

# Traffix Group

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## Traffic Engineering Assessment

Proposed Mixed Use Development  
188–202 Swan Street, Richmond

Prepared for  
188 Swan Street Holdings Pty Ltd

April 2026

G36477R-01D

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## Document Control

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## **1. Introduction**

Traffix Group has been engaged by 188 Swan Street Holdings Pty Ltd to undertake a Traffic Engineering Assessment for the Proposed Mixed Use Development at 188–202 Swan Street, Richmond.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposed development.

In the course of preparing this assessment, we inspected the subject site, reviewed development plans and background material, and assessed the car parking and traffic impacts of the proposal.

Our assessment is as follows.

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## 2. Existing Conditions

### 2.1. Subject Site

The subject land, addressed as 188–202 Swan Street, Richmond, is located on the south side of Swan Street and has abutments to Swan Street, Railway Place and Royal Place. The subject site has a frontage of approximately 38.09m to Swan Street at the north, 24.28m to Royal Place to the east and 51.49m to Railway Place to the south.

A locality plan and aerial photograph of the site are provided at Figure 1 and Figure 2, respectively.

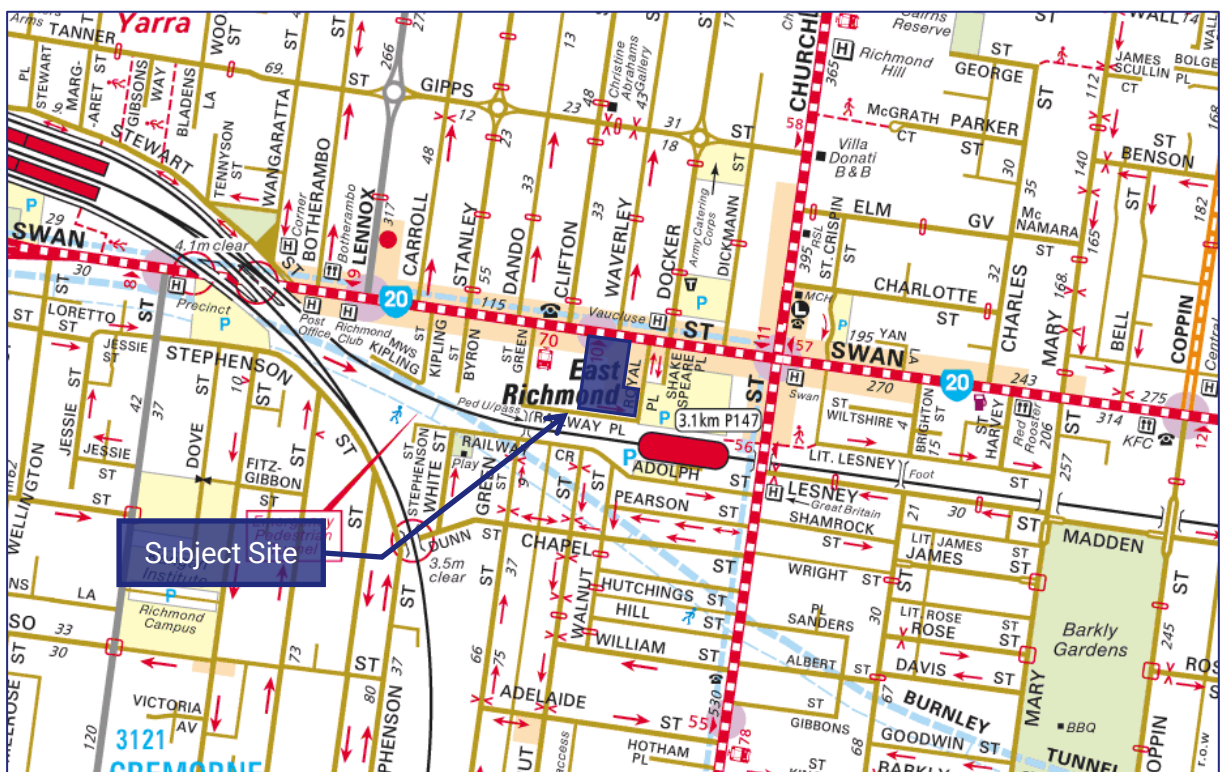


Figure 1: Locality Map

Source: Melway Online

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Figure 2: Aerial Photograph

Source: Nearmap

## 2.2. Subject Site and Use

The site is currently occupied by:

- MM Nails & Beauty – 192 Swan Street,
- Mind and Body Massage – 194 Swan Street,
- Fine Folie painting studio – 198 Swan Street,
- Smokemart Tobacco & Accessories – 200 Swan Street,
- Blackhearts & Sparrows wine store - 202 Swan Street,

The tenancy at 196 Swan Street is currently vacant and was formerly occupied by Coles.

The site has an area of approximately 2822 square metres.

Vehicular access to the site is as follows:

- Three Loading Bays and two parking spaces are located within the site at 202 Swan Street and can be accessed from eastern boundary of the site at Royal Place. Currently, two of the parking spaces appear to be allocated to staff of Blackhearts & Sparrows wine store. The three Loading Bays were formerly used by Coles and now appear to be occupied private vehicles.
- Two loading bays are located within the south-east corner of the site and can be accessed from Railway Place to the south or Royal Place to the east. These bays were vacant at the time of the site inspection and formerly used as Coles Receiving.
- A single roller door vehicle access is located on the southern boundary of 188–194 Swan Street, providing access to Railway Place.

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### 2.3. Planning Zones & Surrounding Uses

The subject site is zoned as a Commercial Zone (C1Z) under the Yarra Planning Scheme. A planning zone map is provided at Figure 3.

Land use in the immediate vicinity of the subject site is commercial and residential. Notable nearby uses include:

- Chemist Warehouse Richmond, located immediately east of the site, fronting Swan Street,
- Richmond Hill Medical Centre, located immediately east of the site, fronting Royal Place,
- Public carpark, located immediately south-east of the site,
- Coles Richmond Icon, approximate 70 metre walk west,
- East Richmond Station, approximate 100 metre walk east.

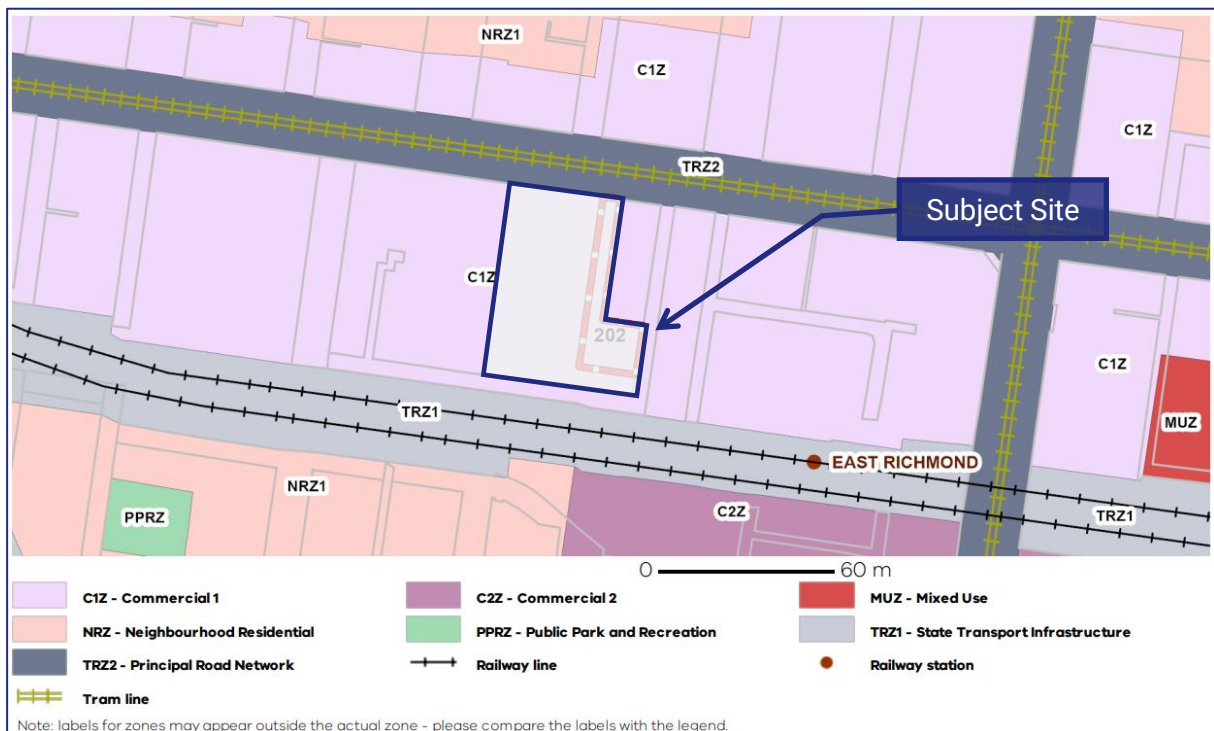


Figure 3: Planning Zone Map – Yarra

Source: Vicplan

### 2.4. Road Network

**Swan Street** is a Department of Transport (DoT) declared arterial road and located in a Transport Zone 2 under the Planning Scheme. It runs in an east–west direction, extending from Punt Road in the east, where it continues as Olympic Boulevard, to Yarra Boulevard in the west, where it continues as Wallen Road.

Swan Street has an approximate carriageway width of 12.2m which allows one shared traffic/tram lane in each direction with kerbside parking on both sides.

There is a signalised pedestrian crossing immediately adjacent to the site on Swan Street.

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Tow Away restrictions apply on Swan Street from 7am to 9:15am on the south side and from 4:30pm to 6:30pm on the north side.

2x '2P Meter 9:30am-6:30pm / P Meter 6:30pm-Midnight' and 'No Stopping' restrictions apply to the frontage of the site along Swan Street.

A speed limit of '40km/h 7am-Midnight' applies to Swan Street within the vicinity of the subject site.

Figure 4 and Figure 5 provide views of Swan Street to the east and west, respectively.

**Royal Place** is a Council laneway that runs in a north-south direction between Swan Street to the north and Railway Place to the south. Vehicle access is restricted to one-way operation in the north-south direction, meaning vehicles cannot enter Royal Place from Swan Street.

The laneway has an approximate carriageway width of 3.5 metres, with a 1.3-metre-wide footpath located on its western side adjacent to the buildings.

No Stopping restrictions apply to Royal Place adjacent to the buildings. There are 5 disabled spaces along the eastern side of Royal Place at the public carpark.

Royal Place is within a 40km/h area.

Figure 6 and Figure 7 provide views of Royal Place to the north and south, respectively.

**Railway Place** is a Local Council Road that runs in an east-west direction, extending between the public carpark in the east and Green Street in the West. Vehicle access is restricted to one-way operation in the west-east direction between Green Street and Royal Place.

Railway Place has a carriageway width of approximately 5.5 metres, with a 1.7-metre-wide footpath located along its southern side. It is noted that at the eastern extent of Railway Place the carriageway width is reduced due to an existing street tree provided on the southern side. As a result, historically vehicles travelling along Railway Place have been required to travel through the subject site to access the public car park to the east of the site.

Three '4P 7am-7pm' spaces are located along the site frontage on Railway Place.

An urban default speed limit of 50km/h applies to Railway Place within the vicinity of the subject site.

Figure 8 and Figure 9 provide views of Railway Place to the east and west, respectively.



Figure 4: Swan Street - View East



Figure 5: Swan Street – View West

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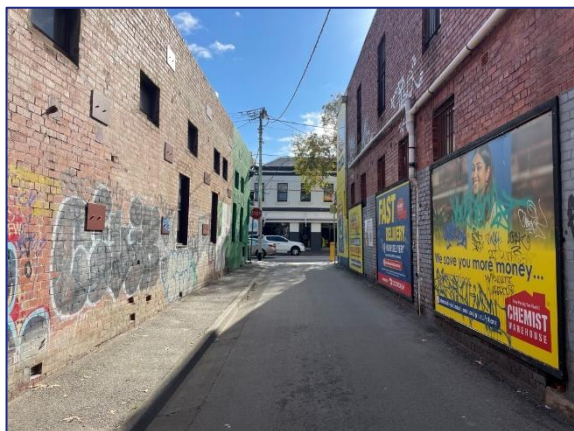


Figure 6: Royal Place – View North



Figure 7: Royal Place - View South



Figure 8: Railway Place – View East



Figure 9: Railway Place – View West

## 2.5. Sustainable Modes of Transport

The site has excellent access to sustainable transport modes and is well located with regard to public transport and bicycle routes as detailed below.

### 2.5.1. Walking

The site is well located to promote walking to everyday services.

The subject site scores 99 out of a possible 100 using the 'Walk Score', which is a measure of how easy it is to access everyday services by walking. This score classifies the site as a 'Walker's Paradise' and that daily errands do not require a car.

This site is located on Swan Street, which provides access to a wide range of everyday services such as supermarkets, banks, restaurants and specialty shops.

### 2.5.2. Public Transport Accessibility

The site is extremely well serviced by public transport. A tram stop (Route 70) is located adjacent to the site on Swan Street.

East Richmond Station is located approximately 100 metres walking distance to the east of the site which provides a range of train services to and from Melbourne CBD and other areas.

Table 1 summarises the available services, whilst Figure 10 illustrates the nearby routes.

Table 1: Public Transport Services in the Vicinity of the Subject Site

Service	Route	Route Description	Distance to Node
Train Services	East Richmond Station – City to Alamein/Belgrave/Glen Waverley/ Lilydale		~100m east
	Richmond Station - City to Alamein/ Belgrave/ Cranbourne/ Frankston/ Glen Waverley/ Lilydale / Pakenham/ Sandringham		~500m west
Tram Services	Route 70	Waterfront City Docklands - Wattle Park	Site Frontage
	Route 78	North Richmond - Balaclava via Prahran	~100m east
	Route 48	North Balwyn - Victoria Harbour Docklands	~950m north
	Route 75	Vermont South - Central Pier Docklands	

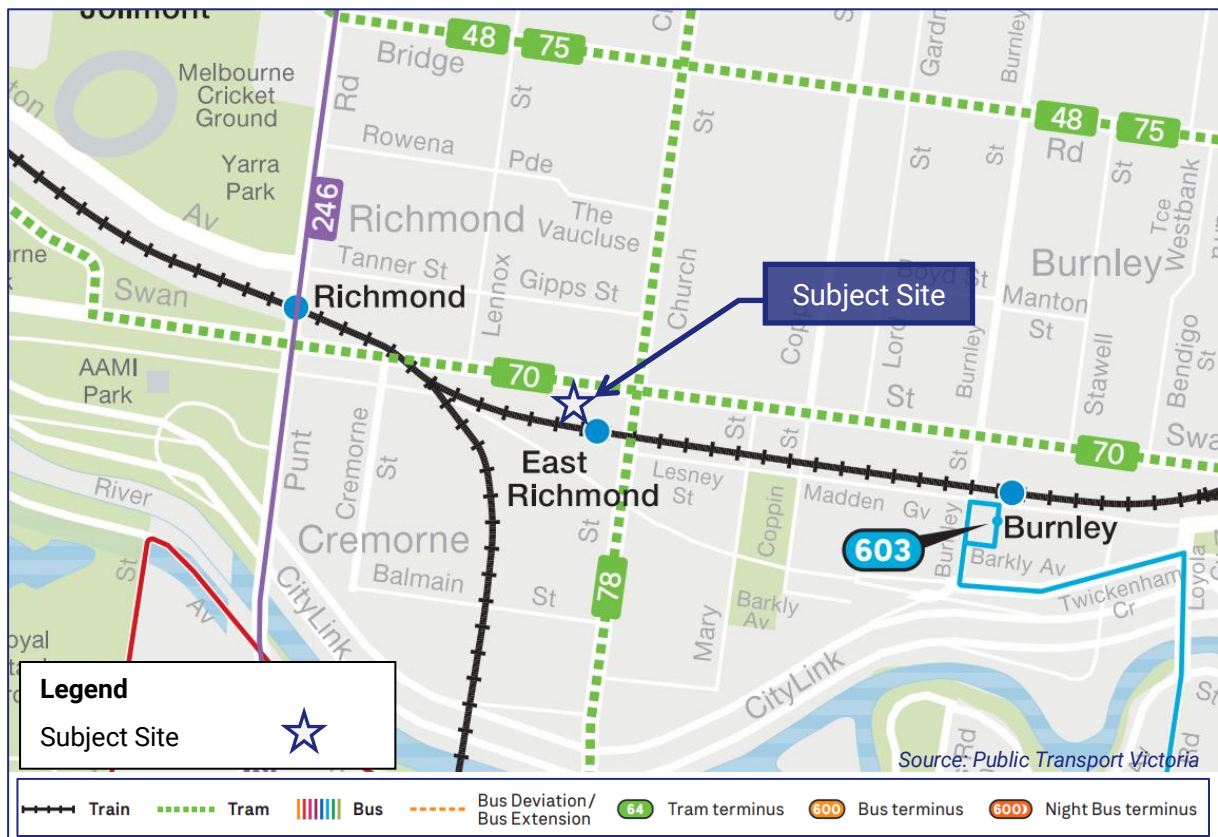


Figure 10: PTV Public Transport Map – Yarra

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### 2.5.3. Bicycle Accessibility

The site has access to bicycle facilities and is located proximate to the Principal Bicycle Network (PBN) along Swan Street. The PBN connects on-road and off-road bicycle paths between municipalities.

Capital City Trail is a 1.3km bicycle ride to the south-west of the subject site which provides a connection to the city.

An excerpt of Strava 'ride' map is shown at Figure 11, with the green lines indicating bicycle routes.

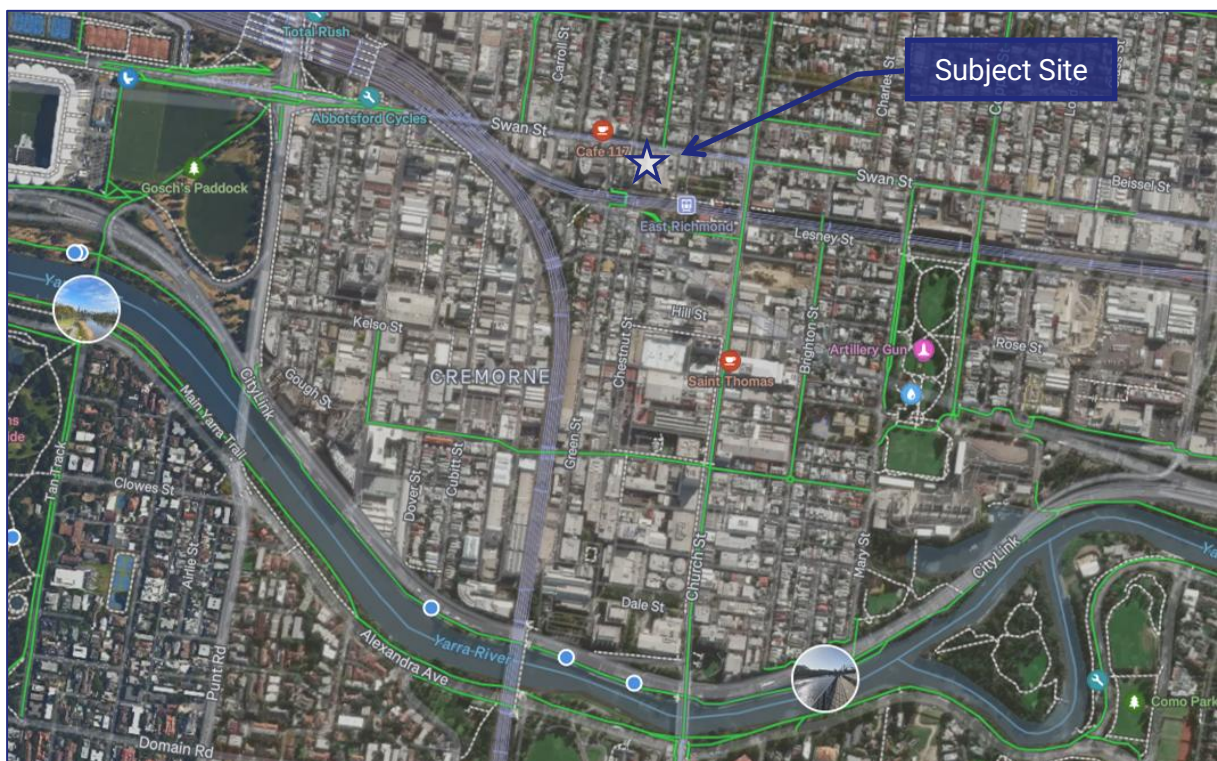


Figure 11: Strava 'Ride' Map – Yarra

### 2.5.4. Car Share

Car sharing schemes have been operating in Melbourne since 2003 with a number of inner metropolitan Councils actively supporting their use by allocating public spaces throughout their municipalities for the purposes of accommodating 'car share' cars<sup>1</sup>.

Yarra City Council supports 'car sharing' schemes by allocating spaces within private developments and Council operated off-street car parks for the purposes of accommodating 'car share' cars operated by Flexicar, Go Get and GreenShareCar.

The car share scheme provides an alternative to private vehicles and encourages the use of sustainable modes of transport for the majority of trips. Car share facilities offer personal and

<sup>1</sup> The three main schemes supported by these Councils are Flexicar ([www.flexicar.com.au](http://www.flexicar.com.au)), Go Get Car Share ([www.goget.com.au](http://www.goget.com.au)) and PopCar ([www.popcar.com.au](http://www.popcar.com.au)).

commercial or business memberships and can be more convenient for short trips as payment is generally on a per hour basis.

Commercially operated car share cars currently available proximate to the subject site, include:

- Church Street near Swan Street (GoGet), approximately 250m walking distance.
- Docker Street near Swan Street (2x GoGet), approximately 60m walking distance.
- Lennox Street near Swan Street (GoGet), approximately 250m walking distance.
- Church Street near Charlotte Street (FlexiCar), approximately 200m walking distance.

The nearest existing car share pods (spaces) are shown in Figure 12.

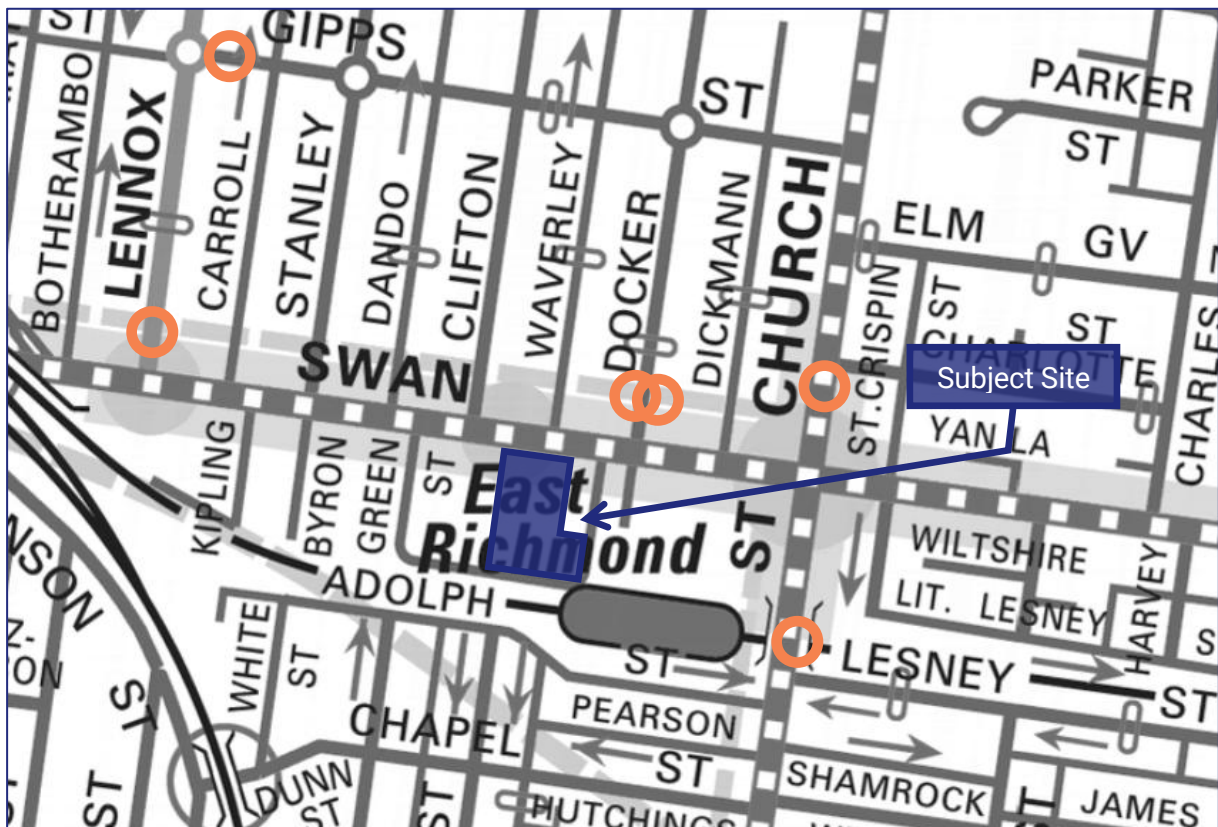


Figure 12: Proximate Car Share Pods

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## 3. Proposal

### 3.1. The Development

The proposal seeks to develop the site as a mixed-use development comprising ground floor retail and commercial tenancies with residential apartments above.

In effect, the development will provide for an improved retail and commercial offering at ground floor (with less floor area than existing) and provide a ground floor residential lobby with apartments above.

The proposed development schedule is provided in Table 2.

*Table 2: Proposed Development Schedule*

Use		No. / Area
Residential	Studio	6 no.
	1-bed dwelling	59 no.
	2-bed dwelling	72 no.
	3+ bed dwelling	28 no.
	<b>Total</b>	<b>165 no.</b>
Retail		901 m <sup>2</sup>
Commercial		231 m <sup>2</sup>

### 3.2. Access

#### 3.2.1. Pedestrians & Cyclists Access

Primary pedestrian access to the residential component is provided via a public arcade on the eastern side of the building. This arcade, accessible from both Swan Street and Railway Place, connects directly to the residential lobby and lifts.

Cyclists can also access the lifts via the arcade or via Railway Place at the rear of the site. Ground floor tenancies will be accessed separately via their designated street frontages.

#### 3.2.2. Vehicles

The proposed development includes vehicle access from Railway Place at the southern boundary of the site.

The application requires the removal of the existing tree on the southern side of Railway Place to facilitate legal access to the existing public car park immediately east of the site in lieu of traversing through the subject land.

A summary of the site access is shown at Figure 13.

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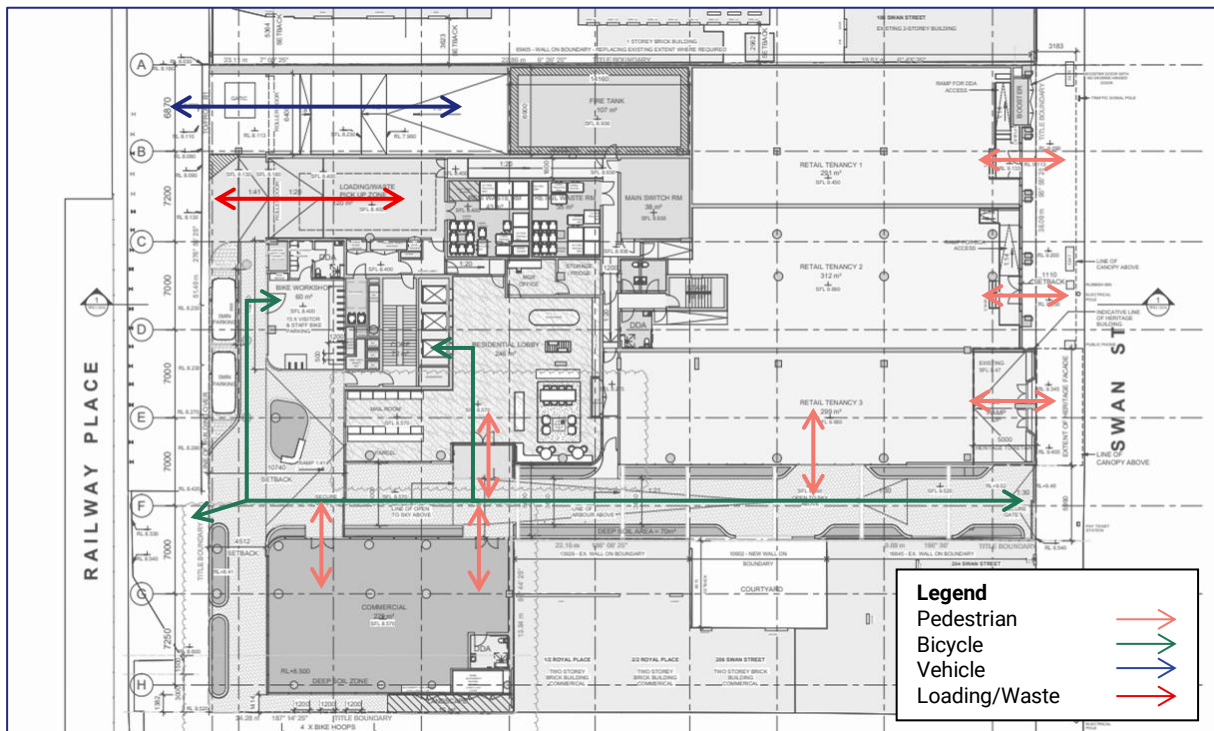


Figure 13: Proposed Access Arrangements

### 3.3. Parking

#### 3.3.1. Bicycles and End of Trip

The application proposes the provision of 90 bicycle spaces throughout the basement car park for residents and staff. An additional 23 visitor spaces are provided at ground floor.

End of Trip facilities are proposed on-site for staff at ground floor inclusive of 1 shower / changeroom and 6 lockers.

#### 3.3.2. Car Parking

The proposal includes 196 car parking spaces, including 24 tandem pairs, across four basement levels. The car parking is primarily proposed to be allocated to residents of the development:

The proposed allocation is:

- 56 spaces to the 3+ bedroom dwellings (2 spaces per dwelling),
- 72 spaces to the 2-bedroom dwellings (1 space per dwelling),
- 59 spaces to the 1-bedroom dwellings (1 space per dwelling),
- 6 spaces to the studio dwellings (1 space per dwelling), and

The three remaining car parks are to be allocated to residents on an as demands basis.

In addition to the parking provisions within the basement, two additional drop off bays are provided at the rear of the site on Railway Place.

### 3.3.3. Loading & Waste Collection

An on-site loading bay has been provided at the rear of the site accessed via Railway Place. The loading bay has been designed to accommodate vehicles up to an 8.8 metre Medium Rigid Vehicle (MRV).

The loading bay will facilitate waste collection, residential move-in/move-out and retail deliveries.

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## 4. Parking Considerations

### 4.1. Car Parking Considerations

#### 4.1.1. Statutory Requirements – Clause 52.06

The car parking requirements for the proposed development are outlined under Clause 52.06 of the City of Yarra Planning Scheme. The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Clause 52.06-5 states that:

*“Table 1 of this clause sets out the minimum and maximum car parking requirements that apply to a use specified in the table based on the land category identified in the Car Parking Requirement Maps (Department of Transport and Planning, 2025) (CPR maps).*

*If the land is shown in two or more categories on the CPR maps, the car parking requirements for the higher category applies to all of the land.”*

An excerpt of the Car Parking Requirement Map is provided at Figure 14.

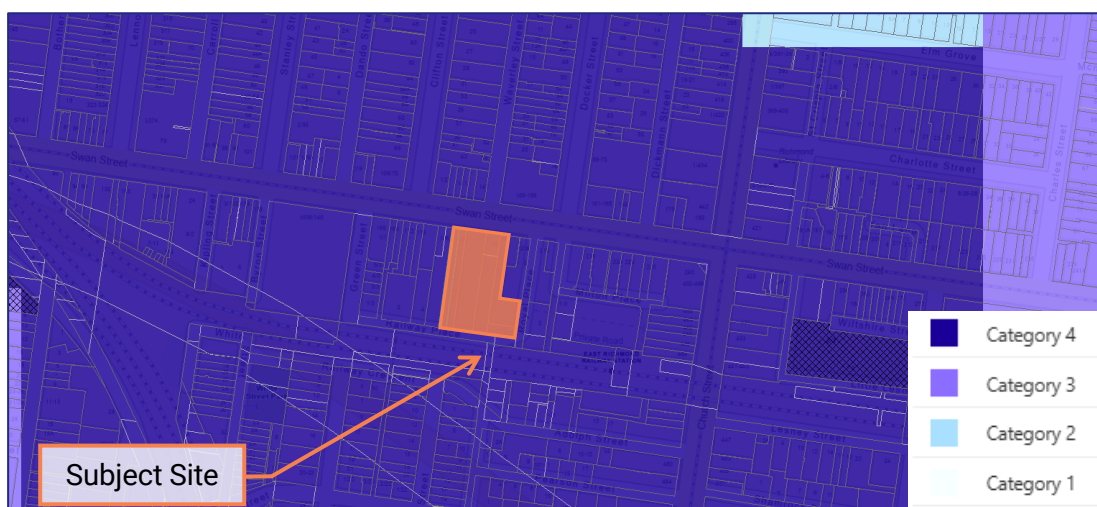


Figure 14: City of Yarra – Car Parking Requirement Maps

The subject site falls within Category 4 of the Car Parking Requirement Maps.

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A statutory assessment of the proposal under Clause 52.06 is provided at Table 3.

Table 3: Statutory Car Parking Requirements (Clause 52.06) - Maximums

Use	No / Size	Statutory Requirement	No of Spaces Required
Retail	901 m <sup>2</sup>	1 space to each 100 m <sup>2</sup> of LFA	9 spaces
Commercial (office)	231 m <sup>2</sup>	0.45 spaces to each 100 m <sup>2</sup> of NFA	1 space
Dwelling	165 no.	2 car spaces to each dwelling for tenants	330 spaces
<b>Total</b>			<b>340 spaces</b>

Based on the table above, the development has a statutory maximum of 340 car spaces, inclusive of 9 retail spaces, 1 commercial space and 330 residential spaces.

The proposal includes the provision of 196 parking spaces to be allocated to residents of the development. These allocations do not exceed the statutory maximums and therefore no permit is sought under Clause 52.06.

## 4.2. Bicycle Considerations

Clause 52.34 of the Planning Scheme specifies the bicycle parking requirement for new developments.

The relevant requirements are summarised in Table 4.

Table 4: Statutory Bicycle Parking Requirements

Use	Units	Statutory Requirement	No. Of Spaces Required
Dwellings	165 dwellings	1 space per 5 dwellings for residents 1 space per 10 dwellings for visitors	33 resident spaces 17 visitor spaces
Retail / Commercial	1,132 m <sup>2</sup>	1 space per 300 square metres for staff 1 space per 500 square metres for customers	4 staff spaces 2 visitor spaces
<b>Total</b>		<b>Resident Staff Visitors</b>	<b>33 resident spaces 4 staff spaces 19 visitor spaces</b>

Based on the above assessment, the development is required to provide a total of 56 bicycle spaces, comprising 33 resident spaces, 4 staff spaces and 19 visitor spaces.

The application plans illustrate the provision of 113 bicycle spaces, including:

- 90 spaces within Basement 1 for residents provided as a two-tiered stacker system,
- 15 spaces within the bike workshop to the south of the site (4 staff & 11 visitors) provided as vertical rails, and
- 8 spaces provided as horizontal loops for visitors at the rear of the site.

The requirement of 4 staff spaces does not trigger the requirement for the development to provide End of Trip facilities under Clause 52.34-5 of the Planning Scheme.

However, End of Trip facilities have been provided at the ground floor, including a shower / changeroom and 6 lockers.

### **4.3. Loading Considerations**

#### **4.3.1. Loading**

Clause 65.01 of the Planning Scheme states the responsible authority must consider a number of matters as appropriate including:

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

An on-site loading bay is provided at ground floor accessed via the Railway Place along the site's southern boundary. The loading area is to be utilised for waste collection, residential move-in/move-out and retail deliveries for vehicles up to an 8.8 metre Medium Rigid Vehicle.

The loading bay exceeds the minimum width requirements under AS2890.2:2018, being at least 3.5 metres wide and 8.8 metres long based on an MRV.

A minimum clearance of 4.5 metres is provided above the loading dock areas for loading requirements.

#### **4.3.2. Waste**

Waste collection is proposed to be undertaken within the loading dock at the rear of the site via a private contractor.

Waste collection will be undertaken via a vehicle up to an 8.8 metre waste collection vehicle. A dedicated residential and commercial bin room are provided immediately adjacent the loading dock area providing for convenient waste collection arrangements.

The proposal includes the provision of a dual chute system for general waste and commingled recycling terminating at ground floor. Residents of the development will dispose of these waste streams via the bin chutes at each level. Building Management will be responsible for the transfer of bins between the chute termination room and the main bin storage area as needed.

Residential organic and glass waste will be transferred directly by residents to the dedicated bin room at ground floor.

All retail waste will be transferred by future tenants directly into the commercial bin storage area at ground floor.

Accordingly, we are satisfied that appropriate loading and waste provisions can be accommodated in accordance with the objectives of the Planning Scheme.

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## 5. Design Considerations

### 5.1. Car Parking Layout & Access Arrangements

The car park layout and access arrangements have been developed with design advice provided to the project architect (Cox) and is considered to principally meet the relevant requirements of the Yarra Planning Scheme and where applicable, the Australian Standard for Off-Street Parking (AS2890.1:2004).

A review of the car park layout reveals:

#### General Car Parking Layout

- Car spaces have generally been designated with minimum dimensions of 2.6 metres width and 4.9 metres length, accessible from 6.4 metre wide aisles, meeting the Planning Scheme requirements.
- Where spaces have been provided with a reduced access aisle, they have been widened in accordance with the requirements of Clause 52.06 – Design Standard 2.
- Car spaces adjacent to walls have been provided with appropriate clearances to allow for satisfactory car door opening.
- Columns are sited within 0.25-1.25 metres from the aisle end of car spaces in accordance with the Planning Scheme car parking envelope to allow for access into and out of spaces.
- A minimum head clearance of 2.2 metres is provided within all trafficable areas of the car parking area.

#### Access & Ramps

- The proposal intends to take access via Railway Place via a new two-way ramp.
- The first 5 metres of the driveway within the site is flat, with the grade not exceeding 1 in 10 satisfying the requirements of the Planning Scheme.
- Ramps are provided as two-way ramps with a minimum width of 6.1 metres between walls meeting the requirements of AS2890.1:2004.
- The plans illustrate a maximum grade of 1 in 5 with transitions not exceeding 1 in 8 for not less than 2.0 metres, satisfying the requirements of the Planning Scheme.
- A pedestrian sight triangle has been provided on the exit side of the ramp in accordance with the requirements of Clause 52.06 of the Planning Scheme.

In this regard, the above access arrangements, grades, transitions and clearances have been assessed and, in our view, meet the intent of the relevant standards.

Based on the foregoing, the car park layout and access is considered satisfactory.

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### Appropriateness of Access Location

The application seeks to take access from Railway Place at the rear of the site.

Whilst the site is provided a direct frontage to Swan Street, when considering the most appropriate location to take access to the site, typically access should be provided via the lower order road, which in this case is Railway Place.

We are of the opinion that providing direct access to Swan Street is not appropriate and would have impacts to the surrounding area including tram routes, parking provisions etc.

As such we are of the opinion that access to Railway Place is the most appropriate location for the subject site however the current interface with the south-east corner of the site needs to be addressed as vehicles cannot currently access Royal Parade without travelling through the subject land.

It is therefore appropriate the tree be removed in order to provide for reasonable access from Railway Place to the public car park, egress route from the subject site and surrounding properties.

### 5.2. Bike Parking & Access

Bicycle parking is provided for residents of the development are provided within the basement, with access via the residential lift core. Staff and visitor bicycle parking is provided at Ground floor with a mixture of spaces within the public realm and a designated bicycle parking storage room at the rear of the site.

Bicycle parking spaces has been provided in accordance with AS2890.3-2015 with a mix of vertical and horizontal rails as follows:

- Two-tier horizontal rails are provided with dimensions of 2.0 metre length and spaced at 0.5 metre centres, accessible from a 2.0 metre aisle;
- Horizontal rails are provided with dimensions of 1.8 metre length and spaced at 1.0 metre centres, accessible from a 1.5 metre aisle; and
- Vertical rails are provided with dimensions of 1.2 metre length and spaced at 0.5 metre centres, accessible from a 1.5 metre aisle.

Based on the above, the bike parking arrangements are considered appropriate.

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## 6. Traffic Considerations

### 6.1. Existing Traffic Conditions

#### 6.1.1. Traffic Surveys

To understand the existing traffic conditions in the vicinity of the subject site Traffix Group commissioned traffic surveys at the intersections of Swan Street with Green Street, Royal Place and Shakespeare Place. Traffix Group also commissioned traffic surveys on Railway Place at the rear of the site.

The surveys were undertaken between 7am and 7pm on 12<sup>th</sup> September 2025. The surveys identified a peak hour between 9:00 and 10:00am and 4:15 and 5:15pm for the morning and afternoon peak hours, respectively.

A summary of the observed traffic movements is provided at Figure 15.

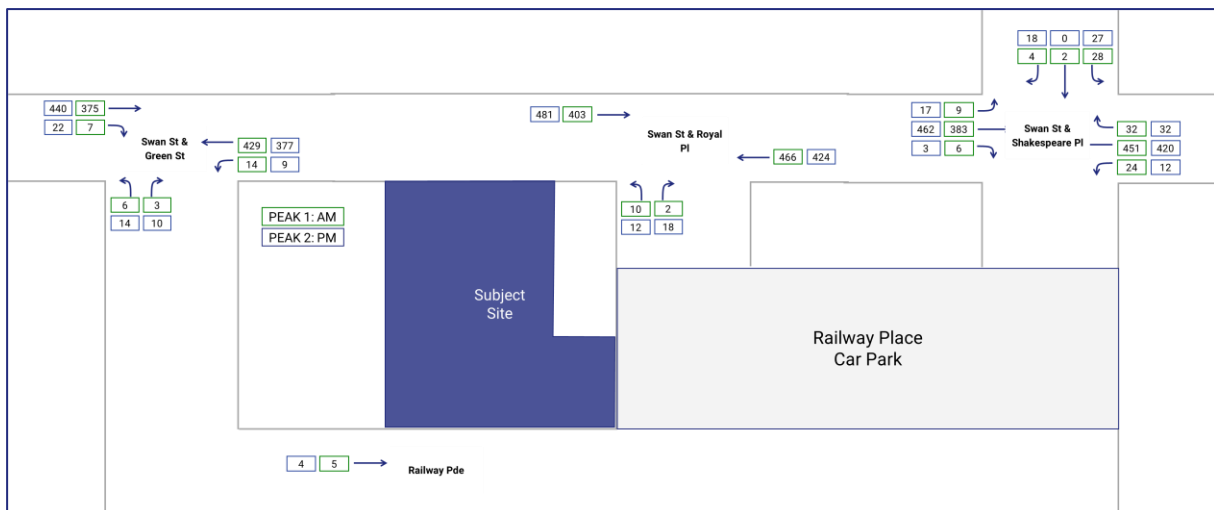


Figure 15: Existing Traffic Volumes

#### 6.1.2. Intersection Analysis

In order to understand the existing operation of the critical intersection of Swan Street and Royal Parade, a SIDRA Analysis was undertaken for the AM and PM peak hours.

SIDRA is a computer program originally developed by the Australian Road Research Board, which can be used to analyse the operation of intersections. SIDRA provides information about the capacity of an intersection in terms of a range of parameters, as described below:

**Degree of Saturation (D.O.S.)** is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement. Various values of degree of saturation and their rating are shown below.

The **95<sup>th</sup> Percentile Queue** represents the maximum queue length, in metres, that can be expected in 95% of observed queue lengths in the peak hour.

**Average Delay** (seconds) is the average delay time that can be expected for all vehicles making a particular movement in the peak hour.

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## Traffic Engineering Assessment

188–202 Swan Street, Richmond

Level of Service		Intersection Degree of Saturation	
		Unsignalised Intersection	Signalised Intersection
A	Excellent	≤ 0.60	≤ 0.60
B	Very Good	0.60 – 0.70	0.60 – 0.70
C	Good	0.70 – 0.80	0.70 – 0.90
D	Acceptable	0.80 – 0.90	0.90 – 0.95
E	Poor	0.90 – 1.00	0.95 – 1.00
F	Very Poor	≥ 1.0	≥ 1.0

The results of the existing analysis are summarised in Table 5 identifying that the intersection operates under ‘excellent’ conditions with most movements at the intersection having relatively minimal delays and queues.

Table 5: Existing Intersection Analysis

Approach	Mov.	AM Peak			PM Peak		
		DoS	Ave. Delay (s)	95% Queue (m)	DoS	Ave. Delay (s)	95% Queue (m)
Royal Place (S)	L	0.02	11	1	0.06	10	1
	R	0.02	13	1	0.06	14	1
Swan Street (E)	T	0.30	0	0	0.27	0	0
Swan Street (W)	T	0.26	0	0	0.31	0	0

## 6.2. Traffic Generation

Traffic generation rates of residential dwellings vary dependent on the size of the dwelling and proximity to everyday services and the location of nearby public and alternative transport modes.

In consideration of the location of the site and size of the dwellings, a daily traffic generation rate of 3 vehicle movements per dwelling, inclusive of 0.3 movements per dwelling in peak hours is considered conservative but appropriate for the dwellings.

Application of this rate to the proposed 165 dwellings equates to a projected daily traffic generation of 495 movements, inclusive of 50 movements in peak hours.

Assuming a typical AM peak traffic split of 20% arrivals and 80% departures and PM peak traffic split of 60% arrivals and 40% departures for the residential spaces it is projected the development will generate:

AM PEAK: 10 arrival and 40 departures  
PM PEAK: 30 arrivals and 20 departures

The traffic generation of the proposal is low in traffic engineering terms, equal to an average of 1 vehicle being generated each 1.2 minutes in a peak hour to the network.

### 6.3. Traffic Distribution

The proposed traffic generation of 50 vehicle movements is expected to follow the existing distributions for the surrounding network. The proposed traffic generation and distributions has been illustrated at Figure 16 and superimposed onto the existing traffic volumes as illustrated at Figure 17.

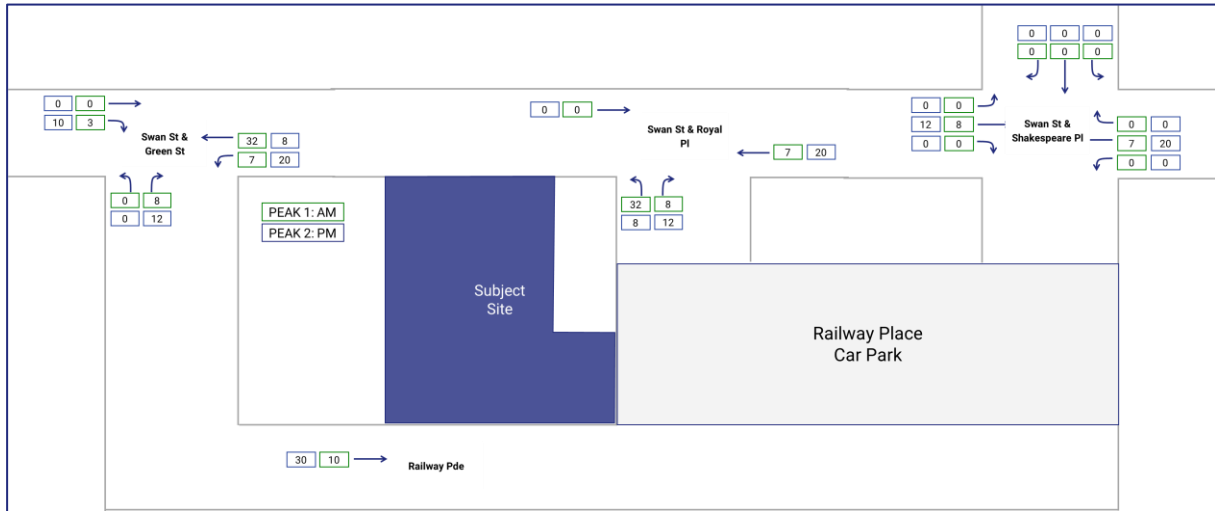


Figure 16: Proposed Traffic Generation

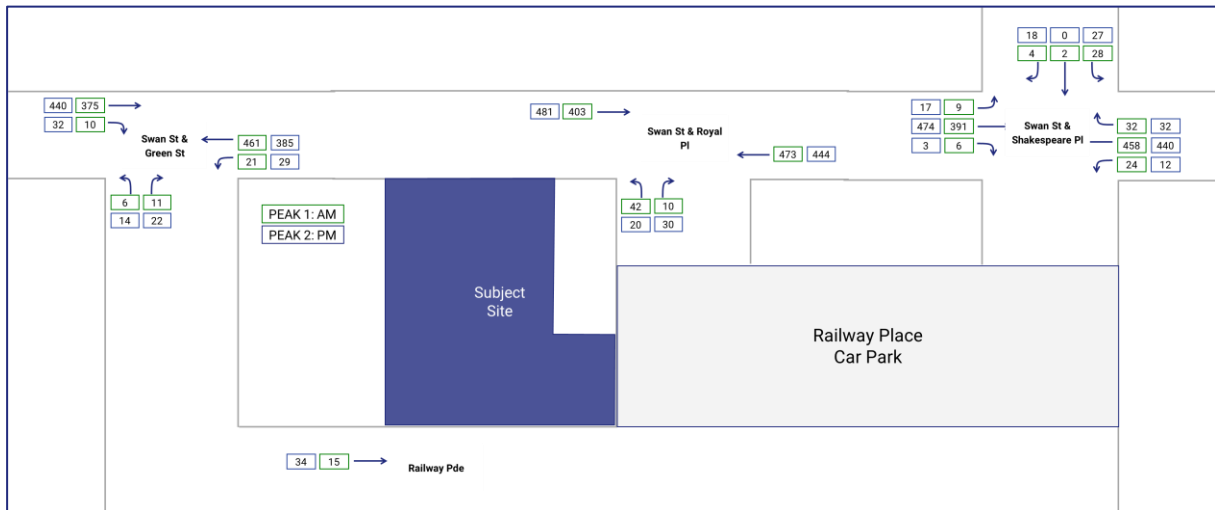


Figure 17: Post Development Traffic Volumes

### 6.4. Traffic Impact

To determine the impact of the proposal, a SIDRA analysis has been undertaken for the post development traffic volumes illustrated at Figure 17.

The results of the analysis are summarised in Table 6 identifying that the intersection will continue to operate under 'excellent' conditions following the completion of the development with most movements at the intersection continuing to have relatively minimal delays and queues.

Table 6: Post Development Intersection Analysis

Approach	Mov.	Existing			Proposed		
		DoS	Ave. Delay (s)	95% Queue (m)	DoS	Ave. Delay (s)	95% Queue (m)
<b>AM Peak Hour</b>							
Royal Place (S)	L	0.02	11	1	0.08	11	2
	R	0.02	13	1	0.08	14	2
Swan Street (E)	T	0.30	0	0	0.30	0	0
Swan Street (W)	T	0.26	0	0	0.26	0	0
<b>PM Peak Hour</b>							
Royal Place (S)	L	0.06	10	1	0.10	11	3
	R	0.06	14	1	0.10	14	3
Swan Street (E)	T	0.27	0	0	0.28	0	0
Swan Street (W)	T	0.31	0	0	0.31	0	0

Based on the preceding, the level of traffic generated by the proposal is acceptable and will be comfortably accommodated by the surrounding network.

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## 7. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed mixed use development at 188–202 Swan Street, Richmond, we are of the opinion that:

- a. the proposed development has a statutory car parking maximum of 340 car spaces under Clause 52.06-5 of the Planning Scheme and the provision of 196 car spaces does not exceed this maximum.
- b. Bicycle parking is provided in accordance the requirements set out at Clause 52.34 of the Planning Scheme.
- c. The on-site loading and waste collection area has been designed to meet the objectives of Clause 65.01 of the Planning Scheme.
- d. the design of the proposal, including the car parking layout and access arrangements, bicycle parking and access, and loading arrangements generally accord with the requirements of the Planning Scheme and the AS2890 Series (where relevant) and current practice,
- e. The level of traffic generated as a result of this proposal is acceptable will not have a detrimental impact on the surrounding road network subject to the removal of the tree within Railway Place.
- f. There are no traffic engineering reasons why a planning permit for the proposed mixed use development at 188–202 Swan Street, Richmond, should not be issued, subject to appropriate conditions.

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# Appendix A

## Swept Paths

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8.8m MRV LOADING BAY ACCESS - INGRESS

8.8m MRV LOADING BAY ACCESS - EGRESS

**VEHICLE USED IN SIMULATION**

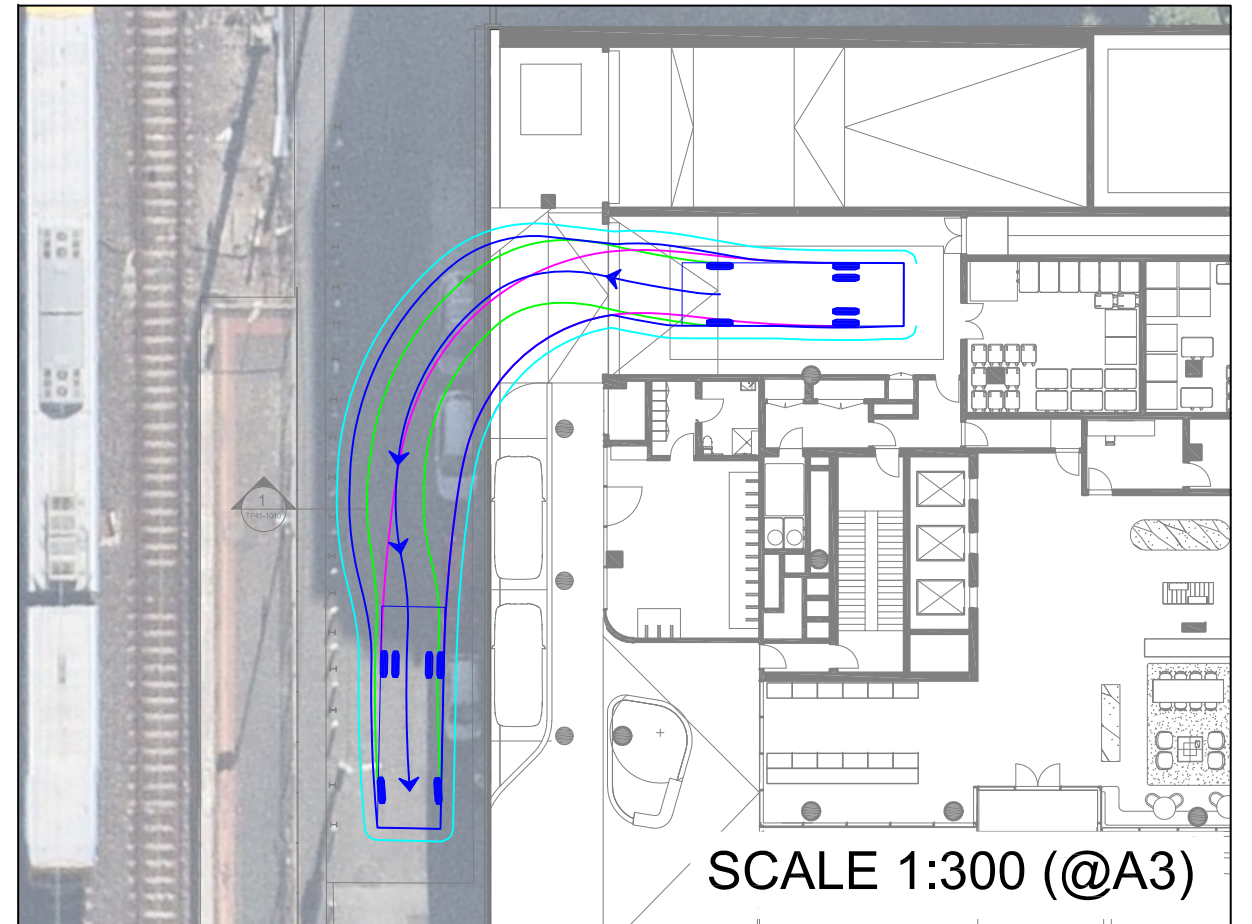
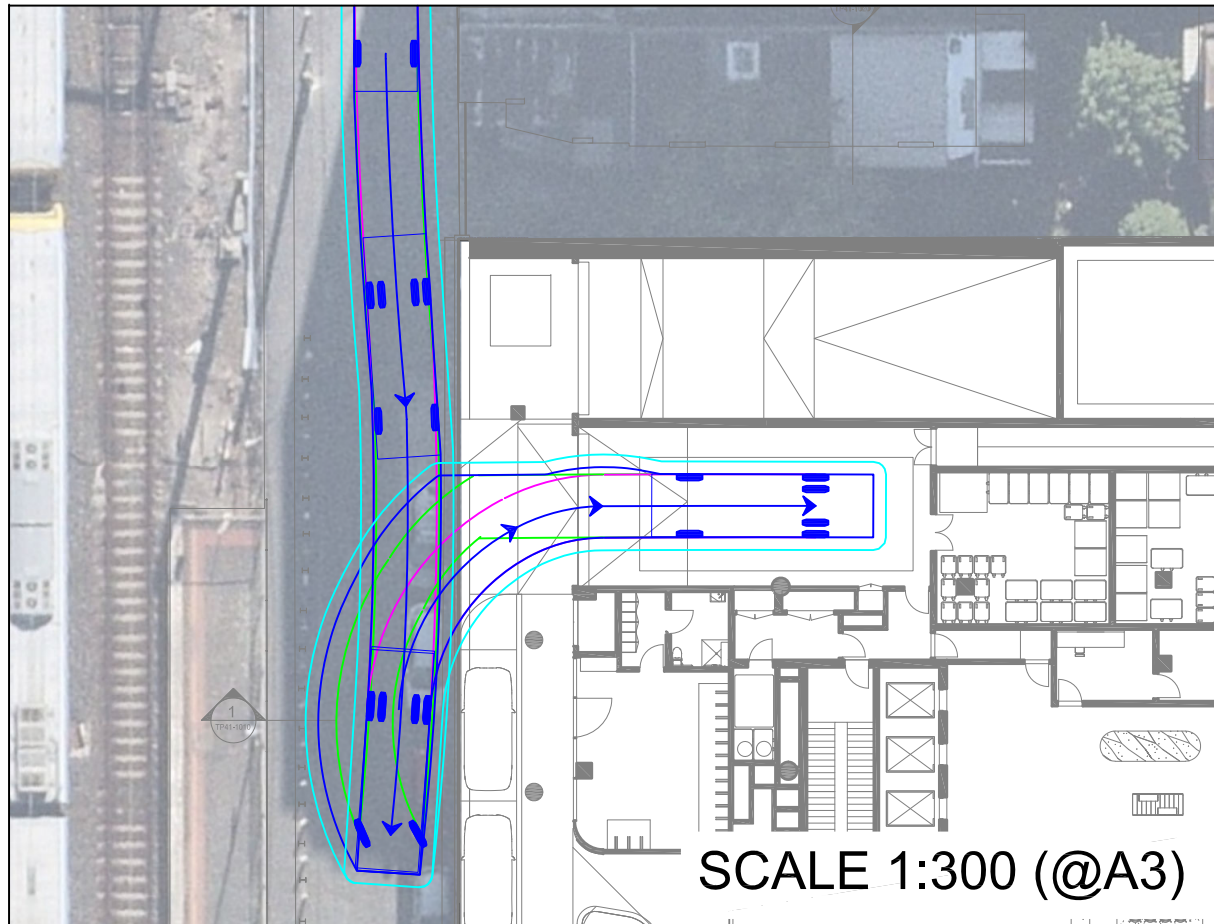
8800  
1500 5000

**MRV (AS 2890.2)** mm

Width : 2500  
Track : 2500  
Lock to Lock Time : 6.0  
Steering Angle : 34.0

**LEGEND**

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE



**ADVERTISED PLAN**

BASEMENT 1 DEAD END SPACE - INGRESS

BASEMENT 1 DEAD END SPACE - EGRESS

**VEHICLE USED IN SIMULATION**

4.91\*  
0.92 2.80

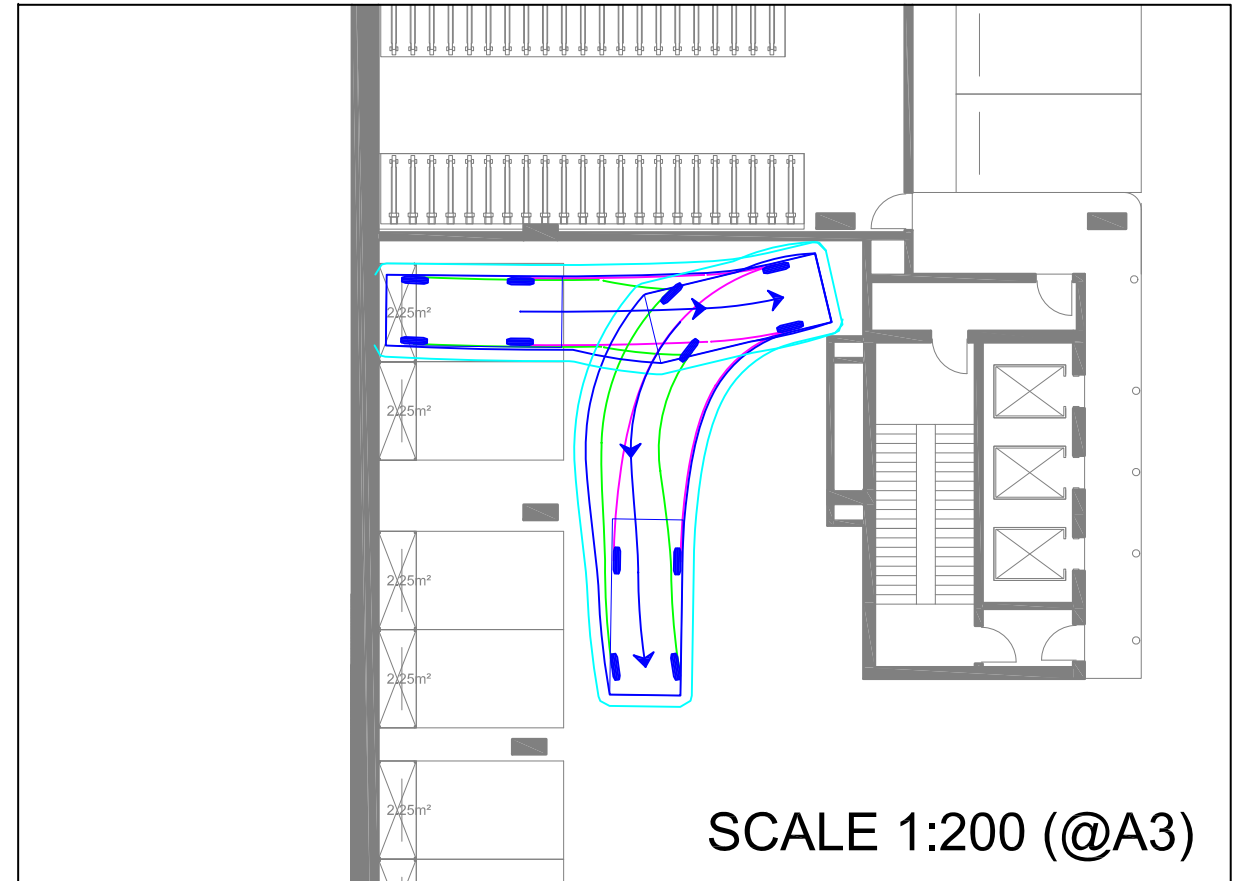
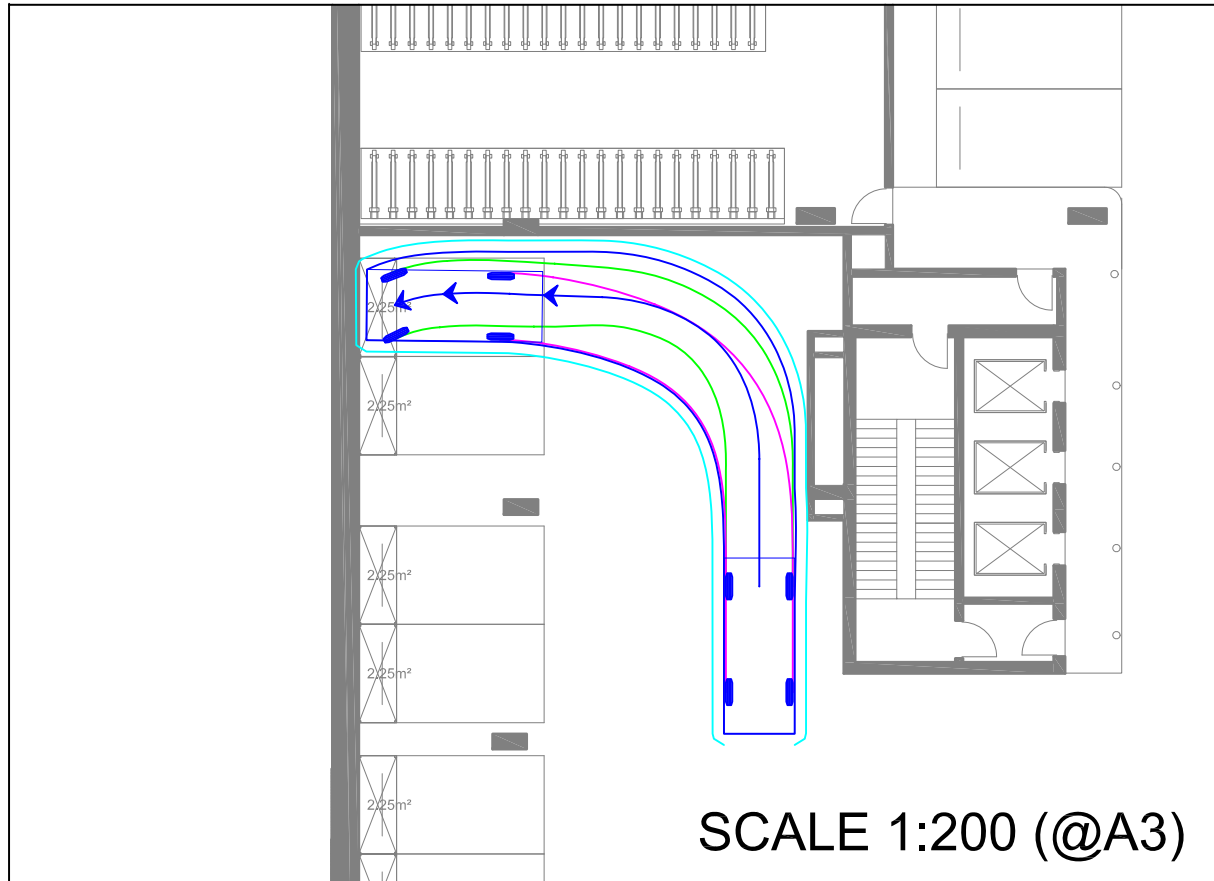
85th percentile  
(AS/NZS 2890.1:2004)

Width : 1.87m  
Track : 1.77m  
Kerb to Kerb Radius : 5.8m

\* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

**LEGEND**

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	10/12/2025	PRE-APP	J. LEWIS	J. COSSINS (RPE11767)
B	08/04/2026	TOWN PLANNING	J. LEWIS	J. COSSINS (RPE11767)

**188-202 SWAN STREET, CREMORNE**  
PROPOSED MIXED USE DEVELOPMENT

**GENERAL NOTES:**  
BASED ON PLANS PREPARED BY COX ARCHITECTS RECEIVED MARCH 2026

FILE NAME: G36477-01  
SHEET NO.: 01



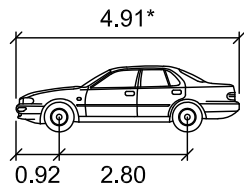
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VEHICLE USED IN SIMULATION



85th percentile  
(AS/NZS 2890.1:2004)

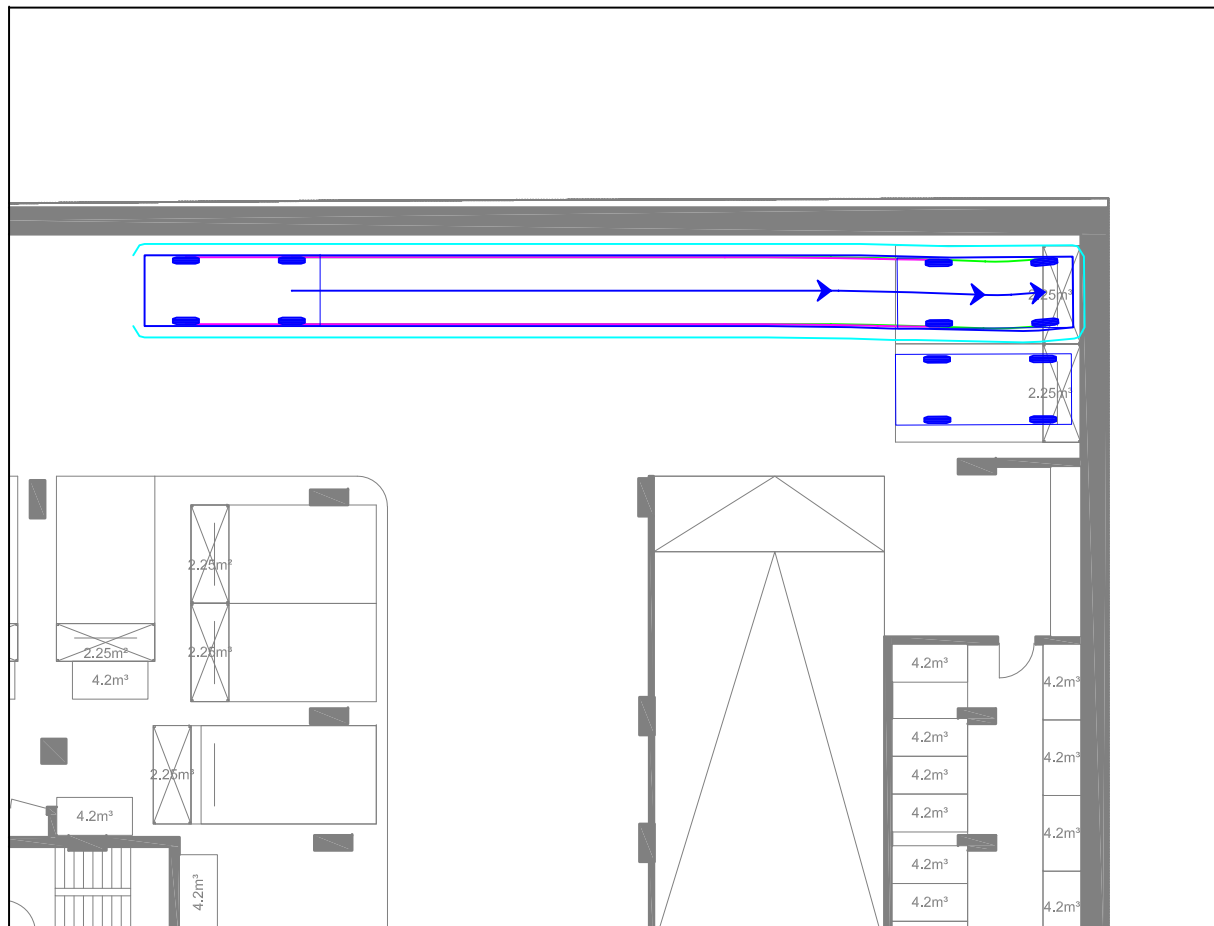
Width : 1.87m  
Track : 1.77m  
Kerb to Kerb Radius : 5.8m

\* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

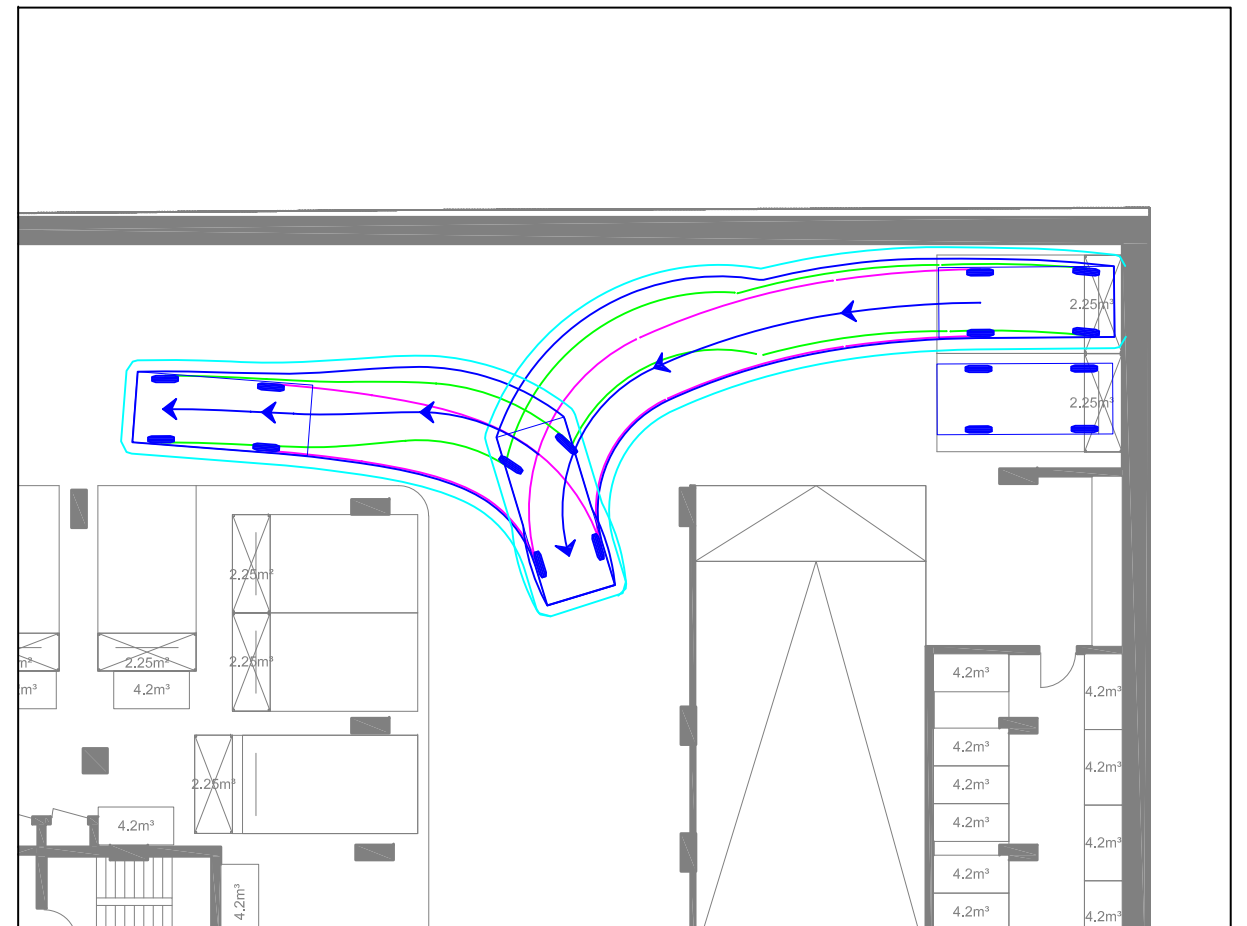
LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

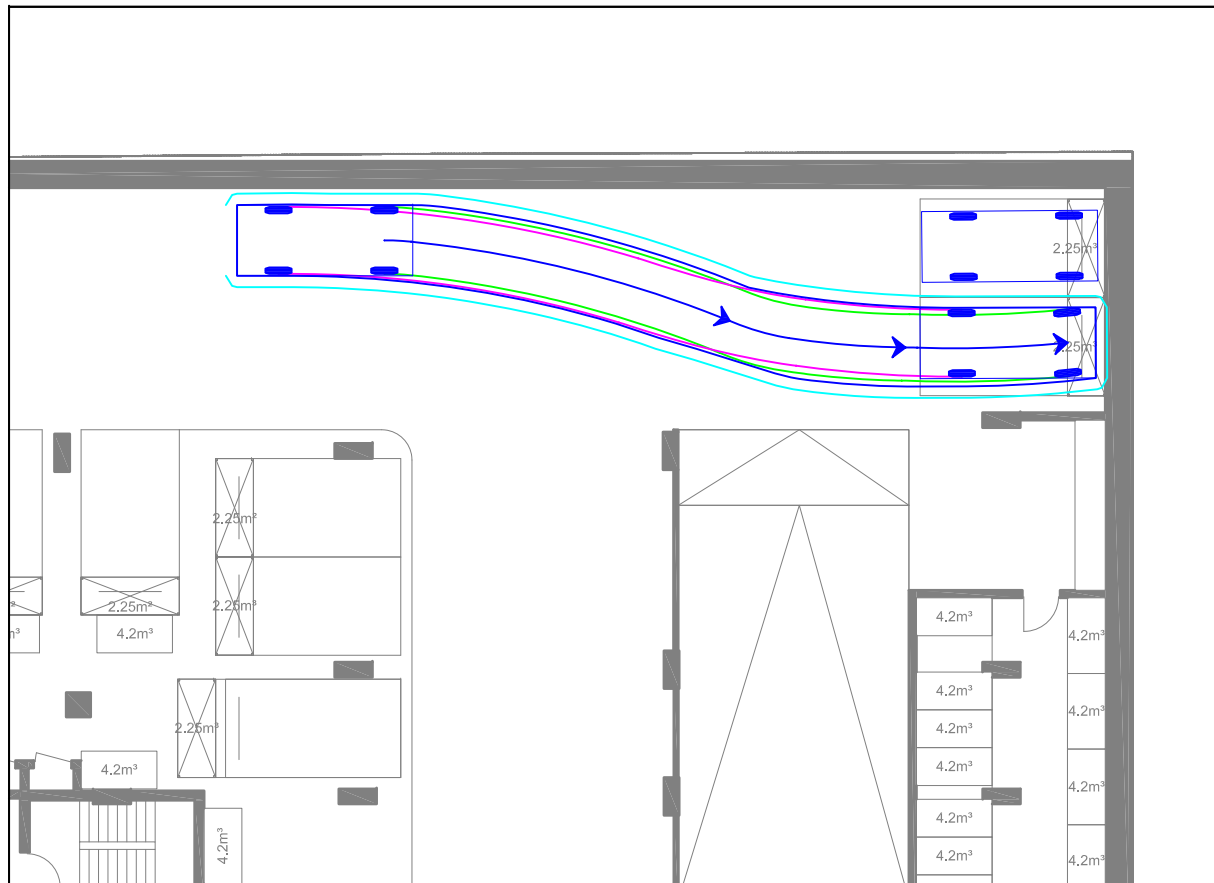
B85 CRITICAL SPACE ACCESS 1 - INGRESS



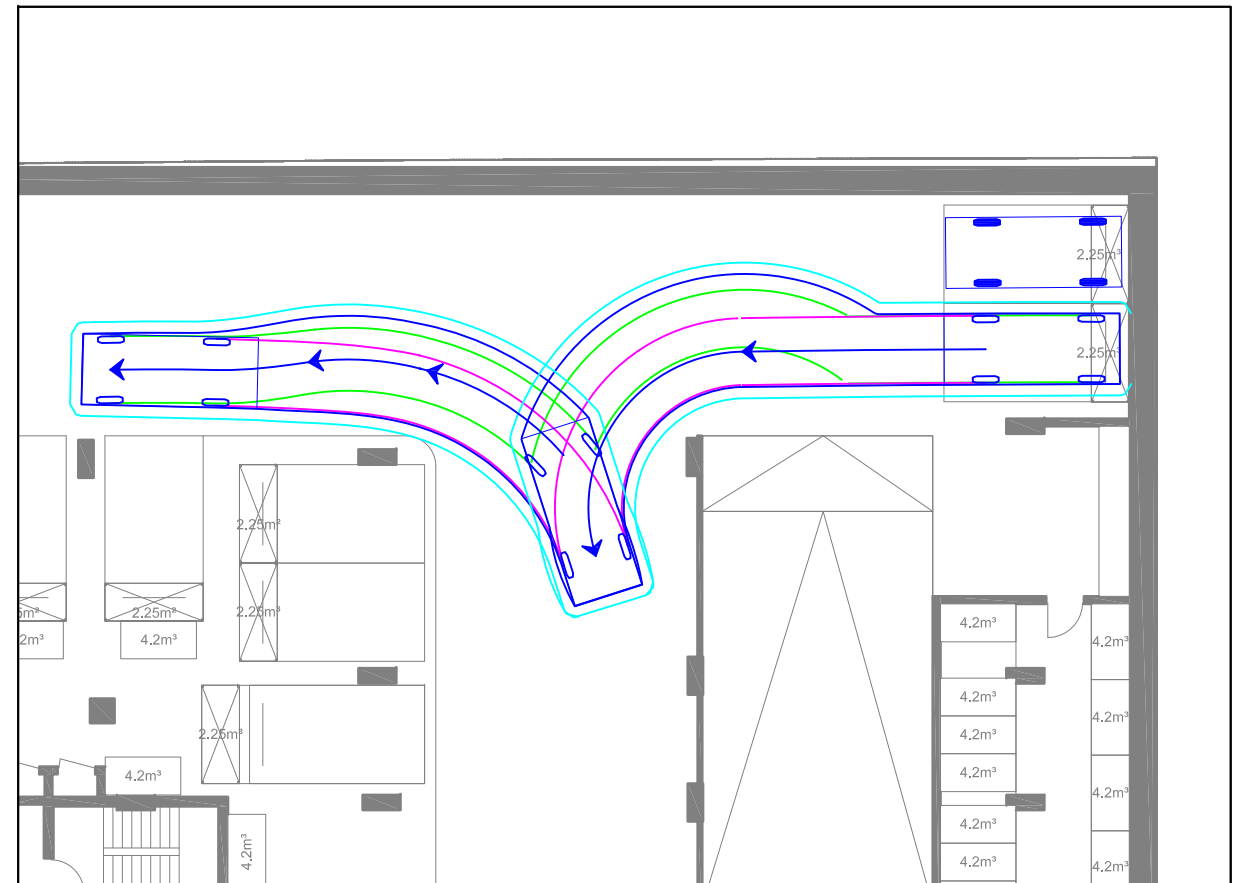
B85 CRITICAL SPACE ACCESS 1 - EGRESS



B85 CRITICAL SPACE ACCESS 2 - INGRESS



B85 CRITICAL SPACE ACCESS 2 - EGRESS



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**188-202 SWAN STREET, CREMORNE**  
PROPOSED MIXED USE DEVELOPMENT

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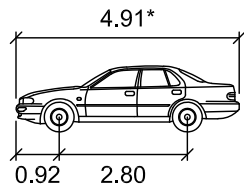
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B85 CRITICAL SPACE ACCESS 3 - INGRESS

B85 CRITICAL SPACE ACCESS 3 - EGRESS

VEHICLE USED IN SIMULATION



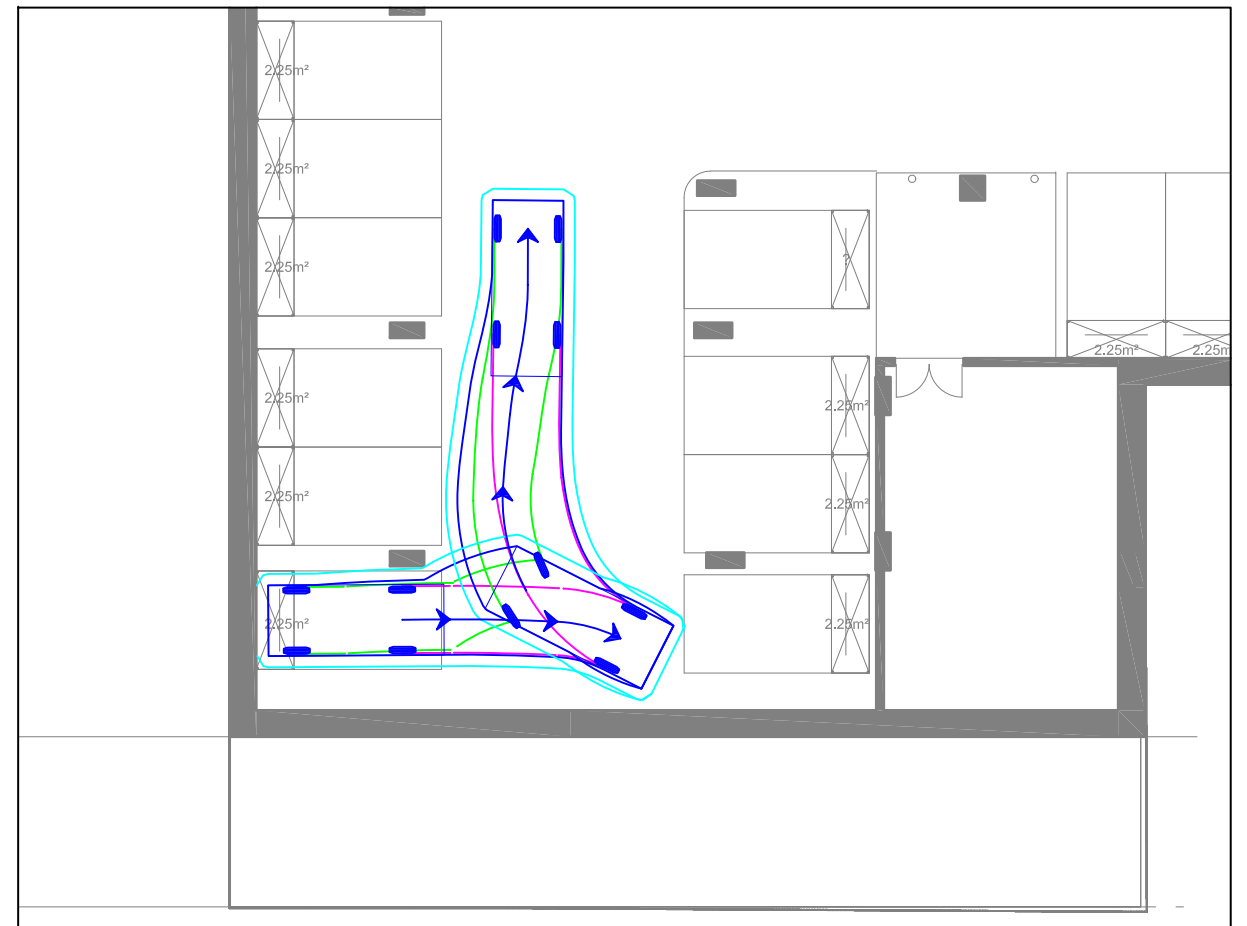
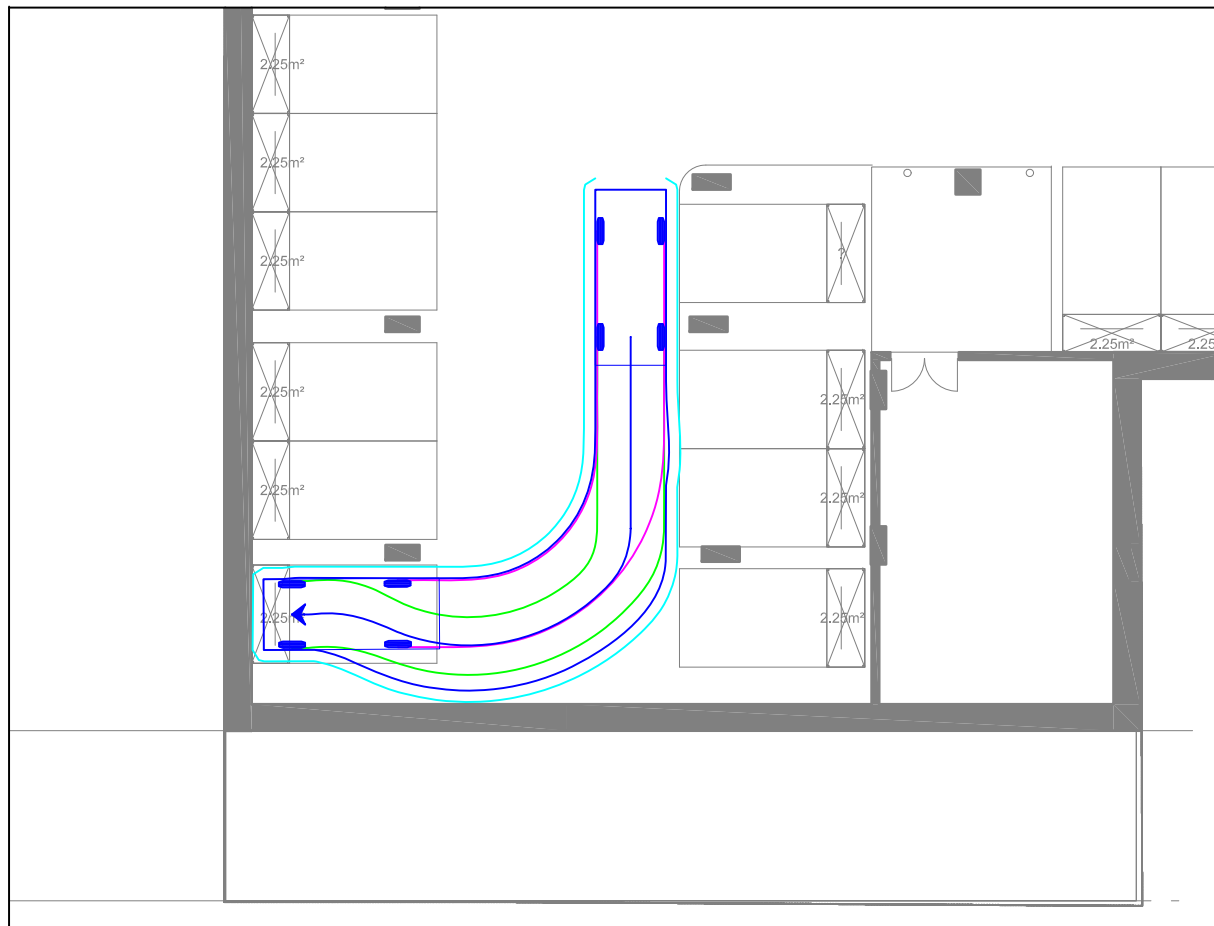
85th percentile  
(AS/NZS 2890.1:2004)

- Width : 1.87m
- Track : 1.77m
- Kerb to Kerb Radius : 5.8m

\* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

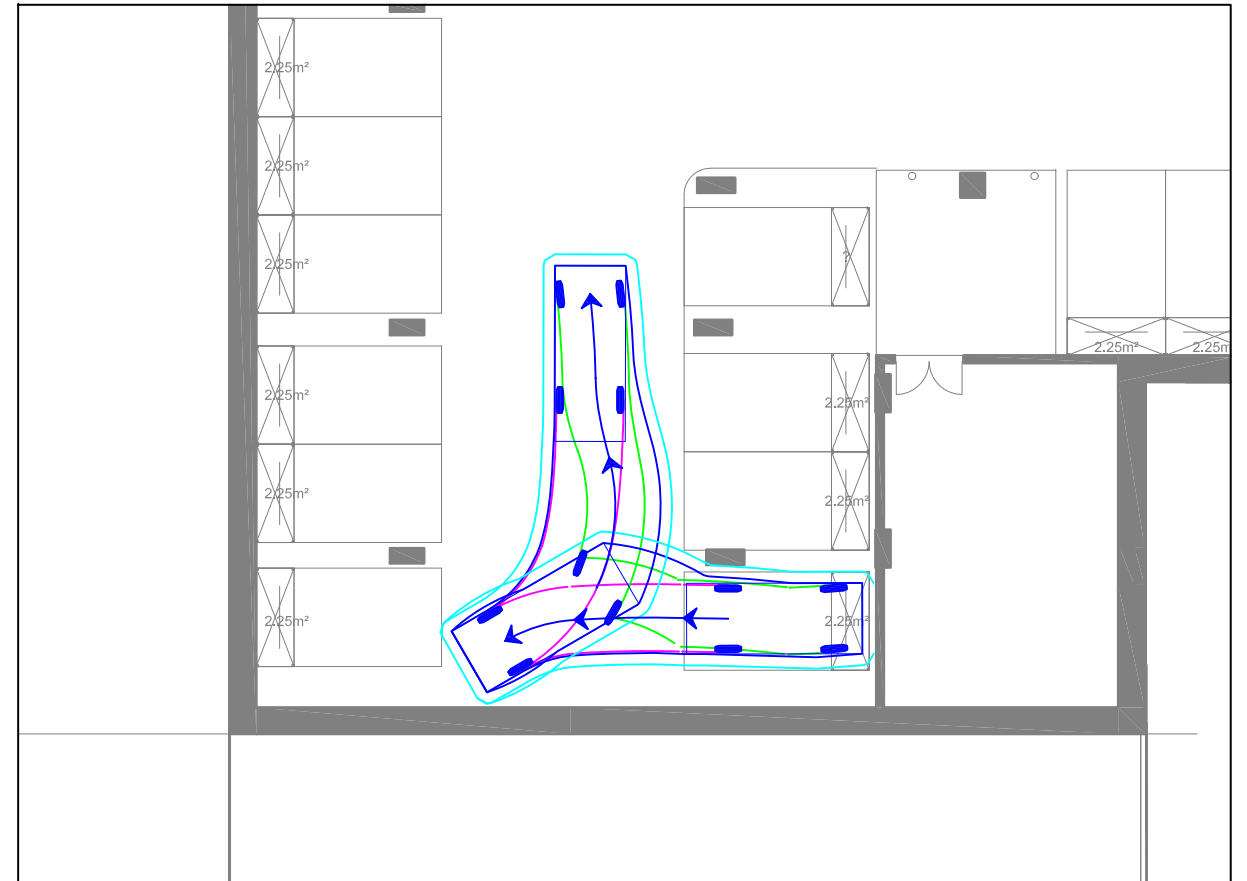
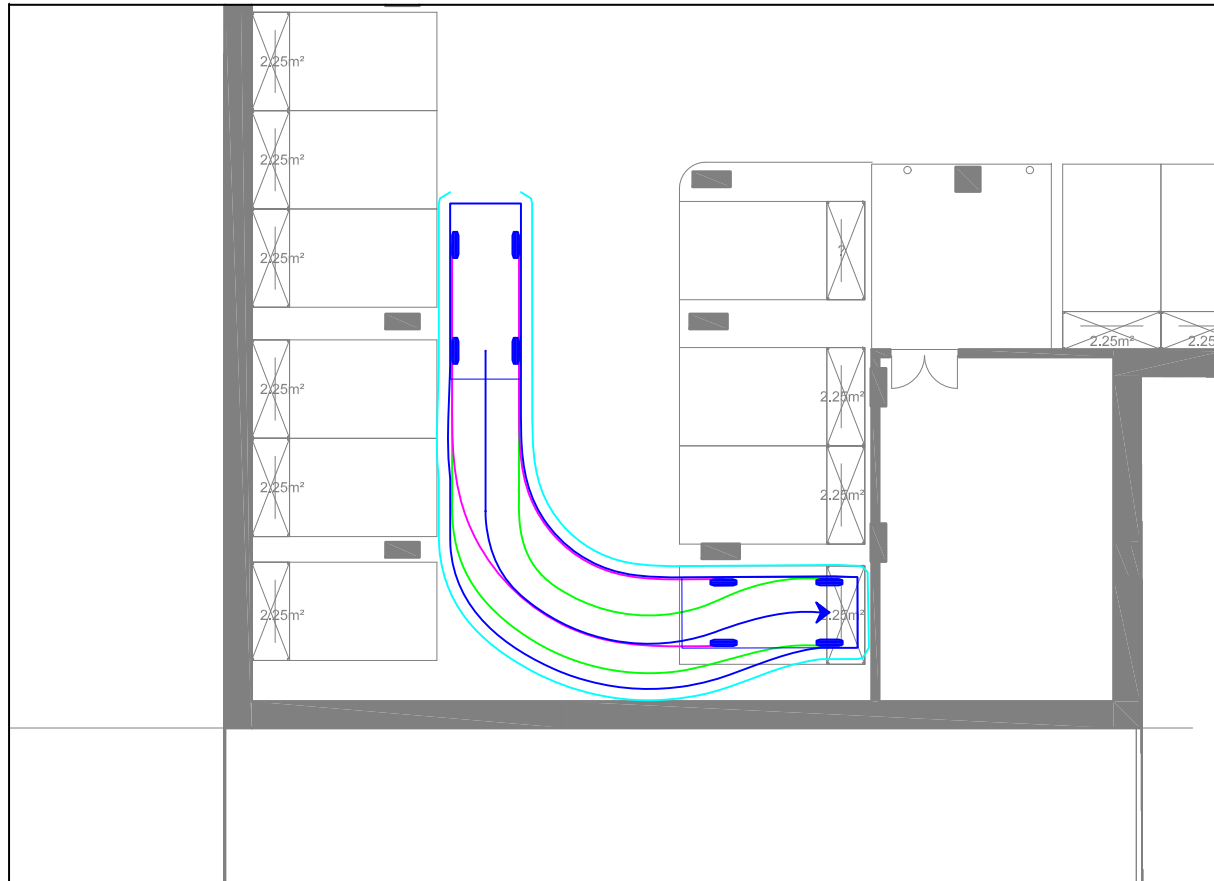
- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE



B85 CRITICAL SPACE ACCESS 4 - INGRESS

B85 CRITICAL SPACE ACCESS 4 - EGRESS

**ADVERTISED  
PLAN**



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B	08/04/2026	TOWN PLANNING	J. LEWIS	J. COSSINS (RPE11767)

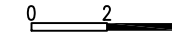
**188-202 SWAN STREET, CREMORNE**  
PROPOSED MIXED USE DEVELOPMENT

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