Our Ref: 21205

15 December 2022

Dee Why 3 Pty & Dee Why 4 Pty Ltd
Level 25, 88 Phillip Street,
Sydney NSW 2000

Attention: Mr Adam Martinez

Dear Adam,

RE: 4 DELMAR PARADE AND 812 PITTWATER ROAD, DEE WHY
ADDENDUM TRAFFIC REPORT

As requested, please find herein The Transport Planning Partnership (TTPP)'s traffic and parking assessment for the above proposed development.

Background

A development application (DA) has been submitted to Northern Beaches Council (Council) for a proposed mixed-use development at 812 Pittwater Road & 4 Delmar Parade, Dee Why.

Following post-submission consultation with Council, modifications have been made to the development, including a minor variation to the development yields and the following key changes relating to traffic and parking:

- a 7.1m long loading bay to accommodate a 6.4m long Small Rigid Vehicle (SRV) has been provided in basement level 1
- basement level 1 has been modified to accommodate ramp grades and headroom appropriate for an SRV.

The architectural plans of the amended layout are provided in **Attachment One** and swept path analysis of the amended layout is provided in **Attachment Two**.

In addition, Council has requested further details on the proposed traffic management strategy for the ground floor loading dock and a queueing analysis of the loading dock to assess the likelihood of queues overflowing on to the footpath or public road, while a truck is manoeuvring into the loading dock.

The following addendum report assesses the traffic and parking impacts of the amended development and addresses Council's request for information. The original traffic report submitted as part of the DA is provided in **Attachment Three**.

Proposed Development Yields

The submitted DA included a provision of 230 residential apartments and 439m^2 of commercial/ retail floor area.

The amended layout includes a total of 219 residential apartments and 817m^2 of commercial/ retail floor area as detailed in Table 1.

Table 1: Development Yields

Land Use	Buiding A – 4 Delmar Pde	Building B – 812 Pittwater Rd	Total
Residential			
Studio	0 units	0 units	0 units
1-bedroom	51 units	41 units	92 units
2-bedroom	46 units	41 units	87 units
3-bedroom	25 units	15 units	40 units
Total	**122 units**	**97 units**	**219 units**
Commercial/ Retail	**378.5 m^2**	**439 m^2**	**817 m^2**

In relation to parking, the development comprises:

- two loading bays including one Heavy Rigid Vehicle (HRV) bay on the ground floor and one SRV bay in basement level 1
- 334 car spaces including 203 residential spaces and 28 commercial/ retail spaces
- 16 bicycle parking spaces for visitors and 219 residential storage cages large enough to accommodate one bike space.

Parking Assessment

Car Parking

The parking requirements relevant to the proposed development are summarised in Table 2.

Table 2: DCP Car Parking Assessment

Parking User	Size	Car Parking Rate	Parking Requirement	Parking Provision
Residential				
1-bedroom	92	0.6 spaces per dwelling	56	
2-bedroom	87	0.9 spaces per dwelling	79	
3-bedroom	40	1.4 spaces per dwelling	56	259
Visitors	-	1 space per 5 units	44	47
Sub-Total	**219 units**		**235**	**306**
Commercial/ Retail	819.9m^2	Commercial: 1 space per 40sqm Retail: 4.2 spaces per 100sqm	21-34	28
Total			**256-269**	**334**

The DCP does not specify the above parking rates as a minimum nor a maximum requirement. However, it is noted that the DCP rates for residential development directly match the parking rates recommended by the Apartment Design Guidelines (i.e. from the Roads and Maritime *Guide to Traffic Generating Developments 2002* for a Metropolitan Sub-Regional Centre), which is a minimum requirement.

The parking provision exceeds the DCP requirement for residents. It is considered that this level of parking is acceptable with consideration for the minimum requirements of the Apartment Design Guidelines.

The tenant proposed for the commercial/ retail tenancy is not known at this stage, however, based on the commercial rate, 21 car spaces are required and based on the retail rate, 34 spaces are required.

The development includes a provision of 28 spaces. This is a shortfall from the retail parking requirement, however, is considered acceptable noting that:

- the site provides parking for staff only
- the site fronts Pittwater Road which is well serviced by frequent bus routes
- parking in the surrounding area is time restricted so staff would not have much opportunity to drive and park on-street and thereby would be encouraged to catch public transport.

Accessible Parking

Warringah DCP does not provide car parking requirements for accessible spaces.

The Australian Standard for Adaptable Housing (AS4299) requires at least one accessible car parking space to be provided for each adaptable apartment.

The development includes 22 accessible spaces to accommodate 22 adaptable units which complies with the above requirement.

The accessible parking requirement for the commercial/ retail site has been based on the *Disability (Access to Premises-Buildings) Standards 2010* which recommends one space per 50 car spaces for a retail site or one space per 100 car spaces for commercial office site. The development includes one commercial accessible space which complies with this requirement.

Bicycle Parking

The parking assessment based on the Councils DCP is summarised in Table 3.

Table 3: Bicycle Parking

Land Use	Size	DCP Bicycle Rate		Bicycle Parking Required	
		Employee/ Resident	Visitor	Employee/ Resident	Visitor
Residential	219 units	1 per dwelling	1 per 12 dwellings	219	18
Commercial/ Retail	817 m^2	1 per 200m^2	1 per 750m^2 over 1,000m^2	4	1
Total	**-**	**-**	**-**	**223**	**19**

The proposed development is required to provide 242 bicycle parking spaces including 219 spaces for residents, 4 space for employees and 19 spaces for visitors.

Residents are provided with private storage cages that are to be large enough to accommodate bike parking i.e., with a minimum dimension of 715mm wide and 1840mm long.

In addition, 18 bicycle parking racks for staff and visitors are to be provided, including two bike spaces within the public domain on the ground floor and 16 spaces within the basement.

Car Park Layout Review

The basement car park and associated access arrangements have been reviewed for compliance with Australian Standard design requirements, namely AS2890.1:2004, AS2890.2:2002, AS2890.3:2015 and AS2890.6:2009.

The residential and employee car parking spaces are designed to comply with Australian Standard Class 1A parking facilities for residents and employees. Class 1A requires car spaces to have dimensions of 2.4m wide by 5.4m long with an aisle width of 5.8m.

The accessible car spaces have been designed in accordance with AS2890.6 which requires a 2.4m wide shared area adjacent to a 2.4m wide car space or, in accordance with the Australian Standard for Adaptable Housing (AS4299) which requires an adaptable space to be at least 3.8m wide.

A minimum head clearance of 4.5m is provided over the ground floor loading dock, 3.5m for basement 1 and 2.2m for basement level 2, which is compliant with the requirements of AS2890.1 and AS2890.2.

Ramp grades comply with the requirements of AS2890.1 and AS2890.2, which require:

- a maximum grade of 1:6.5 and change in grade of 1:12 for SRVs
- a maximum grade of 1:4 and change in grade of 1:8 for B99 vehicles
- a maximum grade of 1:20 for car parking modules
- a maximum grade of 1:25 for a service bay.

Any remaining minor non-compliances are expected to be resolved prior to Construction Certification.

Swept path analysis of the proposed car park and access is provided in Appendix C.

Traffic Management Plan

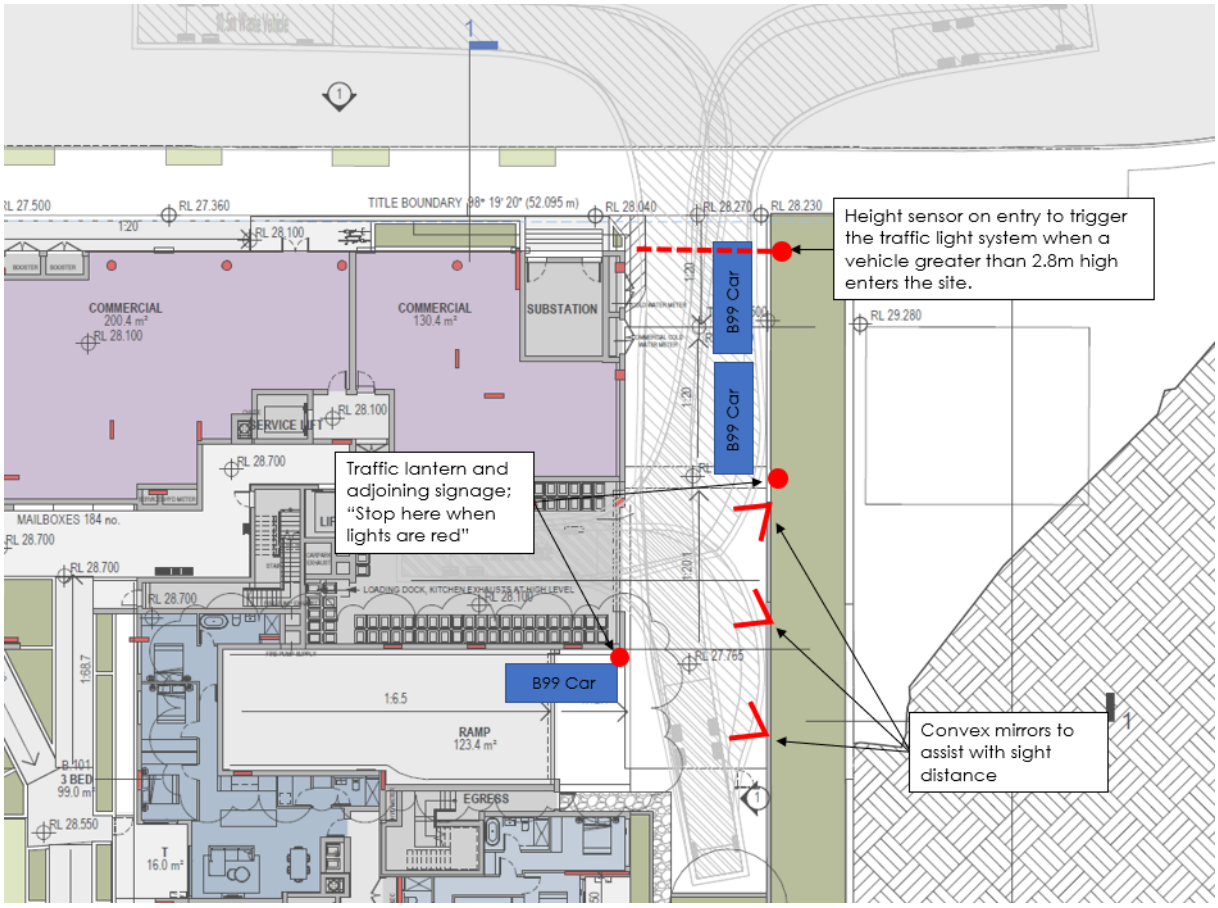
A traffic management plan is to be implemented to manage the access of heavy vehicles including SRVs and above. The traffic management plan would include the following measures:

- A height sensor is to be installed across the driveway which triggers the traffic management system when a vehicle greater than 2.8m high enters the site.
- A button is to be located within the loading dock, for drivers to trigger the traffic management system on exit.
- Traffic lanterns at two hold points (on entry and exit) a light (red or flashing depending on the chosen system), with an adjoining signage which says "Stop here when lights are red/flashing".
- On entry, the hold point is to be located at least 12m from the site boundary to enable a queue of up to two vehicles from the traffic lantern.
- On exit, the hold point is to be located at the top of the 1:12 grade ramp.
- Convex mirrors are to be placed such that:

- On the ground level:
  - Trucks exiting the loading dock are able to look out of cars entering the site from the left and exiting the site from the right, and
  - Cars exiting the basement are able to look out for entering trucks and cars.
- In basement level 1:
  - At the bottom of the ramp and at all corners along the the route of travel to the basement loading bay. This is to ensure visibility between small trucks and opposing cars at corners where swept paths are constrained.

An indicative plan of the traffic management measures on the ground floor is presented in Figure 1.

Figure 1: Indicative Traffic Management Plan



Loading Dock Management Plan

The development provides two loading bays including one Heavy Rigid Vehicle (HRV) bay on the ground floor and one SRV bay in basement level 1. The SRV bay in basement level 1 is to be used by the commercial/ retail development for small deliveries, while the HRV bay is expected to be used for both residential and non-residential servicing needs.

It is proposed to prepare and implement a Loading Dock Management Plan, prior to occupation detailing:

- servicing requirements
- servicing frequency per week
- vehicle size for each servicing requirement
- strategies/ policies to manage traffic and capacity of the site's loading facilities.

The Loading Dock Management Plan cannot be prepared until the commercial tenancies are occupied and their needs are identified. The tenancies are expected to be known prior to occupation.

Traffic Impact

The traffic generation assessment for the development is summarised in Table 4.

Table 4: Traffic Generation Assessment

Land Use	Size	Trip Rate (per unit/ 100m²)		Trips (vehicle trips per hour)	
		AM	PM	AM	PM
Existing (Commercial)	**4,000 m²**	**1.6**	**1.2**	**64**	**48**
Proposed					
Residential	219 units	0.19	0.15	42	33
Commercial/ Retail	820 m²	2.3	4.6	19	38
Proposed Total	**-**	**-**	**-**	**60**	**70**
Net Impact				**-4**	**+22**

Based on Table 4, the proposed development is to generate 60-70 vehicles per hour, allowing for the non-residential component to be fully retail.

Compared to the theoretical traffic generation of the existing development, the proposed development is estimated to result in a net increase of 22 vehicles per hour.

This equates to one additional vehicle every two minutes, and this is considered a negligible level of traffic. This level of traffic would make no significant difference to the performance of the intersection in any traditional traffic modelling software,

Queueing Assessment

The development is expected to generate up to 60 two-way vehicle movements per hour in the morning peak and 70 two-way vehicle movements per hour in the afternoon peak.

Allowing for an 80% inbound and 20% outbound split of residential traffic and 50% inbound and 50% outbound split of retail traffic in the afternoon peak, the site is expected to generate a peak of 45 vehicles per hour entering the site.

This equates to one vehicle every one to two minutes entering the site at the peak.

It is considered that the traffic signals holding traffic during loading dock entry and exit, would be red for a period of no more than 90 seconds, which is considered sufficient time for a truck to enter, wait for any exiting cars already on the driveway, and manoeuvre into the loading dock.

As such, during this two-minute period, a queue of 1-2 vehicles can be expected on entry. The site provides an on-site queue capacity of two vehicles which is sufficient to accommodate the queueing demand for the site.

Summary and Conclusion

The above addendum traffic report assesses the traffic and parking impact of the amended development at 812 Pittwater Road & 4 Delmar Parade, Dee Why. The key findings of the assessment are:

- The development requires 235 residential car spaces and 21-34 commercial/ retail spaces.
- The proposed provision of 306 residential spaces and 28 non residential spaces is adequate notwithstanding the shortfall in six spaces if the tenancies are all retail, noting that the site is well serviced by public transport and that the limited availability of unrestricted on-street parking would discourage staff from driving to the site.
- Two loading bays are provided including a HRV bay on the ground floor and a SRV bay in Basement 1 for the commercial/ retail tenants.
- The proposed development complies with the DCP's bicycle parking requirement.
- The net traffic impact of the proposed development is negligible.
- The access and car park layout is compliant with AS2890.
- A traffic management plan is to be implemented to manage traffic flow during HRV access.
- A Loading Dock Management Plan is to be prepared to manage the usage and capacity of the on-site loading facilities.

We trust the above is to your satisfaction. Should you have any queries regarding the above or require further information, please do not hesitate to contact the undersigned on 8437 7800.

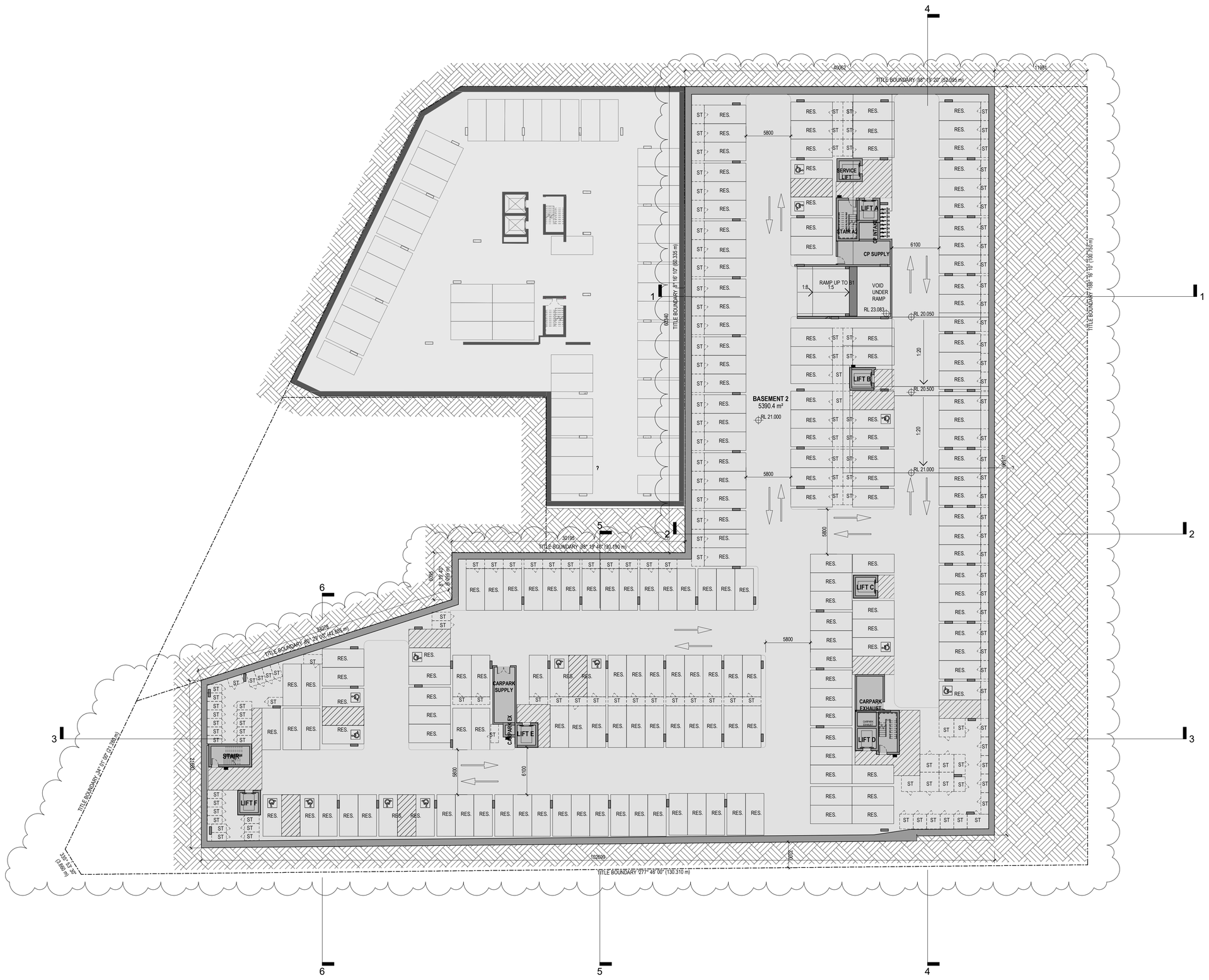
Yours sincerely,

Ken Hollyoak
Director

Encl. Attachment One – Architectural Plans
Attachment Two – Swept Paths
Attachment Three – Submitted Traffic Report

Attachment One

Architectural Plans



Revisions				
	A	14.12.2021	DEVELOPMENT APPLICATION	JC
	B	11.11.2022	COUNCIL SUBMISSION	JC
	C	07.12.2022	COUNCIL SUBMISSION	JC

13/12/2022 3:06:45 PM

Client: **Dee Why 3 Pty Ltd & Dee Why 4 Pty Ltd**

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**

Drawing: **BASEMENT 2**

Project No: **221054**

Date: **07.12.2022**

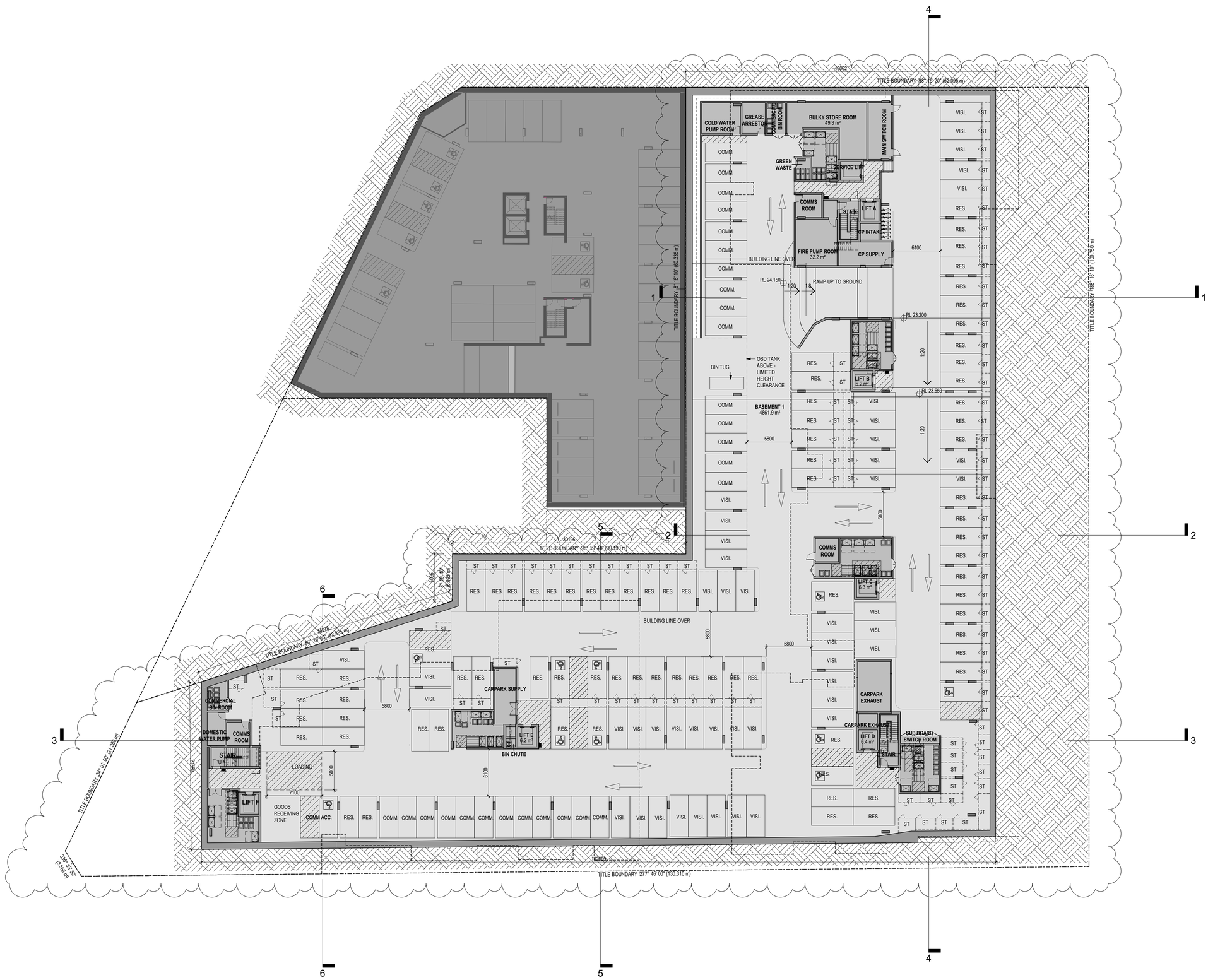
Author: **BR**

Scale: @ A1 **1 : 250**

Drawing No.: **TP01.01 C**

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au



Revisions				
	A	14.12.2021	DEVELOPMENT APPLICATION	JC
	B	11.11.2022	COUNCIL SUBMISSION	JC
	C	07.12.2022	COUNCIL SUBMISSION	JC

13/12/2022 3:06:50 PM

Client: **Dee Why 3 Pty Ltd & Dee Why 4 Pty Ltd**

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**

Drawing: **BASEMENT 1**

Project No: **221054**

Date: **07.12.2022**

Author: **BR**

Scale: @ A1 **1 : 250**

Drawing No.: **TP01.02 C**

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au

Revisions			
A	14.12.2021	DEVELOPMENT APPLICATION	JC
B	11.11.2022	COUNCIL SUBMISSION	JC
C	07.12.2022	COUNCIL SUBMISSION	JC

13/12/2022 3:07:02 PM

Client: **Dee Why 3 Pty Ltd & Dee Why 4 Pty Ltd**

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**

Drawing: **GROUND**

Project No: **221054**

Date: **07.12.2022**

Author: **DM**

Scale: @ A1 **1 : 250**

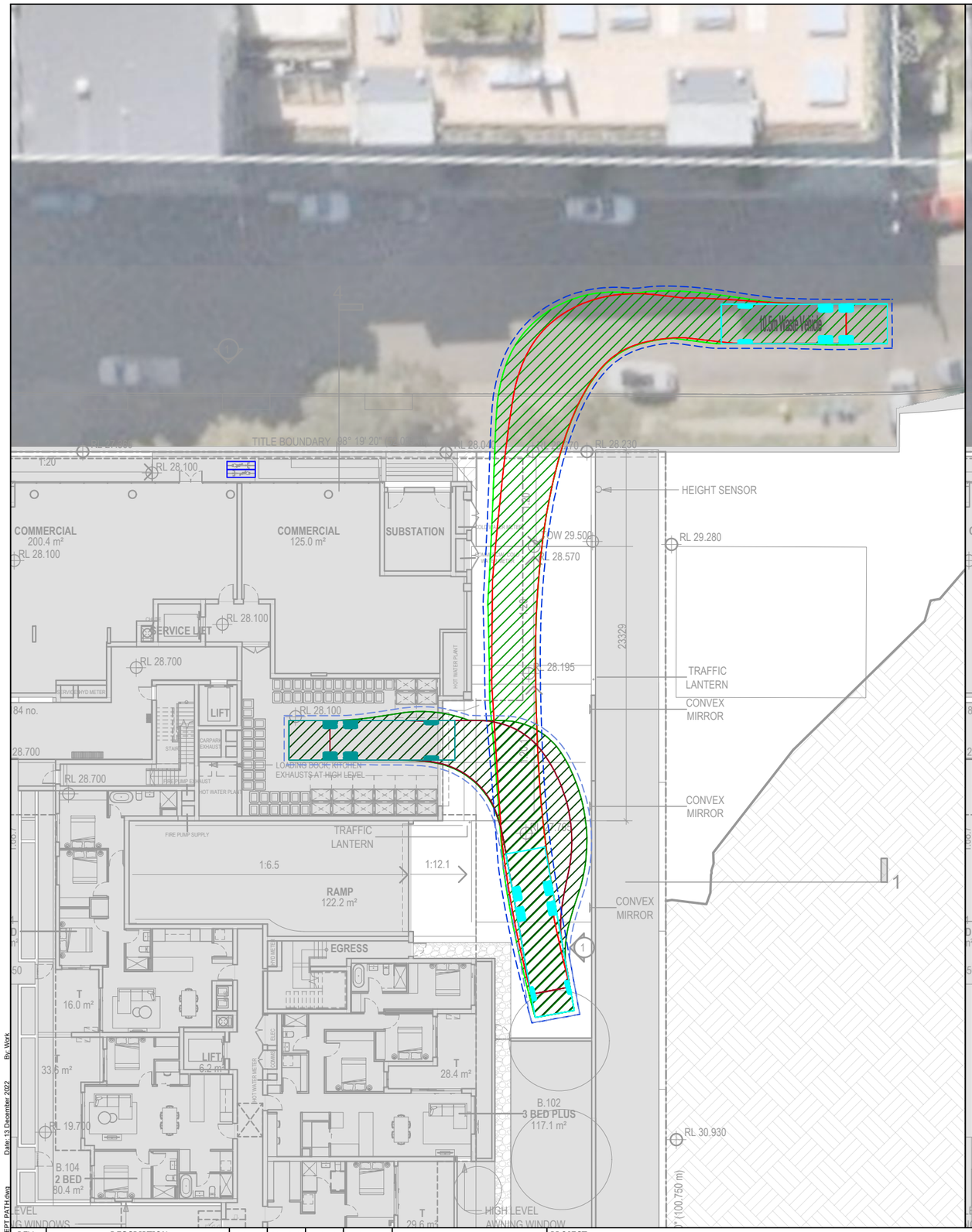
Drawing No.: **TP01.03 C**

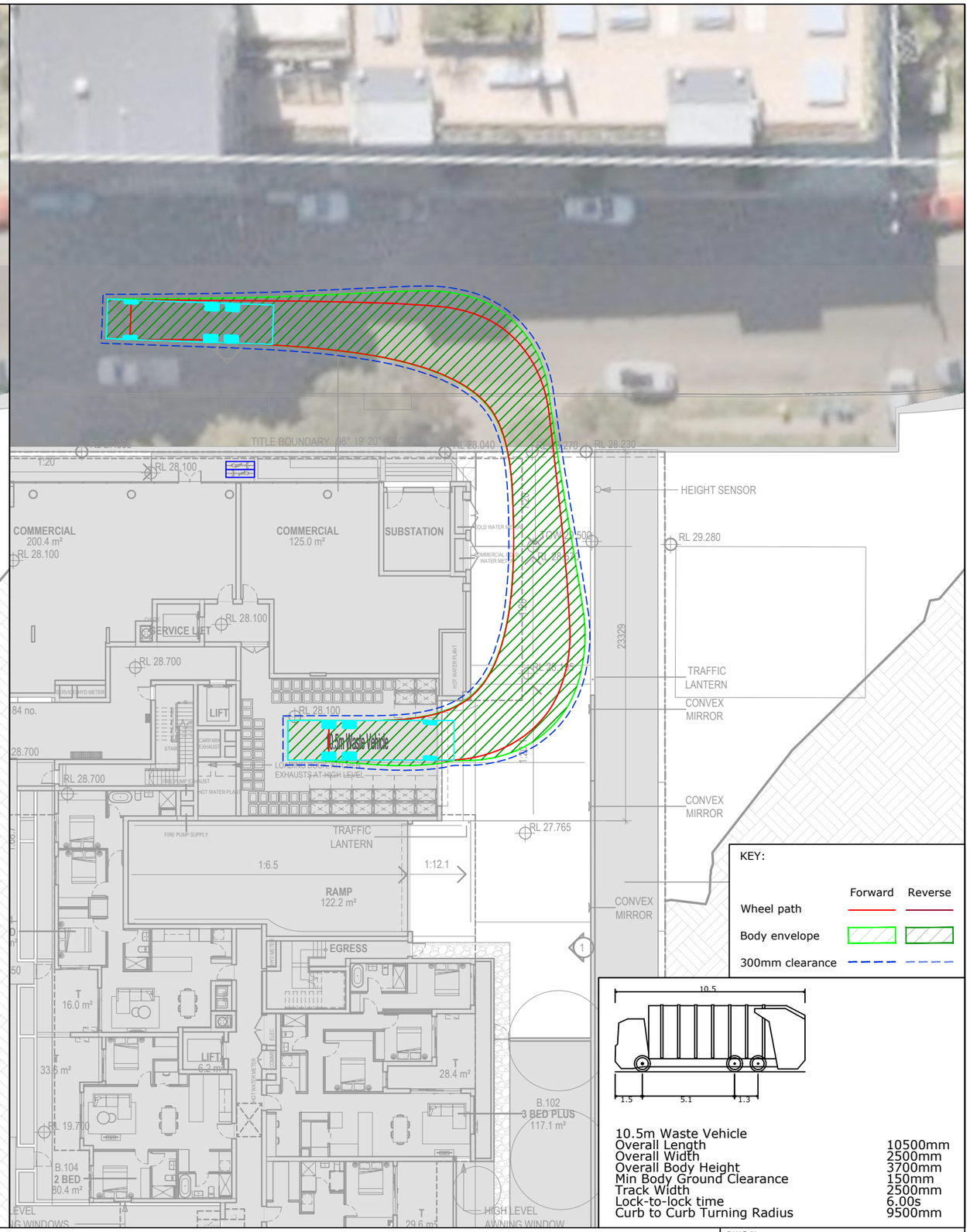
rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au

Attachment Two

Swept Paths





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

10.5m Waste Vehicle	
Overall Length	10500mm
Overall Width	2500mm
Overall Body Height	3700mm
Min Body Ground Clearance	150mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT: 4 DELMAR PARADE, DEE WHY

TITLE: SWEPT PATH ANALYSIS - LOADING BAY
10.5m WASTE TRUCK

DWG No. 21205CAD014
FIGURE 1

DATE STAMP: 13 DECEMBER 2022

PROJECT No.	SCALE	REV.
21205	1:300 @A3	A

Filename: 21205CAD014-22213-SWEPT PATH.dwg
Date: 13 December 2022 By: Work

RL 27.500
RL 27.420
1:20
RL 28.100
BOOSTER
BOOSTER
COMMERCIAL
200.4 m²
RL 28.100
COMMERCIAL
125.0 m²
SUBSTATION
TITLE BOUNDARY 98° 19' 20" (
RL 28.040
RL 28.230
HEIGHT SENSOR
RL 29.280
COLD WATER METER
COMMERCIAL COLD WATER METER
TOW 28.500
RL 28.570
1:20
RL 27.980
CHUTE
SERVICE LIFT
RL 28.100
RL 28.700
SERVICE/HYD METER
HOT WATER PLANT
RL 28.195
23329
RL 27.980
MAILBOXES 184 no.
RL 28.700
LIFT
STAIR
CARPARK EXHAUST
RL 28.100
RL 28.700
RL 28.700
LOADING DOCK, KITCHEN EXHAUSTS AT HIGH LEVEL
FIRE PUMP EXHAUST
HOT WATER PLANT
1:20
TRAFFIC LANTERN
CONVEX MIRROR
CONVEX MIRROR
1:20
1:68.7
FIRE PUMP SUPPLY
TRAFFIC LANTERN
RAMP
122.2 m²
CONVEX MIRROR
B.101
3 BED
95.5 m²
EGRESS
HYD METER
RL 28.550
1

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

5200
950
3050

B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT
4 DELMAR PARADE, DEE WHY

TITLE
SWEPT PATH ANALYSIS - GROUND LEVEL
AS2890.1 5.2m B99 VEHICLE

DWG No. 21205CAD014
FIGURE 2

DATE STAMP
13 DECEMBER 2022

PROJECT No.	SCALE	REV.
21205	1:200 @A3	A

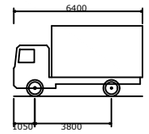
Filename: 21205CAD014-221213-SWEPT PATH.dwg
Date: 13 December 2022
By: Work

VEHICLE ENTERING

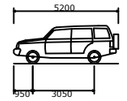
VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



SRV - Small Rigid Vehicle	
Overall Length	6400mm
Overall Width	2330mm
Overall Body Height	3500mm
Min Body Ground Clearance	398mm
Track Width	2330mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7100mm



B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT

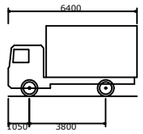
4 DELMAR PARADE, DEE WHY

TITLE

SWEPT PATH ANALYSIS - GROUND LEVEL
6.4m SMALL RIGID VEHICLE AND 5.2m B99 VEHICLE

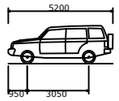
DWG No.	21205CAD014 FIGURE 3	
DATE STAMP	13 DECEMBER 2022	
PROJECT No. 21205	SCALE 1:300 @A3	REV. A

Filename: 21205CAD014-221213-SWEPT PATH.dwg Date: 13 December 2022 By: Work



SRV - Small Rigid Vehicle

Overall Length	6400mm
Overall Width	2330mm
Overall Body Height	3500mm
Min Body Ground Clearance	398mm
Track Width	2330mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7100mm



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT: 4 DELMAR PARADE, DEE WHY

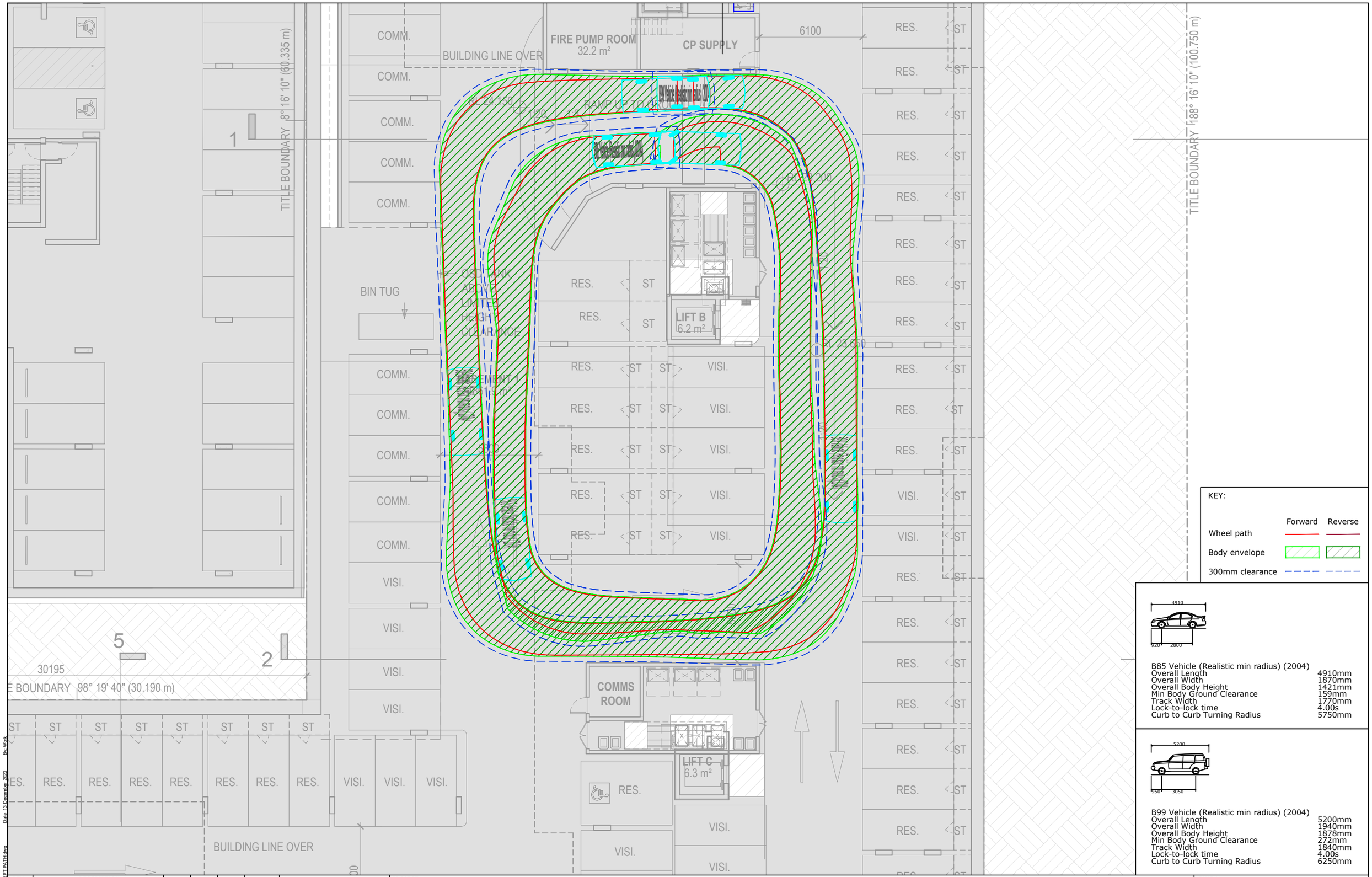
TITLE: SWEPT PATH ANALYSIS - BASEMENT 1
6.4m SMALL RIGID VEHICLE AND 5.2m B99 VEHICLE

DWG No. 21205CAD014
FIGURE 4

DATE STAMP 13 DECEMBER 2022

PROJECT No. 21205 | SCALE 1:400 @A3 | REV. A

Filename: 21205CAD014-221213-SWEPT PATH.dwg
Date: 13 December 2022
By: Work



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

B85 Vehicle (Realistic min radius) (2004)

Overall Length	4910mm
Overall Width	1870mm
Overall Body Height	1421mm
Min Body Ground Clearance	159mm
Track Width	1770mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5750mm

B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT: 4 DELMAR PARADE, DEE WHY

TITLE: SWEPT PATH ANALYSIS - BASEMENT LEVEL 1
AS2890.1 5.2m B99 VEHICLE & 4.91m B85 VEHICLE

DWG No. 21205CAD014
FIGURE 5

DATE STAMP 13 DECEMBER 2022

PROJECT No.	SCALE	REV.
21205	1:200 @A3	A

Filename: 21205CAD014-221213-SWEPT PATH.dwg Date: 13 December 2022 By: Work

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT

4 DELMAR PARADE, DEE WHY

TITLE

SWEPT PATH ANALYSIS - BASEMENT LEVEL 2
AS2890.1 5.2m B99 VEHICLE & 4.91m B85 VEHICLE

DWG No. 21205CAD014
FIGURE 6

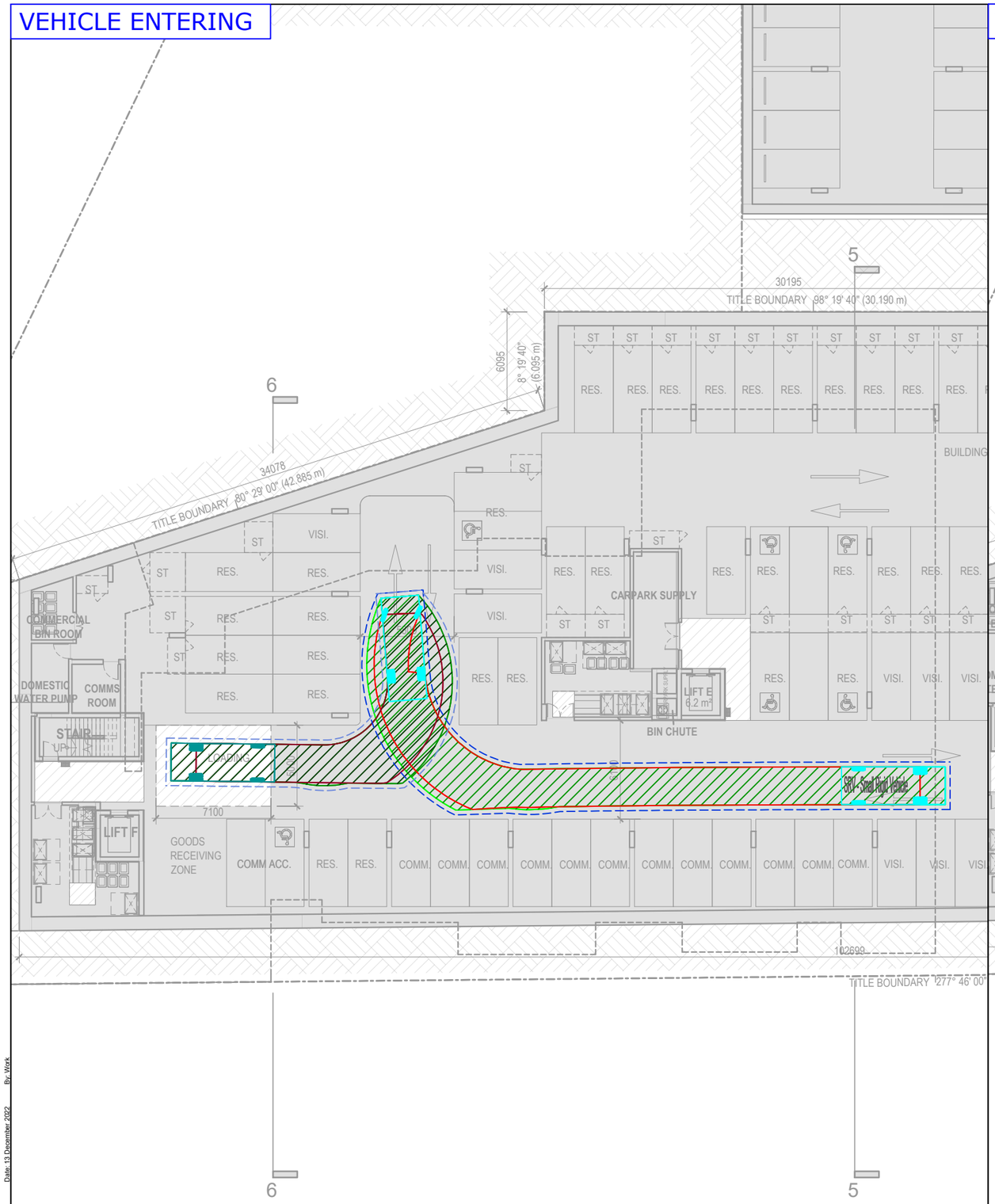
DATE STAMP 13 DECEMBER 2022

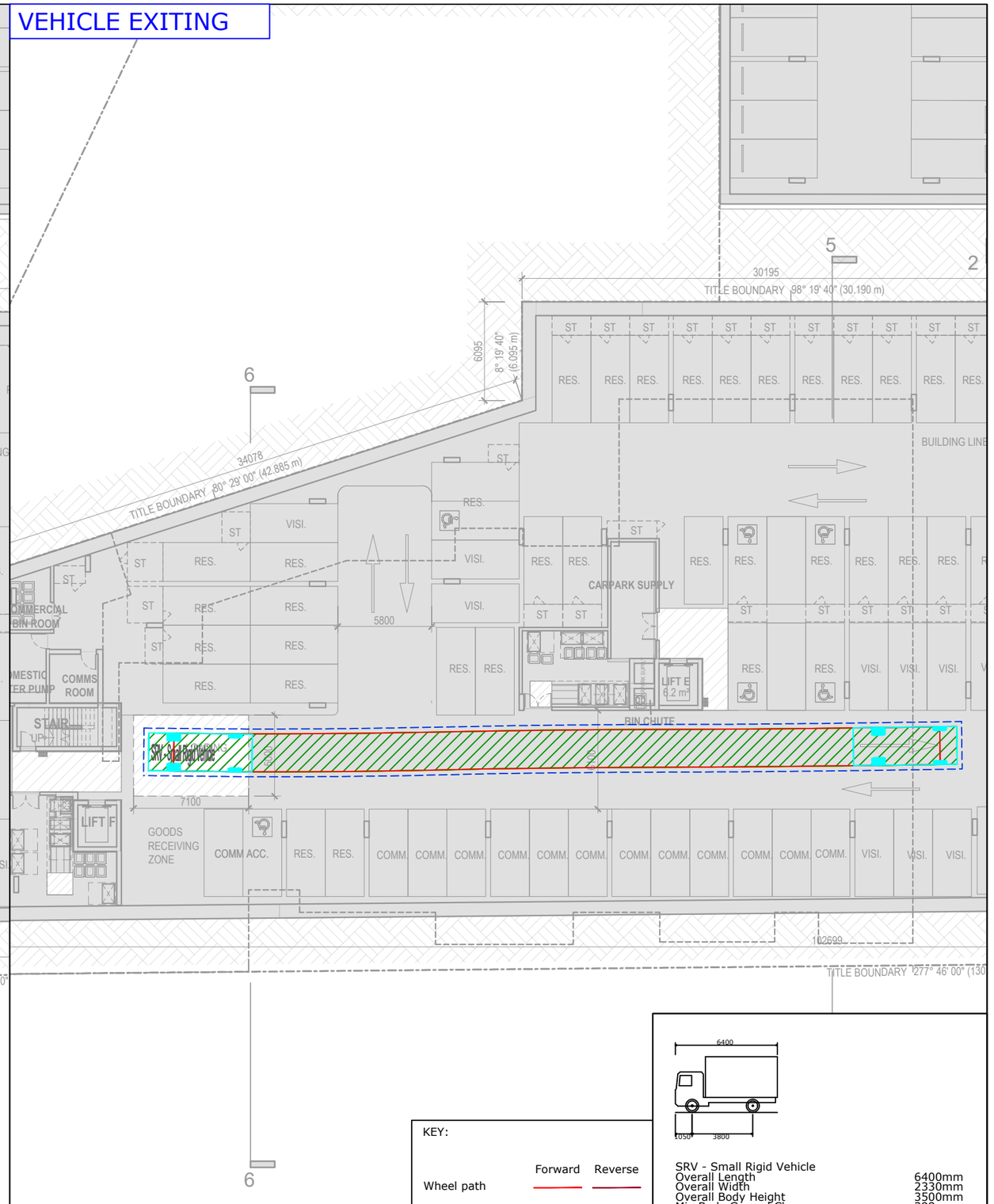
PROJECT No.	SCALE	REV.
21205	1:200 @A3	A

By: Work
Date: 13 December 2022
Filename: 21205CAD014-22213-SWEPT PATH.dwg

VEHICLE ENTERING

VEHICLE EXITING





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

SRV - Small Rigid Vehicle

Overall Length	6400mm
Overall Width	2330mm
Overall Body Height	3500mm
Min Body Ground Clearance	398mm
Track Width	2330mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7100mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT: 4 DELMAR PARADE, DEE WHY

TITLE: SWEPT PATH ANALYSIS - BASEMENT LEVEL 1
AS2890.1 4.91m B85 VEHICLE

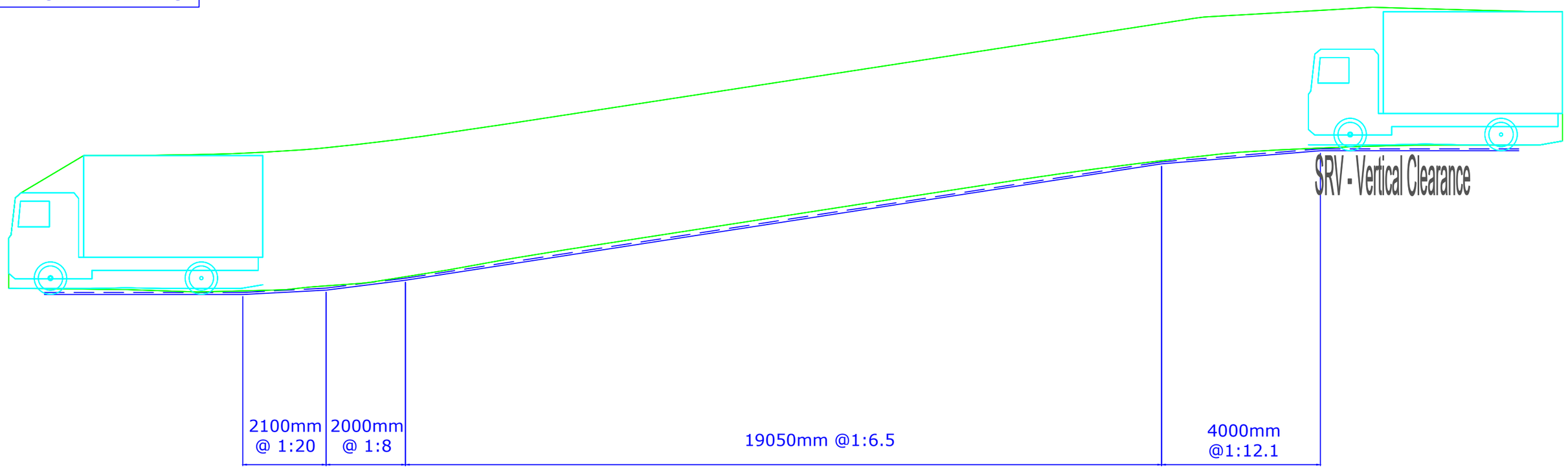
DWG No. 21205CAD014
FIGURE 7

DATE STAMP 13 DECEMBER 2022

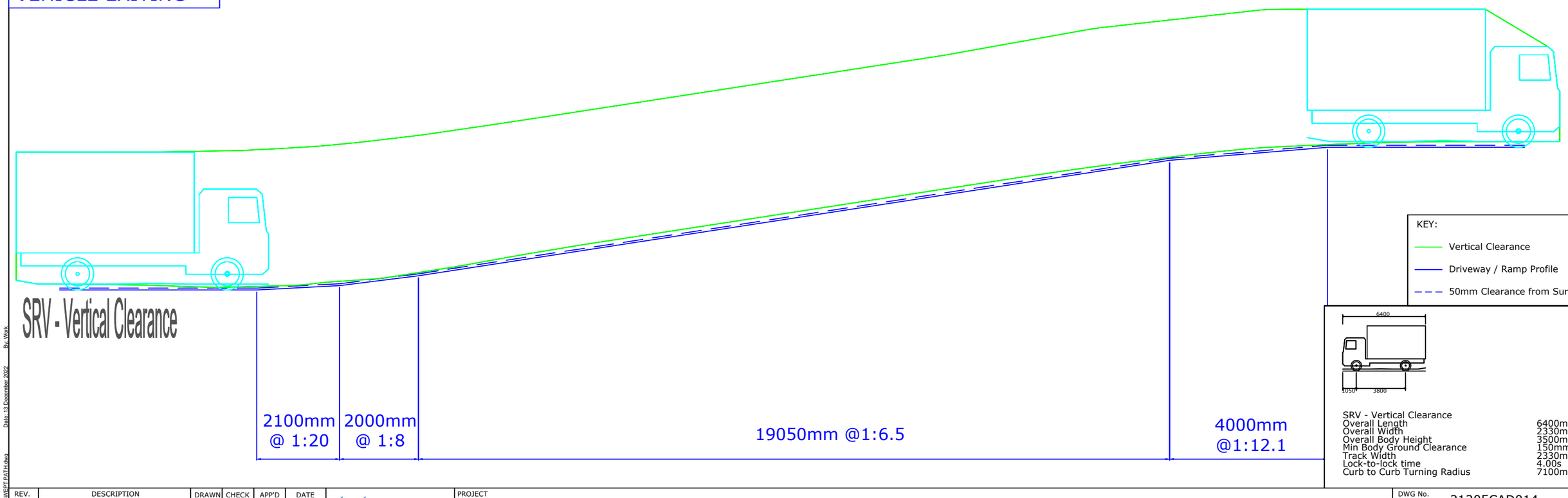
PROJECT No.	SCALE	REV.
21205	1:300 @A3	A

Filename: 21205CAD014-221213-SWEPT PATH.dwg Date: 13 December 2022 By: Work

VEHICLE ENTERING



VEHICLE EXITING



KEY:

- Vertical Clearance
- Driveway / Ramp Profile
- 50mm Clearance from Surface

SRV - Vertical Clearance	
Overall Length	6400mm
Overall Width	2330mm
Overall Body Height	3500mm
Min Body Ground Clearance	150mm
Track Width	2330mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7100mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	JG	OF	KH	13/12/22

ttpp transport planning

PROJECT: 4 DELMAR PARADE, DEE WHY

TITLE: RAMP GRADE PROPOSAL - GROUND LEVEL TO BASEMENT 1
AS2890.2 6.4m SMALL RIGID VEHICLE

DWG No. 21205CAD014
FIGURE 8

DATE STAMP: 13 DECEMBER 2022

PROJECT No.	SCALE	REV.
21205	1:100 @A3	A

Filename: 21205CAD014-22213-SWEPT PATH.dwg Date: 13 December 2022 By: Work

Attachment Three

Submitted Traffic Report

812 Pittwater Road & 4 Delmar Parade, Dee Why

Traffic Impact Assessment

Prepared for:

Dee Why 3 Pty Ltd & Dee Why 4 Pty Ltd

6 December 2021

The Transport Planning Partnership

E: info@ttpp.net.au

812 Pittwater Road & 4 Delmar Parade, Dee Why

Traffic Impact Assessment

Client: Dee Why 3 Pty Ltd & Dee Why 4 Pty Ltd

Version: V03

Date: 6 December 2021

TTPP Reference: 19494

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	16/09/21	Charbel Hanna	Oasika Faiz	Ken Hollyoak	-
V02	1/11/21	Charbel Hanna	Oasika Faiz	Ken Hollyoak	-
V03	26/11/21	Charbel Hanna	Oasika Faiz	Ken Hollyoak	Ken Hollyoak
V04	06/12/21	Charbel Hanna	Oasika Faiz	Ken Hollyoak	

Table of Contents

Tables

Figures

APPENDICES

1 Introduction

This traffic impact assessment (TIA) has been prepared for a proposed mixed-use development at 812 Pittwater Road & 4 Delmar Parade, Dee Why. The report is to be submitted to Northern Beaches Council (Council) for the purposes of a Development Application (DA) approval.

The proposal includes the,

- Demolition of existing buildings, tree removal and site clearing
- Construction of two new mixed-use buildings over a shared two-storey basement car park comprising:
  - 230 residential apartments
  - 439 m2 of commercial gross floor area on the ground floor and level 1

The development would be serviced by a ground level loading dock.

The Transport Planning Partnership (TTPP) Pty Ltd has prepared this traffic and parking impact assessment report on behalf of SPV relating to the proposed development application.

The remainder of the report is set out as follows:

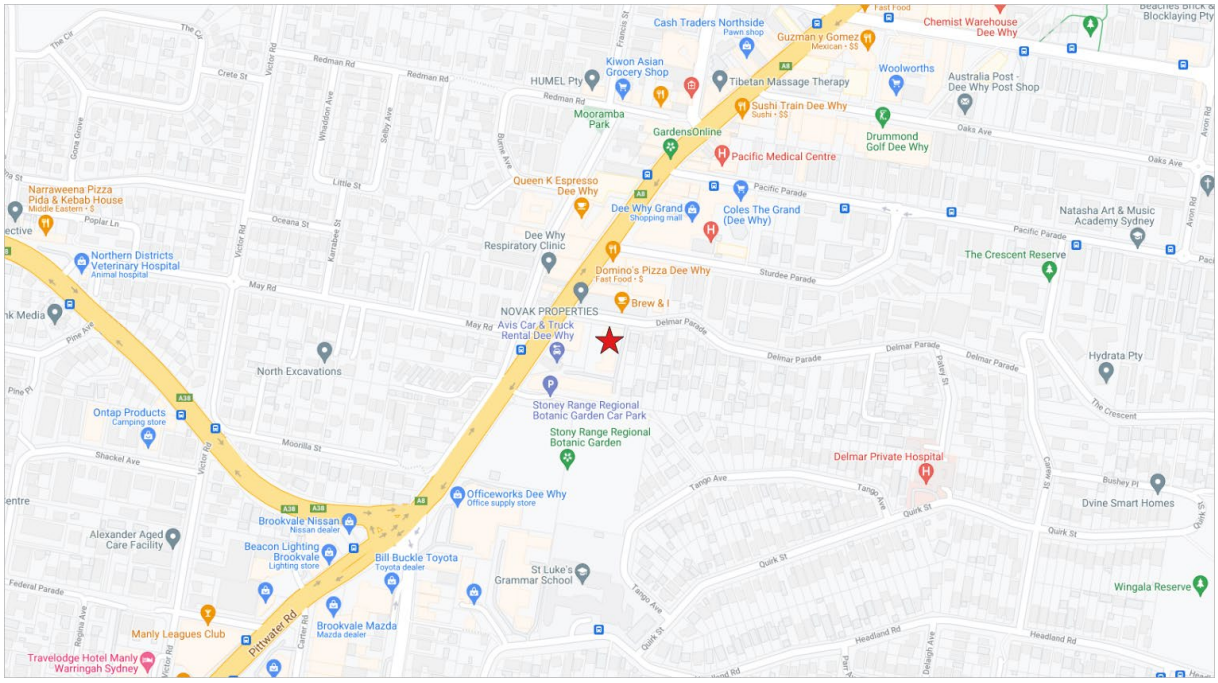
- Chapter 2 discusses the existing conditions including a description of the subject site
- Chapter 3 provides a brief description of the proposed development
- Chapter 4 assesses the proposed on-site parking provision and internal layout
- Chapter 5 examines the traffic generation and its impacts
- Chapter 6 provides a preliminary assessment of the construction traffic management measures
- Chapter 7 presents the conclusions of the assessment.

2 Existing Conditions

2.1 Site Location

The proposed development site is located at 812 Pittwater Road & 4 Delmar Parade, Dee Why. It is located within the Dee Why Town Centre as defined in the Warringah Local Environmental Plan and is zoned as a B4 Mixed Use Zone.

Figure 2.1: Site Location



Source: Google Maps

The site is currently occupied by a commercial development with at grade parking accessed off Delmar Parade.

2.2 Road Network

2.2.1 Pittwater Road

Pittwater Road is a two-way State Road with a dual carriageway (plus auxiliary turning lanes) and bus lane on both sides of the road.

Pittwater Road is the primary route along the Northern Beaches between Mona Vale and Brookvale and extends in a north-south direction.

On street parking is permitted along Pittwater Road outside of the bus lane operating hours which are:

- 6am – 10am Monday to Friday southbound
- 3pm – 7pm Monday to Friday northbound.

The posted speed limit along Pittwater Road is 60km/hr in the vicinity of the site.

There is a public car park off Pittwater Road immediately south of the site. The car park provides 26 car parking spaces including 1 accessible space. All spaces are signposted as 3P MON-FRI.

2.2.2 Delmar Parade

Delmar Parade is a local road and is aligned in east-west direction along the northern boundary of the site. It is a two-way, two lane road, on an approximately 12m wide carriageway within a 18m road reserve. Kerbside parking is permitted on both sides and is typically time restricted to two hours. It is sign posted with a 50km/h speed limit.

2.3 Public Transport

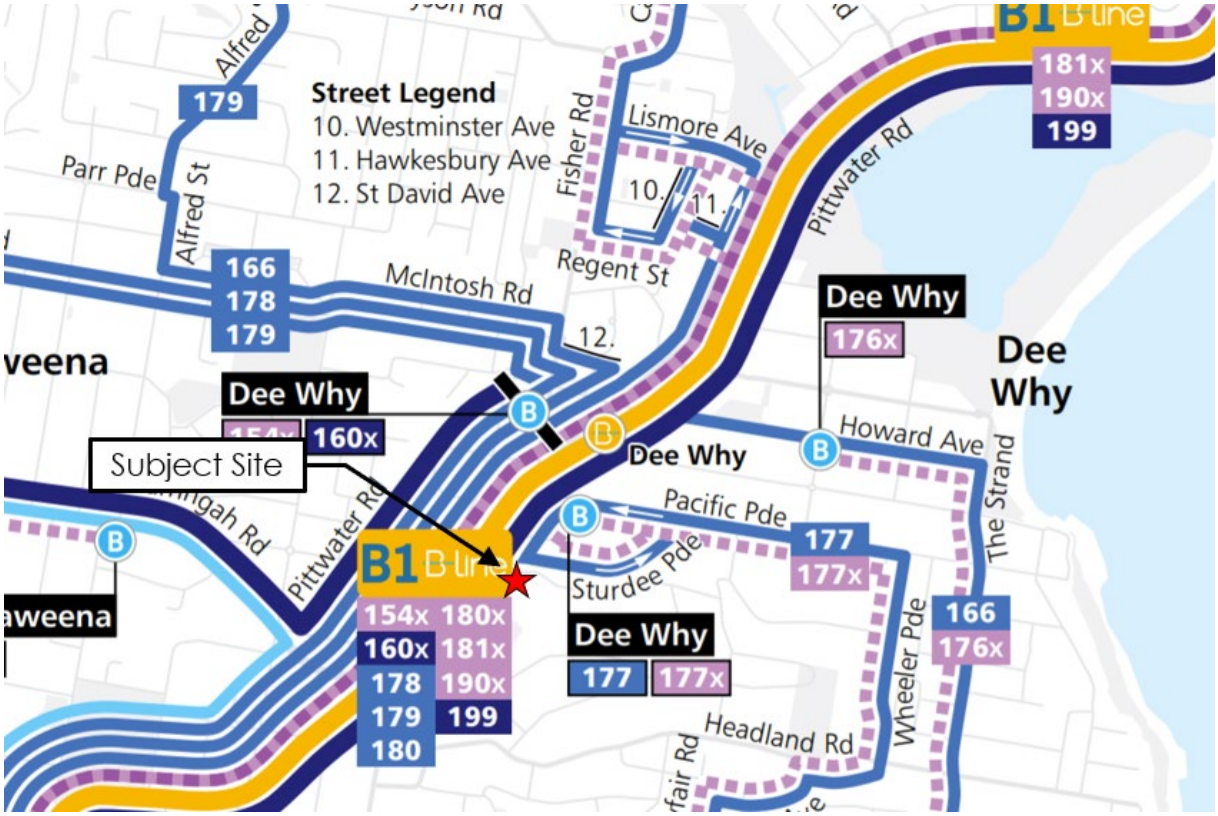
An extensive number of bus services are available in the vicinity of the site. The nearest bus stops are located 190m to the north along Pittwater Road.

Several bus services, including express services, operate from these stops and provide connections to all destinations north and south of Dee Why between Palm Beach and Manly and the Sydney CBD. Services typically operate at 15 to 30-minute intervals during the peak.

In addition to this, the B-Line services the bus stop located 500m north of the site on both sides of Pittwater Road. The B-Line is a frequent express service that provides connections between Mona Vale and Wynyard and operates between 4:30am until 12:30am. Service frequency on the B-line is typically two to 10 minutes.

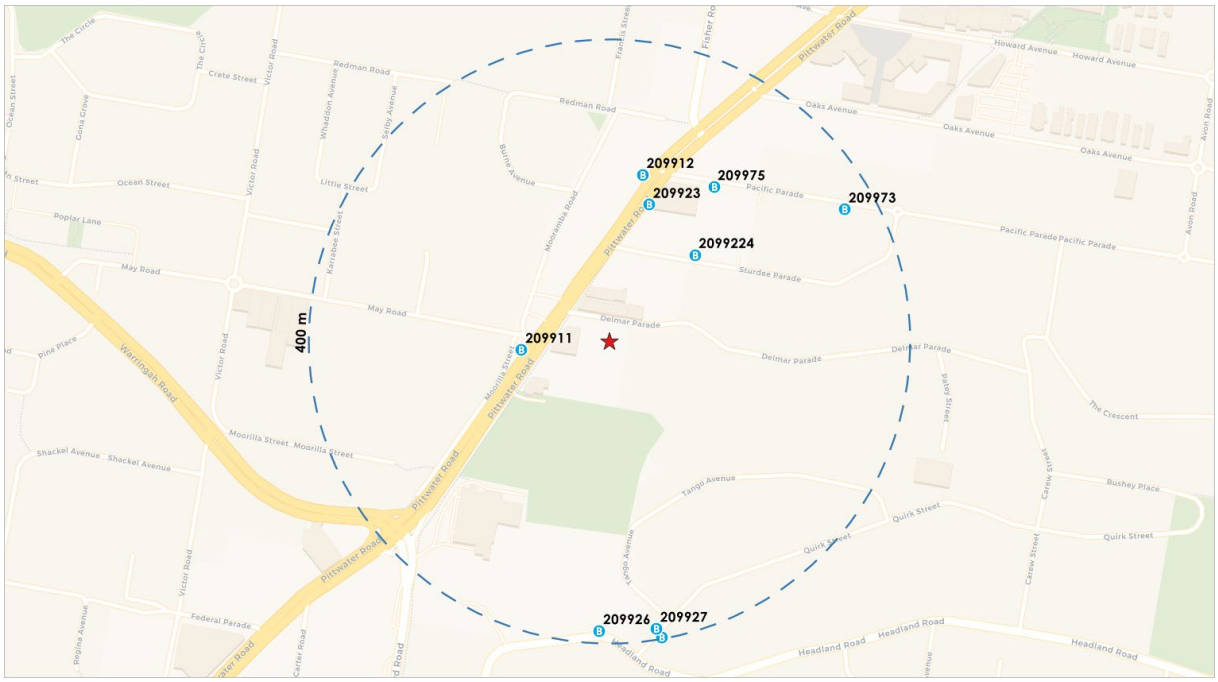
The bus network and bus stops within a 400-metre radius surrounding the site are shown in Figure 2.2 and Figure 2.3, with a summary of relevant routes provided in Table 2.1.

Figure 2.2: Bus Network Map



Source: transportnsw.info, accessed 16/09/21

Figure 2.3: Bus stops within a 400-metre radial distance of site



Base Map Source: Carto Voyager

Table 2.1: Weekday Bus Services

Route	Route Description	Stop ID	Number of services between 0700-0900	Number of services between 1600-1800
172X	City Wynyard to Warringah Mall via North Balgowlah (Express Service)	209926	2	0
173X	City Wynyard to Warringah Mall via Balgowlah Shops (Express Service)	209926	1	0
177	Warringah Mall to Dee Why	209973	0	2
177	Dee Why to Warringah Mall	2099224	0	2
177X	City Wynyard to Dee Why via Wingala (Express Service)	209975	0	2
177X	Dee Why to City Wynyard via Wingala (Express Service)	2099224	8	0
178	Cromer Heights to Warringah Mall	209923	7	6
178	Warringah Mall to Cromer Heights	209912	6	6
179	Warringah Mall to Wheeler Heights	209911	4	4
179	Wheeler Heights to Warringah Mall	209923	7	7
180	Warringah Mall to Collaroy Plateau	209912	6	6
180	Collaroy Plateau to Warringah Mall	209923	0	0
199	Manly to Palm Beach via Dee Why & Mona Vale	209912	21	24
199	Palm Beach to Manly via Mona Vale & Dee Why	209923	20	12

Source: General Transit Specification Feed, dataset dated 03/07/21

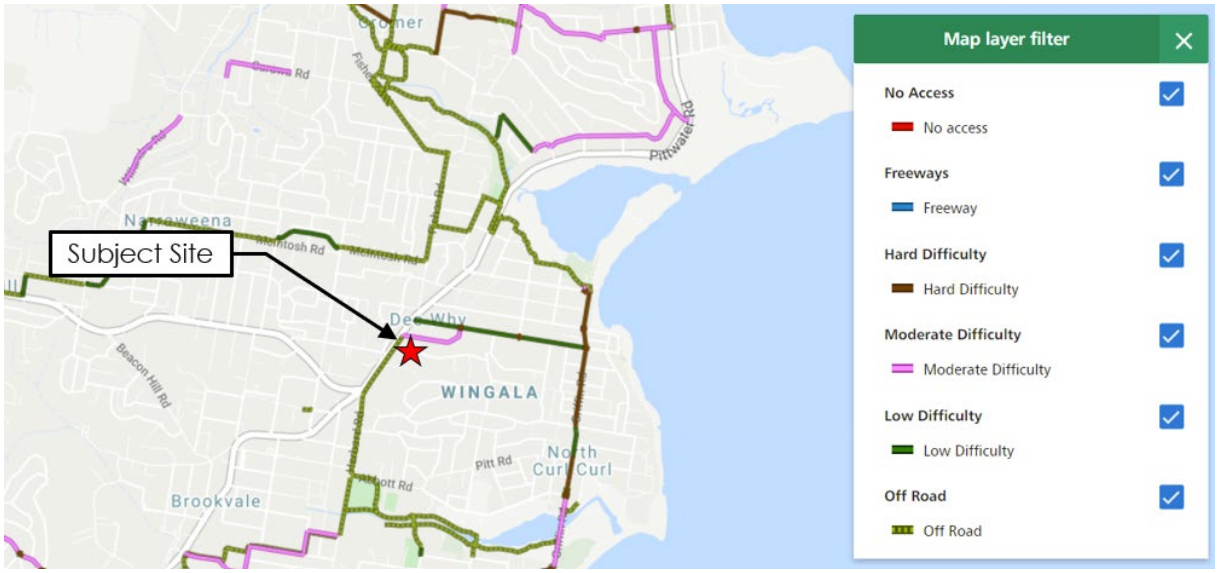
2.4 Pedestrian and Cycling Infrastructure

Pedestrian footpaths are generally provided on all surrounding streets to the subject site.

Formal pedestrian crossings are provided on Pittwater Road at its intersection with Sturdee Parade, approximately 100m north of the site.

The path fronting the subject site, along Pittwater Road is a Shared Path. The cycle routes in the vicinity of the site are illustrated in the Roads and Maritime Services Cycleway Finder as shown in Figure 2.4.

Figure 2.4: Cycling Network



Source: Roads and Maritime Services Cycleway Finder (last viewed 16/09/2021)

3 Proposed Development

3.1 Land Uses

The proposal includes a mixed-use development with 227m² of ground floor retail or commercial GFA below two residential towers with a total of 230 residential units. The development breakdown is presented in Table 3.1.

Table 3.1: Development Schedule

Land Use Type	Building A (4 Delmar Pde)	Building B (812 Pittwater Rd)	Total
Residential			
1-bedroom	42	53	95
2-bedroom	60	45	105
3-bedroom	21	9	30
Sub-Total	**123 units**	**107 units**	**230 units**
Commercial/ Retail	438.8 m²		**438.8 m² GFA**

The development is to be serviced by a ground level loading dock and a single two-storey basement car park, accessed off Delmar Parade. The car park is to accommodate 338 car parking spaces and 19 bicycle parking spaces.

The architectural layouts are provided in Appendix A.

3.2 Access and Loading Arrangements

Site access is provided off Delmar Parade via a two-way vehicular crossover, at the location of the eastern most access into the site. A loading dock is provided off the driveway, prior to the basement car park entry.

Alternative locations for the proposed access was investigated, however, a driveway at the eastern end of the property was selected as the optimum location as this would allow for the furthest possible distance from Pittwater Road. This minimises any potential conflict with vehicles queues along Delmar Parade, waiting to turn left into Pittwater Road, and any delays from vehicles seeking to turn right into the site and requiring to give way to opposing traffic.

The access accommodates two-way flow for cars accessing the basement car park, and one-way flow for Council's 10.5 m long garbage truck. Swept path analysis of the proposed car park and access is provided in Appendix B. For other loading requirements (e.g. commercial/retail tenant and removalists) will be restricted to vehicles up to an 8.8 m Medium Rigid Vehicle (MRV). Given the small size of the commercial/retail component, the

loading and serving vehicle generation of the site would be low and a waste vehicle is expected to be the largest vehicle to access the site. On this basis, the proposed MRV loading dock is sufficient to accommodate the development.

It's considered that the one-way flow for garbage trucks would be manageable noting that waste collection would occur outside of peak residential and road network traffic periods, and therefore, the likelihood of cars and waste vehicles coming into conflict would be low.

Nonetheless, traffic management measures would be implemented including a convex mirror and a flashing light at the top of the basement ramp. The flashing light would be triggered by the garage door opening and would allow entering trucks to be aware that a car is about to exit. The convex mirror would enable cars to be aware of a waste vehicle entering and would be expected to wait for the waste vehicle to enter the loading dock.

Vehicular access to the basement car park would be via a ramp with roller door controlled by a swipe card and intercom system. The intercom would be located on a central island with one-way aisles on either side.

4 Parking Assessment

4.1 Car Parking Assessment

Parking requirements for the subject site have been assessed against the Warringah Development Control Plan (DCP) 2011. The parking requirements relevant to the proposed development are summarised in Table 4.1.

Table 4.1: DCP Car Parking Assessment

Parking User	Size	Car Parking Rate	Parking Requirement
Residents			
1-bedroom	95	0.6 spaces per dwelling	57
2-bedroom	105	0.9 spaces per dwelling	95
3-bedroom	30	1.4 spaces per dwelling	42
Visitors	-	1 space per 5 units	46
Sub-Total	**230**		**240**
Commercial/ Retail	439 m^2	Commercial: 1 space per 40sqm Retail: 4.2 spaces per 100sqm	18
Total			**258**

Table 4.1 indicates that the proposed development is required to provide 258 car parking spaces, including 194 resident spaces, 46 residential visitor spaces and 18 retail spaces.

The development would provide 340 car parking spaces including 275 residential spaces, 46 residential visitor spaces and 19 commercial/retail spaces.

The DCP does not specify the above parking rates as a minimum nor a maximum requirement. However, it is noted that the DCP rates for residential development directly match the parking rates recommended by the Apartment Design Guidelines (i.e. from the Roads and Maritime *Guide to Traffic Generating Developments 2002* for a Metropolitan Sub-Regional Centre), which is a minimum requirement.

The parking provision exceeds the DCP requirement for residents. It is considered that this level of parking is acceptable with consideration for the minimum requirements of the Apartment Design Guidelines.

The tenant proposed for the commercial/ retail tenancy is not known at this stage as such, the higher of the commercial and retail parking rate is applied for this assessment. The site proposes 21 commercial/ retail spaces which exceeds the DCP requirement.

4.2 Accessible Parking

Warringah DCP does not provide car parking requirements for accessible spaces. However, it is proposed to provide 23 adaptable dwellings.

The Australian Standard for Adaptable Housing (AS4299) requires at least one accessible car parking space (3.8m wide) to be provided for each adaptable apartment. In addition, accessible car parking spaces provided in accordance with the design requirements set out in AS2890.6:2009 (i.e. 2.4m wide spaces plus 2.4m wide shared area) would also meet the intent of AS4299 in this regard.

The development includes 23 accessible spaces for residents which complies with the above requirement.

4.3 Bicycle Parking

The parking assessment based on the Councils DCP is summarised in Table 4.2.

Table 4.2: Bicycle Parking

Land Use	Size	DCP Bicycle Rate		Bicycle Parking Required	
		Employee/ Resident	Visitor	Employee/ Resident	Visitor
Residential	230 units	1 per dwelling	1 per 12 dwellings	230	19
Commercial/ Retail	439 m^2	1 per 200m^2	1 per 750m^2 over 1,000m^2	2	-
Total	**-**	**-**	**-**	**232**	**19**

The proposed development is required to provide 250 bicycle parking spaces including 230 spaces for residents, 2 space for employees and 19 spaces for residential visitors.

Residents are provided with private storage cages that are to be large enough to accommodate bike parking i.e., with a minimum dimension of 715mm wide and 1840mm long.

22 visitor bicycle parking racks are to be provided.

4.4 Car Share

The DCP requires a provision of 1 car space per 25 dwellings, with "each car share space replacing one regular car space". On this basis, the development with 230 units requires nine car share spaces.

Car share parking is not provided in the proposed development. Instead, it is proposed to provide additional parking for both residents and commercial tenancy, in place of the car share requirement.

The proposed car parking provision on-site exceeds the DCP parking requirement by 82 spaces. The additional parking provision would adequately accommodate the shortfall in car share spaces.

4.5 Car Park Layout and Access

The basement car park and associated access arrangements have been reviewed for compliance with Australian Standard design requirements, namely AS2890.1:2004, AS2890.2:2002, AS2890.3:2015 and AS2890.6:2009. The review included assessment of the following:

- access ramp into the basement car park
- car park circulation,
- parking space and aisle dimensions, and
- bicycle parking.

The review indicates the development is compliant with the Australian Standard AS2890.

The residential and employee car parking spaces are designed to comply with Australian Standard Class 1A parking facilities for residents and employees. Class 1A requires car spaces to have dimensions of 2.4m wide by 5.4m long with an aisle width of 5.8m.

The accessible car spaces have been designed in to include a 2.4m wide shared area adjacent to a 2.4m wide car space which accords with AS2890.6.

Swept path analysis of the proposed car park and access is provided in Appendix C.

Any minor non compliances are expected to be resolved prior to the Construction Certification application.

5 Traffic Assessment

The proposal includes the provision of 230 residential apartments and 434 m^2 of commercial floor area.

Traffic generation estimates for the proposed development have been sourced from the TfNSW (formerly Roads and Maritime Services) *Guide to Traffic Generating Developments* (TfNSW Guide) and the updated surveys as detailed in the Technical Direction 2013/04a.

The traffic generation assessment for the development is summarised in Table 5.1.

Table 5.1: Proposed Traffic Generation

Land Use	Size	Trip Rate (per unit/ 100m^2)		Trips (vehicle trips per hour)	
		AM	PM	AM	PM
Residential	230 units	0.19	0.15	44	35
Commercial	439 m^2	2.3	4.6	10	20
Total	-	-	-	**54**	**55**

Based on Table 5.1, the proposal would generate 54-55 vehicles per hour, which equates to one vehicle every minute which is considered to be a minor volume of traffic.

Nonetheless, the existing site is understood to contain approximately 4,000m^2 of commercial floor area.

Based on TfNSW traffic generation rates for commercial developments, that is 1.6 trips per 100m^2 floor area in the morning peak and 1.2 trips per 100m^2 floor area in the afternoon peak, the existing development is estimated to contain around 48-65 vehicles per hour.

Therefore, it is expected that the development would generate traffic generally in line with the existing site. On this basis, the proposed development would not result in any adverse traffic impacts on the surrounding road network.

6 Preliminary Construction Traffic Management Plan

6.1 Construction Activity

The development is to be constructed in two stages including;

- Stage 1 – 4 Delmar Parade
- Stage 2 – 812 Pittwater Road.

The staging and site plan is provided in Appendix C.

Each stage would be constructed in the following key phases:

- Excavation and site establishment
- Building structure construction
- Façade and internal fittings
- Public domain and landscaping works

A detailed Construction Traffic Management Plan is to be prepared prior to the commencement of the construction activities; however, a preliminary review of construction traffic management requirements is set out below.

6.2 Work Hours

The consent conditions would detail the permitted hours of construction work; however, it is anticipated that construction activities will be permitted during the following periods:

- Monday to Friday 7am to 5pm
- Saturdays 8am to 1pm
- Sundays and Public Holidays No work.
- In addition, demolition and excavation works are restricted to 8am to 5pm Mondays to Fridays.

Any works outside of the above listed hours will only occur with approval from the relevant authorities (i.e. Northern Beaches Council / Transport for New South Wales), prior to the commencement of any works. The Contractor will be responsible to liaise with Council to obtain all relevant permit approvals.

6.3 Construction Vehicle Type

Construction vehicles likely to be generated by the proposed construction activities include:

- 19m semi-trailer and 19.6m truck-and-dog trailer trucks for use during demolition and excavation works,
- 12.5m heavy rigid vehicles and concrete truck mixers for structural and finishing works, and
- Small rigid vehicles, vans and couriers for smaller deliveries as required.

It is expected that approximately 80 per cent of all construction vehicles would be heavy and medium rigid vehicles and approximately 20 per cent would be small rigid vehicles, vans and couriers.

The traffic generated by construction activities on the site is not known at this stage, however given the size of the proposed development, the construction traffic generation is expected to be low.

6.4 Vehicle Access

The site is to be accessed via two points:

- Delmar Parade, at the location of the proposed driveway for access to the Stage 1 site
- Stony Range Botanic Gardens Car Park for access to the Stage 2 site.

At this stage a works zone is not expected to be required. The extent of the work site shall generally be wholly contained within the site boundary, with minimal impact on the surrounding road network.

However, access to the development site off the Stony Range Car Park will require the removal of some 90-degree car parking spaces to accommodate a new access and driveway. Around 3-4 car spaces are expected to be affected at minimum, however, swept path analysis of the largest vehicle will need to be undertaken to confirm this.

6.5 Construction Vehicle Routes

Construction vehicles will have origins and destinations throughout Sydney. Dedicated construction vehicle routes have been developed to provide the shortest distances to/from the arterial road network, whilst minimising the impact of construction traffic on streets within the immediate vicinity of the site.

All truck drivers will be advised of the designated truck routes to/from the site and be required to adhere to the nominated routes.

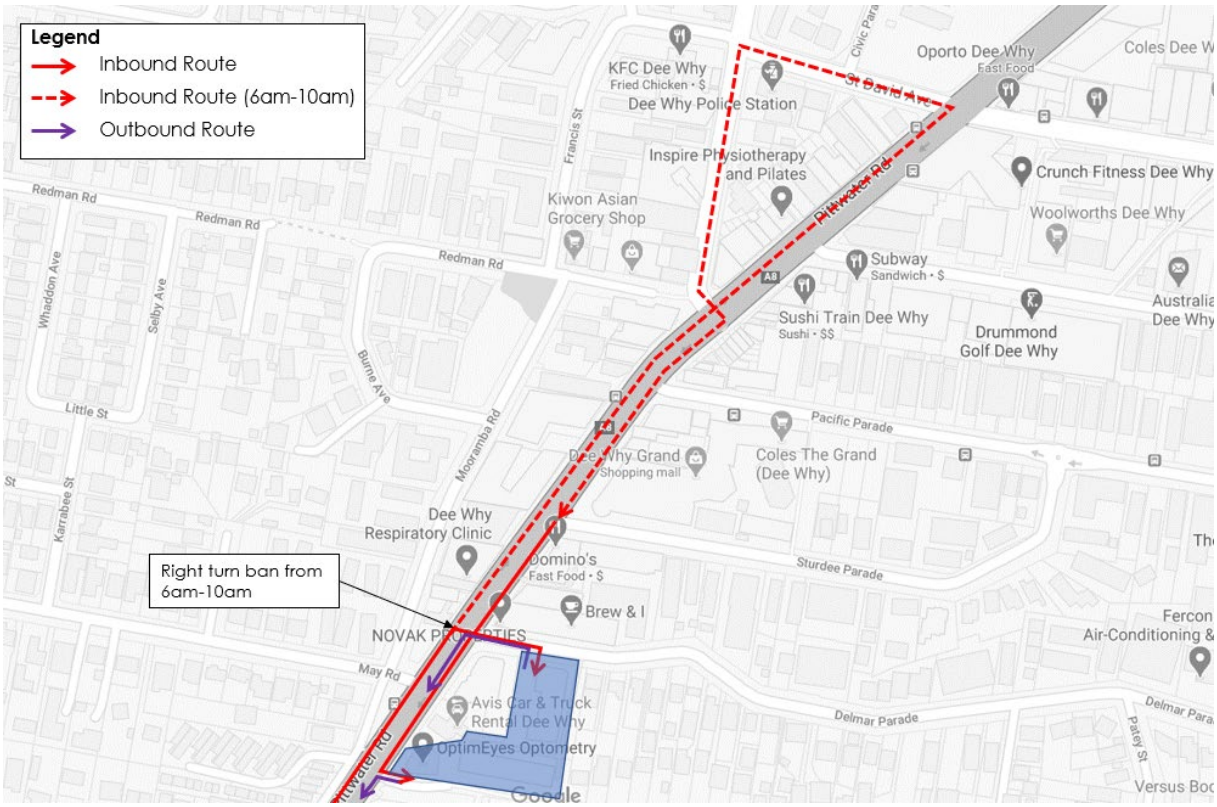
It is anticipated that construction vehicles travelling to/from the south would make use of the Sydney Harbour Bridge/ Cahill Expressway, Military Road, Spit Road, Manly Road, Burnt Bridge Creek Deviation, Condamine Street and Pittwater Road to access the site. Vehicles travelling from the north and the west would make use of Pittwater Road and Warringah Road, respectively.

No right turns are permitted from Pittwater Road to Delmar Parade between 6am and 10am. Drivers arriving from the south are to detour via St David Avenue and Fisher Road (turning right from Fisher Road to travel southbound along Pittwater Road)

Vehicle routes are shown in Figure 6.1.

Construction vehicles are to radio or call on approach to ensure adequate access to the site and/or works zone is made available.

Figure 6.1: Vehicle Routes



6.6 Worker Parking

On-site construction worker parking is not proposed due to the footprint size of the proposed development leaving no available space on site. All workers will be encouraged and expected to use public transport to travel to/from the site. This will be incorporated in the workers' induction program to ensure minimal parking impact on surrounding streets.

Taking the above into consideration, it is proposed to implement the following measures to encourage workers to use public transport:

- provide an on-site tool drop-off and storage facility to allow tradespeople to drop off and store their specific machinery for the project to prevent the need to drive equipment in everyday
- inform staff during the induction and regular management meetings that no car parking will be available for staff
- instruct staff to use public transport to access the site during the induction and regular management meetings, and
- display public transport timetable information at key locations within the work site and ensure that it is easily accessible by staff.

6.7 Worker Induction

All workers and subcontractors engaged on site will be required to undergo a site induction. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedures.

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and will be covered by adequate and appropriate insurances. All traffic control personnel will be required to hold RMS accreditation.

6.8 Traffic Control Plan

Notwithstanding the likely limited impacts of construction on traffic operation of the surrounding network, a Traffic Control Plan (TCP) will likely need to be prepared by and submitted to the Roads and Maritime Services and Northern Beaches Council to appropriately manage the use of the designated construction routes.

The TCP should also outline how potential construction vehicle manoeuvres could be accommodated in and out of the construction site and detailed location of temporary roadside signage.

6.9 Construction Traffic Management Plan

A Construction Traffic Management Plan (CTMP) would be required to be prepared and submitted to Northern Beaches Council and Transport for New South Wales for approval. The CTMP will provide further details on the construction activities and their impacts, if any.

7 Conclusion

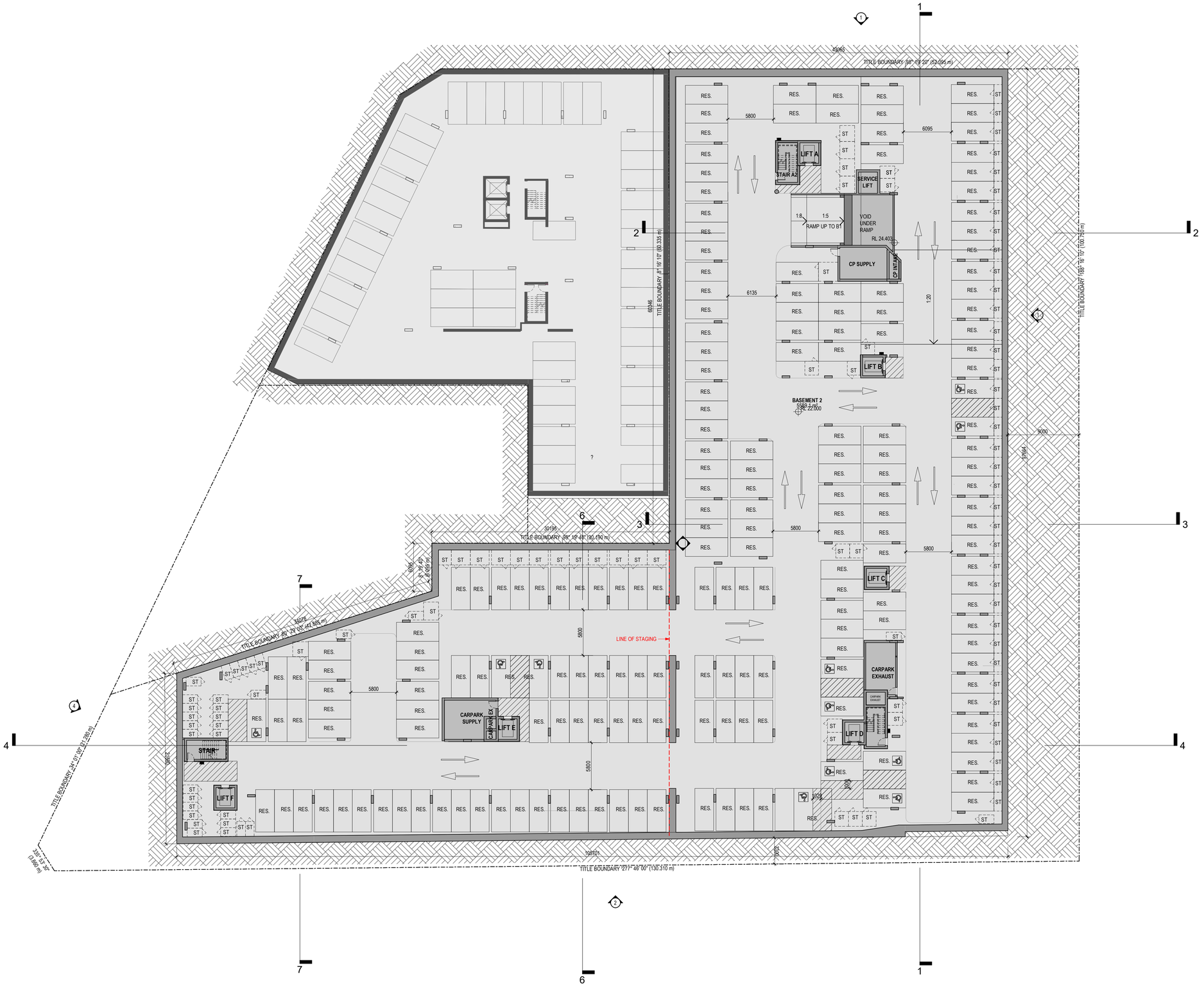
This traffic and parking impact assessment has been undertaken to assess the traffic implications of the proposed high-density residential development with commercial floor area at 812 Pittwater Road and 4 Delmar Parade, Dee Why. The key findings of the report are presented below.

- The proposed development includes a provision of 230 residential apartments and 438.8m^2 of commercial floor area.
- Vehicle access to the subject site would be provided via a single two-way driveway off Delmar Parade.
- Car parking and access has been designed in accordance with AS2890.1:2004. Accessible parking spaces have been designed to satisfy the requirements of AS2890.6:2009.
- The DCP requires the development to provide 258 spaces including 194 resident spaces, 46 residential visitor spaces, and 18 retail spaces.
- The proposed development would provide 340 parking spaces including 275 resident spaces, 46 residential visitor spaces and 19 commercial spaces. The proposed provision is considered satisfactory for the subject development.
- The DCP also requires a provision of 9 car share spaces, with one car share space replacing one standard car space. In place of car share, it is proposed to provide additional car parking on-site including a provision of 82 spaces above the DCP requirement.
- The proposed development would generate 54-55 vehicles per hour, which is a minor volume of traffic. Additionally, it is generally consistent with the estimated traffic generation of the existing site (48-65 vehicles per hour), therefore, the development would have a negligible impact on the surrounding roads.

Overall, there would be no adverse traffic implications resulting from the proposed development.

Appendix A

Proposed Architectural Plans



PRELIMINARY

Revisions				
	A	01.12.2021	FOR INFORMATION	JC

1/12/2021 6:15:50 PM

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**
4 Delmar Pde & 812 Pittwater Rd, Dee Why

Drawing: **BASEMENT 2**

Project No: **221054**

Date: **01.12.2021**

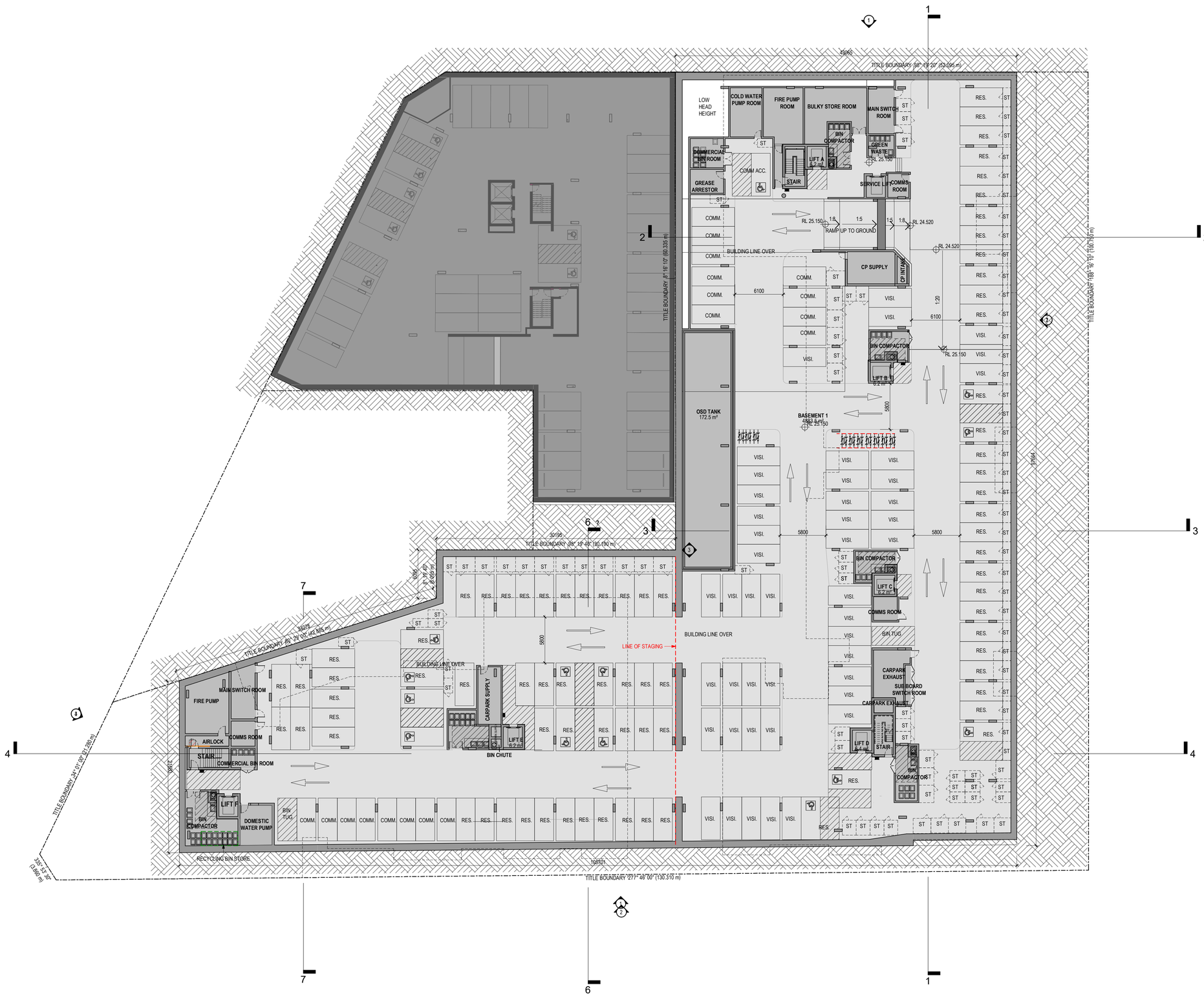
Author: **BR**

Scale: @ A1 **1 : 250**

Drawing No.: **TP01.01 A**

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au



PRELIMINARY

Revisions				
	A	01.12.2021	FOR INFORMATION	JC

1/12/2021 6:15:59 PM

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**
4 Delmar Pde & 812 Pittwater Rd, Dee Why

Drawing: **BASEMENT 1**

Project No: **221054** Date: **01.12.2021** Author: **BR** Scale: @ A1 **1 : 250** Drawing No.: **TP01.02 A**

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au

PRELIMINARY

Revisions			
A	01.12.2021	FOR INFORMATION	JC

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**
4 Delmar Pde & 812 Pittwater Rd, Dee Why

Drawing: **GROUND**

Project No: **221054**

Date: **01.12.2021**

Author: **DM**

Scale: @ A1 **1 : 250**

Drawing No. **TP01.03 A**

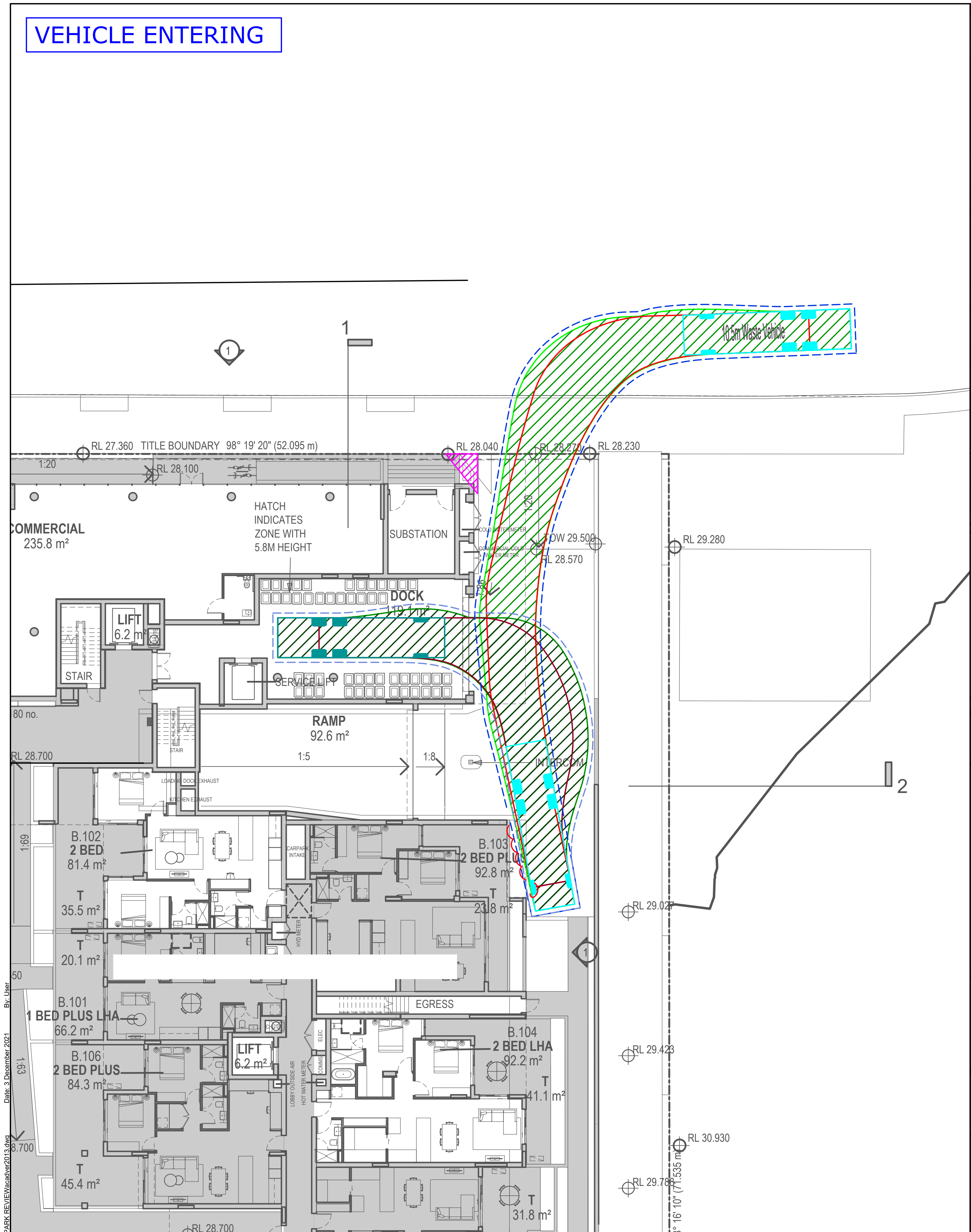
rothelowman

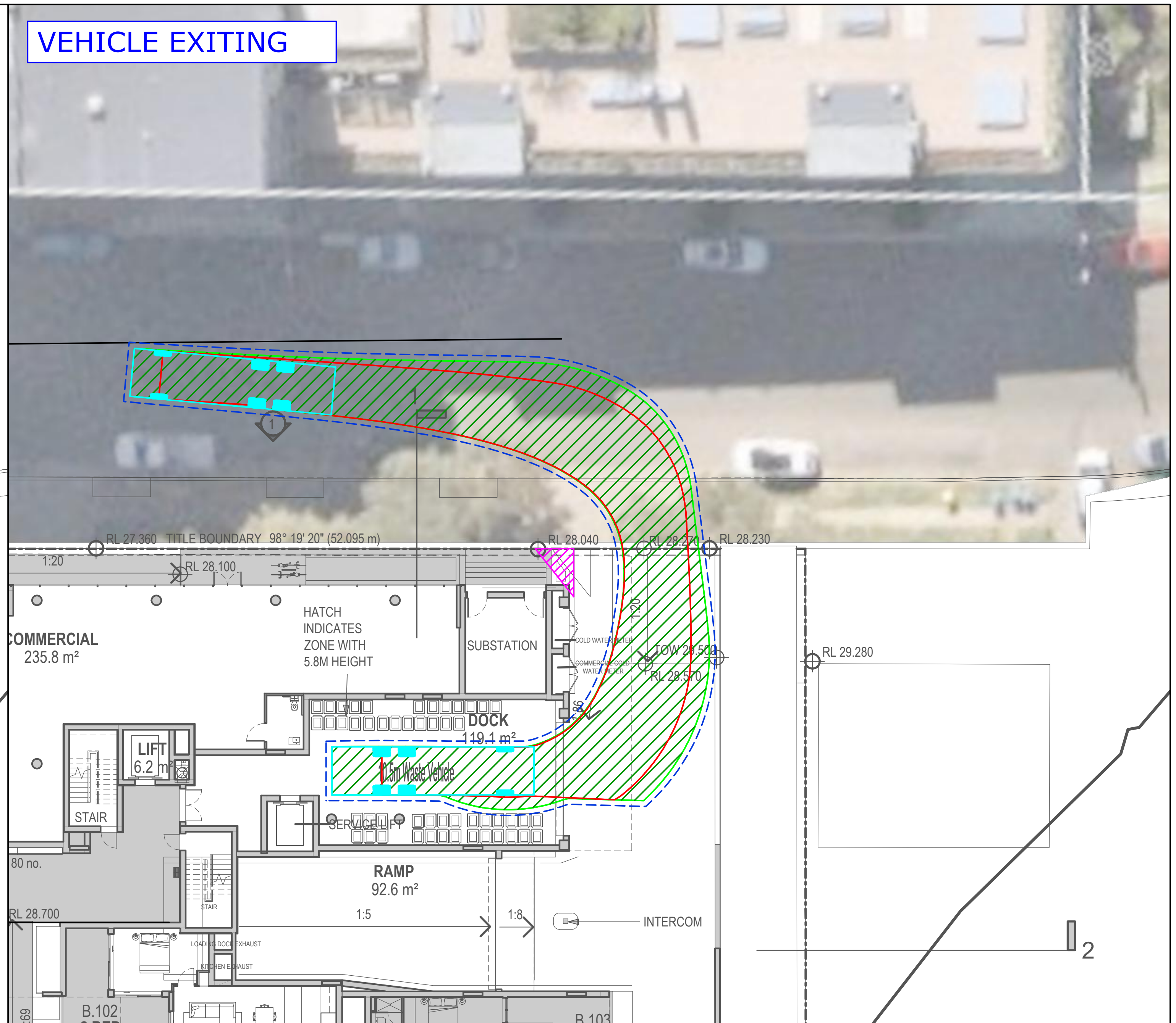
Brisbane, Melbourne, Sydney
www.rothelowman.com.au

1/12/2021 6:16:12 PM

Appendix B

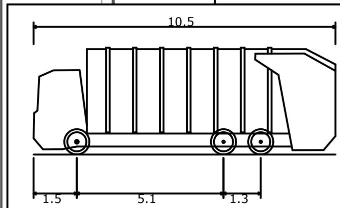
Swept Paths





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



10.5m Waste Vehicle	
Overall Length	10500mm
Overall Width	2500mm
Overall Body Height	3700mm
Min Body Ground Clearance	150mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	OF	KH	25/11/21

ttpp transport planning

PROJECT
4 DELMAR PARADE, DEE WHY

TITLE
SWEPT PATH ANALYSIS - LOADING BAY
10.5m WASTE TRUCK

DWG No. 21205CAD008
FIGURE 4

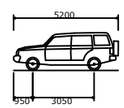
DATE STAMP 25 NOVEMBER 2021

PROJECT No. 21205 | SCALE 1:300 @A3 | REV. A

RL 27.500
RL 27.360 TITLE BOUNDARY 98° 19' 20" (52.095 m)
RL 28.040
RL 28.270
RL 28.230
RL 27.420
1:20
RL 28.100
BOOSTER
BOOSTER
COMMERCIAL
235.8 m²
HATCH
INDICATES
ZONE WITH
5.8M HEIGHT
SUBSTATION
COLD WATER METER
COMMERCIAL COLD WATER METER
1:20
TOW 29.500
RL 28.570
1:86
DOCK
119.1 m²
RL 29.280
LIFT
6.2 m²
STAIR
RL 27.980
SERVICE LIFT
RL 27.980
MAILBOXES 180 no.
RAMP
92.6 m²
1:5
1:5
STAIR
RL 28.700
INTERCOM
LOADING DOCK EXHAUST
KITCHEN EXHAUST
B.102
2 BED
81.4 m²
T
35.5 m²
T
20.1 m²
CARPARK INTAKE
B.103
2 BED PLUS
92.8 m²
T
23.8 m²
HYDMETER
1:20
1:69
RL 28.550
RL 29.027
2
1

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	OF	KH	25/11/21

ttpp transport planning

PROJECT
4 DELMAR PARADE, DEE WHY

TITLE
SWEPT PATH ANALYSIS - GROUND LEVEL
AS2890.1 5.2m B99 VEHICLE

DWG No. 21205CAD008
FIGURE 5

DATE STAMP 25 NOVEMBER 2021

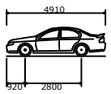
PROJECT No.	SCALE	REV.
21205	1:200 @A3	A

Filename: 21205CAD008-211203-CAR PARK REVIEWcadwr2013.dwg Date: 3 December 2021 By: User

LOW HEAD HEIGHT
COLD WATER PUMP ROOM
FIRE PUMP ROOM
BULKY STORE ROOM
MAIN SWITCH ROOM
BIN COMPACTOR
GREEN WASTE
RL 25.150
LIFT A 6.2 m²
COMMERCIAL BIN ROOM
COMM ACC.
GREASE ARRESTOR
STAIR
SERVICE LIFT
COMMS ROOM
RES.
COMM.
VISI.
ST
2.4M
RL 25.150
1:8
1:5
RL 24.520
RAMP UP TO GROUND
BUILDING LINE OVER
CP SUPPLY
CP INTAKE
6100
1:20
BIN COMPACTOR
RL 25.150
LIFT B 6.2 m²
OSD TANK 172.5 m²
BASEMENT 1
1853.5 m²
RL 25.150
SWEPT PATH ENCROACHES OPPOSING MOVEMENT.
TITLE BOUNDARY 188° 16' 10" (100.750 m)
TITLE BOUNDARY 8° 16' 10" (60.335 m)
97664
2

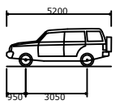
KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



B85 Vehicle (Realistic min radius) (2004)

Overall Length	4910mm
Overall Width	1870mm
Overall Body Height	1421mm
Min Body Ground Clearance	159mm
Track Width	1770mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5750mm



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	OF	KH	25/11/21

ttpp transport planning

PROJECT
4 DELMAR PARADE, DEE WHY

TITLE
SWEPT PATH ANALYSIS - BASEMENT LEVEL 1
AS2890.1 5.2m B99 VEHICLE & 4.91m B85 VEHICLE

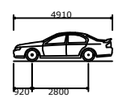
DWG No. 21205CAD008 FIGURE 6
DATE STAMP 25 NOVEMBER 2021
PROJECT No. 21205
SCALE 1:200 @A3
REV. A

Filename: 21205CAD008-211203-CAR PARK REVIEWacadver2013.dwg Date: 3 December 2021 By: User

RES.
ST
2.4M
5800
6095
LIFT A
STAIR A2
SERVICE LIFT
1:8
1:5
RAMP
VOID UNDER RAMP
RL 24.403
CP SUPPLY
CP INTAKE
LIFT B
6135
1200
9000
97664
60346
TITLE BOUNDARY 188° 16' 10" (100.750 m)
TITLE BOUNDARY 8° 16' 10" (60.335 m)
BASEMENT 2
SWEPT PATH ENCROACHES OPPOSING MOVEMENT.
1
2
?

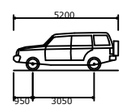
KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



B85 Vehicle (Realistic min radius) (2004)

Overall Length	4910mm
Overall Width	1870mm
Overall Body Height	1421mm
Min Body Ground Clearance	159mm
Track Width	1770mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5750mm



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	OF	KH	25/11/21

ttpp transport planning

PROJECT
4 DELMAR PARADE, DEE WHY

TITLE
SWEPT PATH ANALYSIS - BASEMENT LEVEL 2
AS2890.1 5.2m B99 VEHICLE & 4.91m B85 VEHICLE

DWG No. 21205CAD008
FIGURE 7

DATE STAMP
25 NOVEMBER 2021

PROJECT No.	SCALE	REV.
21205	1:200 @A3	A

Filename: 21205CAD08-211203-CAR PARK REVIEWcadver2013.dwg
Date: 3 December 2021
By: User

Appendix C

Preliminary Construction Staging and Site Plan

PRELIMINARY

Revisions			
P12	17.09.2021	FOR INFORMATION	JC
P13	21.09.2021	FOR INFORMATION	JC
P14	08.10.2021	FOR INFORMATION	JC
P15	11.10.2021	FOR COORDINATION	JC
P16	22.10.2021	FOR INFORMATION	JC

22/10/2021 12:07:56 AM

Project: **4 Delmar Pde & 812 Pittwater Rd, Dee Why**
4 Delmar Pde & 812 Pittwater Rd, Dee Why

Drawing: **LEVEL 1**

Project No: **221054**

Date: **22.10.2021**

Author: **DM**

Scale: @ A1: **1 : 250**

Drawing No.: **TP01.04 P16**

rothelowman
Brisbane, Melbourne, Sydney
www.rothelowman.com.au

The Transport Planning Partnership
Suite 402 Level 4, 22 Atchison Street
St Leonards NSW 2065

P.O. Box 237
St Leonards NSW 1590

02 8437 7800

info@ttpp.net.au

www.ttpp.net.au