functional.	AO12.1 Corner lots are truncated at each roadway intersection by: (a) three equal chords of a 6m radius for non-industrial lots and are dedicated to Council as public road; or (b) three equal chords of a 8m radius for industrial lots and are dedicated to Council as public road.	Not applicable.	
	AO12.2 At roundabouts and intersections, corner truncations are wider to maintain verge widths and sight line requirements.	Not applicable.	
PO13 New intersections: (a) are safe and do not compromise the efficiency, function, convenience of use or capacity of the road network; (b) have verge areas that provide sufficient area for safe pedestrian and cycling movement; and (c) have sufficient area to provide essential services and infrastructure, including traffic management.	AO13 New intersections are designed and constructed in accordance with <i>Austroads</i> and SC6.12 City Plan policy – Land development guidelines, Section 2 – Transport network standards .	Not applicable.	
Ingress and egress			
PO14 All vehicles enter and exit the site in a forward gear (restricted manoeuvring is allowed for service vehicles identified in Table 9.4.13-8: Service vehicle requirements). Note: This PO does not apply to the following uses: Dwelling house;	AO14 No acceptable outcome provided.	COMPLIES WITH PO14 A designated standing area for an SRV is provided within the ground floor level car park to service the proposed development. All passenger and service vehicles can enter and exit the development site in a forward gear. Refer to plans of development and Section 5.3 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
- Dual occupancy; or - Multiple dwelling (where there are 3 dwellings). Editor's note – Access to State controlled roads may require additional approvals in accordance with the <i>Transport Infrastructure Act 1994</i>			
PO15 Where identified on the functional road hierarchy (as shown on the zone maps in Schedule 2) and a lot has two or more road frontages, vehicle access is provided from the road with the least on-road traffic.	AO15 No acceptable outcome provided.	Not applicable.	
Integrated transport and land use			
PO16 Development: (a) does not compromise the function and capacity of the existing and planned road network; and (b) appropriately mitigates impacts on the safety and operation of the existing and planned road network. Note: A Traffic Impact Assessment is Council's preferred method of addressing the above Performance outcome particularly in the following instances: (a) when the development is identified as "any other use not listed in this table" or "any other undefined use" in Part 5 – Tables of assessment; (b) freight dependent development; or (c) site access is to a road identified on the Functional road hierarchy (indicated on the	AO16 No acceptable outcome is provided.	COMPLIES WITH PO16 Refer to Section 3 of Geleon Traffic and Transport Assessment Report 50952-RP01-A which presents the findings of an impact assessment on the external road network.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Zone maps in Schedule 2); (d) site access is from a road identified on the Pacific motorway service road types overlay map; (e) site access is within 100m of a signalised intersection; (f) site access is within 50m of a roundabout; or (g) a new intersection is proposed; (h) density outcomes in a Zone code are exceeded; or (i) development has the potential to increase existing background traffic (peak period or daily traffic movements) ≥ 5 percent.			
PO17 Development is not located in areas that compromise future transport corridors, including roads, public transport and active transport.	AO17 Land shown on the zone maps for the purposes of existing or future road network infrastructure, is to be dedicated to Council as public road.	COMPLIES WITH PO17 The development is not located in areas that compromise future transport corridors.	
PO18 Development within the Coomera Town Centre area provides an integrated network of predominantly public streets to ensure efficient movement of pedestrians, cyclists, vehicles and strong public transport connections. Note: Indicative access and mobility outcomes for the Coomera Town Centre area are identified on Figure 9.4.13-2.	AO18 No acceptable outcome provided.	COMPLIES WITH PO18 The development is not located in the Coomera Town Centre area.	
General			
PO19 Continuous circulation aisles are provided within carparking areas to avoid the use of	AO19.1 All off-street car parking modules and service areas are accessed by internal	COMPLIES WITH AO19.1 Refer to Section 4.2 of Geleon Traffic and Transport	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
the road network when accessing areas within the development.	circulation aisles.	Assessment Report 50952-RP01-A .	
	AO19.2 Circulation aisles are not disconnected by car parking modules or service areas.	COMPLIES WITH AO19.2 Refer to Section 4.2 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
	AO19.3 All access driveways are linked by circulation aisles and free from parking manoeuvres.	COMPLIES WITH AO19.3 Refer to Section 4.2 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
	AO19.4 All vehicles can circulate throughout the site in a forward gear without performing reverse manoeuvres.	COMPLIES WITH AO19.3 Refer to Section 4.2 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
PO20 Off street car parking areas: (a) provide a legible and efficient internal layout; (b) ensure the safety and security of users; (c) are clearly distinguishable from pedestrian paths and entry points; (d) are easily negotiated by vehicles and pedestrians including persons with a disability; (e) ensure that there are no disruptions to or queues onto the public road network; (f) provide sight distances from driveways to ensure visibility between vehicles on the driveway and pedestrians on the verge; (g) are designed, marked and maintained to the current relevant standard; and (h) promote driver expectations consistent with conventional road rules (e.g. keep	AO20.1 Off street car parking provided in accordance with AS 2890.1: <i>Parking facilities – Part 1: Off-street car parking</i> , AS 2890.2: <i>Parking facilities – Part 2: Off-street commercial vehicle facilities</i> , AS/NZS 2890.6: <i>Parking facilities Part 6: Off-street parking for people with disabilities</i> and AS 1428.1: <i>Design for access and mobility Part 1: General requirements for access – New building work</i> .	COMPLIES WITH AO20.1 Refer to Section 4.2 of Geleon Traffic and Transport Assessment Report 50952-RP01-A .	
	AO20.2 Development does not provide pavement humps or raised platforms in queuing areas.	COMPLIES WITH AO20.2 Refer to the plans of development.	
	AO20.3 Development is designed so that vehicles do not reverse across marked pedestrian crossings.	COMPLIES WITH AO20.3 All vehicles can manoeuvre throughout the development site without being required to reverse across pedestrian crossings. Refer to the plans of development.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
to the left).			
PO21 Any proposed porte-cocheres are designed to enable safe manoeuvring and access of vehicles on-site.	AO21 Any proposed porte-cocheres are designed to: (a) have a minimum vertical clearance of 4.5m; (b) accommodate vehicles entirely within the site, including the queuing of vehicles; and (c) allow vehicles to circulate in a forward direction at all times.	Not applicable.	
PO22 Staged development is planned, designed and constructed to ensure that for each stage: (a) sufficient car parking is provided; and (b) appropriate connections to active and public transport facilities are provided.	AO22 No acceptable outcome is provided.	COMPLIES WITH PO22 The development will be staged accordingly.	

Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area

This table sets out the minimum number of car parking spaces required according to the use applied for. Where the calculated number of car spaces is not a whole number, the number of car parking spaces required must be the next higher whole number.

Land use	Minimum number of off-street car parking spaces
Adult store	5 per 100m ² of TUA (total use area)
Agricultural supplies store	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²
Animal husbandry	1 per staff in addition to parking provided for the primary dwelling

Land use	Minimum number of off-street car parking spaces	
Animal keeping	1 per staff in addition to parking provided for the primary dwelling	
Bar	5 per 100m ² of TUA	
Brothel	1 per each room plus 1 per 2 staff	
Bulk landscape supplies	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Caretaker's accommodation	2	
Car wash	DIY car wash	0
	Hand-wash	1 per 2 staff
Child care centre	1 per 4 children, which may be provided as a passenger set-down/pick-up area	
Club	6 per 100m ² of TUA	
Community care centre	14, plus 5 per 100m ² of TUA	
Community use	6 per 100m ² of TUA	
Crematorium	10 per 100m ² of TUA	
Cropping	1 per staff in addition to parking provided for the primary dwelling	
Dual occupancy	2 per dwelling	
Dwelling house	Dwelling house	1 per 1 bedroom dwelling
		2 per dwelling with 2 or more bedrooms
	Secondary dwelling where 80m ² or less	1
	Secondary dwelling where greater than 80m ²	2
Dwelling unit	2	
Educational establishment	Preparatory	1 per staff, plus 1 per 5 children enrolled which may be provided as a passenger set-down/pick-up area
	Primary	1 per staff
	Secondary	1 per staff plus 1 per 10 Year 12 students
	Before and after school care	1 per staff, plus 1 per 5 children enrolled which may be

Land use	Minimum number of off-street car parking spaces	
		provided as a passenger set-down/pick-up area
	Tertiary and further education	To be determined upon submission of a Car Parking Assessment to Council
	In addition to the car parking requirements a set down/pick-up area is provided.	
Food and drink outlet	5 per 100m ² of TUA, plus queuing area for 10 vehicles for any drive-thru facility from the collection point	
Function facility	10 per 100m ² of TUA	
Funeral parlour	The greater of: (a) 1 per 10m ² of TUA; or (b) 1 per 2.5 persons, based on maximum occupancy	
Garden centre	10, plus 1 space per 100m ² of TUA in excess of 3,000m ²	
Hardware and trade supplies	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Health care services	The greater of: (a) 1 per 20m ² of TUA; or (b) 2 per consulting room, plus 1 space per staff	
High impact industry	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Home based business	Bed and breakfast	1 per guest room in addition to parking provided for the primary dwelling
	Home office	1, in addition to parking provided for the primary dwelling
	Home based child care	0
	Home based business n.e.i.	2, in addition to parking provided for the primary dwelling
Hospital	0.8 per staff plus 1 per 2 beds	
Hotel	6 per 100m ² of TUA and 1 space per short term/serviced apartment plus queuing area for 10 vehicles for any drive-through facility from the collection point	
Indoor sport and recreation	Gymnasium (where 24hr and no classes)	1 per 20m ² of TUA
	Amusement parlour	5 per 100m ² TUA
	Squash or enclosed tennis court	6 per court

Land use	Minimum number of off-street car parking spaces	
	Indoor cricket or other court game	20 per court
	Swimming pool or skating rink	15, plus 1 per 100m ² of TUA
	Any other operation	1 per 10m ² of TUA
Intensive animal industry	1 per staff in addition to parking provided for primary dwelling	
Intensive horticulture	1 per staff in addition to parking provided for primary dwelling	
Low impact industry	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Marine industry	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Market	1 per 2 stalls	
Medium impact industry	Medium impact industry	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²
	Salvage Yard	0.7 per 100m ² of TUA, with a minimum of 5 spaces
Multiple dwelling	(a) 1 per 1 bedroom unit or dwelling; (b) 1.25 per 2 bedroom unit or dwelling; (c) 1.5 per 3 bedroom unit or dwelling; (d) 2 per 4 bedroom unit or dwelling; Plus: (a) where 3 to 4 dwellings, 1 for visitor parking; or (b) where 5 to 6 dwellings, 2 for visitor parking; or (c) where 7 to 9 dwellings, 3 for visitor parking; or (d) where 10 or more dwellings, 3 plus 1 per 10 dwellings for visitor parking thereafter Note: At least 50% of visitor parking to be provided in a single location	
Nightclub	5 per 100m ² of TUA	
Office	Office, if real estate agent	To be determined upon submission of a Car Parking Assessment to Council
	Office, if call centre	To be determined upon submission of a Car Parking Assessment to Council
	Office n.e.i	3 per 100m ² of TUA

Land use	Minimum number of off-street car parking spaces	
Outdoor sales	Vehicle hire	3 per 100m ² of TUA plus 1 per 1.5 vehicles in the vehicle hire fleet and 1 on-site wash bay
	Motor vehicles sale yard	3 per 100m ² of TUA plus 0.5 per 100m ² of display area
Outdoor sport and recreation	Tennis court	4 per court
	Lawn bowls (stand-alone)	20 per green
	Swimming pool	15, plus 1 per 100m ² of TUA
	Golf course	The greater of: (a) 4 per hole, plus 3 per 100m ² of TUA of clubhouse; or (b) 6 per 100m ² of TUA of clubhouse
	Football ground	50 per field
	Any other court game	20 per court
Permanent plantation	1 per staff in addition to parking provided for the primary dwelling	
Place of worship	1 per 2.5 persons, based on maximum occupancy	
Port services	Marina	(a) 0.6 per wet berth designed for boats 10m and under; (b) 0.8 per wet berth designed for boats between 10m and 15m; (c) 1 per wet berth designed for boats greater than 15m; (d) 0.2 per dry berth or swing mooring; plus (e) 0.5 per staff; (f) 1 per 50m ² TUA of ancillary activities associated with the marina.
Relocatable home park	Relocatable home park	1 per relocatable home plus 1 per 5 homes for visitors
Research and technology industry	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Residential care facility	1 per 2 beds for visitor car parking, and 1 per staff based on maximum residential occupancy Note: 50% of visitor parking to be provided in a single location	
Resort complex	1 per 4 dwellings	

Land use	Minimum number of off-street car parking spaces	
Retirement facility	(a) 1 per independent living, self contained dwelling; plus (b) 1 per 4 independent living, self contained dwellings for visitor car parking; plus (c) 1 per staff based on maximum residential occupancy Note: 50% of visitor parking to be provided in a single location	
Roadside stall	4	
Rooming accommodation	Off-site Student accommodation	1 per 2 students, based on maximum occupancy plus 1 for a manager residence
	Hostel	1 per room, excluding communal areas, plus 1 for a manager residence
	Other	To be determined upon submission of a Car Parking Assessment to Council
Rural industry	1 per staff in addition to parking provided for primary dwelling plus 1 visitor space	
Sales office	Sales office	5
	Display dwelling	0
Service industry	Service industry	5 per 100m ² of TUA
	Laundromat	5 per 100m ² of TUA
Service station	2, plus 5 per 100m ² of TUA	
Shop	5 per 100m ² of TUA	
Short-term accommodation	Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
	Other	1 per room plus 1 per managers residence
Showroom	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²	
Theatre	Stand-alone	To be determined upon submission of a Car Parking Assessment to Council
	Where part of a shopping centre	1 per 8 seats
Tourist attraction	Existing	To be determined upon submission of a Car Parking Assessment to Council

Land use	Minimum number of off-street car parking spaces	
Tourist park	Caravan park	11 per 10 sites plus 1 per 10 sites for visitors
	Holiday cabins	1 per site or cabin plus 1 per 10 sites for visitors
Transport depot	To be determined upon submission of a Car Parking Assessment to Council	
Veterinary services	5 per 100m ² of TUA	
Warehouse	Warehouse	2 per tenancy or lot plus 1 per 50m ² of TUA up to and including 500m ² , and 1 per 100m ² of TUA over 500m ²
	Self storage sheds 0 – 3,000m ² GLA	(a) 3 plus 1 for trailer (b) This rate includes staff parking requirements (c) All spaces are located beside or adjacent to the office administration building (d) Where storage units are proposed to be located in a multi-storey building and access to the units is via stairs or lifts, an additional 2 parking spaces are to be provided behind a secured gate and at the entry to the building
	Self storage sheds 3,001m ² - 6,000m ² GLA	(a) 4 plus 1 for trailer (b) This rate includes staff parking requirements (c) All spaces are located beside or adjacent to the office administration building (d) Where storage units are proposed to be located in a multi-storey building and access to the units is via stairs or lifts, an additional 5 parking spaces are to be provided behind a secured gate
	Self storage sheds 6,001m ² - 9,500m ² GLA	(a) 5 plus 1 for trailer (b) This rate includes staff parking requirements (c) All spaces are located beside or adjacent to the office administration building (d) Where storage units are proposed to be located in a multi-storey building and access to the units is via stairs or lifts, an additional 5 parking spaces are to be provided behind a secured gate
	Self storage sheds ≥ 9,501m ² GLA	To be determined upon submission of a Car Parking Assessment to Council

Land use	Minimum number of off-street car parking spaces
Wholesale nursery	10, plus 1 space per 100m ² of TUA in excess of 3,000m ²
Winery	To be determined upon submission of a Car Parking Assessment to Council
Any other land use or land use operation	To be determined upon submission of a Car Parking Assessment to Council

Note: The Car sharing travel demand measure may be applied to reduce car parking requirements in accordance with Table 9.4.13-7: Travel demand measures.

Note: Tandem car parking spaces (limited to 2 vehicles parked one behind the other) can be counted as 2 spaces in the following instances:

- (a) the spaces are designated and signed for the occupants of the same dwelling or the same non-residential tenancy;
- (b) the minimum length of the tandem car space is 10.4m; and
- (c) the minimum length of a tandem garage (if proposed) is 11m.

Table 9.4.13-4: Car parking rates – Centre zone and High density residential zone – Transport Hub Area

This table sets out the minimum number of car parking spaces required according to the use applied for. Where the calculated number of car spaces is not a whole number, the number of car parking spaces required must be the next higher whole number.

Zone	Site proximity to a light rail station	Land use	Minimum number of off-street car parking spaces
Centre zone	Where the property boundary of a development directly adjoins a Light rail station platform	Non-residential	0
Centre zone	Within 400m walking distance	Residential – permanent/long-term accommodation	0.75 per unit or dwelling and 1 per 10 units or dwelling for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	1 per 100m ² of TUA

Zone	Site proximity to a light rail station	Land use	Minimum number of off-street car parking spaces
Centre zone	Within 800m walking distance	Residential – permanent/long-term accommodation	0.9 per unit or dwelling and 1 per 10 units or dwelling for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	1 per 75m ² of TUA
High density residential zone	Within mapped boundaries of the Transport hub area	Residential – permanent/long-term accommodation	1 per unit or dwelling and 1 per 10 units or dwelling for visitors
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
High density residential zone	Within 400m walking distance	Non-residential	1 per 100m ² of TUA
High density residential zone	Within 800m walking distance	Non-residential	1 per 75m ² of TUA

Note: Where 1 space is provided per unit or dwelling, there is no requirement to unbundle car parking.

Note: The Car sharing travel demand measure may be applied to reduce car parking requirements in accordance with Table 9.4.13-7: Travel demand measures.

Note: Tandem car parking spaces (limited to 2 vehicles parked one behind the other) can be counted as 2 spaces in the following instances:

- (a) the spaces are designated and signed for the occupants of the same dwelling or the same non-residential tenancy;
- (b) the minimum length of the tandem car space is 10.4m; and
- (c) the minimum length of a tandem garage (if proposed) is 11m.

Table 9.4.13-5: Car parking rates – Centre zone – outside Transport hub area

This table sets out the minimum number of car parking spaces required according to the use applied for. Where the calculated number of car spaces is not a whole number, the number of car parking spaces required must be the next higher whole number.

Centre zone	Land Use	Minimum number of off-street car parking spaces
Principal centre		
Coomera	Residential – permanent/long-term accommodation	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Residential – serviced and short-term accommodation	1 per 4 units
	Non-residential	1 per 100m ² of TUA
Specialist centre		
Bundall	Office	2.5 per 100m ² of TUA
	Food and drink outlet, shop, service industry	2.5 per 100m ² of TUA
	Any other land use	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Varsity Central/ Bond University	Residential – permanent/long-term accommodation	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Residential – serviced and short-term accommodation	1 per 2 units, plus 1 for a manager residence
	Non-residential	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Bond University campus	Residential – serviced and short-term accommodation where on Lot 10 on SP148599	1 per 4 units, plus 1 for a manager residence
Varsity Station Village	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	1 per 100m ² of TUA
Biggera Waters (Harbour Town)	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	3.3 per 100m ² of TUA

Centre zone	Land Use	Minimum number of off-street car parking spaces
Major centre		
Nerang	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	3.3 per 100m ² of TUA
Coolangatta	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	3.3 per 100m ² of TUA
Helensvale	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	1 per 100m ² of TUA
District centres		
Burleigh	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	3.3 per 100m ² of TUA
Oxenford	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Ormeau	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	5 per 100m ²
Pimpama Old Pacific Highway, Pimpama	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Coomera City Centre Days Rd and City Centre Drive	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Hope Island Marina Quays Dr	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Runaway Bay Shopping Centre Cnr Morala and Lae Dr	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Ashmore City Cnr Southport-Nerang Rd	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area

Centre zone	Land Use	Minimum number of off-street car parking spaces
and Currumburra Rd		Area
Ashmore Plaza Cotlew St	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Southport Park Shopping Centre Cnr Drury Av, Ferry Rd and Benowa Rd	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Q-Superstore Cnr Bermuda and Markeri St	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Mudgeeraba Village	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Treetops (Urbia) Cnr Bermuda Street and Reedy Creek Rd	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
West Burleigh Shopping Centre Reedy Creek Rd, Burleigh Waters	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Palm Beach	Residential	1 per unit or dwelling and 1 per 10 units or dwellings for visitors
	Non-residential	3.3 per 100m ² of TUA
The Pines Shopping Centre Cnr K P McGrath Dr and Guineas Creek	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area
Tugun	Residential	1 per unit or dwelling plus 1 per 10 for visitors
	Non-residential	3.3 per 100m ² of TUA
All other centres	All	Refer to Table 9.4.13-3: Car parking rates – all zones except Centre zone or Special purpose zone – Special development area precinct – Southport Priority Development Area

Note: The Car sharing travel demand measure may be applied to reduce car parking requirements in accordance with Table 9.4.13-7: Travel demand measures.

Note: Tandem car parking spaces (limited to 2 vehicles parked one behind the other) can be counted as 2 spaces in the following instances:

- (a) the spaces are designated and signed for the occupants of the same dwelling or the same non-residential tenancy;
- (b) the minimum length of the tandem car space is 10.4m; and
- (c) the minimum length of a tandem garage (if proposed) is 11m.

Table 9.4.13-6: Car parking rates – Southport Priority Development Area

This table sets out the minimum number of car parking spaces required according to the use applied for. Where the calculated number of car spaces is not a whole number, the number of car parking spaces required must be the next higher whole number.

Precinct	Site proximity to a light rail station	Land use	Minimum number of off-street car parking spaces
Precinct 1	Where the property boundary of a development directly adjoins a Light rail station platform	Residential – permanent/long term accommodation	0.75 per unit or dwelling and 1 per 10 units or dwelling for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled and provided in a pooled parking arrangement.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	0
	Within 400m walking distance	Residential – permanent/long-term accommodation	0.75 per unit or dwelling and 1 per 10 units or dwelling for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled and provided in a pooled parking arrangement.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	1 per 100m ² of TUA
	Outside 400m walking distance and within the boundaries of the precinct	Residential – permanent/long term accommodation	0.9 per unit or dwelling and 1 per 10 units or dwellings for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled and provided in a pooled parking arrangement.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus

Precinct	Site proximity to a light rail station	Land use	Minimum number of off-street car parking spaces
		Non-residential	1 per 75m ² TUA
Precinct 2	Within the boundaries of the precinct	Residential – permanent/long-term accommodation	0.9 per unit or dwelling and 1 per 10 units or dwellings for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled and provided in a pooled parking arrangement.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	1 per 75m ² TUA
Precinct 3	Within 400m walking distance	Residential – permanent/long term accommodation	0.75 per unit or dwelling and 1 per 10 units or dwellings for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled and provided in a pooled parking arrangement.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	1 per 100m ² TUA
	Outside 400m walking distance and within the boundaries of the precinct	Residential – permanent/long term accommodation	0.9 per unit or dwelling and 1 per 10 units or dwellings for visitors. A minimum of 17.5% residential parking, excluding visitor, is to be unbundled and provided in a pooled parking arrangement.
		Residential – Short-term accommodation (not including Backpackers accommodation) and Rooming accommodation	1 per 4 units or dwellings
		Residential – Short-term accommodation if Backpackers accommodation	1 per 8 beds plus 1 for a shuttle bus
		Non-residential	1 per 75m ² TUA

Note: The Car sharing travel demand measure may be applied to reduce car parking requirements in accordance with Table 9.4.13-7: Travel demand measures.

Note: Tandem car parking spaces (limited to 2 vehicles parked one behind the other) can be counted as 2 spaces in the following instances:

- (a) the spaces are designated and signed for the occupants of the same dwelling or the same non-residential tenancy;
- (b) the minimum length of the tandem car space is 10.4m; and
- (c) the minimum length of a tandem garage (if proposed) is 11m.

Table 9.4.13-7: Travel demand measures

This table sets out the travel demand measures that can be applied to development. The indicative reduction of each travel demand measure is to be subtracted from the car parking requirement indicated in the tables: Table 9.4.13-3 to Table 9.4.13-6.

Travel demand measure	Indicative reduction to car parking rates
Car sharing	Each car share vehicle off-sets 5 spaces (equates to a relaxation of 4 spaces)
Unbundled parking	20% to 50% unbundled – 30% reduction in minimum rate
Motorcycle/motor scooter parking	Every 2 motorcycles spaces can replace 1 car space, up to 15% of the minimum parking requirement
Bicycle parking (where provided in excess of the requirement under relevant section of this code)	Every 6 bicycles offsets 1 car space, up to 15% of the minimum parking requirement
Any other travel demand measure Note: This travel demand measure only applies to assessable development	To be approved by Council

Table 9.4.13-8: Service vehicle requirements

Site area (m ²)	Service vehicle requirements
Less than 1,000m ²	Demonstrate that the development can accommodate the design service vehicle – in accordance with Table 9.4.13-9: Minimum class of service vehicle – a separate service bay is not required and restricted manoeuvring areas from a public roadway are allowed.
1,000m ² to < 2,000m ²	(a) Service bay to accommodate the design service vehicle in accordance with Table 9.4.13-9: Minimum class of service vehicle. (b) Restricted manoeuvring from a public roadway is allowed for a heavy rigid vehicle (HRV) and/or articulated vehicle (AV) is the design service vehicle. (c) Full on-site manoeuvring is required for all other classes of service vehicle (Van, SRV & MRV).
2,000m ² to <4,000m ²	(a) Service bay to accommodate the design service vehicle in accordance with Table 9.4.13-9: Minimum class of service vehicle. (b) Restricted manoeuvring from a public roadway is allowed for an articulated vehicle. (c) Full on-site manoeuvring is required for all other classes of service vehicle (Van, SRV, MRV, LRV, RCV & HRV).
4,000m ² and greater	(a) Service bay to accommodate the design service vehicle in accordance with Table 9.4.13-9: Minimum class of service vehicle. (b) Full on-site manoeuvring is required for all classes of service vehicle.

Editor's note – Restricted manoeuvring is designed as a single point reverse manoeuvre from the public roadway into the site to access a servicing area. This manoeuvre may be performed from the kerbside lane where it is clearly demonstrated that the design vehicle can achieve the manoeuvre to access the service area.

Table 9.4.13-9: Minimum class of service vehicle

Where waste collection is required to be provided for on-site, and the stated service vehicle in the table below is less than a Council refuse collection vehicle, then the development must be designed to cater for a waste collection vehicle in accordance with **SC6.15 City Plan policy – Solid waste management** (or as amended) and **SC6.12 City Plan policy – Land development guidelines, Section 2 – Transport network standards** (or as amended) as required.

Land use	Minimum class of service vehicle
Adult store	SRV
Agricultural supplies store	AV
Animal husbandry	AV
Animal keeping	Van
Brothel	Van

Land use	Minimum class of service vehicle
Bulk landscape supplies	AV
Caretaker's accommodation	Not applicable
Car wash	SRV
Child care centre	Van
Club	SRV
Community care centre	SRV
Community residence	Van
Community use	SRV
Crematorium	SRV
Cropping	Not applicable
Dual occupancy	Not applicable
Dwelling house	Not applicable
Dwelling unit	Not applicable
Educational establishment	SRV
Food and drink outlet	SRV
Food and drink outlet if: (a) a take away food premises; or (b) including a drive through facility	HRV
Function facility	MRV
Funeral parlour	SRV
Garden centre	HRV
Hardware and trade supplies	AV
Health care services	SRV
High impact industry	AV
Home based business	Not applicable
Hospital	AV

Land use	Minimum class of service vehicle
Hotel	HRV
Indoor sport and recreation	SRV
Intensive animal industry	AV
Intensive horticulture	AV
Low impact industry	AV
Marine Industry	AV
Market	Not applicable
Medium impact industry	AV
Multiple dwelling if: (a) 3 dwellings	Not applicable
Multiple dwelling if: (a) more than 3 dwellings	Standing area for an MRV on-site
Nightclub	SRV
Office	Van
Outdoor sales	AV
Outdoor sport and recreation	SRV
Permanent plantation	AV
Place of worship	SRV
Relocatable home park	Van
Research and technology industry	AV
Residential care facility	HRV
Resort complex	HRV
Retirement facility	HRV
Roadside stall	Not applicable
Rooming accommodation	SRV
Student accommodation	SRV

Land use	Minimum class of service vehicle
Hostel accommodation	SRV
Rural industry	AV
Sales office	Not applicable
Service industry	SRV
Service station	SRV and AV (fuel tanker)
Shop	SRV
Shop (GFA less than 400m ²)	SRV
Shop (GFA 400m ² - 1,500m ²)	HRV
Shop (GFA greater than 1,500m ²)	AV
Short-term accommodation	Coach
Showroom	AV
Tourist park	Coach
Tourist park if: (a) a caravan park	Van
Transport depot	AV
Veterinary services	Van
Veterinary hospital	MRV
Warehouse	AV
Warehouse if: (a) for self storage sheds	Not applicable
Wholesale nursery	AV
Any other land use	As determined upon submission of a Service vehicle assessment

Editor's note – A Van is a 99.8th percentile vehicle equivalent to the AS2890.1:2004 – *Parking facilities – Part 1: Off-street car parking* B99 vehicle or large car.

Editor's note – A Coach is an inter-city 12.5m tourist bus from *Austroroads*.

Table 9.4.13-10: Bicycle Parking Rates

This table sets out the minimum number of bicycle spaces required according to the use applied for. Where the calculated number of spaces is not a whole number, the number of bicycle spaces required is the next highest whole number.

Land use	Long and medium term off-street bicycle parking (staff and residents – Security level B)	Short term off-street bicycle parking (visitors – Security level C)	Additional end-of-trip facilities required (refer to Table 9.4.13-11: End of trip facilities for active travel users)
Adult store	1 per 100m ² TUA	1 per 50m ² TUA	No
Child care centre	1 per 10 staff	2 per centre	Yes
Club	1 per 25m ² TUA public bar area plus 1 per 100m ² public lounge and beer garden area	1 per 100m ² TUA	Yes
Educational establishment	1 per 3 students Year 4 and above plus 1 per 10 staff	N/A	Yes
Food and drink outlet	1 per 100m ² TUA	1 per 50m ² TUA	No
Health care services	1 per 8 consultation rooms	1 per 4 consultation rooms	Yes
High impact industry	1 per 800m ² TUA	N/A	No
Hotel	1 per 25m ² TUA public bar area plus 1 per 100m ² public lounge and beer garden area	1 per 100m ² TUA	No
Indoor sport and recreation	1 per 4 employees	1 per 200m ² TUA	Yes
Low impact industry	1 per 150m ² TUA	N/A	No
Medium impact industry	1 per 150m ² TUA	N/A	No
Multiple dwelling	1 per dwelling	1 per 12 dwellings, to a maximum of 20 spaces	No
Office	1 per 100m ² where within 800m walking distance to light rail station, otherwise 1 per	1 per 500m ² TUA	Yes

Land use	Long and medium term off-street bicycle parking (staff and residents – Security level B)	Short term off-street bicycle parking (visitors – Security level C)	Additional end-of-trip facilities required (refer to Table 9.4.13-11: End of trip facilities for active travel users)
	200m² TUA		
Rooming accommodation	1 per bedroom	N/A	No
Rooming accommodation if for a hostel	1 per 3 rooms	1 per 12 rooms	No
Residential care facility	1 per 5 beds	1 per 10 staff, based on maximum residential occupancy	No
Retirement facility	1 per dwelling	1 per 3 dwellings	No
Service industry	1 per 100m² TUA	1 per 50m² TUA	No
Service station	1 per 200m² TUA	2 per Service station	No
Shop	1 per 100m² TUA	1 per 50m² TUA	No
Short-term accommodation	1 per 40 dwellings	1 per 20 dwellings	No
Showroom	1 per 800m² TUA	1 per 200m² TUA	No
Warehouse	1 per 800m² TUA	1 per 200m² TUA	No
Waterfront industry	1 per 150m² TUA	N/A	No

Note: User Class as referred to and defined in AS 2890.3:2015 *Parking facilities Part 3: Bicycle parking*.

Table 9.4.13-11: End of trip facilities for active travel users

This table sets out the minimum number of end of trip facilities required according to the number of long-term bicycle spaces to be provided. Where the calculated number is not a whole number, the number required is the next highest whole number.

Number of long-term bicycle spaces to be provided	Number of lockers to be provided	Number of showers (within an associated change room) to be provided		Number of toilets to be provided	Number of wash basin stations (including mirrors, electrical outlet & counter top)
		Male	Female		
1-5	1.5 per bicycle space	1 shower and change room of unisex design		1	1
6-10	1.5 per bicycle space	1 plus change room	1 plus change room	1	2
11-20	1.5 per bicycle space	2 plus change room	2 plus change room	2	4
21-30	1.5 per bicycle space	3 plus change room	3 plus change room	2	6
31-40	1.5 per bicycle space	4 plus change room	4 plus change room	3	8
41-50	1.5 per bicycle space	5 plus change room	5 plus change room	1 per 3 showers required or part thereof	1 per shower
50+	1.5 per bicycle space	4 showers, plus 1 shower for each 10 bicycle spaces provided	4 showers, plus 1 shower for each 10 bicycle spaces provided	1 per 3 showers required or part thereof	1 per shower



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Waste Management Plan

Proposed Multiple Dwelling Development
60 Dutton Street, Coolangatta



21 May 2025

Prepared for:

Southern Cross Property Holdings Pty Ltd

Report: 50952-RP02-A

GELEON

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1. Introduction

1.1 Project background

Geleon has been engaged by Southern Cross Property Holdings Pty Ltd (the **Applicant**) to prepare a Waste Management Plan (**WMP**) to accompany a Development Application (**DA**) to establish a multi-storey residential apartment building (multiple dwelling land use) at 60 Dutton Street, Coolangatta (Lot 2 on RP86756) (**Figure 1.1**). The existing 703m² site is currently occupied by a residential apartment building comprising four dwellings.

The purpose of this WMP is to ensure that the waste storage and collection activities for the operational phase of the development are in accordance with the City of Gold Coast (Council) *City Plan Policy – Solid waste management (SC6.16)* and *Solid waste management code (V11)*.

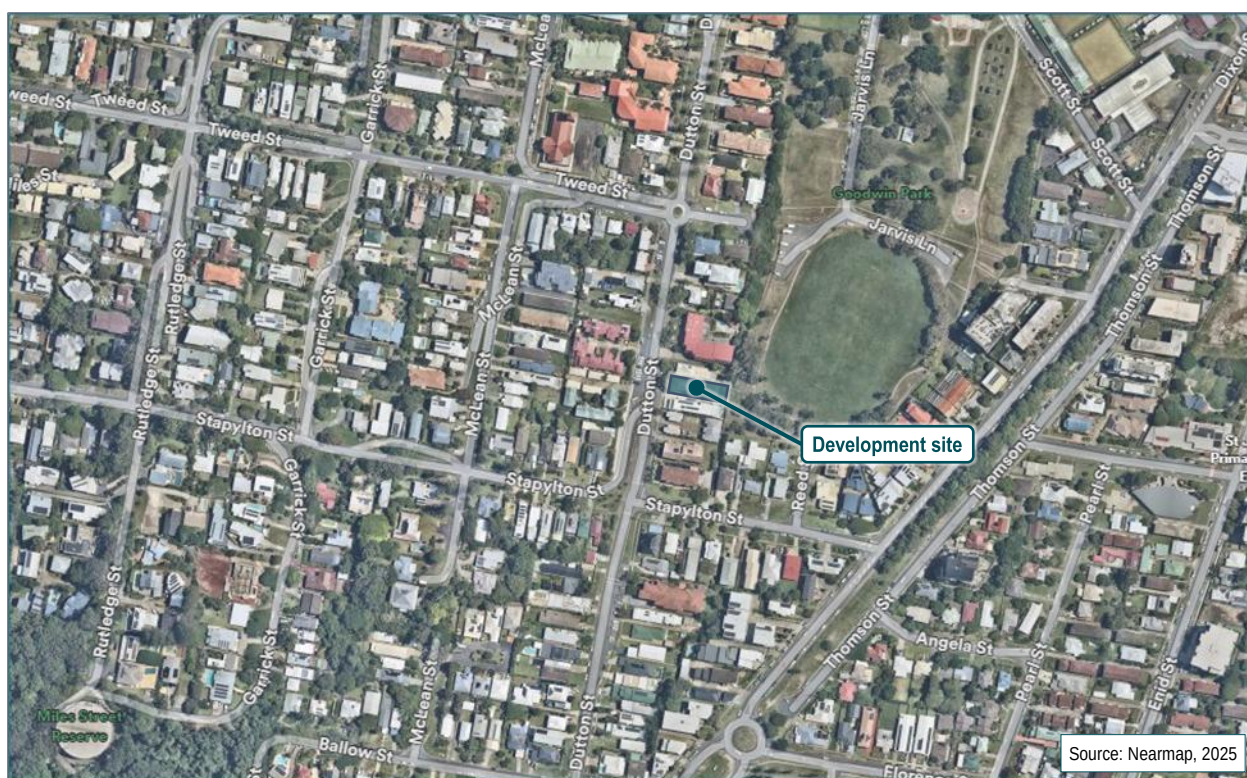


Figure 1.1 Locality plan

1.2 Applicable planning scheme

The proposed development site falls under the jurisdiction of Council and is governed by the *City Plan – Version 11 (Feb 2024)*.

Other applicable documents include:

- Environmental Protection Regulation 2019
- Waste Reduction and Recycling Act 2011
- Waste Reduction and Recycling Regulation 2023.

1.3 Purpose and Scope

The purpose of this WMP is to outline the waste management provisions for the proposed development to demonstrate the efficient, safe, and sustainable management of waste during the operational phase of the development. This report has been prepared to address the requirements of *City Plan Policy – Solid waste management (SC6.16)*.

The scope of works for this WMP includes:

- detailing the anticipated type and quantity of waste to be generated by the development
- detailing the waste storage room and bin requirements
- detailing the proposed waste collection arrangements for the proposed development, and
- addressing Council's *Solid waste management code (V11)*.

1.4 Definitions and abbreviations

Table 1.4 Definitions and abbreviations

Term	Definition
Bin carting route	the proposed route to move bins between the storage point and the servicing point.
Common servicing point	a common area where more than two dwellings/tenancies stand their wheelie bins for servicing.
Common storage point	a common area where more than two dwellings/tenancies store their wheelie bins.
Constructed hardstand area	a hardstand area, for example a concrete pad which has been constructed for bin storage.
General waste	waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of domestic or commercial premises.
Recyclable waste	clean and inoffensive waste that is declared by the local government to be recyclable waste for the area. In the City of Gold Coast the following wastes are deemed recyclable: ▪ all household plastics, bottles and containers; ▪ aluminium and steel cans and aerosols; ▪ bottles and jars made only of glass; ▪ clean cardboard, newspaper, loose paper, junk mail, magazines and cartons.
Servicing point	the designated area allocated to the temporary storage of waste bins for the period of servicing only. The point may be within or external to a development.
Storage point	the area allocated to the permanent storage of waste bins. This is the normal location of the waste bins and excludes the period where the bin is serviced. A storage point may be a common storage point or an individual bin storage point.
Waste carting distance	the distance required for a person to transport their waste from the nearest point of exit of their dwelling / tenancy to a storage point (or in the case of a multilevel building, to the nearest waste disposal point).
Waste storage room	a room used for the storage of waste bins.
Wheelie bin	two wheeled mobile garbage bins, made from high density polyethylene (HDPE). Wheelie bins are collected by a side-lift truck.

2. Proposed development

2.1 Development details

The development proposes a multiple dwelling land use to establish a multi-storey residential apartment building on the subject site. Access to and from the development is proposed via a single two-lane, two-way vehicle crossing on Dutton Street that will provide access to the ground floor level car park.

Details of the proposed development are provided in **Table 2.1**, with the ground floor shown in **Figure 2.1**. Relevant plans of development have been included in **Appendix A**.

Table 2.1 Development details

Land use	3-bedroom units	4-bedroom units
Multiple dwelling	2	7

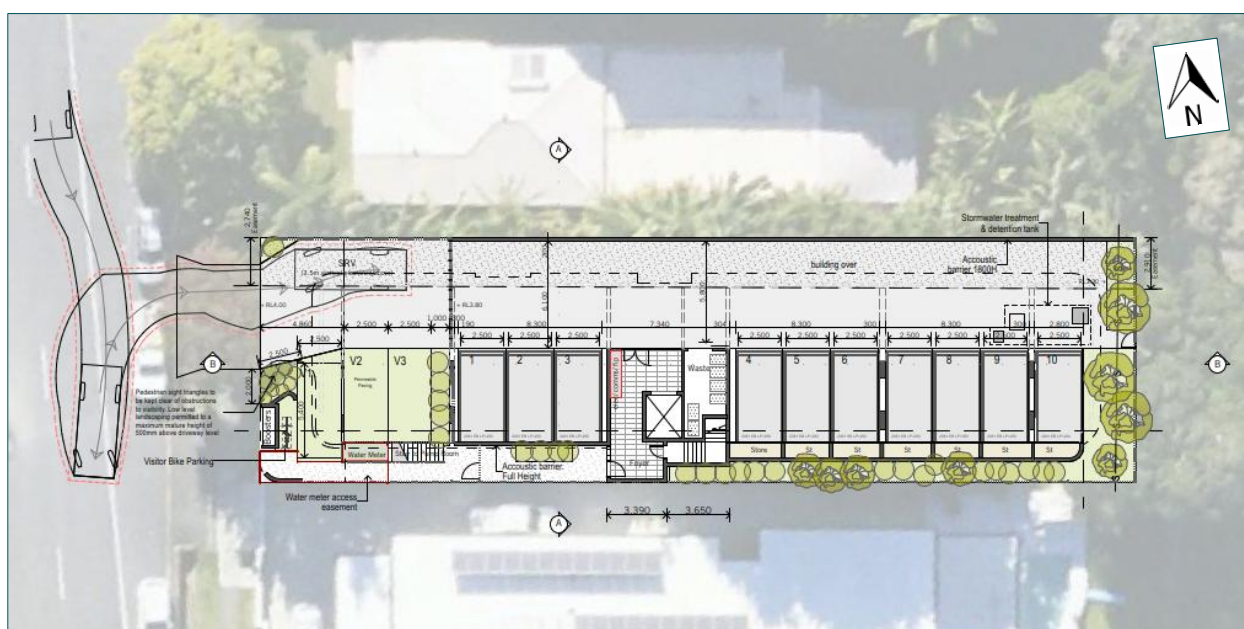


Figure 2.1 Plans of development – ground floor

3. Development related waste

Details of waste generation, storage, and collection for the proposed development are provided in the following sections.

3.1 Waste streams

The anticipated types of waste that will be generated by the development are shown in **Table 3.1**.

Table 3.1 Predicted waste types

Land use	Predicted waste types
Multiple dwelling	General and recycling waste

3.2 Waste generation

Waste quantities for the development site have been calculated in accordance with typical waste generation rates stipulated in *SC6.16 City Plan Policy: Solid waste management (V11)*. A summary of the waste generating characteristics of the site are provided in **Table 3.2**.

Table 3.2 Waste generating characteristics

Land use	Quantity	Type of unit	General waste generation rate	Total (L/week)	Recycling rate	Total (L/week)
Multiple dwelling	9	3-bed and above unit	120L / dwelling per week	1,080	80L / dwelling per week	720

3.3 Waste container provisions

To accommodate the waste generated by the proposed development, wheelie bins will be utilised to store site waste as detailed in **Table 3.3**.

Table 3.3 Refuse bin requirements

Waste type	Anticipated waste quantity (L/week)	Waste bin provision	Collection frequency	Total waste provision
General waste	1,080	3 x 360L wheelie bin	Once per week	3 x 360L x 1 collection per week = 1,080L / week
Recycling waste	720	2 x 360L wheelie bin	Once per week	2 x 360L x 1 collection per week = 720L / week

While Council's *SC6.16 City Plan Policy: Solid waste management (V10)* stipulates that wheelie bins should not be used for multiple dwelling land uses with more than five dwellings, PO1 of Council's *Solid waste management code (V11)* states:

'Development provides waste and recycling storage and servicing facilities that are safe, convenient, efficient, appropriately sized for the type and volume of waste generated.'

In total, five 360L wheelie bins including three 360L wheelie bins for general waste and two 360L wheelie bins for recycling waste are required to accommodate the expected waste generation of the development. This can be accommodated within the proposed waste storage room within the ground floor level car park and avoids the need for an additional temporary waste storage room near the Dutton Street road frontage where landscaping, civil services and visitor car parking are required. There is also sufficient kerbside area available to store five wheelie bins along the development's road frontage for collection, clear of the vehicle crossing.

Based on the above, it is considered that use of wheelie bins for waste storage provides an outcome that is safe, convenient, efficient and appropriate for a development of this scale and nature. Therefore, compliance with PO1 of Council's *Solid waste management code (V11)* is considered to be achieved.

3.4 Dimensions of waste containers

Table 3.4 provides the dimensions of the wheelie bins to be used on site.

Table 3.4 Dimensions of waste containers

Bin type	Volume (L)	Length (mm)	Width (mm)	Height (mm)	Collection vehicle type
Wheelie bin	360	865	650	1,100	Side load collection vehicle

3.5 Waste storage room

The waste storage room for the development is located on the ground floor level as shown in **Figure 3.5.1**. The dimensions for the proposed waste storage room generally comprise a length of 5m and a width of 2.4m (**Figure 3.5.2**). General and recycling waste will be carted independently by each resident to the applicable bins and does not exceed a 60m carting route from the exit / entry of each dwelling. It is intended that the waste storage rooms will only be accessible by site management / authorised persons to remove any potential health and safety implications that may arise if these areas were to have been freely accessible.

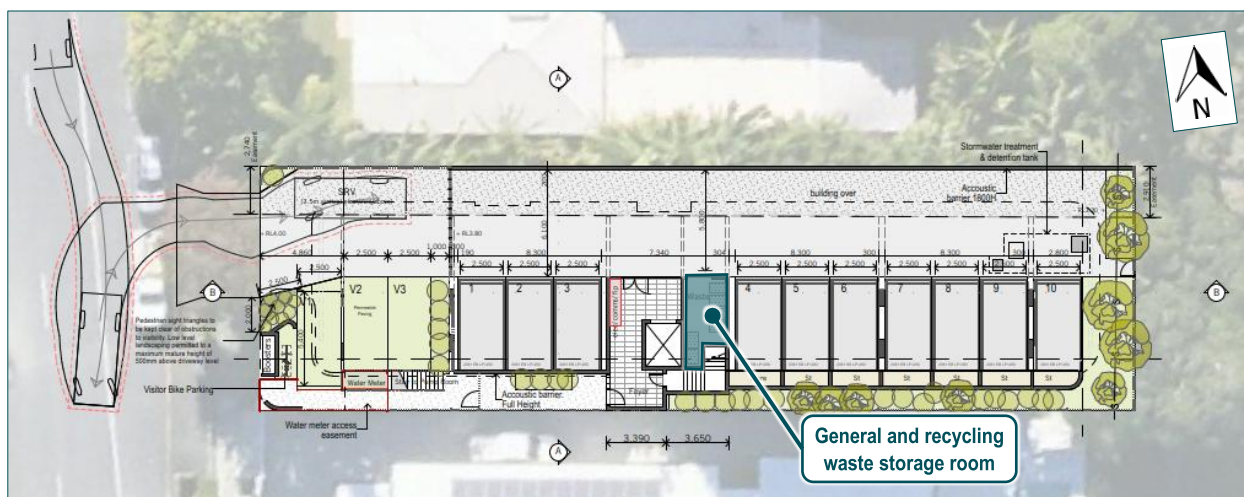


Figure 3.5.1 Waste storage room

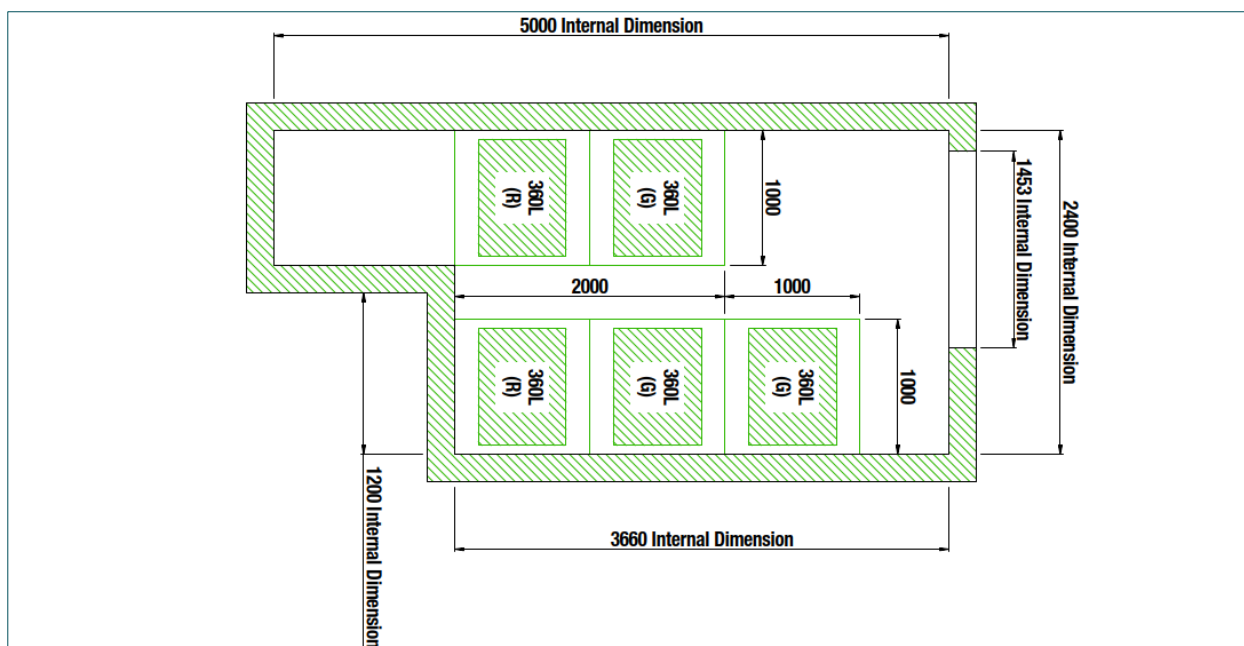


Figure 3.5.2 Waste storage room dimensions

The waste storage area will be designed and constructed to meet the following requirements:

- located in a purpose-built storage area, which is air locked, fly and vermin proof and used solely for the storage of waste
- generally located at least five metres from any door, window or fresh air intake within the development or any adjoining site
- inclusive of clear and safe access to the disposal area for all users of the storage point
- screened to ensure bins are not visible from passing vehicles and pedestrian traffic external to the site, or inhabitants of adjoining properties
- be well ventilated
- be fitted with a hose cock and drained to the sewer
- designed with sufficient dimensions to house the required bins with necessary clearance provided for the positioning, removal and replacement of the waste containers
- signed, well-lit and easily accessible from within the development
- not be located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage), and
- designed to ensure doors are wide enough to allow for the easy removal of the largest bin / container to be stored.

As a result of using wheelie bins for waste storage, a waste chute to transport waste from each level of the building to the ground floor level waste storage room is not proposed. While AO1.3 of Council's *Solid waste management code (V11)* requires a waste chute for residential buildings greater than three storeys, PO1 of Council's *Solid waste management code (V11)* states:

'Development provides waste and recycling storage and servicing facilities that are safe, convenient, efficient, appropriately sized for the type and volume of waste generated.'

The requirements for waste management are balanced with other development outcomes as mentioned in **Section 3.3**. While the building has nine storeys, lift and stair access to the ground floor level is provided within 60m walking distance. It is not considered unreasonable for residents to transfer waste from the units directly to the wheelie bins on the ground floor levels especially given residents will typically travel to the ground floor level car park when leaving the development site.

In addition to the above, it is noted that similar developments of similar height have been approved without the use of a waste chute, e.g. MCU/2020/131, MCU/2021/295, MCU/2023/208, PDA/2024/8.

Based on the above, the waste disposal strategy is considered appropriate for a development of this type, as it provides facilities that are safe, convenient, and efficient. Therefore, compliance with PO1 of Council's *Solid waste management code (V11)* is considered to be achieved.

4. Waste collection requirements

4.1 Collection frequency and arrangement

Based on the calculations detailed in **Section 3.2** and the waste bin provisions determined in **Section 3.3** of this report, both general waste and recycling waste will require servicing once per week. Once the development is operational, the collection frequency will be reviewed to ensure that it is sufficient but not excessive for the development. Details of the servicing frequencies are provided in **Table 4.1**.

Table 4.1 Bin collection frequency

Waste type	Waste bin provision	Collection frequency
General waste	3 x 360L wheelie bin	Once per week
Recycling waste	2 x 360L wheelie bin	Once per week

4.2 Servicing and collection vehicle access

In accordance with Council's *City Plan – Transport Code (V11)*, developments with site areas less than 1,000m² do not require full on-site manoeuvring for a refuse collection vehicle (RCV). As the site area for this development is 703m², refuse collection will be undertaken kerbside on Dutton Street by a side-loading RCV which is consistent with other developments along Dutton Street. The Dutton Street frontage has sufficient capacity to store all five wheelie bins if each bin is allocated 1.0m at the kerbside.

On pre-arranged collection days, the site manager / members of the body corporate committee / residents will transport the refuse bins from the waste storage room to the Dutton Street frontage of the site (**Figure 4.2**). Upon completion of servicing, the site manager / members of the body corporate committee / residents will return the bins to the waste storage room. Details of the refuse collection vehicle dimensions are provided in **Table 4.2** for reference.



Figure 4.2 Kerbside collection point

Table 4.2 Service vehicle dimensions

Dimension	9.8m side-loading RCV
Width	2.5m
Length	9.8m
Travelling height	4.1m
Servicing height	4.25m
Minimum turning circle	25.0m
Minimum turning radius	11.5m (wall to wall), 10.5 (kerb to kerb)

5. Response to development codes

A detailed review of the proposed development against Council's *City Plan – Solid Waste Management Code (V11)* is provided in **Appendix B**.

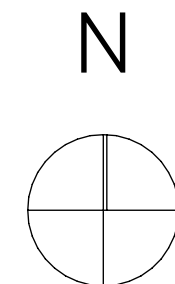
6. Conclusion

This report presents the findings related to assessment of waste management related matters for a proposed development located at 60 Dutton Street, Coolangatta. Based on the information presented within this report, it has been demonstrated that the development proposes a waste management solution aligning with Council's requirements.

7. References

1. City of Gold Coast, *City Plan – Version 11 (Feb 2024)*, Gold Coast.
2. City of Gold Coast, *City Plan – Version 11 – SC6.16 Solid waste management (Feb 2024)*, Gold Coast.
3. State of Queensland, *Environmental Protection Regulation 2019 (2019)*, Brisbane.
4. State of Queensland, *Waste Reduction and Recycling Act 2011 (2011)*, Brisbane.
5. State of Queensland, *Waste Reduction and Recycling Regulation 2023 (2023)*, Brisbane.

Appendix A Plans of development



Appendix B Development code responses

City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note:

For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

9.4.12 Solid waste management code

9.4.12.1 Application

This code applies to assessing material change of use for development requiring waste management where indicated within **Part 5 Tables of assessment**, unless the use is Caretaker's accommodation, Car wash, Community residence, Dwelling house, Dual occupancy, Environmental facility, Home based business, Landing, Major electrical infrastructure, Park, Parking station, Permanent plantation, Roadside stall, Sales office, Substation or Telecommunications facility.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

9.4.12.2 Purpose

- (1) The purpose of the Solid waste management code is to ensure development provides appropriate solid waste and recycling storage and servicing facilities.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Development provides waste and recycling storage and servicing points that are safe, convenient, efficient, appropriately sized, and minimise disruption to traffic.
 - (b) Waste and recycling storage and servicing facilities minimise risk to public health and the environment.
 - (c) The location and design of waste and recycling storage and waste servicing points protect the amenity of occupants and adjoining properties.
 - (d) Development provides suitable waste management measures in non-serviced areas.

9.4.12.3 Specific benchmarks for assessment

PART B – ASSESSABLE DEVELOPMENT BENCHMARKS

Table 9.4.12-1: Solid waste management code – for assessable development

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Waste and recycling storage and bin wash-down facilities			
PO1 Development provides waste and recycling storage and servicing facilities that are safe, convenient, efficient, appropriately sized for the type and volume of waste generated.	AO1.1 Development includes waste storage points of sufficient size to accommodate the required number of waste and recyclable bins consistent with SC6.16 City Plan policy – Solid waste management .	COMPLIES WITH PO1. The proposed development includes a waste storage room of sufficient size to accommodate the required bins / containers. The development will require the provision of three 360L wheelie bins to manage general waste and two 360L wheelie bins to manage recycling waste. The waste storage room has been designed to achieve a minimum 1m ² area for each container. For further details refer to Section 3.5 of Geleon Waste Management Plan Report 50952-RP02-A .	
	AO1.2 Waste and recycling storage points are located, designed and sized consistent with SC6.16 City Plan policy – Solid waste management .	COMPLIES WITH PO1. In total, five 360L wheelie bins including three 360L wheelie bins for general waste and two 360L wheelie bins for recycling waste are required to accommodate the expected waste generation of the development. This can be accommodated within the proposed waste storage room within the ground floor level car park and avoids the need for an additional temporary waste storage room near the Dutton Street road frontage where landscaping, civil services and visitor car parking are required. There is also sufficient kerbside area available to store five wheelie bins along the development's road frontage for collection, clear of the vehicle crossing.	
	AO1.3	COMPLIES WITH PO1. The provision of wheelie bins instead of bulk bins and a waste chute is considered a safe, convenient,	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	Development with a dwelling above the third storey include appropriate waste removal systems which incorporate: (a) waste chutes; (b) hoppers; and (c) separate waste storage rooms. Note: Waste removal system design is to be consistent with SC6.16 City Plan policy – Solid waste management.	efficient and appropriate arrangement for the type and volume of waste generated. The building has nine storeys with lift and stair access to the ground floor level within 60m walking distance. It is therefore not considered unreasonable for residents to transfer waste from the units directly to the wheelie bins on the ground floor levels especially given residents will typically travel to the ground floor level car park when leaving the development site. For further details refer to Section 3.0 of Geleon Waste Management Plan Report 50952-RP02-A.	
	AO1.4 Development that includes a commercial kitchen or generates clinical or related waste incorporate additional waste facilities consistent with SC6.16 City Plan policy –Solid waste management.	Not applicable.	
PO2 Development provides a bin wash-down facility that maintains appropriate environmental health and amenity standards.	AO2 Development includes appropriately sized and located bin wash-down facilities consistent with SC6.16 City Plan policy –Solid waste management.	COMPLIES WITH AO2. The waste storage room on the ground floor level is to be fitted with a hose cock and drained to the sewer in accordance with the City Plan Waste Management Policy. For further details, refer to Section 3.5 of Geleon Waste Management Plan Report 50952-RP02-A.	
Amenity			
PO3 Waste and recycling storage and servicing points are appropriately located and designed for convenient and safe access by all users and to minimise the potential for	AO3.1 Direct unobstructed paths exist between waste and recycling storage and servicing points and road frontages.	COMPLIES WITH AO3.1. The refuse bins will be transferred from the waste storage room to the kerbside collection point by the site manager / members of the body corporate committee / residents.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
nuisance to occupants of the development or adjoining properties.		For further details in relation to the proposed refuse collection procedure, refer to Section 4.0 of Geleon Waste Management Plan Report 50952-RP02-A .	
	AO3.2 Waste and recycling storage points are screened by solid fencing or vegetation to ensure they are not visible from a public place or sensitive land use.	COMPLIES WITH AO3.2. The proposed storage point is appropriately screened. For further details in relation to the proposed waste storage room, refer to Section 3.5 and 4.2 of Geleon Waste Management Plan Report 50952-RP02-A .	
Waste servicing			
PO4 Waste and recycling servicing points are appropriately located and designed to facilitate safe, unobstructed and efficient servicing of waste containers.	AO4 Waste and recycling servicing points are located, designed and sufficiently sized consistent with SC6.16 City Plan policy –Solid waste management . Note: Regulation of the access, stopping and manoeuvring of refuse collection vehicles are subject to meeting, Part 9.4.13 Transport code and associated City Plan guidelines.	COMPLIES WITH AO4. The waste storage room and waste servicing point has been located, designed and sized in accordance with requirements stipulated in <i>SC6.16 City Plan policy – Solid waste management</i> . For further details in relation to the proposed refuse collection procedure, refer to Section 4.0 of Geleon Waste Management Plan Report 50952-RP02-A .	
Non-serviced areas			
PO5 Developments in non-serviced areas have appropriate solid waste management measures to adequately service the development.	AO5 No acceptable outcome provided.	Not applicable.	



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geleon.com.au

**60 Dutton St,
Coolangatta**



**TPZ PROJECT
ARBORISTS**

Provided for:
Michael Lattimore

By:
TPZ Project Arborists
Tuesday 18 February 2025

Preliminary Arborists Report



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Preliminary Arborists Report

report no: TPZ 25.11

project arborist (site): David Gunter

report author: David Gunter

date of visit: 14/02/2025

customer: Michael Lattimore

site address: 60 Dutton St, Coolangatta QLD

site contact: Michael (0481 848435)

email: joandmike@y7mail.com

introduction

Michael Lattimore (hereafter referred to as “the Client”) contacted TPZ Project Arborists (TPZ) in February 2025 seeking an arborists report for trees located at 60 Dutton St, Coolangatta (hereafter referred to as “the site”). The client would like to develop the site, with demolition of the existing building, sheds and gardens, and construction of a multiple occupancy unit block across the entire. Existing trees will be impacted by the proposed works.

This report will present an assessment of the trees in relation to the existing site and the proposed development.

objectives

- I. An assessment of the health, structural integrity and condition of the trees.
- II. An assessment of the trees in relation to the site.
- III. Provide recommendations and guidance for management of the trees (if applicable) throughout the development process.

methodology and limitations

- We visited the site on the 14th of February 2025.
- The trees were assessed visually from the ground.
- No internal or aerial investigations were carried out, although a sounding hammer was used to establish the presence of decay where tell-tale indicators were observed.
- All dimensions (other than DBH & TPZ) are estimated.
- Tree Protection Zone (TPZ) measurements (where applicable) were calculated utilising the Queensland Arboricultural Associations (QAA) website calculator. TPZ's were offset by 10% (as per AS4970 (2009) given the proposed site layout.
- Tree data regarding condition and health was recorded on site and is presented below in Table 1.

the trees



Fig. 1: Shows locations for the trees assessed for this report in relation to the existing site *and* proposed new shed.

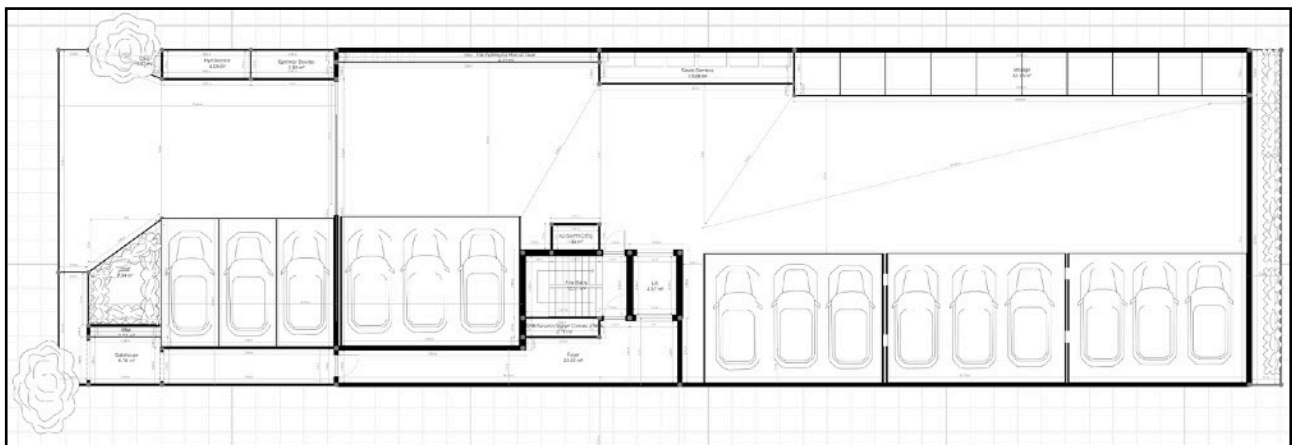


Fig. 2: Shows possible Ground Floor Plan design for the site.

Preliminary Arborists Report

Tree No.	Species	DBH (mm)	Height (m)	TPZ radius (m)	Vitality	Structure	Notes	Proposed
1	<i>Candlenut - Aleurites moluccanus</i>	400	15	N/A	Good	Average	<500mm from front boundary fence. As of right removal.	Remove
G1	<i>Mixed sp. Palms x 14</i>	200-300	14	N/A	Average	Average	Coco's, Fishtail, Alexander Palms, Golden Canes. All trees in close proximity to existing house and/or boundary fence. As of right removal.	Remove
G2	<i>Mixed sp. Palms x 20</i>	300	16	N/A	Average	Average	Predominantly Alexander Palms with some Golden Cane	Remove
2	<i>Ficus sp.</i>	900	28	N/A	Good	Average	Codominant from approx. 2m with included bark noted at the main union. There is a large wound adjacent to the union (site of an old stem removal) where there is some active decay. The remainder of the tree has been well pruned in the past. The surrounding hard surfaces (driveway, parking etc) have been severely impacted by tree root growth.	Remove
3	<i>Ficus sp.</i>	1000	25	N/A	Poor	Average	The canopy of this tree is very sparse for the species. The tree has been over-pruned in the past (although the pruning cuts are of good quality). There is some significant active decay in the main stem. The tree appears to be on the property boundary and if so, is as of right removal.	Remove
G3	<i>Alexander Palms - Archontophoenix alexandrae X 6</i>	300 x 6	15	N/A	Average	Average	These trees are situated on the property boundary. As of right removal.	Remove
G4	<i>Mixed sp.</i>	250	12	N/A	Average	Average	Crepe Myrtle, Fishtail Palm, Cabbage Palm, Golden Cane. As of right removal.	Remove
4	<i>Cheese Tree & Cocos Palm</i>	250	14	N/A	Average	Average	As of right removal.	Remove

Table 1: shows data collected for the assessed trees. Colour coding matches Fig.1.

notes, discussion and recommendations

Four (4) individual trees and four groups of trees were considered for this report. Please see **Fig 1** (above) for tree locations in relation to the site. See **Table 1** (above) for details of the assessed trees, including species, dimensions and associated Tree Protection Zone (TPZ) where appropriate.

All of the trees are impacted by the proposed works. The great majority of the trees are exempt from City of Gold Coast vegetation protection due to their proximity to either the property boundary fence/s or the existing council approved structure/s.

The exceptions are Tree 2, and G2:

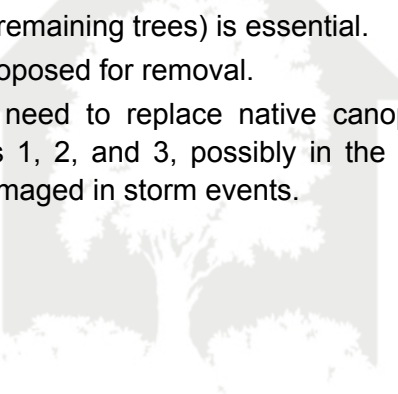
G2 is a very dense planting of Alexander Palms that is central to the Lot and prohibits any development outside of the existing building footprint. The trees have begun to outgrow the existing site.

Preliminary Arborists Report

Tree 2 is a large, mature *Ficus* (further investigation would be required to accurately confirm the species) which dominates the site. While large, the tree is not fully grown, and is extremely problematic in such a confined area. Existing damage to surrounding concrete surfaces is obvious, but root damage to underground services is likely both on this, and adjacent sites going forward.

The clients early design drawings indicate a desire to utilise the whole site and, clearly for this to occur, removal of this (and all the remaining trees) is essential.

- Of the trees assessed, all are proposed for removal.
- The client is cognisant of the need to replace native canopy trees and is keen to provide replacement plantings for Trees 1, 2, and 3, possibly in the adjacent parkland/reserve, where trees have recently been lost/damaged in storm events.



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Fig. 2: Shows a view of trees 1 and 4 from the street.



Fig. 3: Shows trees in G1.



Fig. 4: Shows dense grouping of trees in G2.



Fig. 5: Shows location of T2 in relation to existing site and adjacent properties.



Fig. 6: Shows lifted/cracking concrete surfaces around T2.



Fig. 7: Shows T3 & G3 in-situ. Note sparse canopy of T3.

caveat

It must be acknowledged that trees are biodynamic organisms that constantly change throughout their existence, increasing in size, complexity and ecological importance as they age. They can be adversely affected by pests, extreme weather or the activity of humans. Regular inspections should be undertaken in order to monitor trees health, and to make suitable management proposals in order to ensure maintenance of a continued healthy urban forest.

disclaimer

While all care is taken in preparing this report, TPZ Project Arborists can take no responsibility for the continuing vitality of the tree/s assessed, or for any damage that they may cause in the future. TPZ Project Arborists cannot be held responsible if damage occurs, or if tree health deteriorates as a result of a failure due to poor management practices that might occur in the future.

project arborist

David Gunter. Dip. Hort. (Arboriculture); Dip. Environment; National Cert. Arboriculture; Tree Assessor for Queensland Civil and Administrative Tribunal (QCAT).

references

- Mattheck. C. & Breloar. H. (1994) The Body Language of Trees. A Handbook for Failure Analysis. The Stationary Office. London.
- Dunster, Julian A., E. Thomas Smiley, Nelda Matheny and Sharon Lilly. (2013) Tree Risk Assessment Manual. Champagne, Illinois. International Society of Arboriculture.
- AS4970 (2009). Protection of Trees on Development Sites: Standards Australia.
- Tree AZ: Information Note 3; Site Guidance for working in root protection zones.
- Roberts. J., Jackson. N. & Smith. M. (2006) Tree Roots in the Built Environment. TSO. London.
- Arboricultural Advisory and Information Service (2007) APN 12 Through the Trees to Development

appendix 1: Assessment Descriptors

Trees inspected have been assessed for structural integrity, vitality and condition plus long-term potential according to the following simplified descriptors.

Health/Vitality

- Poor - Surviving, but moribund, with low vigour; reduced leaf growth and shoot extension; minimal damage/wound occlusion.
- Average - Surviving, but constrained, with medium vigour: acceptable leaf growth and shoot extension, acceptable damage/wound occlusion.
- Good - Healthy, unrestricted, with normal vigour; acceptable leaf/shoot size/extension; acceptable damage/wound occlusion.
- Excellent - Healthy, unrestricted, with exceptional vigour; above normal leaf/shoot size/extension; above normal damage/wound occlusion

Condition/Structure

- Poor - Serious/severe/un survivable decline associated with pathogenic infection/infestation, physical damage and/or environmental deterioration; advanced/extensive decay/dieback/deadwood; structural defects render tree unstable with risk of part/whole failure.
- Average - Moderate/survivable damage seen as decay/dieback/deadwood arising from pathogenic infection/infestation and/or physical damage and/or environmental modification; isolated/moderate structural defects that can be managed/treated to reduce risk of failure.
- Good - Sound/undamaged structure free from signs of debilitating/fatal decay/dieback and/or damage/defects with only acceptable/minimal deadwood throughout crown; intact/typical branch development; normal bud growth and shoot extension; no pruning/works requirement unless for amenity/shaping/balancing reasons.
- Excellent - Sound/undamaged structure free from signs of debilitating/fatal decay/dieback and/or damage/defects with no/negligible deadwood throughout crown; intact/typical branch development; above normal bud growth and shoot extension; no pruning/works requirement unless for amenity/shaping/balancing reasons.

appendix 2: Limitations of Service

TPZ Project Arborists (TPZ) provides arboricultural advice in good faith, based upon contemporary research and theory considered to be current best practice. The following limitations of service should be noted:

- Any tree inspection is preliminary in the first instance.
- Further tree assessment/investigation may be warranted to define specific details.
- Tree inspections are based upon visual appraisal of the tree's aboveground exterior only.
- No internal inspection/investigation has been conducted, unless specifically stated.
- No below ground examination of roots has been conducted, unless specifically stated.
- No samples have been taken and/or no tests have been undertaken, unless specifically stated.
- An inspection of any description is not an assurance of a tree's health/condition/longevity and/or safety.
- TPZ does not guarantee any tree's health/condition/longevity and/or safety.

TPZ PROJECT
ARBORISTS

60 Dutton Street

Coolangatta

Statement of Landscape Intent

May 2025

Project Details & Contents

Project Details

Project Name:
Dutton Street

Client Name:
Lattimore

Architect Name:
Lightwave Architectural

Planner Name:
Enhance Urban Planning

Project Address:
60 Dutton Street Coolangatta QLD 4225

Project No.
2450

Revision:
A- 2025-04-29- Draft for Review
B- 2025-05-06- For Approval
C- 2025-05-07- For Approval

Contents

1	Design Summary
2	Location & Context Plan
3	Key Design Principles
4	Landscape Concept Plan- Ground Level
5	Landscape Concept Plan- Level 2
6	Landscape Concept Plan- Level 3-9
7	Landscape Concept Plan- Level Roof
8	Planting Palette

Design Summary

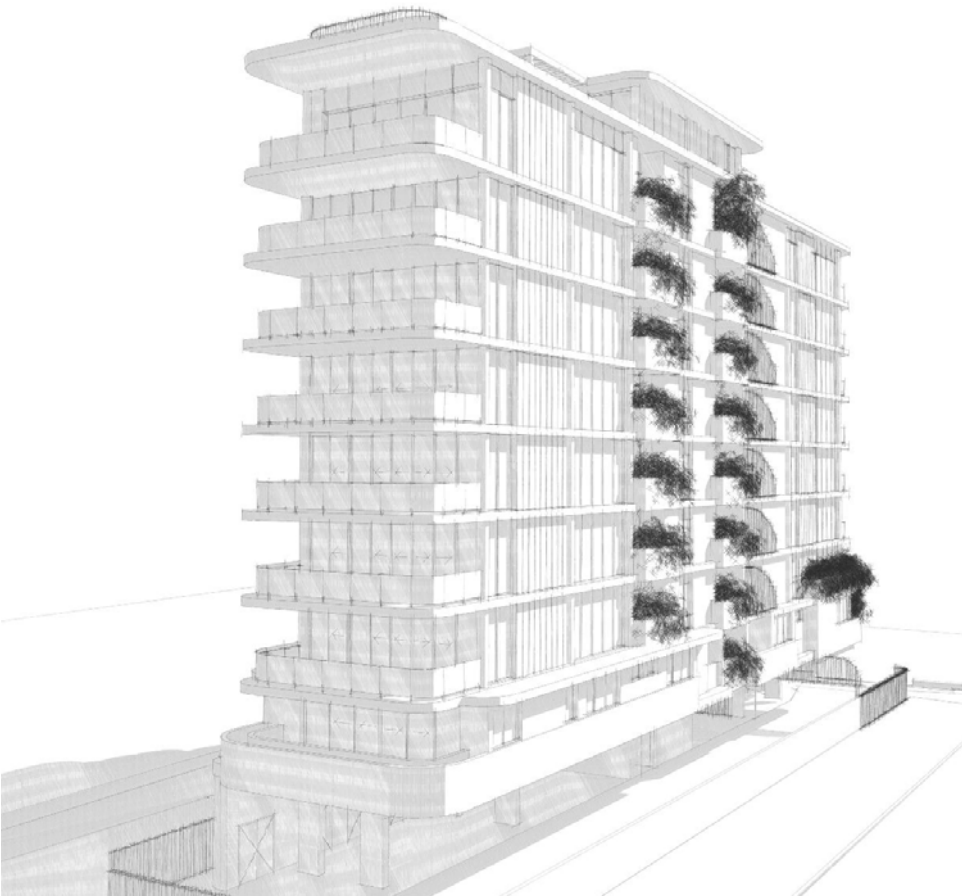
The subject site located at 60 Dutton Street (Lot 2 on RP86756) in Coolangatta on the Gold Coast, comprising 703m2 approximate of medium density land within Division 14 of the City of Gold Coast.

The Landscape concept for the proposed residential development is based on the surrounding context, response to the proposed architectural layout and expression including the desired outcomes of the City of Gold Coast Council City Plan.

The design intent is to contribute positively to the image and overall quality of the proposed residential development by providing a contemporary, sensitive and appropriate landscape environment.

The key landscape design principles applied to the landscape concept comprise:

- Enhancing (Maximising planting opportunities and responding to local context)
- Connected (multiple access points and lines of movement)
- Diverse (a planting palette that provides variation of habit, form, colour, texture, mix of natives and exotics)
- Enduring (sustainable and resilient material selection)
- Comfortable (humanised scale. A space where you can be yourself)
- Vibrant (providing spaces for interaction and socialisation)
- Safe (open sight lines)



Location & Context Plan



Key Design Principles



Make it Local

- + Reflect local context, story and people
- + Reflect local planting communities
- + Provide a sense of place and locality
- + Promote local connectivity



Make it Human

- + Provide a human scale of design
- + Experience to be comfortable



Make it Social

- + Provide social amenities for the community
- + Provide options to gather and meet
- + Provide flexible spaces for socialisation



Make it Green

- + Create active zones for residents and visitors
- + Create interest for kids such as sensory planting and safe water interaction
- + Promote active connections to surrounding open space

Overview

The Landscape Principles are based on best practice design, understanding the human needs, making it safe and enjoyable while designing spaces that encourage social outcomes, community spirit and a strong sense of place.

Landscape Concept Plan - Ground Floor

Legend

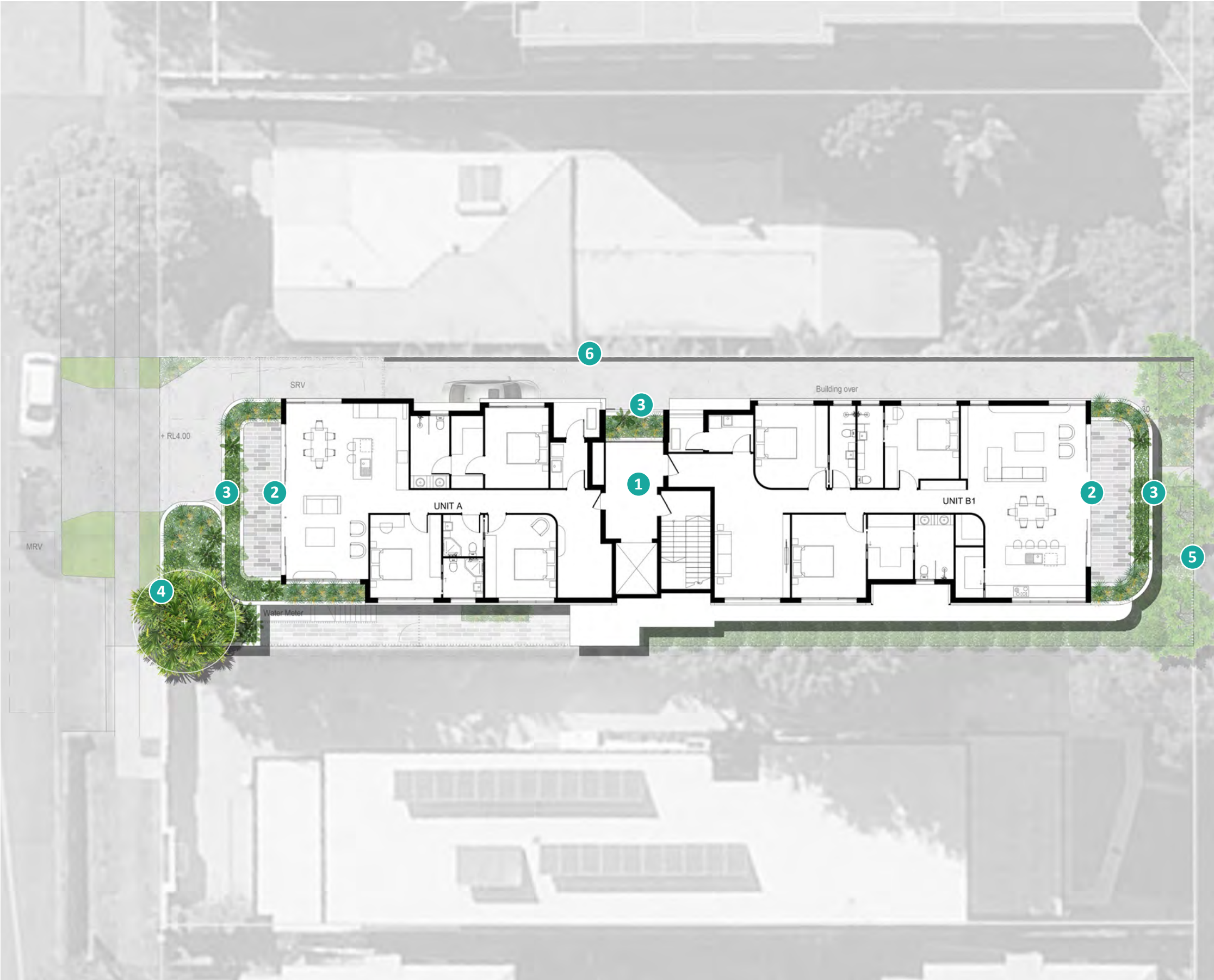
- 1 Pedestrian entry / exit
- 2 Vehicle entry / exit
- 3 Deep soil planting zone with screen shrub planting and accent palm / shrub / groundcover planting
- 4 Feature paving (to Architects details)
- 5 Visitor bike parking
- 6 Residential Lobby
- 7 Reinstated verge (footpath and turf)
- 8 Site Boundary
- 9 View triangle- Low level planting only



Landscape Concept Plan - Level 2

Legend

- 1 Lobby
- 2 BBQ / dining / gathering terrace
- 3 Raised planter 1m high with accent shrub, groundcover and cascade planting
- 4 Raised planter to booster roof 1m high with shade tree, accent shrub, groundcover and cascade planting
- 5 Ground level landscape
- 6 Site Boundary



Landscape Concept Plan - Level 3-9

Legend

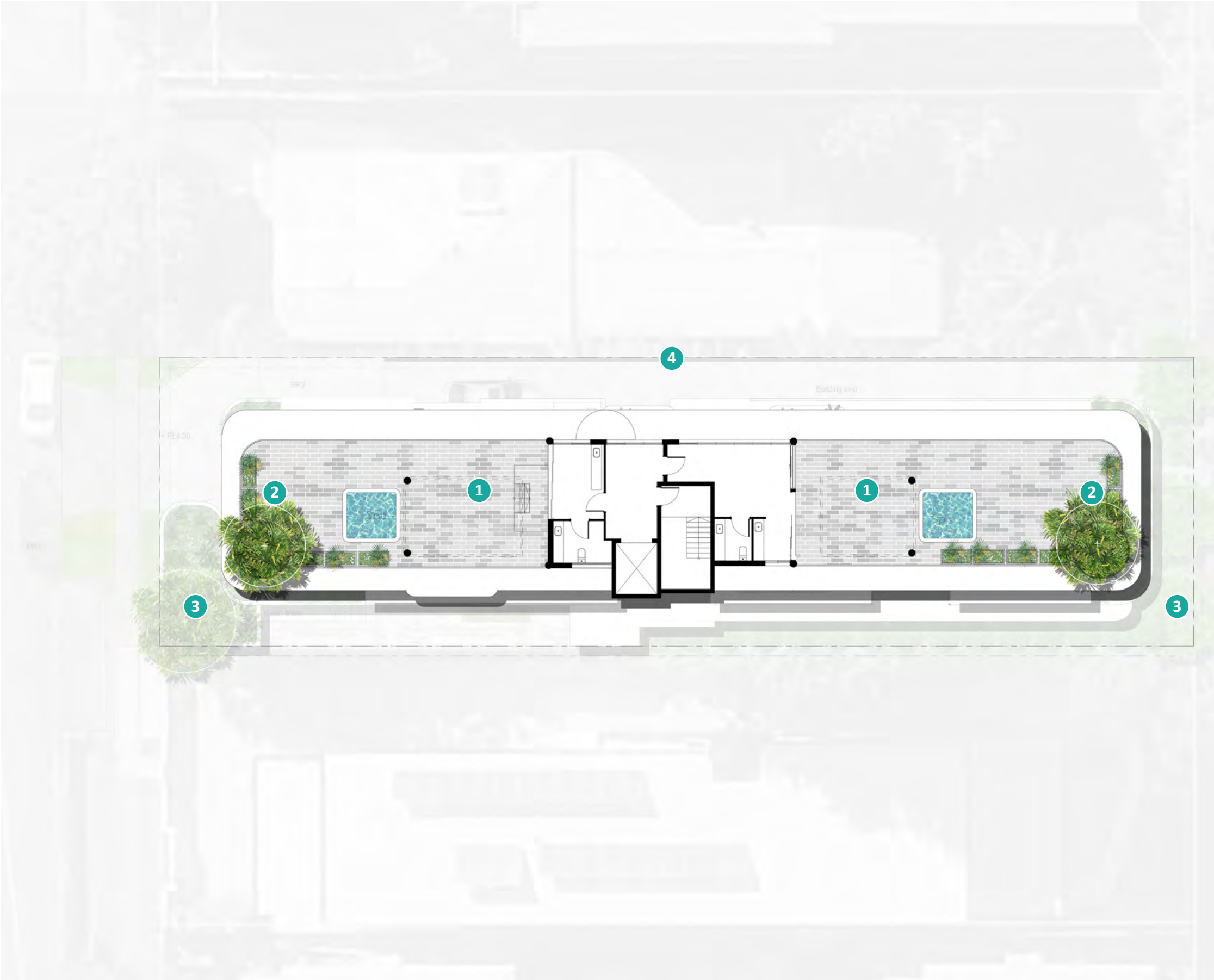
- 1 Lobby
- 2 BBQ / dining / gathering terrace
- 3 Raised planter 600mm high with accent shrub, groundcover and cascade planting
- 4 Landscape below
- 5 Site Boundary



Landscape Concept Plan - Roof Level

Legend

- 1 BBQ / dining / spa / gathering terrace
- 2 1m high raised precast fibreglass / concrete planter with shade tree, accent shrub, groundcover and cascade planting
- 3 Landscape below
- 4 Site Boundary



0 2 4 6 8 10m
Scale 1:200 @ A3



Project Name:
Dutton Street

Client Name:
Lattimore

Project No.
2450

Revision:
C

Date:
2025-05-07

DWG No.
L007

shepherd
Urban Landscape Architecture

Planting Palette - Trees & Palms



Tuckeroo
Cupaniopsis anacardiodes



Eumundi Quandong
Elaeocarpus eumundi



Water Gum
Tristaniopsis 'Luscious'



Weeping Lilly Pilly
Waterhousea floribunda



Kentia Palm
Howea forsteriana



Foxtail Palm
Wodyetia bifurcata



Cabbage Tree Palm
Livistona australis



Screw Pine
Pandanus utilis

Tree
8 x 4m

Tree
8 x 3m

Native Tree
8 x 5m

Native Tree
8 x 5m

Palm
8 x 6m

Palm
10 x 5m

Palm
8 x 6m

Tree
8 x 4m

Planting Palette - Shrubs



Miss Muffet
Pittosporum tobira
Shrub
1 x 1m



Giant Bird of Paradise
Strelitzia nicolai
Shrub
5 x 3m



Agave attenuata
Century Plant
AGA att



Big Red
Syzygium australe
Shrub
3 x 3m



Resilience
Syzygium australe
Shrub
3 x 2m



Dense Fence
Viburnum odoratissimum
Shrub
3 x 3m



Pink Diamond
Cordyline fruticosa
Shrub
2 x 1m



Cardboard Plant
Zamia furfuracea
Shrub
2 x 1m



Desert Star
Carissa grandiflora
Shrub
2 x 2m



Gynea Lily
Doryanthes excelsa
Shrub
2 x 2m



Silver Lady
Blechnum sp
Shrub
1 x 1m



Rojo Congo
Philodendron sp
Shrub
1 x 1m

Planting Palette - Groundcovers



Yareena
Myoporoum parvifolium
Groundcover
0.3 x 3m



Silver Leaf Gazania
Gazania tomentosa
Groundcover
0.3 x 2m



Blue Chalksticks
Senecio serpens
Groundcover
0.3 x 2m



Xanadu
Philodendron selloum
Groundcover
1 x 1m



Just Right
Liriope muscari
Groundcover
0.3 x 0.3m



Evergreen Giant
Liriope muscari
Groundcover
0.5 x 0.5m



Lime Tuff
Lomandra
Groundcover
0.5 x 0.5m



Matt Rush
Lomandra Hystrix
Groundcover
1.5 x 1.5m

Planting Palette - Cascading & Climbers



Cousin It
Casuarina glauca



Silver Falls
Dichondra repens



Golden Pothos
Epipermnum aureum



Waterfall Plant
Phyllanthus multiflorus

Cascading
0.3 x 2m



Climbing Fig
Ficus pumila



Pink Mandevilla
Dipladenias

Climber
8 x 3m



Trachelospermum jasminoides
Star Jasmine



Funky Bells
Pandorea jasminoides

Climber
8 x 5m

