PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

Traffic Engineering

Proposed Research and Technology Industry

At Lot 10 South Sea Islander Way, Maroochydore

On behalf of Architectus Australia Pty Ltd

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

About TTM

For 40 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 60 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

T: (07) 5514 8000
F: (07) 5514 8144
E: ttmgc@ttmgroup.com.au

Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	R V Jones	R V Jones	RP01A	22/10/2024
2.	H Elliott	R V Jones	RP01B	13/11/2024
3.	H Elliott	R V Jones	RP01C	5/03/2025
4.	H. Elliott	R V Jones	RP01D	13/03/2025
5.	H. Elliott	R V Jones	RP01E	21/03/2025
6.	H. Elliott	R V Jones	RP01F	5/06/2025

© 2016 - TTM Consulting Pty Ltd ABN 65 010 868 621
Seabank Building Level 7, Suite 701, 12-14 Marine Pde, Southport Qld 4215

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

Contents

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

Table Index

Figure Index

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

1 Introduction

1.1 Background

TTM Consulting has been engaged by Architectus Australia Pty Ltd to prepare a traffic engineering assessment investigating a proposed Research and Technology Industry building on land at South Sea Islander Way, Maroochydore. It is understood that a Development Application will be lodged with Economic Development Queensland (EDQ).

1.2 Scope

This report investigates the transport aspects associated with the proposed development. The scope of the transport aspects investigated includes:

- Parking supply required to cater for development demand.
- Parking layout to provide efficient and safe internal manoeuvring.
- Identification of likely traffic volumes and traffic distribution from the future development.
- Identification of likely traffic impact of development on the public road network.
- Access configuration to provide efficient and safe manoeuvring between the site and the public road network.
- Suitability of access and internal facilities to provide for pedestrian and cyclist operation.
- Access to a suitable level of public transport.

To assess the proposed transport arrangements, the development plans have been assessed against the following guidelines and planning documents:

- Maroochydore City Centre Development Scheme 2024.
- The Sunshine Coast Planning Scheme 2014, specifically the Transport and Parking Code (Section 9.4.8 of the Planning Scheme).
- Australian Standard 2890 series.

1.3 Site Location

The site is located at South Sea Islander Way, Maroochydore and the property description is formally described as Lot 10 on SP305311. The proposed site is within the Maroochydore Priority Development Area-Precinct 3.

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

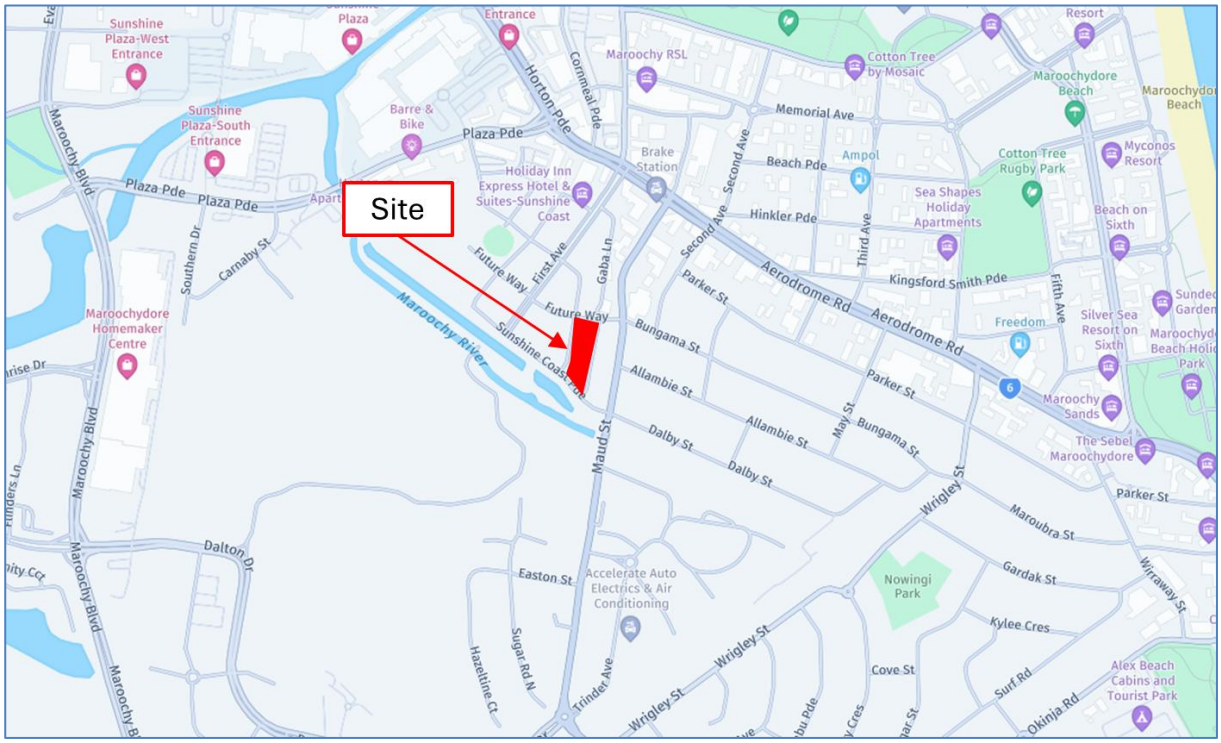


Figure 1: Site location

Figure 2: Site area

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

1.4 Development Profile

The gross floor area for the proposed development is summarised in Table 1-1 below.

Table 1-1: Development Summary

Level	Area
Lower Ground	1,884.46m^2
Ground	2,266.42m^2
Level 1	981.62m^2
Level 2	981.31m^2
Level 3	890.08m^2
Level 4	366.93m^2
Total	**7,370.81m^2**

The Lower Ground Level is designated for car parking, storage, and plant equipment. Levels 1 through 4 are exclusively used for computer servers and associated plant, which do not contribute to parking demand or generate additional trips. Only the Ground Level is occupied by staff, making it the only level that influences parking demand. Therefore, when assessing the impact and for the purposes of this assessment, only the gross floor area of the Ground Level should be considered.

1.5 Access

The development plan includes the following access arrangements:

- Red Bill Lane Access, located at the eastern side of the subject site and is a one-way street from south to north. The characteristics of this access include:
  - Two-way movements.
  - Left in / left out.
  - Priority controlled.
  - 37m north of Sunshine Coast Parade.

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

2 Existing Transport Infrastructure

2.1 The Road Network

Roads in the immediate vicinity of the site are administered by the Sunshine Coast Council. The hierarchy and characteristics of roads in the immediate vicinity of the site are shown below in Table 2-1.

Table 2-1: Local Road Hierarchy

Road	Speed Limit	Lanes	Classification	Road Authority
Red Bill Lane	50kph	1 (one-way)	Laneway	SCC
Future Way	50kph	2 (undivided)	Local Road	SCC
Sunshine Coast Parade	50kph	2 (undivided) + bike lanes	Local Road	SCC
South Sea Islander Way	50kph	2 (undivided)	Local Road	SCC
Maud Street	50kph	2 (undivided) + bike lanes	Local Road	SCC

The site is frontage to Red Bill Lane (east), Sunshine Coast Parade (south), South Sea Islander Way (west) and Future Way (north).

2.2 Public and Active Transport Facilities

Buses

The site is well connected by bus to the greater Sunshine Coast. There are two bus stops (northbound and southbound directions) approximately 200m south of the site on Maud Street.

- Route 614 provides an hourly service from Kawana to Maroochydore via Mountain Creek.

The site also has a future bus route that is noted within the Maroochydore City Centre Development Scheme 2024, which is shown in Figure 3.

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

Figure 3: Proposed Public Transport map

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

Pedestrians

Formal pedestrian footpaths are located on both sides of Future Way, South Sea Islander Way and Sunshine Coast Parade. No paths are provided on Red Bill Lane, as this has been constructed as a concrete driveway/ laneway that only provides access to the proposed site car park.

The Maroochydore City Centre Development Scheme Active Transport Plan is shown in Figure 4.

Cyclists

Excellent cycle facilities are provided within the local area and are indicated in the Maroochydore City Centre Development Scheme Active Transport Plan shown in Figure 4.

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

Figure 4: Active Travel facilities

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

3 Car Parking Arrangements

3.1 Council Parking Supply Requirement

The car parking requirements for the proposed development (Precinct 3) is as per the Maroochydore City Centre Development Scheme 2024 and is provided below in Table 3-1.

Table 3-1: Car Parking Requirement

Land Use	On-site car parking rate
Government services, emergency services, community uses, research, technology industry*	Car parking rates to be determined by a car parking management plan submitted with the PDA development application.

*the GFA provided in a development for government services, emergency services, community use, research or technology industry is excluded from GFA approved.

Economic Development Queensland (EDQ) requires the submission of a Car Parking Management Plan (CPMP) as part of the Priority Development Area (PDA) Development Application. However, EDQ does not provide specific guidelines regarding the required content of a CPMP.

In lieu of submitting a separate standalone document, an outline of the Car Parking Management Plan will be incorporated within the body of this report below.

3.2 Car Parking Management Plan

A Car Parking Management Plan (CPMP) is a document that outlines strategies, policies, and procedures for managing parking within a development or site. It aims to ensure efficient use of parking spaces, minimise congestion, enhance safety, and support sustainable transport options.

3.2.1 Parking Allocation and Distribution

The proposed site has 18 parking spaces, two of which are electric changing spaces and there is one PWD bay.

In addition to the internal car park, there are two visitor parallel bays located on Red Bill Lane.

The general Council requirement is a minimum of 1 PWD space per 50 standard spaces. As such, 1 PWD (Class 5) parking space is required and is provided at lower Ground level to comply with the council requirement.

Tandem car parking is proposed within the car park, which will be for staff parking only. Tandem parking will be managed via a bookable system to ensure efficient and equitable use of the allocated spaces. This system will allow users to reserve parking slots in advance, helping to prevent conflicts and maximise space utilisation.

In addition to the above, there are three motorcycle parking bays provided to encourage alternative travel modes to the development, as typically a motorcycle would utilise a car park space, which this proposal would discourage this.

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

3.2.2 Access and Circulation

3.2.2.1 Site Access

It is proposed that the site will be accessed via Red Bill Lane. Red Bill Lane is an existing concrete constructed access laneway that provides access from Sunshine Coast Parade to the south via an access driveway. The proposed access driveway requirements form the site access to Red Bill Lane are identified in Table3-2.

The proposed site access requirements are specified below.

Table 3-2: Typical Access Requirements for the Site Access

Design Aspect	Council Requirement	Proposed Provision	Compliance
Distance from a minor intersection	6m (min) from tangent point.	>30m	Compliant
Distance from a major intersection	20m (min)	>100m	Compliant
Sight Distance – 50kph (design speed)	Desirable 69m, Minimum 45m	Clear sight distance to the north and south	Compliant
Driveway Design Type	Type 1	Type 1	Compliant
Width/ Entry and Exit Widths	Combined entry and exit: 3.0-5.5m	Combined 6.5m	Compliant
Minimum Queuing Provisions	12m	>12m	Compliant
Pedestrian Sight Triangle	2.5m by 2.0m	2.5m by 2.0m	Compliant

3.2.2.2 Car Parking Layout

Table 3-3 identifies the characteristics of the proposed parking area with respect to the Council requirements. The last column identifies the compliance of each design aspect. Where compliance with Council is not achieved, further information is provided below.

Table 3-3: Parking Design Requirements

Design Aspect	Minimum AS2890.1 Standard	Proposed Provision	Compliance
Parking space length:			
Staff	5.4m	5.4m	Compliant
Visitor (parallel)	6.3m	6.5m	Compliant
PWD	5.4m	5.4m	Compliant
Cycle bay	1.8m	1.8m	Compliant
Motorcycle bay	2.5m	2.5m	Compliant
Parking space width:			
Staff	2.4m	2.5m	Compliant
Visitor (Parallel)	2.1m	2.5m	Compliant
PWD	2.4m	2.5m	Compliant
Cycle bay	0.5m	0.5m	Compliant

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

Design Aspect	Minimum AS2890.1 Standard	Proposed Provision	Compliance
Motorcycle bay	1.2m	1.2m	Complaint
Aisle Width: – Parking aisle	 5.8m	 6.1m	 Compliant
Parking envelope clearance - Column intrusion	0.25m into bay within 0.3m & 0.2m into bay within 1.2m of front of bay	Within 0.3m	Compliant
Parking envelope clearance – space adjacent to wall	Space 0.3m clear of wall	Space 0.3m clear of wall	Compliant
Maximum Change in Grade	1:8 (12.5%) summit 1:6.67 (15.0%) sag	1:20 Summit 1:8 Sag	Compliant
Height Clearance – General Min. – Over PWD bay	 2.2m 2.5m	 2.2m 2.5m	 Shall Comply Shall Comply
Parking Aisle Extension	1m beyond last bay	1m beyond last bay	Compliant

3.2.2.3 Parking Controls and Restrictions

The proposed at-grade car park will have a control point installed in the form of a boom barrier at the entrance, with or without ticket operation.

3.2.3 Sustainable Transport Considerations

Incorporating facilities for bicycles, electric vehicles, and car-sharing initiatives promotes sustainable transport options and reduces reliance on private car use.

The proposed development seeks to provide 16 staff bicycle parking spaces and one visitor parking, as well as end-of-trip facilities including bike storage for 12 bicycles, 12 lockers, shower and toilet facilities.

In comparison, the Austroads Cycling Aspects of Austroads Guides (2017 edition) provides the following rates for bike parking (Table 3-4).

Table 3-4: Austroads Bike Parking Requirements

Land Use	Extent		Council Requirement	Requirement	Provision
Office	2,266.42m² GFA*	**Cycle Space**	1 employee space per 200m² GFA + 1 customer space per 750m² GFA (over 1,000m² GFA)	12 Staff + 2 Customer	16 1

*Does not include data halls as part of this value as they are not expected to generate any transport demand.

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

The proposed development provides four bicycle parking spaces in excess of the Austroads requirements. However, a shortfall on one visitor bicycle space is recognised.

In response, bicycle parking facilities should be designed to align with actual demand, thereby avoiding the unnecessary construction and maintenance of underutilised infrastructure. Data centres operate within highly secure environments with restricted access, limited to essential personnel and authorised technical staff. In terms of visitor bicycle parking, the nature of data centre operations results in minimal visitor traffic. Therefore, the provision of bicycle parking facilities is designed to reflect the limited number of visitors expected to arrive by bicycle.

Based on the above, it is considered that sufficient sustainable transport options has been provided to meet the needs of the proposed development.

3.2.4 Compliance with Regulations

The CPMP ensures that all parking provisions adhere to relevant local council requirements and Australian Standards, particularly AS2890.1-2004, to maintain safety and accessibility.

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

4 Development Traffic Generation and Its Impacts

The traffic generation rate for the type of development is adopted from Guide to Traffic Generating Developments 04a Updated traffic surveys for office blocks, which identifies trip generation rates of 1.6 trips per 100m² GFA and 1.2 trips per 100m² GFA the AM peak and PM peak. Table 4-1 represents the adopted trip rate for each of the development components.

An in:out split of 90%:10% for the morning peak period and 10%:90% for the evening peak period has been assumed for the proposed office use.

Table 4-1: Peak Hour Trip Generation

Land use	Trips	Rate	Extent	Trip Generation	Split In:Out (%)	Trips (In:Out)
Office (associated with Research and Technology Industry)	**AM**	1.6 trips per 100m² GFA	2,266.42m² GFA	37	90:10	34:3
	PM	1.2 trips per 100m² GFA		28	10:90	3:25

The values presented in the table above reflects a typical office development with a significant number of staff and ample on-site parking. However, in the context of a data centre, the provision of 18 parking spaces and two visitor parking spaces aligns with the anticipated demand for the proposed development. Consequently, Table 4-1 does not accurately represent the peak-hour trip generation for the site.

The following table best represents the expected peak hour demand to be expected by the proposed Data Centre (Table 4-2).

Table 4-2: Peak Hour Trip Generation (revised)

Land use	Parking provided	Occupancy Rate (Peak Hour)*	Peak Hour Factor**	Trip Generation	Split In:Out (%)	Trips (In:Out)
Data Centre	18	90%	70%	11	**AM** 90:10 **PM** 10:90	10:1 1:10

* Occupancy Rate: The anticipated occupancy rate of parking on-site during the peak hour.

** Peak Hour Factor: Assumed daily parking demand occurring during the peak hour.

Based on the generated trips from the proposed development, there will be 11 trips in the peak hour, which equates to approximately 1 trip in every 6 minutes. Therefore, it is expected that the development would not have a significant impact on the operations of the local road network.

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

5 Service Vehicle Arrangements

5.1 Council Requirements

To assess the required number of service bays for the development, TTM has referred to the Sunshine Coast City Council Planning Scheme 2014 - Table 9.4.8.3.5. Other service vehicle provisions are generally in accordance with AS2890.2.

Table 5-1: Minimum Service Vehicle Requirements

Use	Area	Council Requirements	Provision
Office (associated with Research and Technology Industry	2,266.42m² GFA	SRV +WCV	MRV Bay

The proposed development provides a service loading bay suitable to accommodate a medium-rigid vehicle (MRV) to meet the Council's requirements.

The development plans show the provision of two diesel refuelling points. These refuelling points will periodically be serviced by fuel tankers, which will not exceed the dimensions of a medium rigid vehicle. Initially, it is anticipated that up to three fuel deliveries will occur per year, with an increase to six deliveries annually as part of the ongoing operational requirements.

Swept path analysis, provided in **Appendix B**, confirms that a medium rigid vehicle can adequately access and manoeuvre within the site. This includes access to the internal service loading bay as well as both diesel refuelling points.

5.2 Refuse Collection

The refuse collection will be on-site with the 8.8m long waste truck and the rear space of 2.6m (total of 11.4m), as the loading point or loading bay has to be 3.5m(W) x 11.4m(L) x 3.5m(H) as a minimum and the design vehicle is 8.8m.

There is sufficient length for Council's Rear Loading RCV's at 9.9m long +1.5m clearance for bin emptying = 11.4m.

Bulk bins will be pulled from the waste room and brought to the waste truck.

The proposed servicing arrangements are suitable for the proposed development and would not significantly impact the local road network.

PDF-XChange Editor Click to BUY NOW! www.tracker-software.com

6 Summary and Conclusions

6.1 Development Summary

The proposed development is for Research and Technology Industry.

6.2 Parking Arrangements

In accordance with the Maroochydore City Centre Development Scheme 2024, a Car Parking Management Plan has been developed and forms part of this report.

Further to this, bicycle parking provisions for staff and visitors are provided to suitably support the nature of the proposed development and will be designed in accordance with the relevant standards.

Overall, TTM considers the proposed car parking arrangements for this development to be adequate.

6.3 Impact on Surrounding Road Network

Assessment of the proposed development indicates that the development trips will not have a significant impact on the future road network.

6.4 Service Vehicle Arrangements

The site provides access for an MRV within the development. TTM considers that the proposed on-site servicing provisions for the MRV is sufficient to cater for the expected demands generated by the development. The arrangements for the refuse collection are suitable for this development.

6.5 Active Transport Facilities

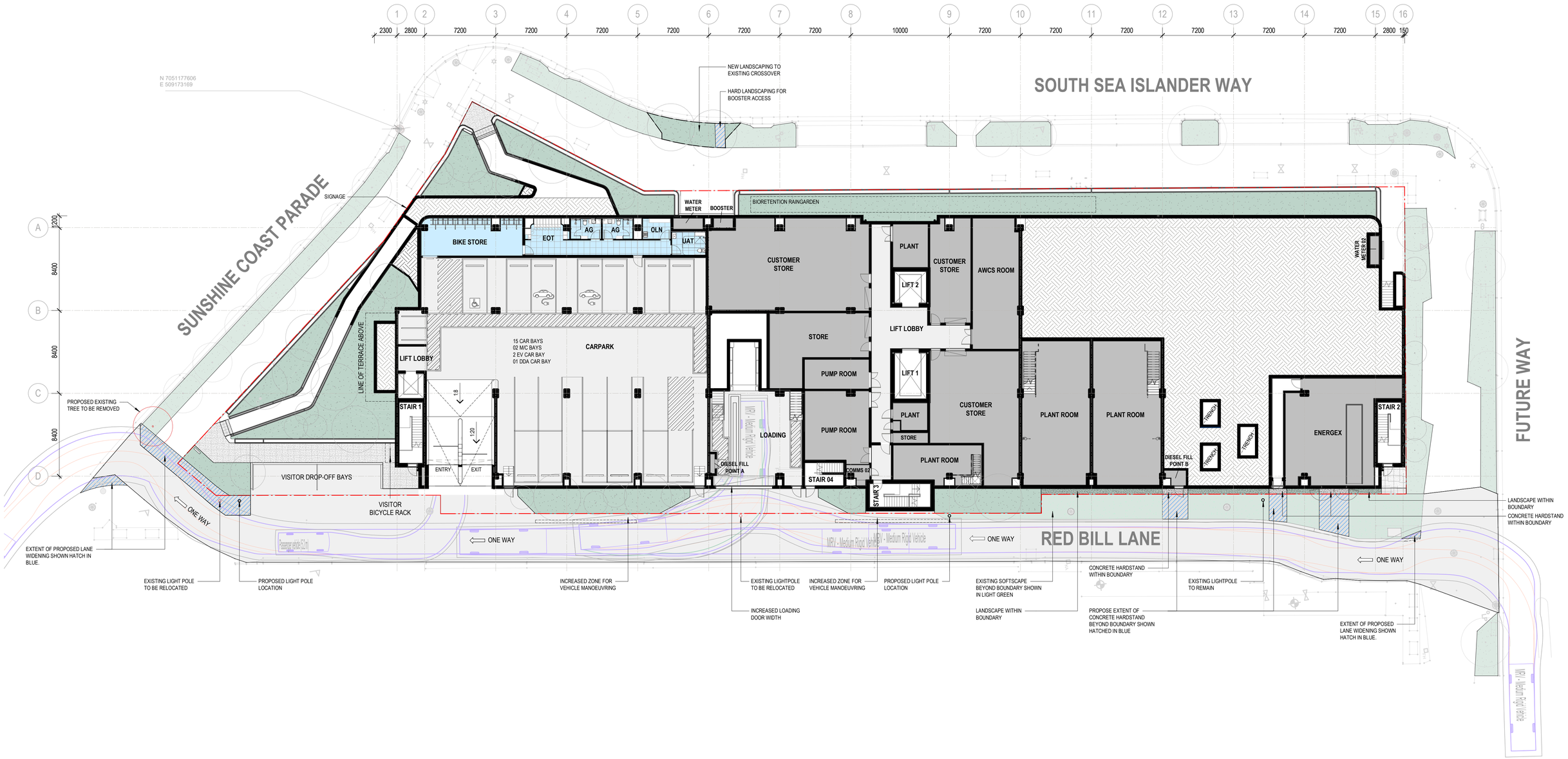
The current public transport infrastructure and proposed site provisions for pedestrian/bicycle facilities are considered adequate for the development.

6.6 Conclusion

Based on the assessment contained within this report, TTM sees no traffic engineering reason why the relevant approvals should not be granted.

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

Appendix A Development Plans



NEXTDC SC2

DEVELOPMENT APPLICATION

Drawing:	**LOWER GROUND PLAN**
Drawing no:	DA06
Issue:	B
Scale@A1:	1 : 200
Date:	03/06/2025

0 2 4 6 8 10 20 m

Do not scale drawings. Verify all dimensions on site

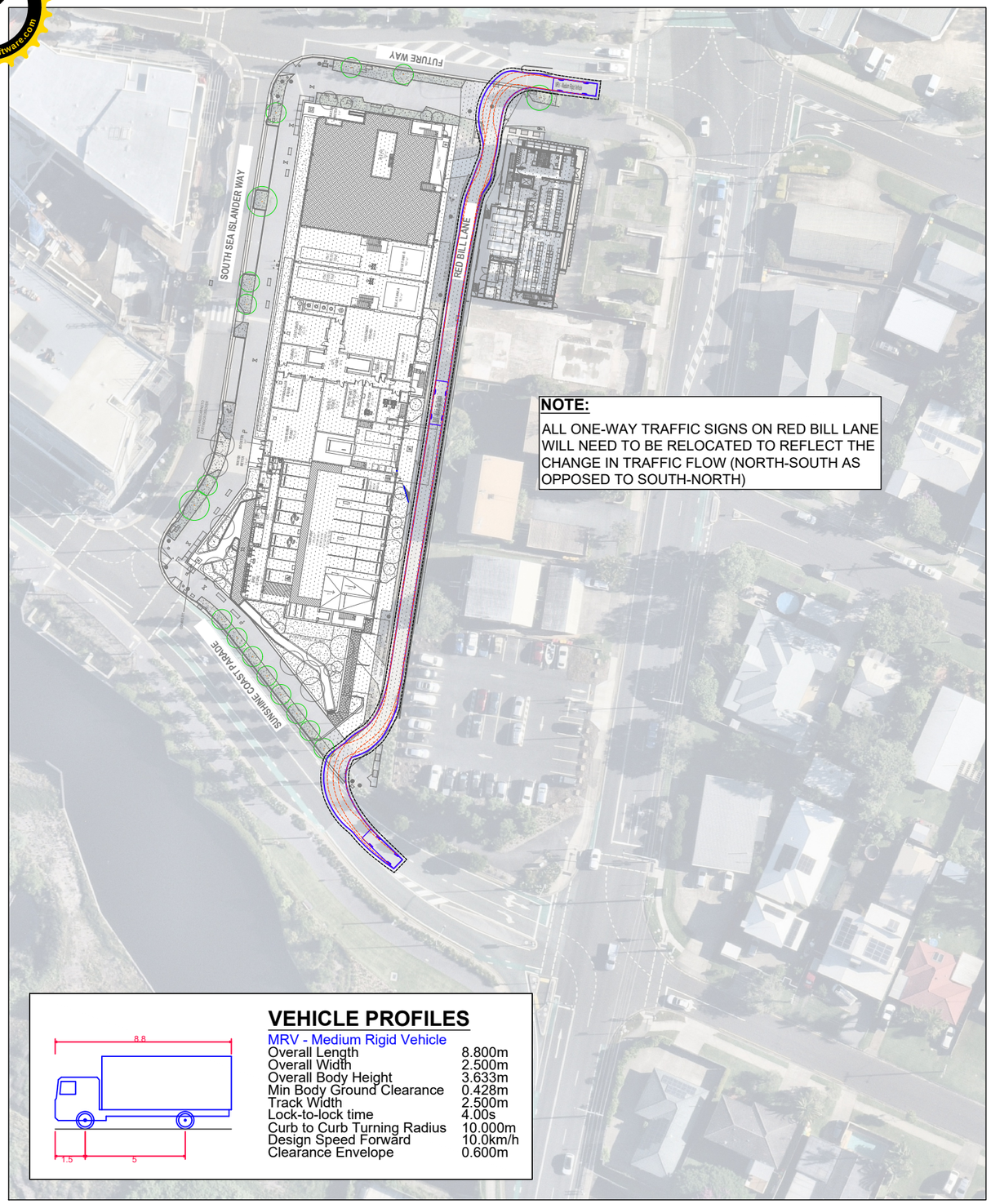
Brisbane
Yuggera and Turrbal Country
Level 26, 240 Queen Street
Brisbane QLD 4000
brisbane@architectus.com.au

architectus™

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com

Appendix B Swept Path Analysis

PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com



NOTE:

ALL ONE-WAY TRAFFIC SIGNS ON RED BILL LANE WILL NEED TO BE RELOCATED TO REFLECT THE CHANGE IN TRAFFIC FLOW (NORTH-SOUTH AS OPPOSED TO SOUTH-NORTH)

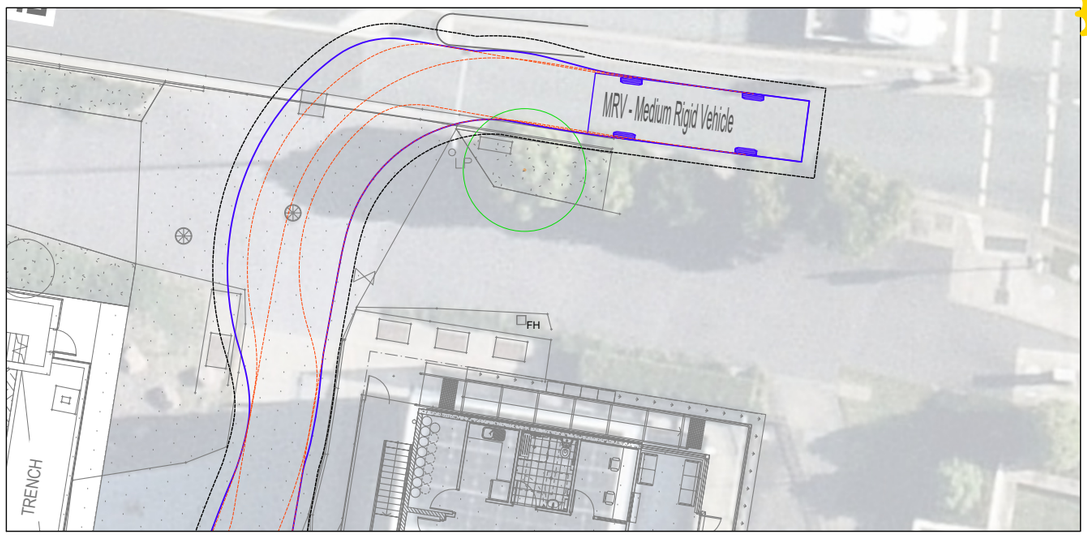
VEHICLE PROFILES

MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	10.0km/h
Clearance Envelope	0.600m

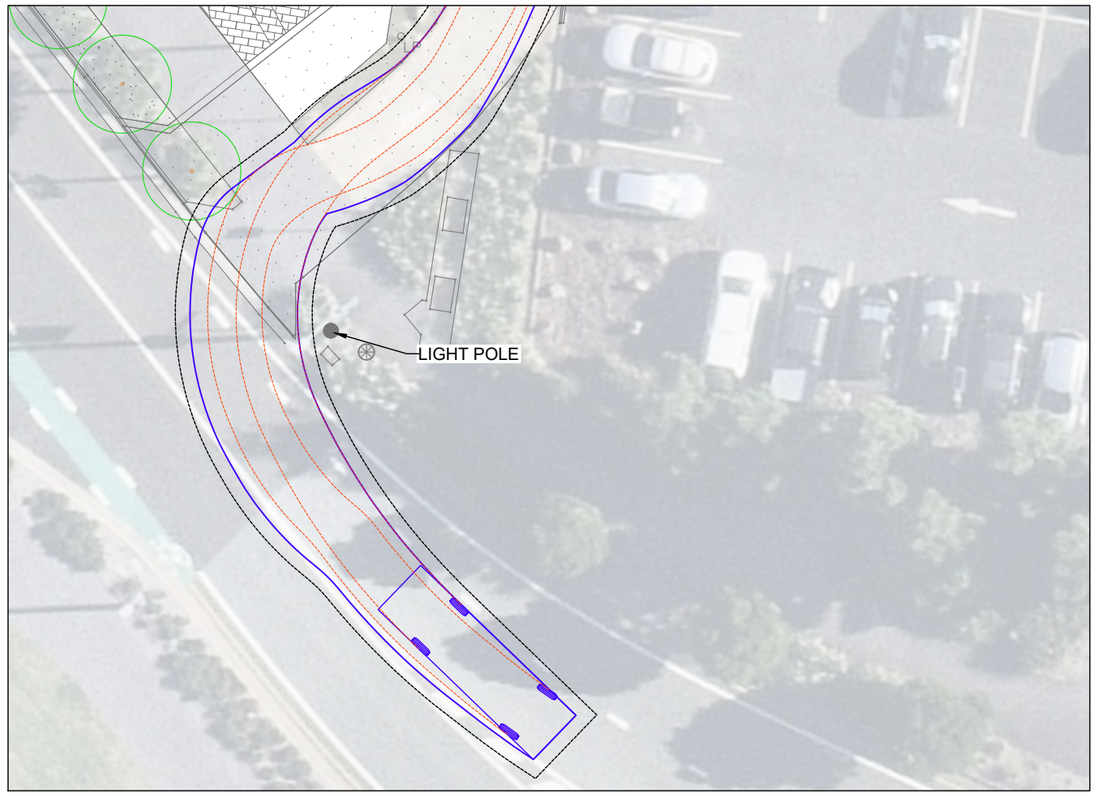
8.80m MRV ACCESS AND EGRESS FROM THE SITE

SCALE 1:1000



NORTH ACCESS DRIVEWAY LAYOUT

SCALE 1:250



SOUTH ACCESS DRIVEWAY LAYOUT

SCALE 1:250

23GCT0193-SK04 RevB

SWEPT PATH ANALYSIS - 8.80m MRV

NEXTDC *CAR PARK REVIEW - SUNSHINE COAST*

PRELIMINARY ADVICE ONLY

27 May 2025

0 2.5 5 7.5 10 12.5m

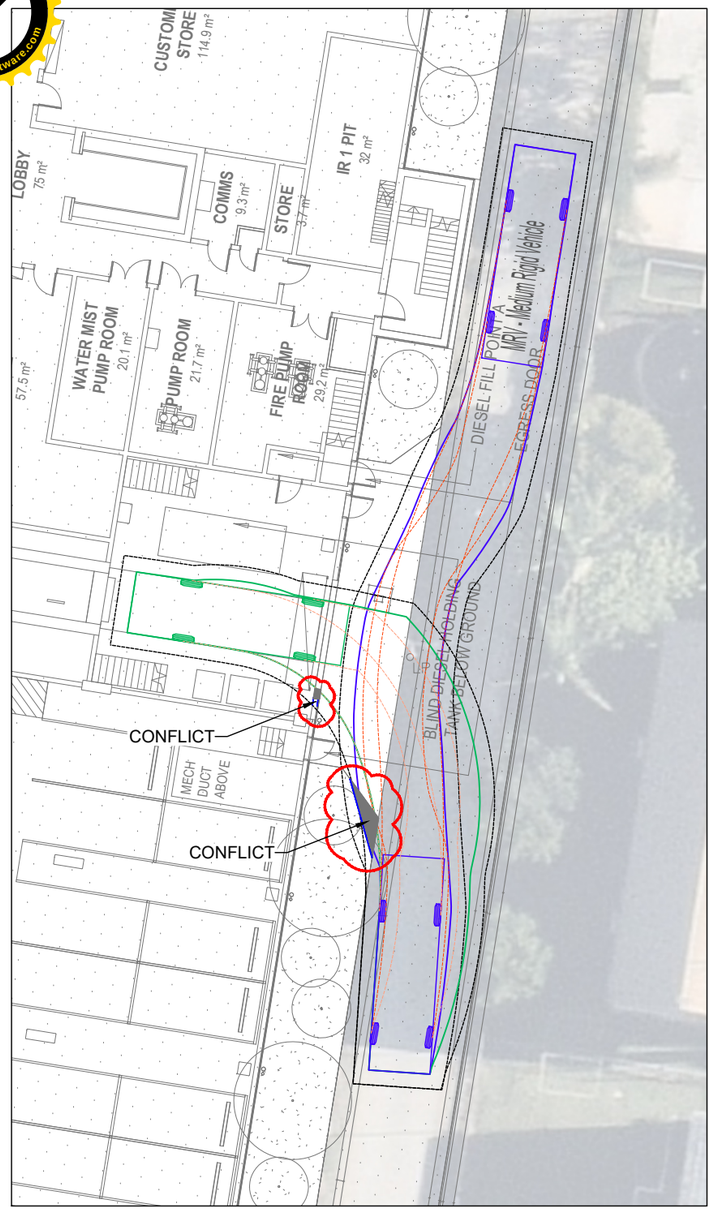
SCALE 1:250 AT ORIGINAL SIZE

0 10 20 30 40 50m

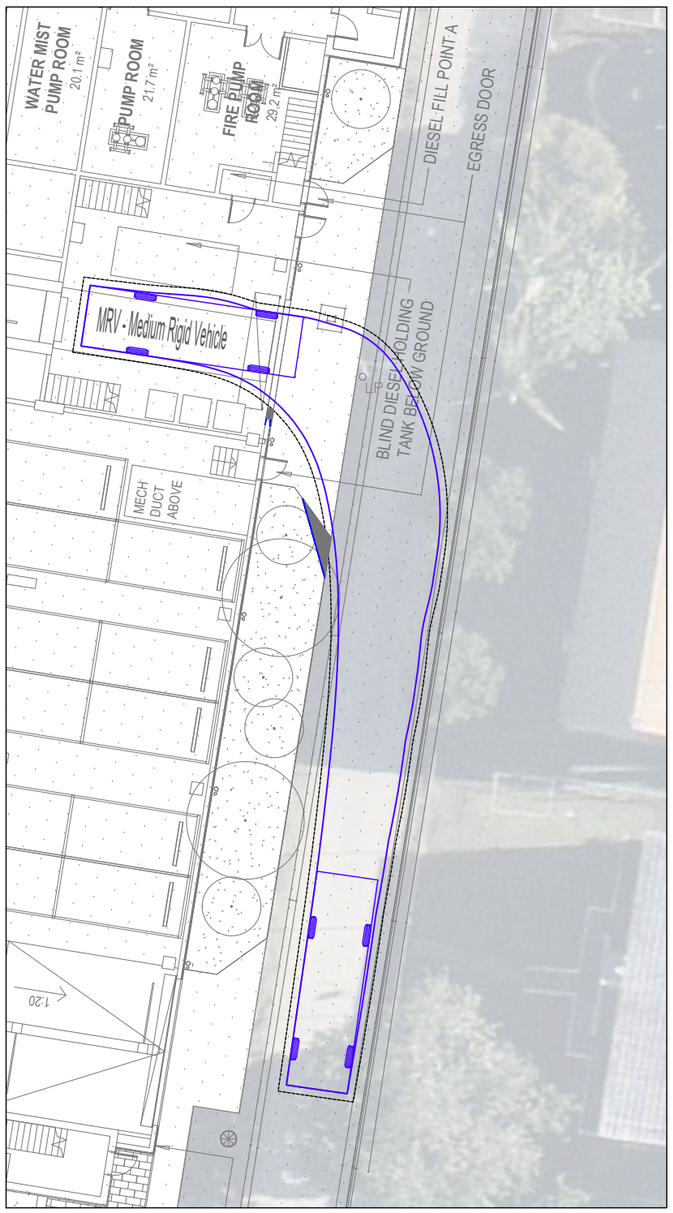
SCALE 1:1000 AT ORIGINAL SIZE

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

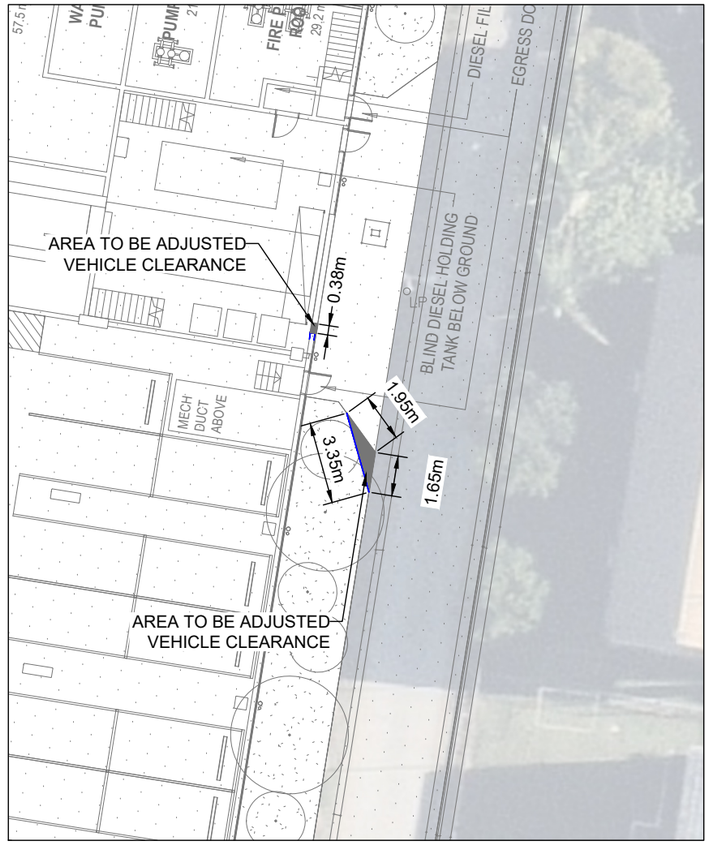
PDF-XChange Editor
Click to BUY NOW!
www.tracker-software.com



8.80m MRV ACCESS THE LOADING ZONE
SCALE 1:250

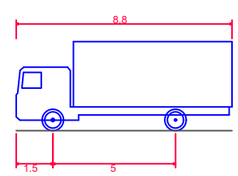


8.80m MRV EGRESS FROM THE LOADING ZONE
SCALE 1:250



LOADING ZONE ADJUSTMENT
SCALE 1:250

VEHICLE PROFILES



MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	10.0km/h
Clearance Envelope	0.600m

23GCT0193-SK05 RevB

SWEPT PATH ANALYSIS - 8.80m MRV

NEXTDC *CAR PARK REVIEW - SUNSHINE COAST*

PRELIMINARY ADVICE ONLY

27 May 2025

0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au