

Traffix Group

Traffic Engineering Assessment

Proposed Mixed Use Development
607-623 Collins Street, Melbourne

Prepared for
Six Two Three Development Pty Ltd

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Appendix A Swept Paths

1. Introduction

Traffix Group has been engaged by Six Two Three Development Pty Ltd to undertake a Traffic Engineering Assessment for the Proposed Mixed Use Development at 607-623 Collins Street, Melbourne.

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

In the course of undertaking 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.

2. Existing Conditions

2.1. Subject Site

The subject land, addressed as 607-623 Collins Street, Melbourne, is located on the south-eastern corner of the Spencer Street / Collins Street intersection.

The subject site is rectangular in shape with frontages to Spencer Street (to the west) and Collins Street (to the north), of approximately 48.9 metres and 40.6 metres, respectively.

A locality plan, aerial photo and a photograph of the site frontage are provided at Figure 1 to Figure 3, respectively.

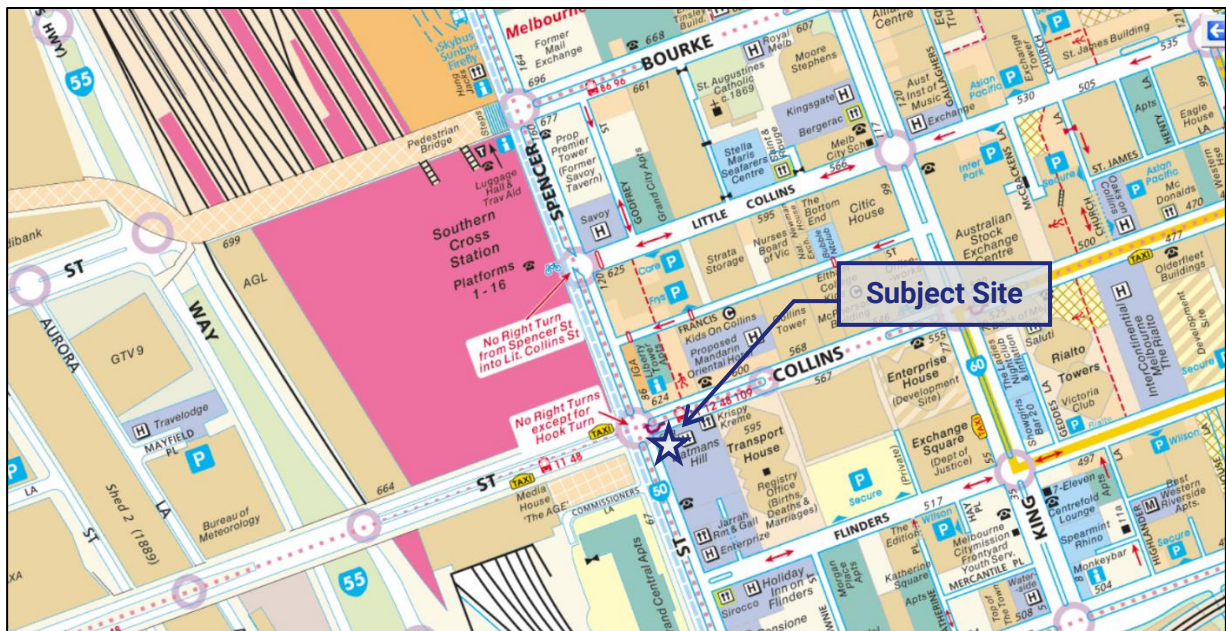


Figure 1: Locality Map

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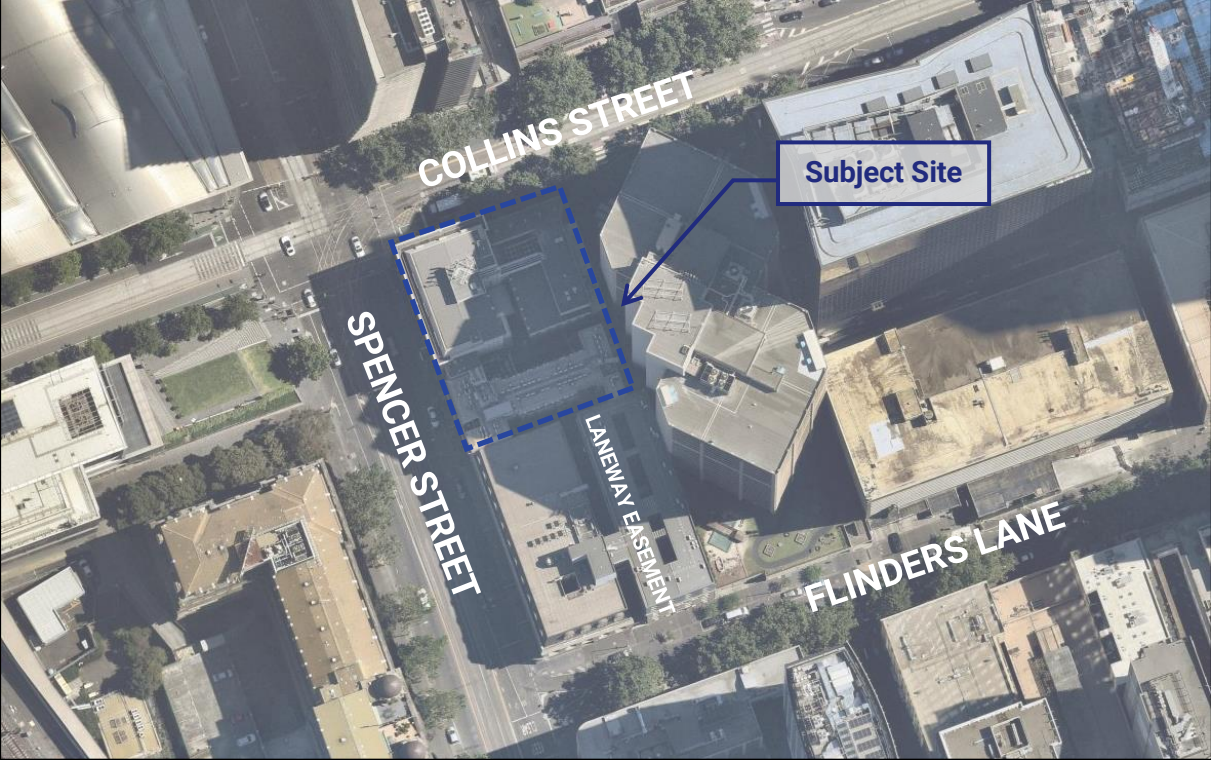


Figure 2: Aerial Photograph

Source: Nearmap



Figure 3: Site Frontage - View from Collins Street

2.2. Existing Use, Access & Parking

The subject site is occupied by the Batmans Hill Hotel with ground floor retail/food and drink/bar premises.

Vehicle access to 607-623 Collins Street is provided via two (2) crossovers as follows:

- One (1) single width crossover to Collins Street, affording vehicle access (ingress only) to the sites existing basement car park,
- One (1) single width crossover to Spencer Street, affording vehicle access (egress only) from the sites existing basement car park, and

The site also has access via a Laneway and Easement that sits over the land to the south linking to Flinders Lane, however we understand that the width of the easement is only approximately 2.4 metres, preventing vehicle access.

Pedestrian access is provided via the laneway easement, and also to both of Spencer Street and Collins Street.

We understand that there are currently 19 car parking spaces provided on-site within the car park, all for use by guests of the hotel.

2.3. Planning Scheme Zones & Surrounding Uses

The subject site is located within the 'Capital City Zone – Schedule 1 (CCZ1)' under the Melbourne Planning Scheme.

Spencer Street is located within a Transport 2 Zone, whilst Collins Street sits within the Capital City Zoning.

A planning zone map is provided at Figure 4.

Notable nearby uses include:

- **Southern Cross Station**, located on the diagonally opposite side of the Spencer Street/Collins Street intersection,
- **Yarra River**, located approximately 400 metres the south of the site,
- **Melbourne Convention & Exhibition Centre and South Wharf**, located approximately 600 metres to the south-west of the site,
- **Southbank and the Crown Casino Entertainment Precinct**, located approximately 600 metres to the south-east,
- **Marvel Stadium and Docklands Precinct**, located approximately 650 metres north-west of the site, and
- **The Melbourne City Central Retail Core**, is approximately 1km to the north-east of the site.

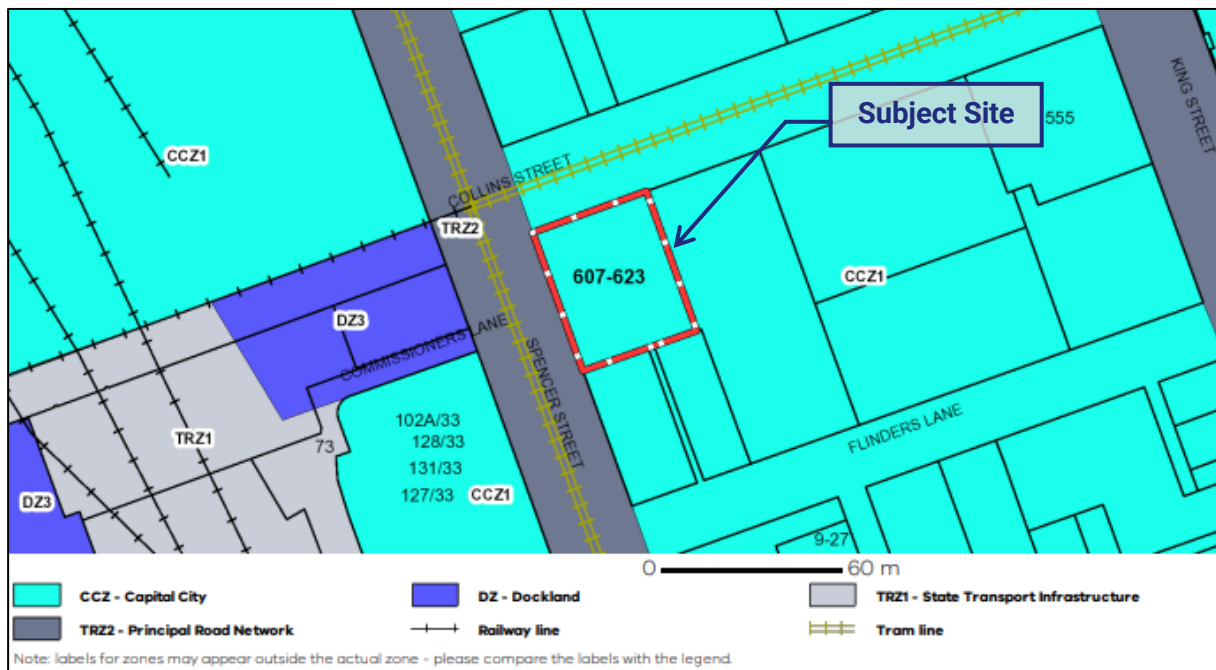


Figure 4: Planning Zone Map – City of Melbourne

2.4. Road Network

Collins Street is a local Council road aligned in an east-west direction through the City, between Spring Street (to the east) and becomes North Wharf Road (at the west).

In the vicinity of the site, Collins Street typically provides for a traffic lane, narrow bike lane and parking in both directions, separated by a central dedicated tram fairway.

At the site frontage, the eastern approach of Collins Street to the Spencer Street signals forms 2 traffic lanes. There is a tram 'super-stop' located to the immediate east of the site which narrows the traffic lanes to a single vehicle and bike lane with no parking.

Kerbside parking is not permitted along the frontage of the site.

The pedestrian footpath along the site frontage is generally provided with a width of approximately 5.4 metres.

A signed speed limit of 40km/h applies along Collins Street.

Spencer Street is a State managed arterial road, located within 'Transport Zone 2 – Principal Road Network (TRZ2)' of the Planning Scheme.

It operates in a north-south direction and forms the western boundary of the Central City area, between Dynon Road (to the north) and Flinders Street (to the south).

Along the site boundary, Spencer Street provides for 2 traffic lanes in each direction, separated by a dedicated central tram fairway. Parking along the site abuttal is restricted as follows:

- Between Collins Street & the existing site access;

- 'Clearway, 7:30am - 9:30am and 4pm - 6pm, Monday - Friday' and
- 'No Parking, 10 Minutes, All Other Times'.
- Between the site access and land to the immediate south,
 - 'Clearway, 7:30am - 9:30am and 4pm - 6pm, Monday - Friday',
 - '1/2 P Meter 9:30am-4pm Monday to Friday and 7:30am-6pm Saturday', and
 - 2P Meter 6pm-8:30pm Monday to Saturday

A signed speed limit of 40km/h applies along Spencer Street.

The pedestrian footpath along the site frontage is generally provided with a width of approximately 3.7 metres.

Spencer Street/Collins Street intersection

The subject site is located on the south east corner of the Collins Street / Spencer Street intersection.

Turning movements at each approach consist of the following:

- The **western approach** on Collins Street consists of one (1) through lane for vehicles, one (1) through and left turn lane for vehicles and tram tracks permitting through and left turn movements for trams,
- The **northern approach** on Spencer Street consists of one (1) through and left turn lane for vehicles and tram tracks permitting through movements for trams,
- The **eastern approach** on Collins Street consists of one (1) through and left turn lane for vehicles and tram tracks permitting through movements for trams, and
- The **southern approach** on Spencer Street consists of one (1) through and right turn movements for vehicles, one (1) through and left turn lane for vehicles and tram tracks permitting through and left turn movements for trams.

Figure 5 illustrates the permitted turning movements at the Collins Street / Spencer Street intersection.

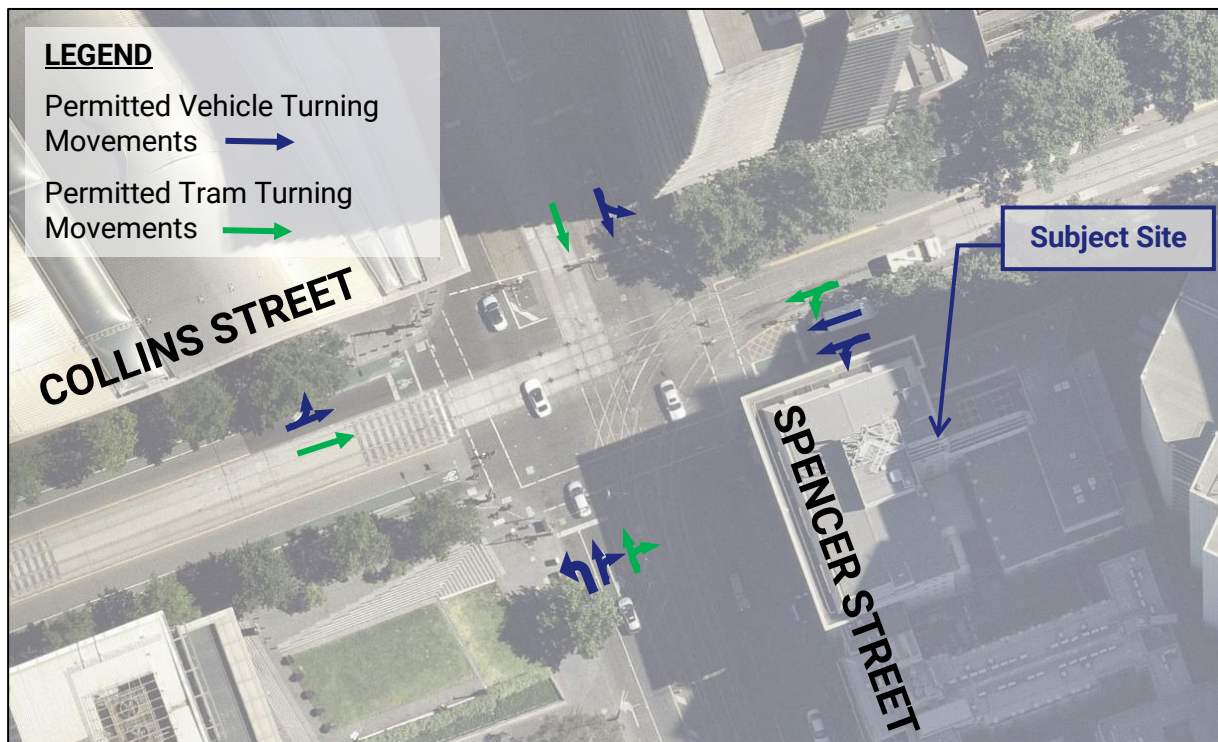


Figure 5: Collins Street / Spencer Street Intersection Permitted Turning Movements

A **Private Laneway** is located approximately 22 metres east of Spencer Street and is aligned in a north-south direction between the subject site and Flinders Lane. It sits on the Title of the land at 44-56 Spencer Street. Access for pedestrians is afforded to the site via an Easement which sits over the land in the laneway. However, the width of the Easement is only 2.4 metres wide (therefore preventing vehicle access).

Vehicle access to the private laneway is afforded via Flinders Lane

The private laneway is approximately 50 metres in length and forms a 'dead end'. The laneway has a carriageway width of approximately 3.45 metres.

Figure 6 to Figure 13 to illustrates the road network surround the subject site and Figure 14 to Figure 17 provide visuals of existing frontage conditions of the site.



Figure 6: Collins Street - View East

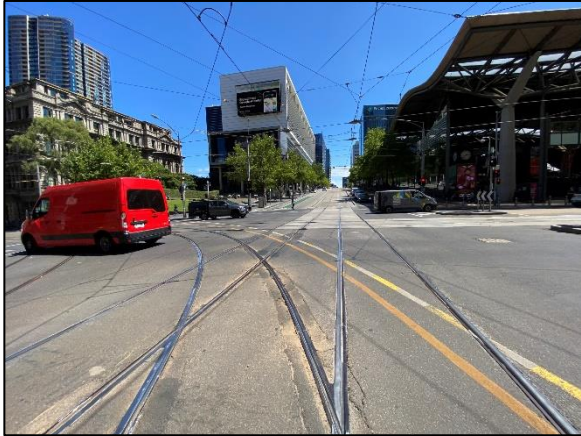


Figure 7: Collins Street - View West



Figure 8: Spencer Street - View North

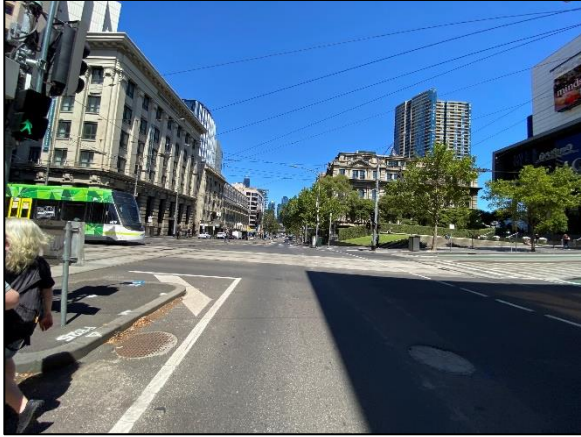


Figure 9: Spencer Street - View South



Figure 10: Flinders Lane - View East

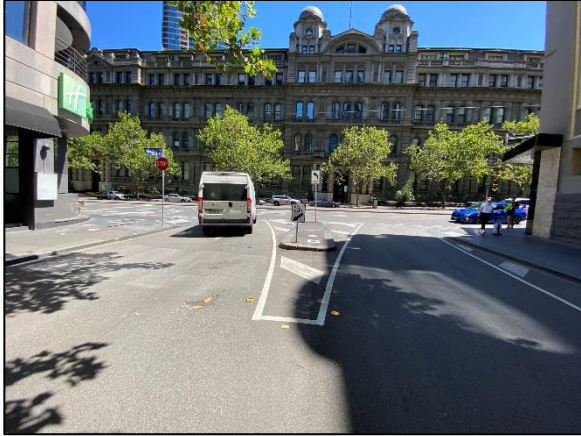


Figure 11: Flinders Lane - View West



Figure 12: Private Laneway - View North



Figure 13: Private Laneway - View South



Figure 14: Collins Street Frontage - View East



Figure 15: Collins Street Frontage - View West



Figure 16: Spencer Street Frontage - View North



Figure 17: Spencer Street Frontage - View South

2.5. Sustainable Transport Accessibility

2.5.1. Walkability

The site has excellent access to sustainable transport modes and is well located with regard to retail and everyday essential services, thus promoting walking.

The site is located within the 'Capital City Zone – Schedule 1 (CCZ1)'. This provides access to a wide range of everyday services such as restaurants, cafes, supermarkets, specialty shops and medical centres.

2.5.2. Bicycle Network Accessibility

Figure 18 illustrates protected bike lanes within the vicinity of the site.

Several on-road bike lanes are located within the vicinity of the site, including along Collins Street, William Street and Bourke Street as shown in the TravelSmart map at Figure 19.

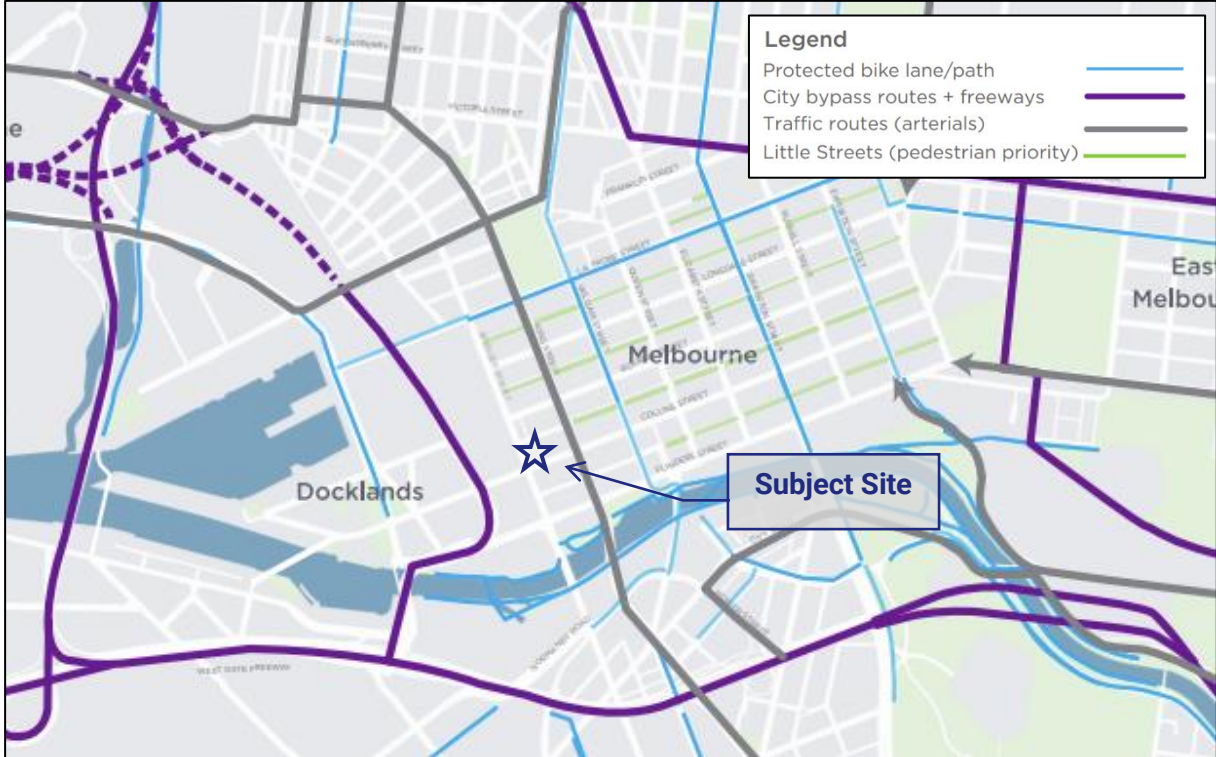


Figure 18: Bike Lanes Map - City of Melbourne

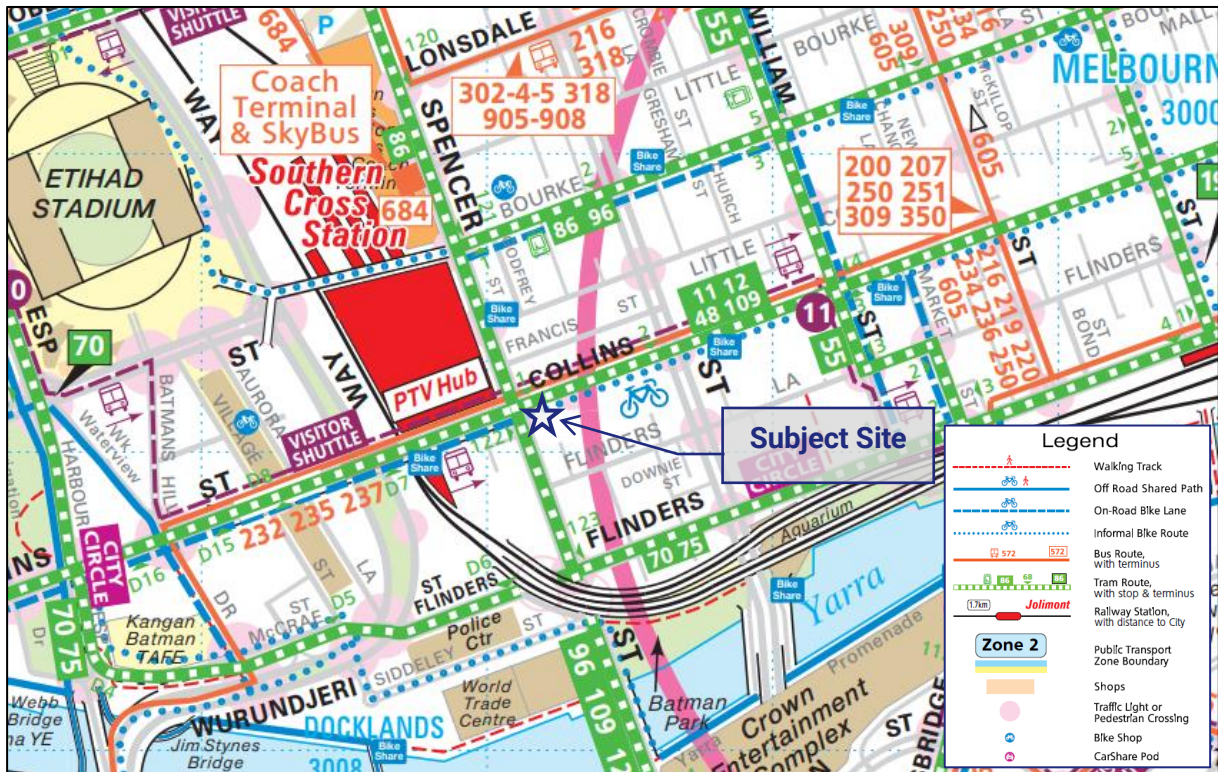


Figure 19: TravelSmart Map - City of Melbourne

2.5.3. Public Transport

The site has excellent accessibility to public transport with Tram Route 11, 12, 48 and 109 operating along Collins Street along the site frontage. Southern Cross station is conveniently accessible from the site. The site also has access to three (3) bus routes located within 500 metres walking distance from the site.

Table 2 summarises the available services, whilst Figure 20 illustrates the nearby routes.

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

Services	Route	Via	Distance to Node
Tram Services	Route 11	West Preston to Victoria Harbour Docklands	~ 70 metres
	Route 12	Victoria Gardens to St Kilda	~ 70 metres
	Route 48	North Balwyn to Victoria Harbour Docklands	~ 70 metres
	Route 109	Box Hill - Port Melbourne	~ 70 metres
	Route 96	East Brunswick to St Kilda Beach	~ 280 metres
	Route 35	City Circle	~ 220 metres
	Route 70	Wattle Park to Waterfront City Docklands	~ 220 metres
	Route 75	Vermont South to Central Pier, Docklands	~ 220 metres
	Route 86	Bundoora RMIT to Waterfront City Docklands	~ 280 metres
Train Services	Southern Cross Station	Hurstbridge / Mernda / Belgrave / Lilydale / Glen Waverley / Alamein / Craigieburn / Upfield / Sunbury / Pakenham / Cranbourne / Werribee / Williamstown train lines. Additionally, Southern Cross Station provides for a variety of V/Line services.	~ 150 metres
Bus Services	Route 232	Altona North - City (Queen Victoria Market)	~ 110 metres
	Route 235	City - Fishermans Bend via Williamstown Road	~ 110 metres
	Route 237	City - Fishermans Bend via Lorimer Street	~ 110 metres
	Skybus Coach Terminal	Skybus - Melbourne Airport - Melbourne City	~ 400 metres

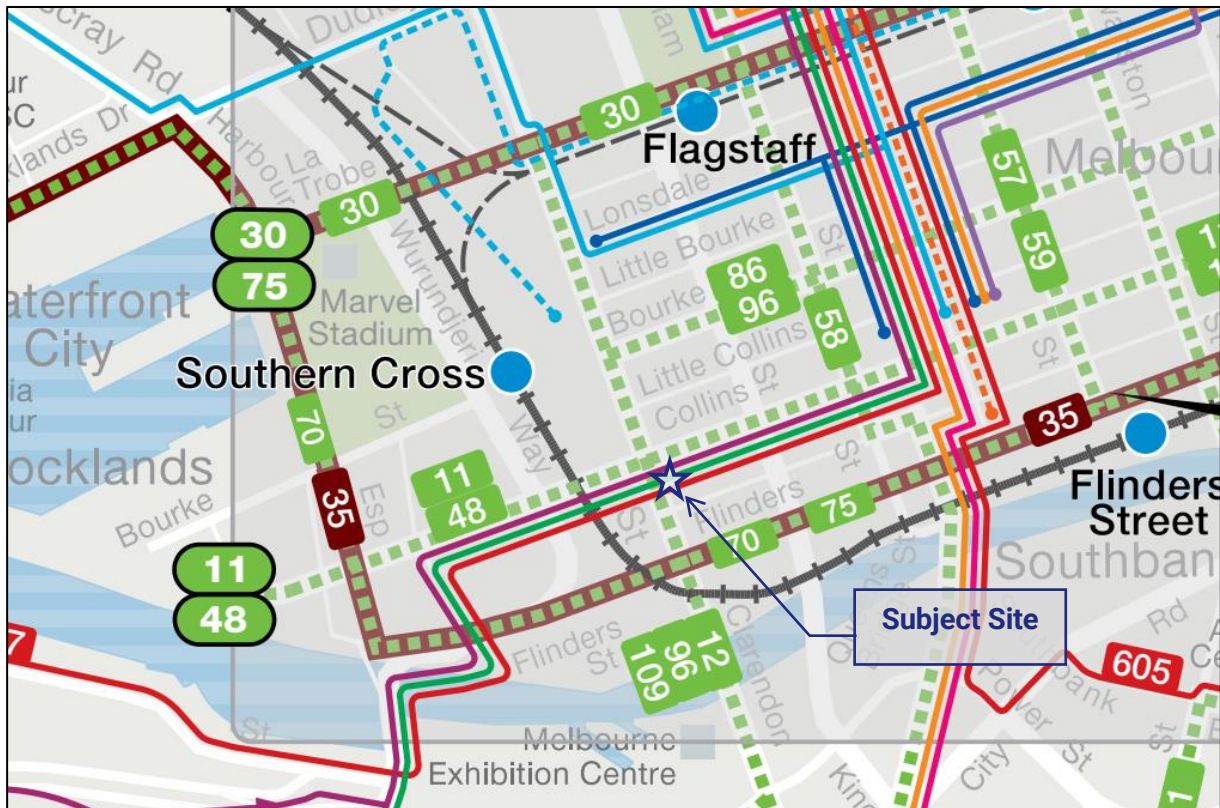


Figure 20: PTV Public Transport Map – City of Melbourne

Source: Public Transport Victoria

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’ cars¹.

Melbourne 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 and goget.

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

- 623 Collins Street, Melbourne (goget) (1 car).
- Collins Street near King Street (goget) (1 car).
- Bourke Street between Spencer Street and King Street (goget) (1 car),
- 522 Flinders Lane Car Park on level 1 (Flexicar) (1 car), and
- Collins Street and King Street (Flexicar) (1 car).

The nearest existing car share pods (spaces) are shown in Figure 21.

¹ The two (2) main schemes supported by these Councils are Flexicar (www.flexicar.com.au) and Go Get Car Share (www.goget.com.au).

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Car sharing schemes provide accessibility for businesses that may require a car for short trips during the daytime period, but otherwise can easily commute to/from the site at the start and end of the day. This actively encourages the use of alternative transport modes for the main commuter trips.

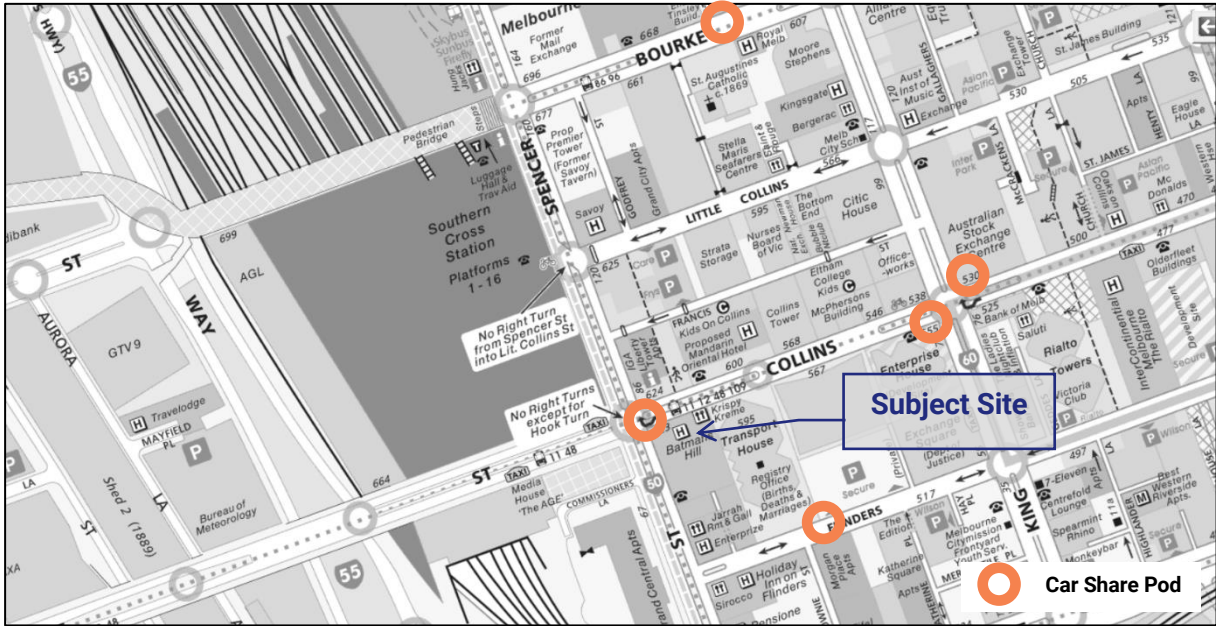


Figure 21: Proximate Car Share Locations

3. Proposal

3.1. The Development

The proposal is for a multi-storey development mixed-use development, maintaining parts of the existing heritage buildings and constructing new residential apartments and a residential hotel above.

The proposal also includes new office/commercial uses.

The proposed development schedule is provided in Table 2.

Table 2: Proposed Development Schedule

Use		Current Scheme
Residential	1 bed dwelling	44 dwellings
	2 bed dwelling	101 dwellings
	3+ bed dwelling	30 dwellings
	Total	175 dwellings
Commercial / Office		2,717 m ²
Residential Hotel		229 rooms / 8,976 m ²
Food and Drink		69 m ²

3.2. Access

3.2.1. Pedestrian Access

The removal of the vehicle access on Collins Street will provide for improved activation to the Collins Street frontage.

Along the Spencer Street abuttal, and between Collins Street and the site vehicle access, the pedestrian footpath is proposed to be widened by approximately 3 metres and two (2) formal indented car spaces are intended to be provided.

Primary pedestrian access to the residential and hotel lobby will be from Collins Street.

3.2.2. Bike Access

Primary cycle access will be provided via the southern laneway, through the basement car park.

Alternative access will be available through the Spencer Street vehicle entry and also via the main Collins Street pedestrian access located centrally along the northern boundary of the site.

3.2.3. Car/Vehicle Access

Vehicle access to the basement car park is provided via Spencer Street. The existing crossover will be retained and provide for ingress movements. The crossover will be widened to the south to provide for an exit crossover.

Whilst the crossover will effectively be a single wide two-way crossover, the access will be separated into entry and exit lanes by the existing heritage façade and structure.

3.2.4. Loading & Waste

Loading and waste collection is proposed to be undertaken on-site within basement level 1 at the proposed loading bay, via private collection services using a Hino mini-rear loader vehicle.

A summary of the access arrangements is provided at Figure 22.

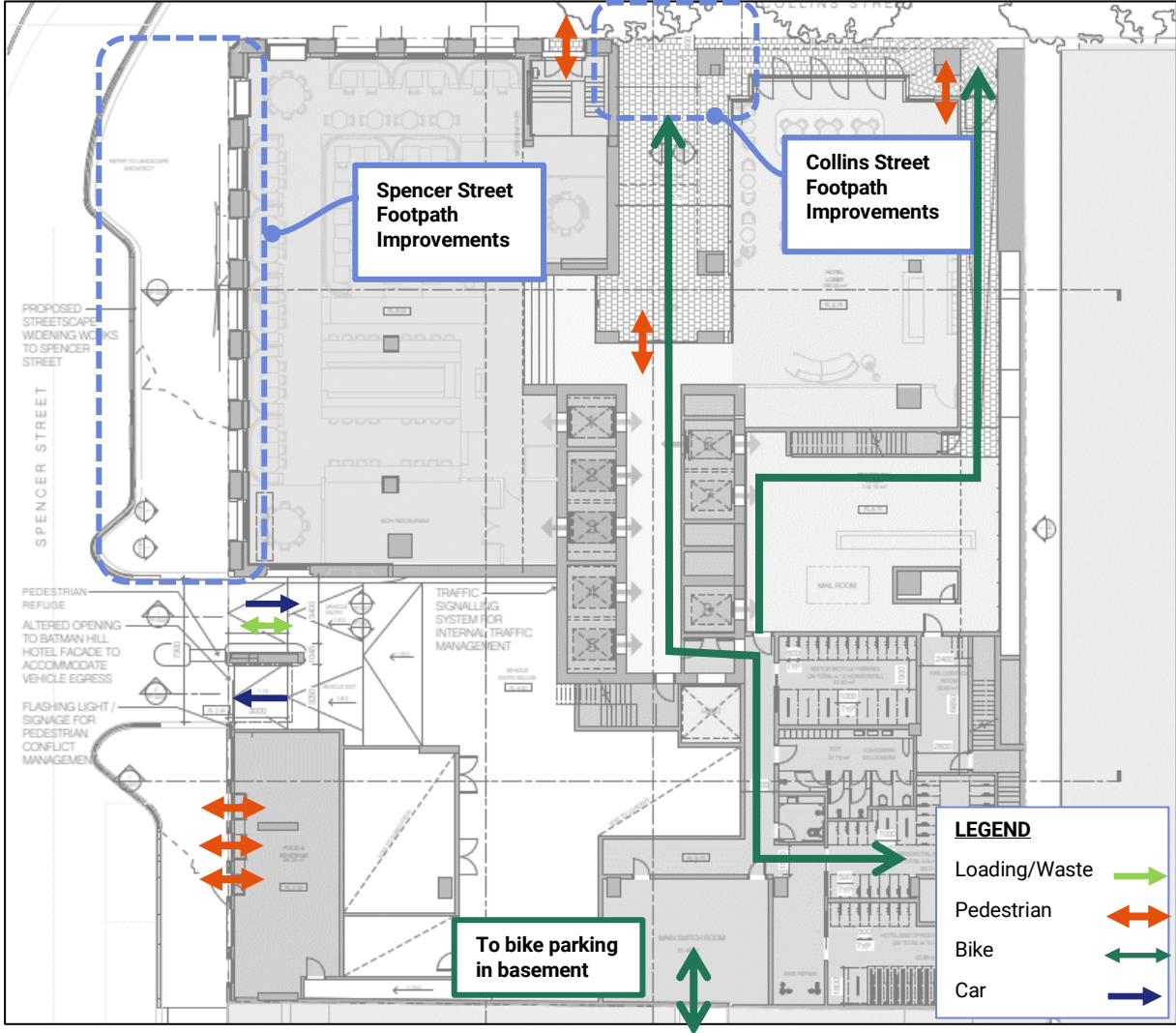


Figure 22: Proposed Access Arrangements

3.3. Parking

3.3.1. Bicycle Parking and EoT

The application proposes secure bicycle parking and End of Trip (EoT) facilities at ground level for visitors and residents. Additional bicycle parking is for residents and residential visitors is provided in the basement levels.

A total of 269 bicycle spaces are proposed, as follows:

- 44 shared bike spaces allocated to visitors:
 - 28 shared bike spaces located within a secure room on the ground floor,
 - 16 bike spaces, located within a secure room on the basement level 1.
- 50 shared bike spaces allocated to office and hotel staff, located within a secure room on the ground floor,
- 175 bike spaces allocated to residents:
 - 43 spaces located within a secure room on the ground floor,
 - 132 over bonnet spaces within the basement level car parks.

3.3.2. Car Parking

The application proposes 148 on-site car spaces (inclusive of one (1) small car space) within a five-level basement car park (basement level 1 to basement level 5).

Eight (8) electric vehicle charging spaces are provided on basement level 1.

All parking is intended to be allocated to residents on a demand basis.

3.3.3. Motorcycle Parking

Thirteen (13) motorcycle spaces are provided within the basement levels for residents.

3.3.4. Summary of Parking

A summary of the parking provisions is provided at Table 3.

Table 3: Proposed Parking Provisions

Use	Resident	Staff	Visitor
Bike Parking	175 spaces	50 spaces	44 spaces
Car Parking	148 spaces	0 spaces	0 spaces
Motorcycle Parking	13 spaces	0 spaces	0 spaces

4. Parking Considerations

4.1. Car Parking

4.1.1. Clause 52.06 & Schedule 1 to Clause 45.09

The car parking requirements for the proposed development are outlined under Schedule 1 to the Parking Overlay (PO1) which works in conjunction with Clause 52.06 of the Melbourne 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.

The Schedule to the Parking Overlay applies maximum car parking rates.

The statutory car parking requirement is set out at Table 4.

Table 4: Statutory Car Parking Requirements (Schedule 1 to Clause 45.09)

Use	No / Size	Statutory Requirement	Maximum Spaces Allowed
Residential apartments	175	No more than one space per dwelling	175 spaces
Residential Hotel & Office & F&B	11,763 m ²	5 spaces per 1,000 sq m of net floor area	58 spaces
Total			233 spaces

Based on the table above, the development is statutorily required to provide no more than 58 car spaces for the residential hotel and office component and no more than 175 car spaces for residential dwellings, totalling no more than 233 car spaces.

The provision of 148 spaces onsite for residents, and no parking for the residential hotel and office components is within the requirements of 'Schedule 1 to the Parking Overlay (PO1)' and therefore no permit is sought under Clause 52.06 of the Planning Scheme.

4.2. Motorcycle Parking – Schedule 1 to Clause 45.09

Schedule 1 to Clause 45.09 (The Parking Overlay) specifies that:

All buildings that provide on-site car parking must provide motorcycle parking for the use of occupants and visitors, at a minimum rate of one motorcycle parking space for every 100 car parking spaces, unless the responsible authority is satisfied that a lesser number is sufficient.

The proposed provision of 148 car spaces triggers a requirement to provide 3 motorcycle spaces under Schedule 1 to Clause 45.09.

The provision of thirteen (13) spaces far exceeds the minimum requirements, and equates to an average of 1 motorcycle space per 11 spaces.

4.3. Bicycle Parking – Clause 52.34

Clause 52.34 of the Planning Scheme specifies the bicycle parking requirement for new developments. The Food and Drink premises is not of sufficient size to trigger a requirement for bike parking.

The relevant requirements are summarised in Table 5.

Table 5: Statutory Bicycle Parking Requirements

Use	Units	Statutory Requirement	No. Of Spaces Required
Dwellings	175 dwellings	1 space per 5 dwellings for residents 1 space per 10 dwellings for visitors	35 resident spaces 18 visitor spaces
Residential Hotel	229 rooms	1 space to each 10 lodging rooms for staff and the same for guests	23 staff spaces 23 guest spaces
Office	2,717 m ²	1 space to each 300 square metres of area for staff 1 space to each 1,000 square metres of area for visitors	9 staff spaces 3 visitor space
Total			Resident 35 spaces Staff 32 spaces Visitors 44 spaces

Based on the above assessment, the development is required to provide a minimum of 111 bicycle spaces, comprising 35 resident spaces, 32 staff spaces and 44 combined visitor /guest spaces.

We note that the plans identify a total of 269 bicycles spaces (175 spaces for residents, 50 spaces for hotel and office staff, and 44 spaces allocated to visitors).

The requirement for 32 staff spaces also triggers a requirement for End of Trip Facilities at a rate of 1 shower/changeroom for the first 5 bicycle spaces and 1 space for each 10 bicycle spaces thereafter.

The application plans illustrate the provision of End of Trip facilities with four (4) combined showers and changerooms at the Ground Floor.

These provisions meet the minimum requirements under Clause 52.34 of the scheme.

4.4. Design Considerations

4.4.1. General Commentary Car Parking Layout

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

Swept paths are provided at Appendix A showing appropriate design vehicle accessibility.

4.4.2. Access Design

The proposal includes a removal of the existing Collins Street vehicle access and delivery of a second access to Spencer Street (effectively a widening of the existing access to provide for 2-way access).

Whilst access is provided to Collins Street currently, we understand that Collins Street provides for a greater pedestrian volume and accessibility than Spencer Street, and the presence of the raised tram fairway opposite the site access limits the opportunities for access for the site. Collins Street is also higher than Spencer Street and parking in this area is dictated by the Planning Scheme to be in Basement.

Along the frontage of the site, Spencer Street also has a wider carriageway between the existing kerb and the raised tram fairway and based on our casual observations, we expect that the higher pedestrian activity takes place along the Collins Street abuttal (rather than Spencer Street).

Whilst there is a level of access via the easement from Flinders Lane, the width of the easement is insufficient for it to provide for vehicular access.

Ultimately, from a parking efficiency and architectural/urban design perspective, relocating the vehicle access from Collins Street to Spencer Street offers more opportunities to deliver a better design outcome for the proposed development.

In relation to the need for two-way access (ie an access allowing for separate in and out movements), the overall traffic generation of the site will be low in traffic engineering terms (and impact to the surrounding road network).

However in a micro sense, Spencer Street is located in a Transport 2 Zone, and because there are more than 10 spaces provided on-site, the Planning Scheme requires passing to be provided at the boundary. Separate access is also desirable to manage interactions between pedestrians, cyclists and cars (on Spencer Street) and cyclists, cars and loading vehicles accessing the site.

It is also important to note that the widths of the access points and height clearances are constrained due to the heritage nature of the façade along Spencer Street.

4.4.3. Detailed Access Design Assessment

Key components of the design are considered below:

- The entry access is provided with a clear width of approximately 3.84 metres which exceeds the minimum requirements under AS2890.1 and is considered acceptable.
- The exit is provided with a minimum width of 2.9 metres between structure. The width of this access is limited due to the existing heritage façade and extent of modifications. Given the access is to private parking, we are comfortable that whilst it is not strictly compliant with AS2890.1, it is acceptable.
- Internally, the proposed ramp from ground floor to basement level 1 is to be at least 7.3 metres wide at the narrowest point and is divided by a central median (boom gate), affording simultaneous ingress and egress vehicle movements.
- The provision of separate entry and exit points satisfies the requirements under Clause 52.06-9 to provide passing at the boundary as Spencer Street is located within a Transport Zone.
- Vehicles can enter and exit the site in a forward direction in accordance with Clause 52.06-9 (Design Standard 1).
- Sight triangles are not able to be provided at the access points due to the heritage façade of the building. This is consistent with the existing conditions. To address this, we recommend the use of signage and/or a flashing beacon light mounted to the building façade which is activated as a car exits the site.
- The ramp grade from boundary is provided as 1 in 15 for the first 3 metres and then 1 in 8 for the next 3.85 metres. Whilst the 1 in 8 exceeds the maximum grade of a 1 in 10, the average grade for a vehicle propped at the exit will be 1 in 10.4. This is considered appropriate and in line with the intent of the requirements under Clause 52.06.
- The grade changes for this ramp have been premised on a small rigid vehicle (SRV) of 6.4 metres length accessing the loading dock. Whilst the grade changes do not comply with the grade changes listed at AS2890.2:2018, we have undertaken a clearance assessment and are comfortable that clearances are appropriate.
- It is noted that due to the height clearance restrictions on the proposed site egress, the SRVs (higher than 2.2 metres) will be required to exit via the entry lane. This will be done under traffic management, managed by the Building Manager.
- Swept paths demonstrating passing for two 99th percentile design vehicles (B99) at both the top and base of the access ramp to Spencer Street are attached at Appendix A.

4.4.4. External Road Design

The build out of the kerb on Spencer Street is proposed to improve the streetscape and pedestrian amenity along this frontage.

It is also in response to recent works undertaken by City of Melbourne to limit the number of turning and through lanes along Spencer Street to the north. In essence, all southbound traffic travelling past the site will be contained to a single lane as it passes through the intersection, and there is no inherent need for 2 southbound traffic lanes plus a parking lane.

Referral comments from DoTP have identified that they have no objection to the proposal or the changes to the external footpath, subject to standard conditions of demonstrating appropriate swept paths and pedestrian access can be maintained. As suggested by DoTP, this can be addressed through condition of permit should one issue.

4.4.5. Internal Ramps – Grades & Traffic Management

- The proposed four (4) ramps from basement level 1 to basement level 5 are to be at least 4.0 metres wide at the narrowest point meeting the requirements of Clause 52.06-9 (Design Standard 1) and AS/NZS 2890.1-2004.
- Appropriate areas for passing are accommodated within the basement car park and movements on the ramps will be managed through a traffic light system.

The traffic light system will be programmed to preferentially allow entering vehicles to drive down the ramp or enter the B1 car park. When a vehicle wishes to exit the site from the lower levels or B1 parking area, the traffic light system will turn red in B1, requiring an entering vehicle to prop adjacent the B1-B2 ramp (within the site) and wait for the vehicle to exit.

This is expected to be a relatively rare occurrence (where there are opposing vehicles at the top and bottom of the ramp). The traffic signalling system will appropriately manage traffic and there is sufficient space for queuing in basement 1.

- The proposed ramps are designed with a maximum grade of 1 in 4.5 and transitions of 1 in 8, satisfying the requirements of the Clause 52.06-9 (Design Standard 3) for private and residential accessways.

4.4.6. General Car Parking Layout

- All spaces are in accordance with the requirements of Clause 52.06-9 (Design Standard 2). Car spaces are to be provided with a mixture of dimensions as follows:
 - minimum dimensions of 2.6 metres width and 4.9 metres length, accessible from 6.4 metre wide aisles,
 - minimum dimensions of 2.8 metres width and 4.9 metres length, accessible when the aisle narrows to 5.8 metres, and
 - minimum dimensions of 3 metres width and 4.9 metres length, accessible when the aisle narrows to 5.2 metres.
- Car spaces within a tandem arrangement are provided with an additional 500mm clearance between each space as per Clause 52.06-9 of the Planning Scheme (Design Standard 2).
- Car spaces adjacent to walls and structures are generally provided with appropriate clearances with spaces at least 2.7 metres wide to allow for satisfactory car door opening. The provision of a 2.7 metre wide space is in accordance with AS2890.1-2004 allowing for a 2.4 metre wide space and a 300mm clearance. Given that the car parking is to be allocated to residents of the development this arrangement is considered acceptable.

- Columns adjacent to car spaces are generally located within 0.25-1.25 metres from the aisle end of car spaces in accordance with the car parking envelope of Clause 52.06-9 (Design Standard 2).
- One (1) 'small car' space, located within basement level 5 has been provided with dimensions of 2.45 metres width and 4.9 metres length, accessible from a 6.4 metre wide aisle. This is considered acceptable given that all parking will be leased and the Building Manager can allocate parking to residents with suitable vehicles. Swept paths demonstrating B85 vehicle access is attached at Appendix A.
- Sufficient headroom clearance is to be provided to, from and throughout the basement car park including along the ramp. In particular, a minimum headroom clearance of at least 2.2 metres will be provided in excess of the statutory requirement under Clause 52.06-9 of the Planning Scheme (Design Standard 2) and in accordance with the relevant Australian Standard (AS2890.1:2004).

4.4.7. Bike Parking

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

- Wall mounted vertical rails are dimensioned at 1.2 metres deep spaces, 0.5 metres spacings, and are accessible from a minimum 1.5 metre wide aisle;
- Over-bonnet rails (Mona Lisa type or similar) are to be provided with dimensions in accordance with relevant product specification sheet; and
- Horizontal rails are provided with dimensions of 1.8 metre length and spaced at 1.0 metre centres, accessible from a minimum 1.5 metre wide aisle.
- Double stacked horizontal rails are provided with dimensions of 1.86 metre length and spaced at 0.5 metre centres, accessible from a minimum 2 metre aisle.

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.

5. Traffic Considerations

The site operates as an existing hotel, with 19 car parking spaces provided on-site.

The hotel parking will be removed and replaced with residential parking only.

In consideration of the location and accessibility to public transport, it is considered that a peak hour traffic generation rate of 0.12 movements per apartment with parking is appropriate for the site.

Whilst there is likely to be some apartments with more than 1 car space (and the traffic generation rate for the second and third space is not a linear factor), we will conservatively apply this rate to the total provision of 148 spaces.

This equates to a peak hour traffic generation of up to 18 vehicle movements per hour which will be split as:

- AM Peak – 4 vehicle movements in / 14 vehicle movements out,
- PM Peak – 11 vehicle movements in / 7 vehicle movements out.

This level of traffic generation, as a whole, is equal to not more than 1 vehicle movement generated on average per three minutes in a peak hour.

This will not have a material impact on the operation of the surrounding road network and pedestrian and vehicle conflicts can be appropriately managed through the site design.

Importantly, there will be a complete removal of any traffic generation across the Collins Street frontage.

Whilst there will be a new access to the Spencer Street frontage, Spencer Street is located within a Transport 2 Zone and is recognised as an arterial road.

All movements will be left in left out, and the dedicated central tram fairway and left in left out restrictions to traffic movements at the access will protect existing public transport.

In this regard, we are comfortable that the traffic impacts of the proposed development can be appropriately managed and there will not be a significant detrimental impact on the surrounding transport network.

6. Loading Considerations

6.1. Clause 65.01 Requirements

Clause 65.01 of the Planning Scheme states that 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.*

6.2. Residential Provisions

Loading activities for residential dwellings associated with furniture movers/removalists when residents move in/out are anticipated to occur relatively infrequently.

The on-site loading dock will accommodate small rigid vehicles (SRVs) and will be managed by the Building Manager, allowing residents using smaller vehicles to be able to utilise the loading dock.

For larger deliveries, it is considered appropriate for delivery vehicles to utilise nearby on-street parking, either on Spencer Street or on Flinders Lane (and utilising the rear laneway to access the dock).

6.3. Hotel Provisions

The residential hotel will require regular deliveries for day-to-day operations. It is of note that this is already occurring on-street as the existing car park cannot accommodate vehicles larger than a passenger car.

Deliveries are expected to occur at various times on various days and will be scheduled to manage the on-site loading area appropriately.

The on-site loading bay has been designed to accommodate a 6.4 metre long small rigid vehicle (SRV) and the Hotel will manage deliveries to this effect.

6.4. Waste Collection

The plans identify one (1) waste room for residents, one (1) waste room for the hotel and one (1) waste room for the commercial uses, located at the mezzanine level. We understand that waste bins will be transferred to basement level 1 via a hoist system and collected at the adjacent loading bay.

Waste collection is proposed to be undertaken by a private contractor utilising a mini rear-loader waste truck (nominal 6.4m length, 2.1m height).

The waste truck will utilise the loading area noted above for collection, and we are satisfied the waste truck can enter the site in forward direction (via the accessway to Spencer Street), reverse into the loading area for collection, and then exit the site in a forward direction.

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

7. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed mixed use development at 607-623 Collins Street, Melbourne, we are of the opinion that:

- a. the proposed development has a statutory car parking requirement of no more than 233 car spaces as per the Parking Overlay (PO1) and the plans identify the provision of 148 car spaces, meeting the requirements of the Parking Overlay (PO1).
- b. motorcycle parking meets the requirements of the Schedule to the Parking Overlay.
- c. bicycle parking is provided in accordance the requirements set out at Clause 52.34 of the Planning Scheme,
- d. the proposed parking layout and access arrangements accord with the requirements of the Planning Scheme, AS2890.1:2004 (where relevant) and current practice,
- e. the level of traffic generated as a result of this proposal is relatively low, and will not have a detrimental impact on the surrounding transport network,
- f. loading has been appropriate considered to meet the objectives of Clause 65.01 of the Planning Scheme, and
- g. there are no traffic engineering reasons why a planning permit for the proposed mixed use development at 607-623 Collins Street, Melbourne, should be refused, subject to appropriate conditions.



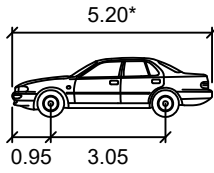
Appendix A

Swept Paths

VEHICLE PROFILE

VEHICLE USED IN SIMULATION

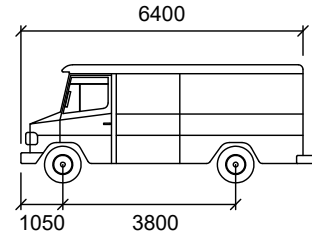
(VEHICLE SPEED - 5KM/H)



99th percentile
(AS/NZS 2890.1:2004)

- Width : 1.94
- Track : 1.84
- Kerb to Kerb Radius : 12.5m

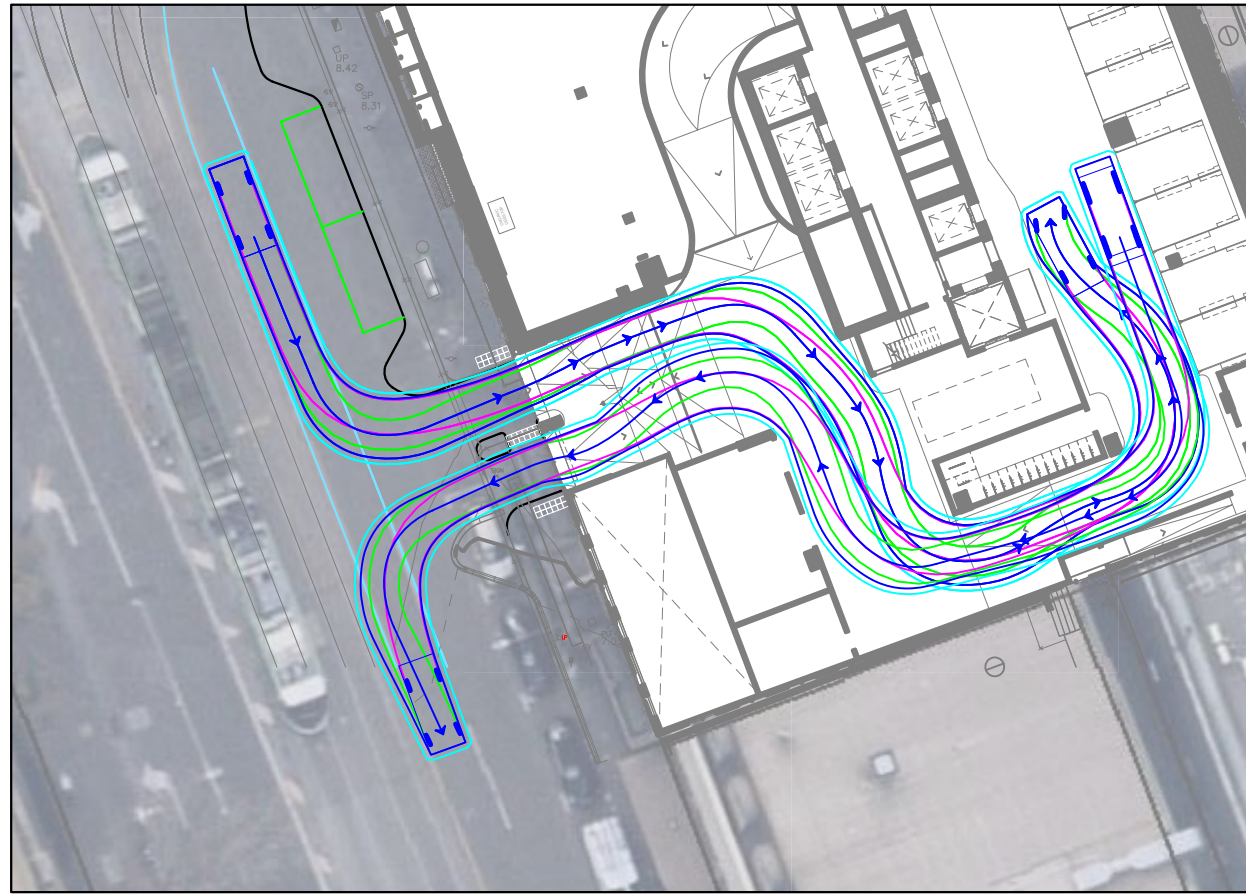
* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004



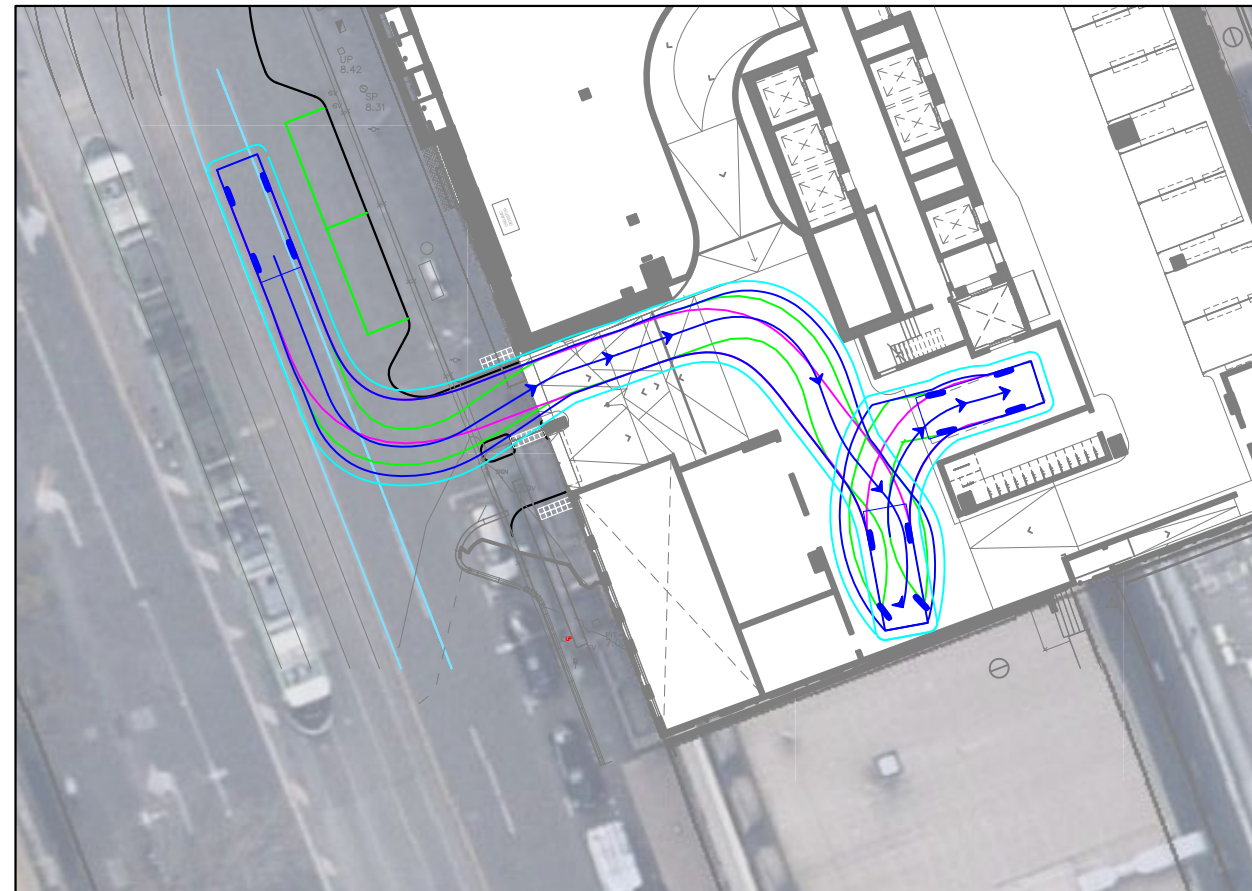
- SRV (AS 2890.2) mm
- Width : 2300
 - Track : 2300
 - Lock to Lock Time : 6.0
 - Steering Angle : 38.0

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

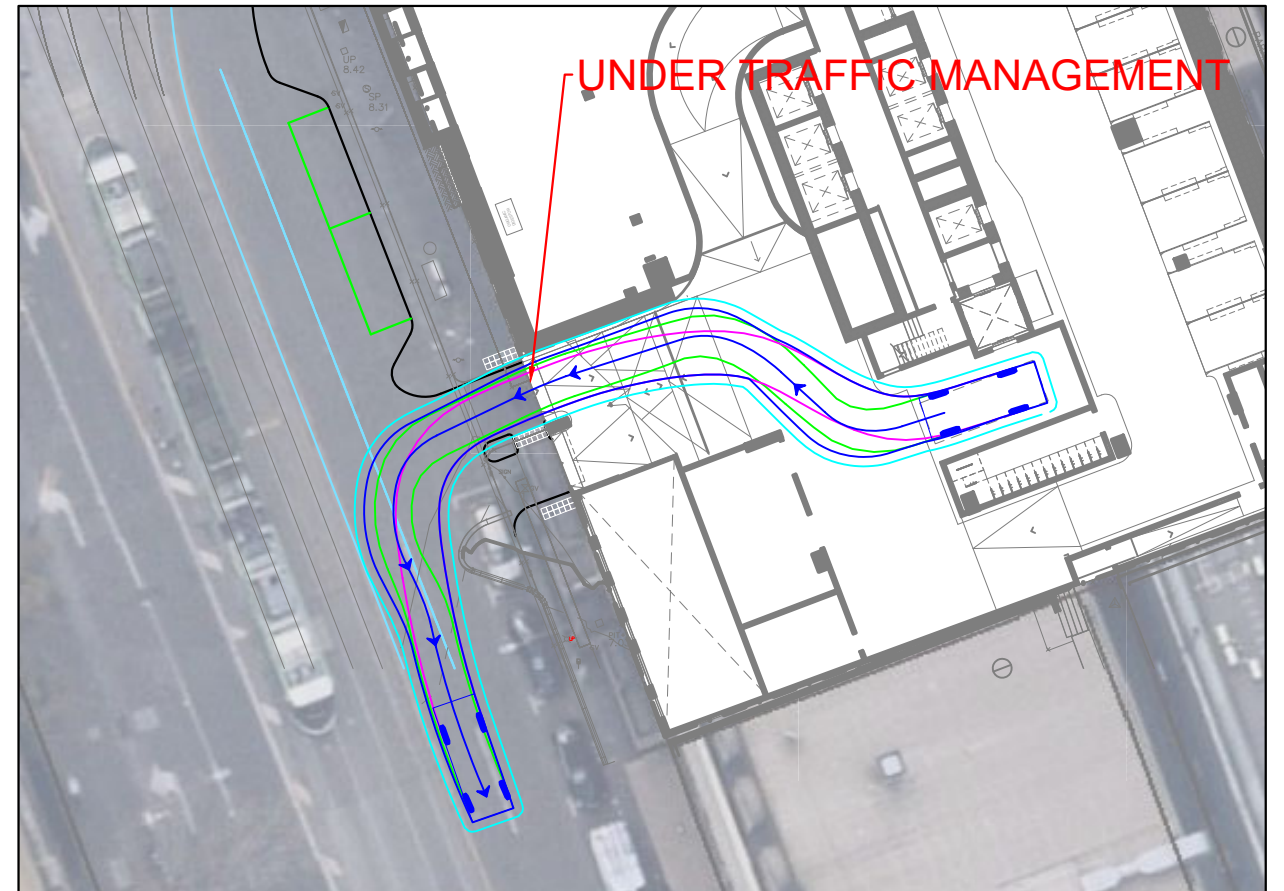
SPENCER STREET SITE ACCESS - B99 PASSING (INGRESS & EGRESS)



SPENCER STREET SITE & LOADING BAY ACCESS - SRV INGRESS



SPENCER STREET SITE & LOADING BAY ACCESS - SRV EGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	18/04/2023	TOWN PLANNING	H. ROBERTSON	C. ROCHE

607-623 COLLINS STREET, MELBOURNE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:
BASE PLANS PREPARED BY CARR, RECIEVED
18/04/2023.

FILE NAME: G39017-01
SHEET NO.: 01



SCALE: 1:400 (A3)
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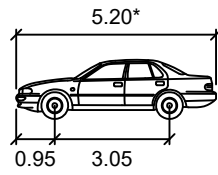
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VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



99th percentile
(AS/NZS 2890.1:2004)

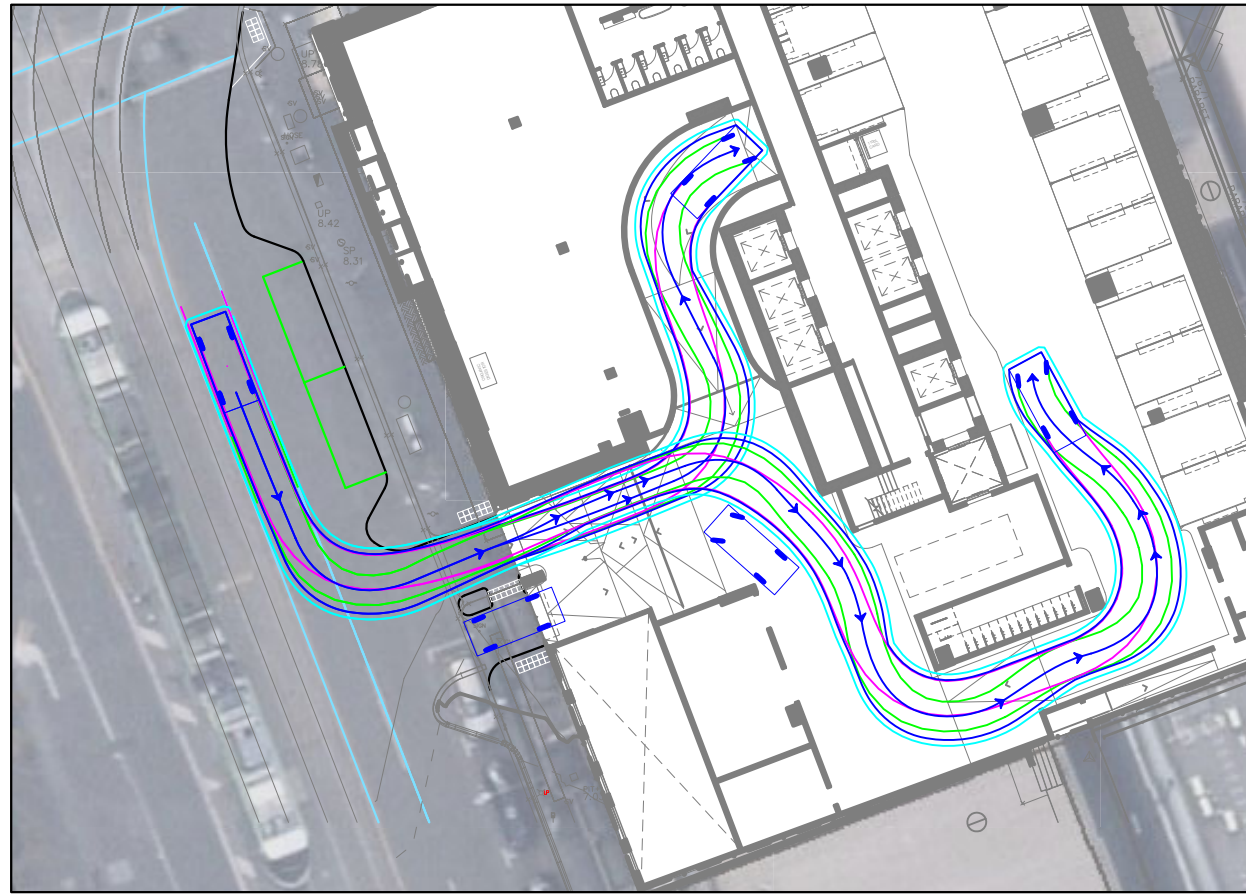
Width : 1.94
Track : 1.84
Kerb to Kerb Radius : 12.5m

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

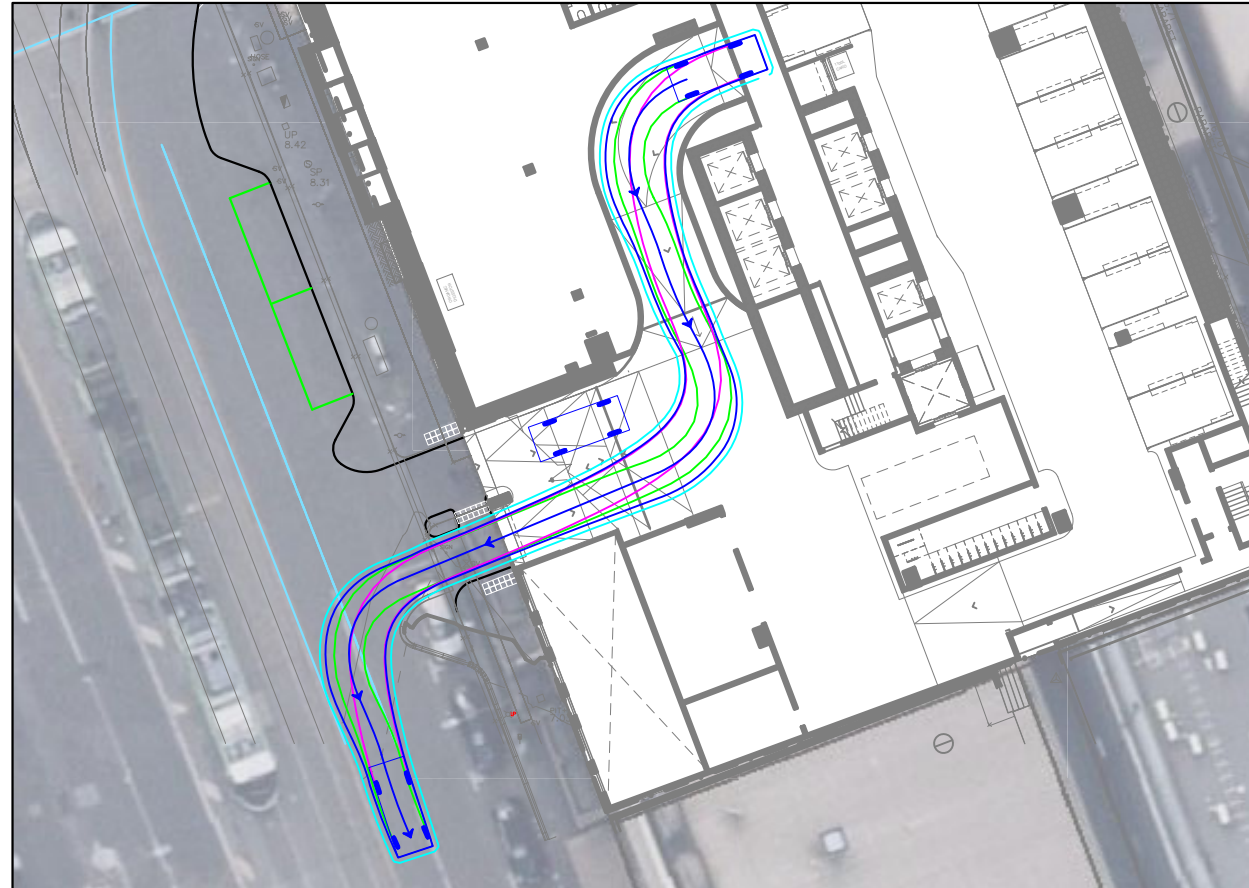
LEGEND

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

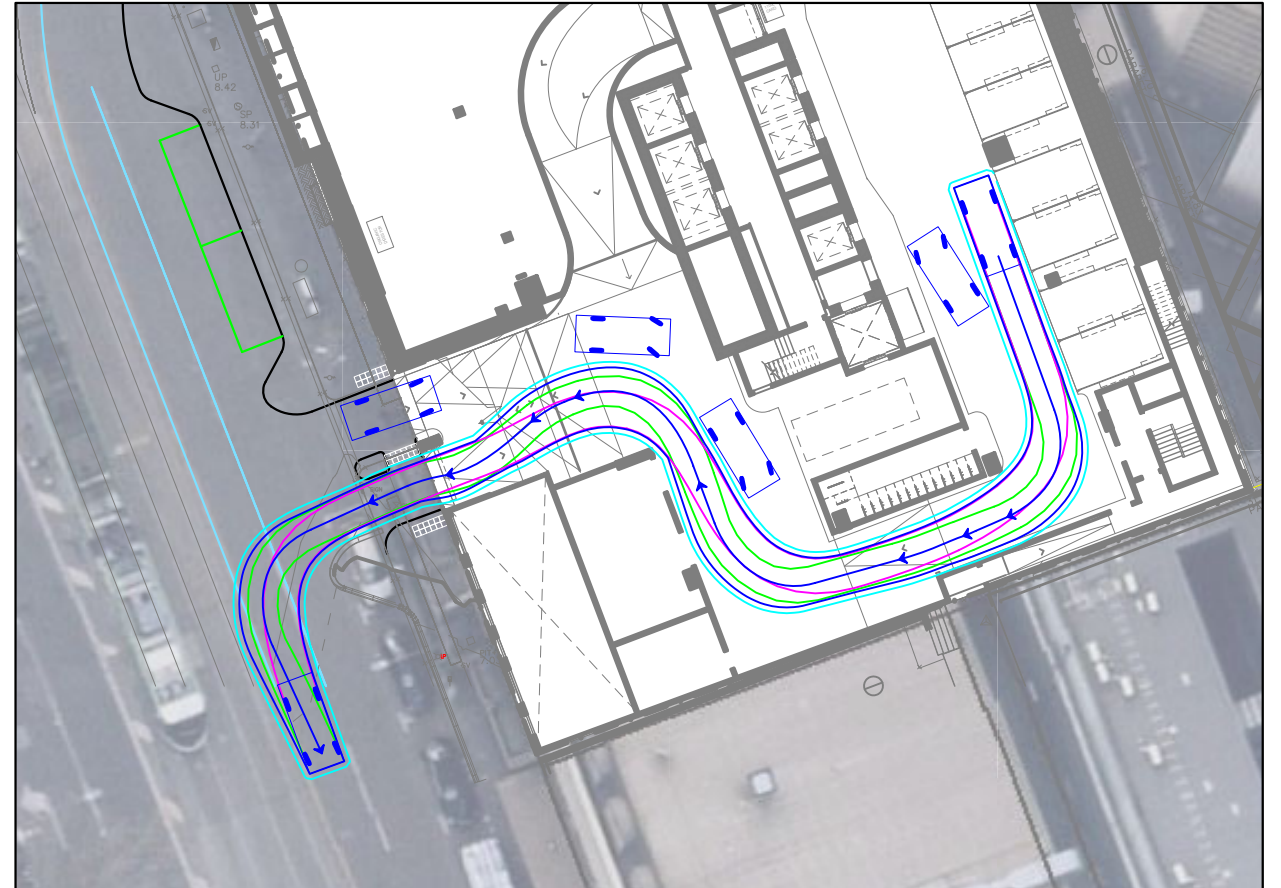
SPENCER STREET SITE ACCESS & CAR PARK ACCESS - B99 PASSING (INGRESS)



SPENCER STREET SITE ACCESS & CAR PARK ACCESS - B99 PASSING (EGRESS)



SPENCER STREET SITE ACCESS & CAR PARK ACCESS - B99 PASSING (EGRESS)



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	18/04/2023	TOWN PLANNING	H. ROBERTSON	C. ROCHE

607-623 COLLINS STREET, MELBOURNE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:
BASE PLANS PREPARED BY CARR, RECIEVED
18/04/2023.

FILE NAME: G39017-01
SHEET NO.: 02



SCALE: 1:400 (A3)
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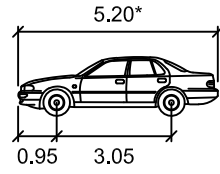
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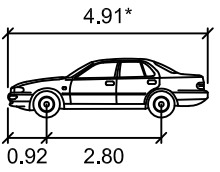
VEHICLE PROFILE

VEHICLE USED IN SIMULATION



99th percentile
(AS/NZS 2890.1:2004)
Width : 1.94
Track : 1.84
Kerb to Kerb Radius : 12.5m

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



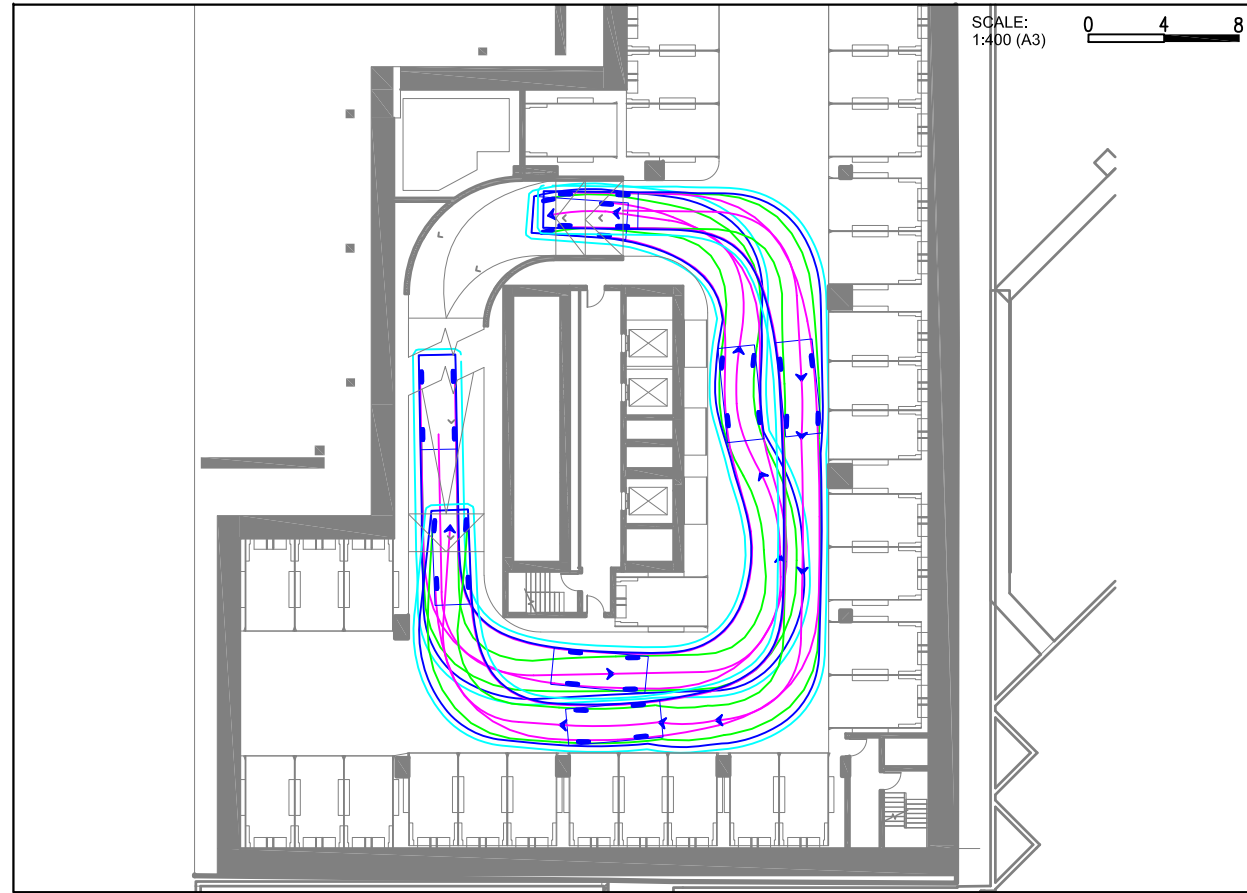
85th percentile
(AS/NZS 2890.1:2004)
Width : 1.87m
Track : 1.77m
Kerb to Kerb Radius : 11.5m

* 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

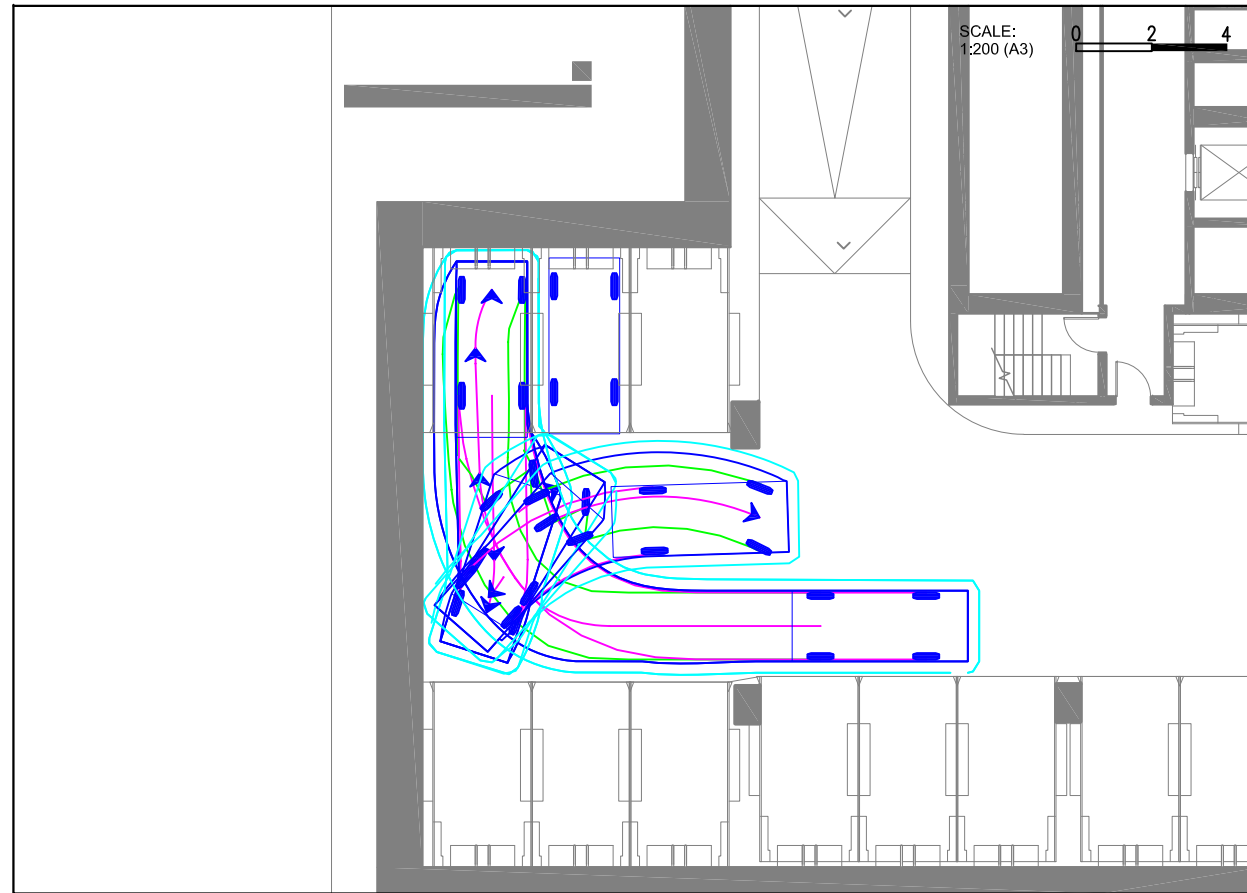
BASEMENT LEVEL 2 INTERNAL CIRCULATION & PASSING (B99)



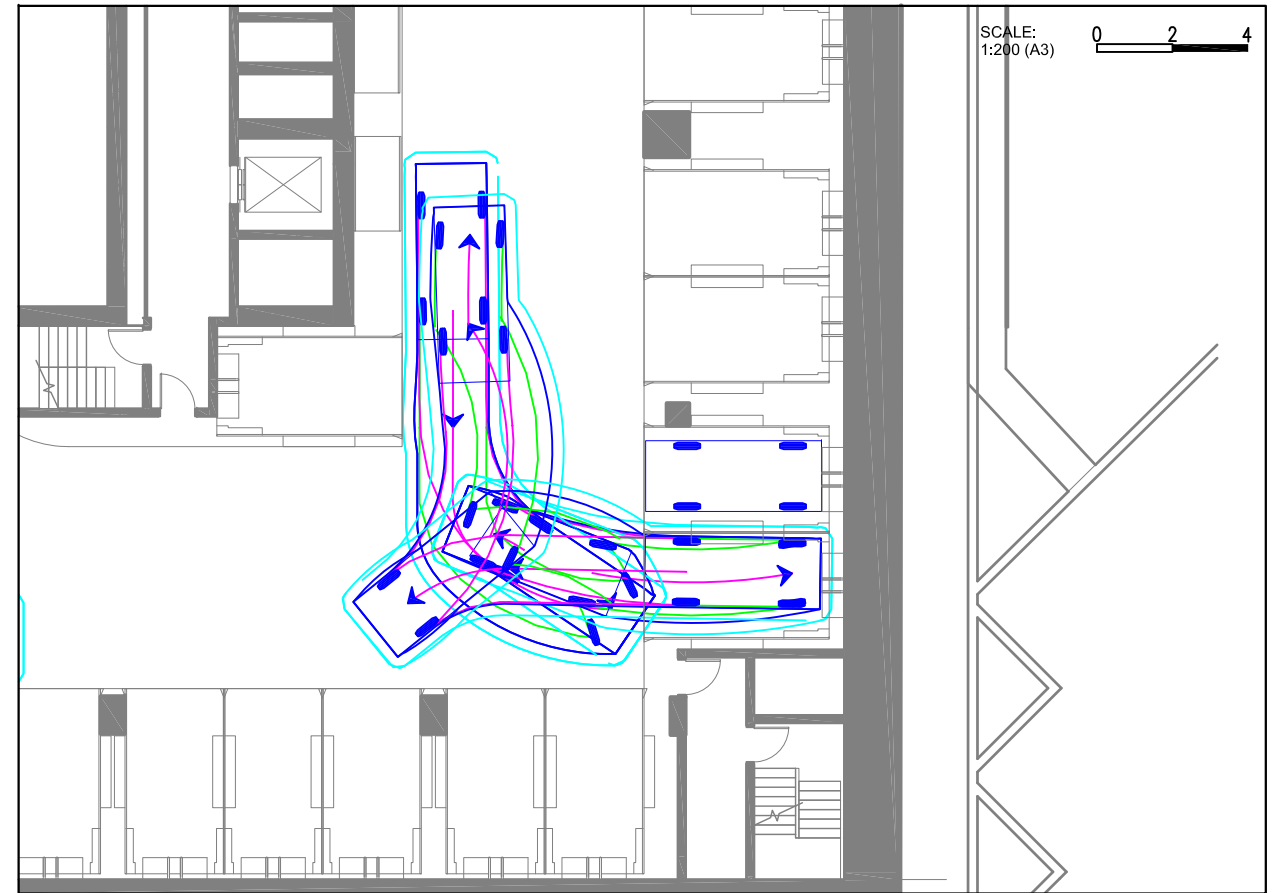
BASEMENT LEVEL 2 CRITICAL CAR SPACE - ACCESS (B85)



BASEMENT LEVEL 2 CRITICAL CAR SPACE - ACCESS (B85)



BASEMENT LEVEL 2 CRITICAL CAR SPACE - ACCESS (B85)



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	18/04/2023	TOWN PLANNING	H. ROBERTSON	C. ROCHE
B	19/10/2023	TOWN PLANNING	D. NEGI	C. MORELLO (RPE7781)

607-623 COLLINS STREET, MELBOURNE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:
BASE PLANS PREPARED BY CARR, RECEIVED
13/10/2023.

FILE NAME: G39017-01
SHEET NO.: 03



SCALE:
AS PER VIEWPORT

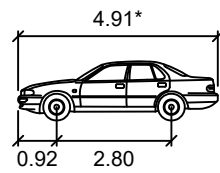
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VEHICLE PROFILE

VEHICLE USED IN SIMULATION



85th percentile
(AS/NZS 2890.1:2004)

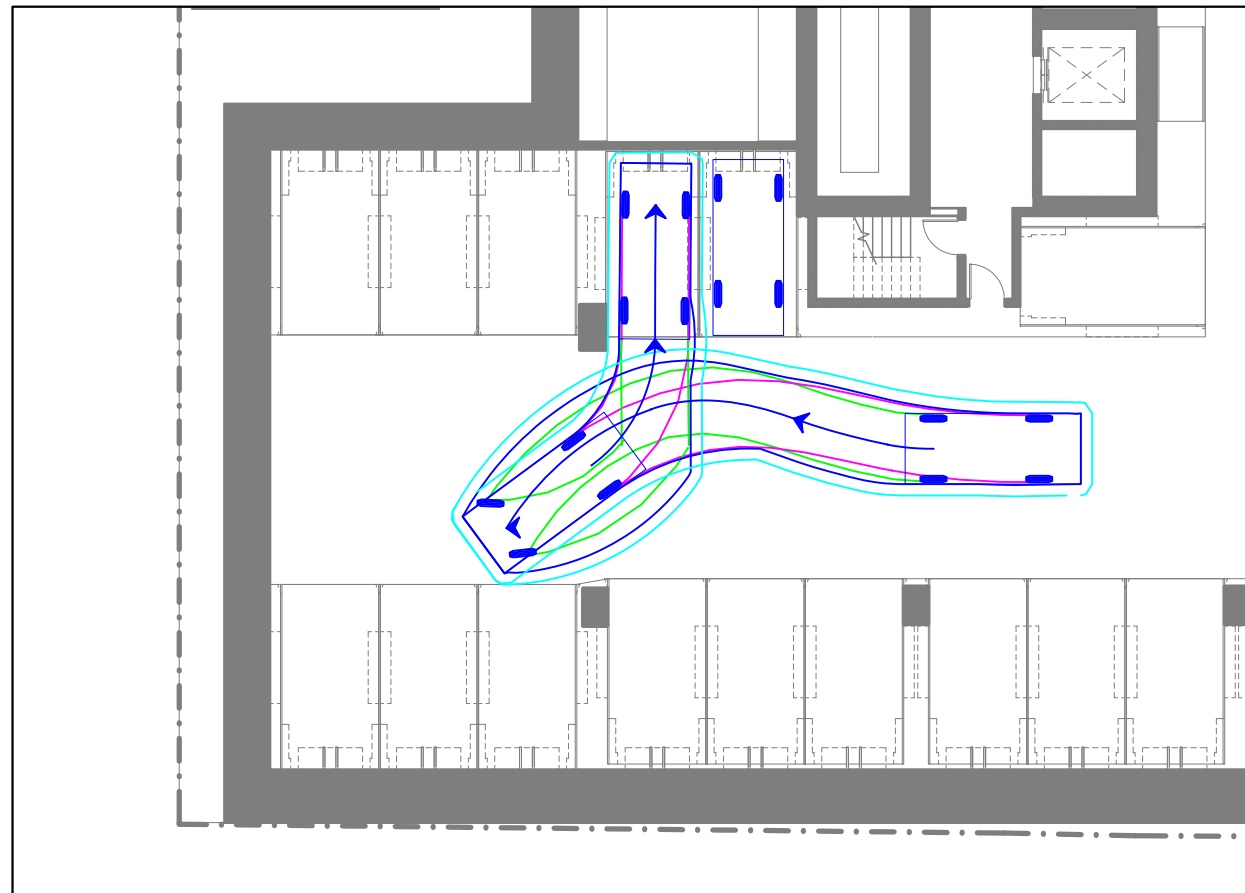
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Kerb to Kerb Radius : 11.5m

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

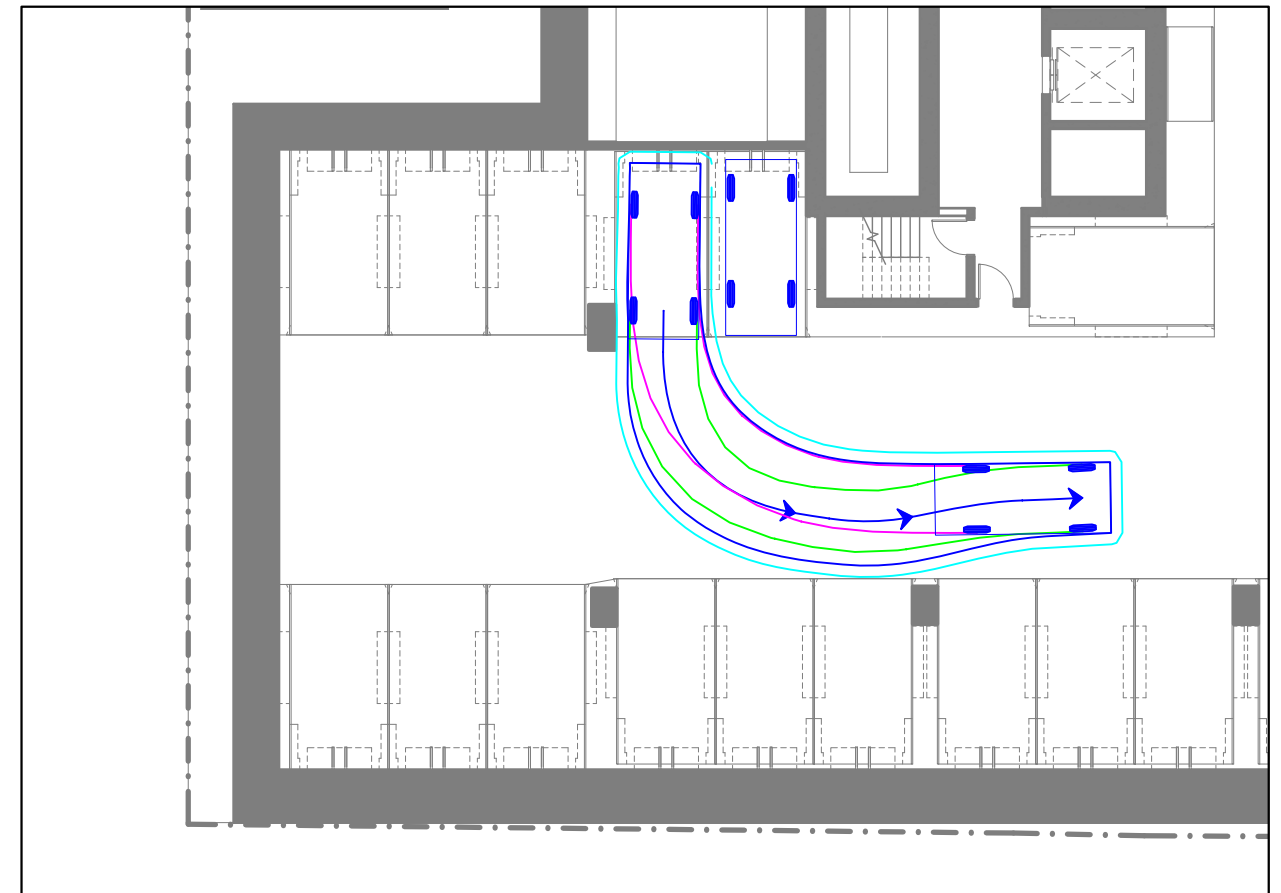
LEGEND

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

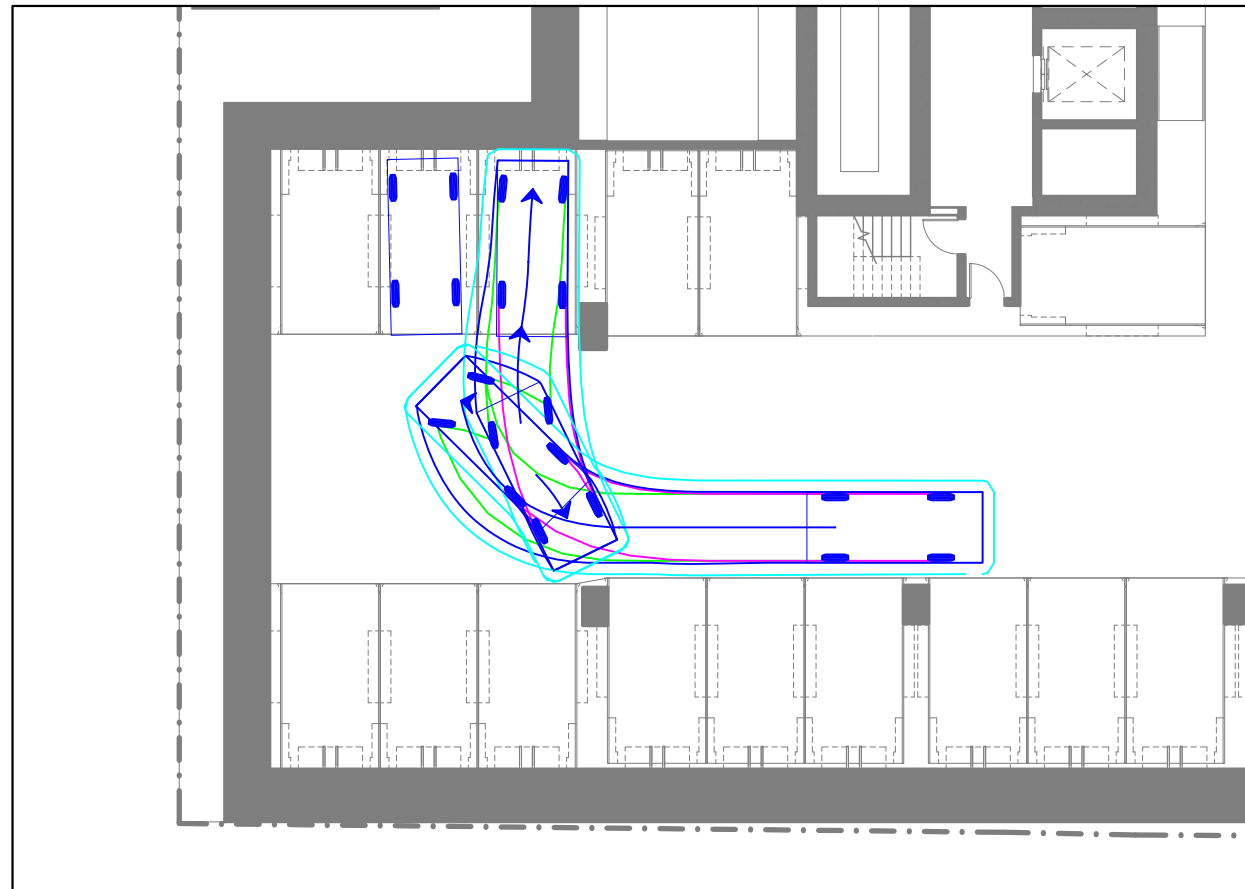
BASEMENT LEVEL 5 SMALL CAR SPACE ACCESS - INGRESS (B85)



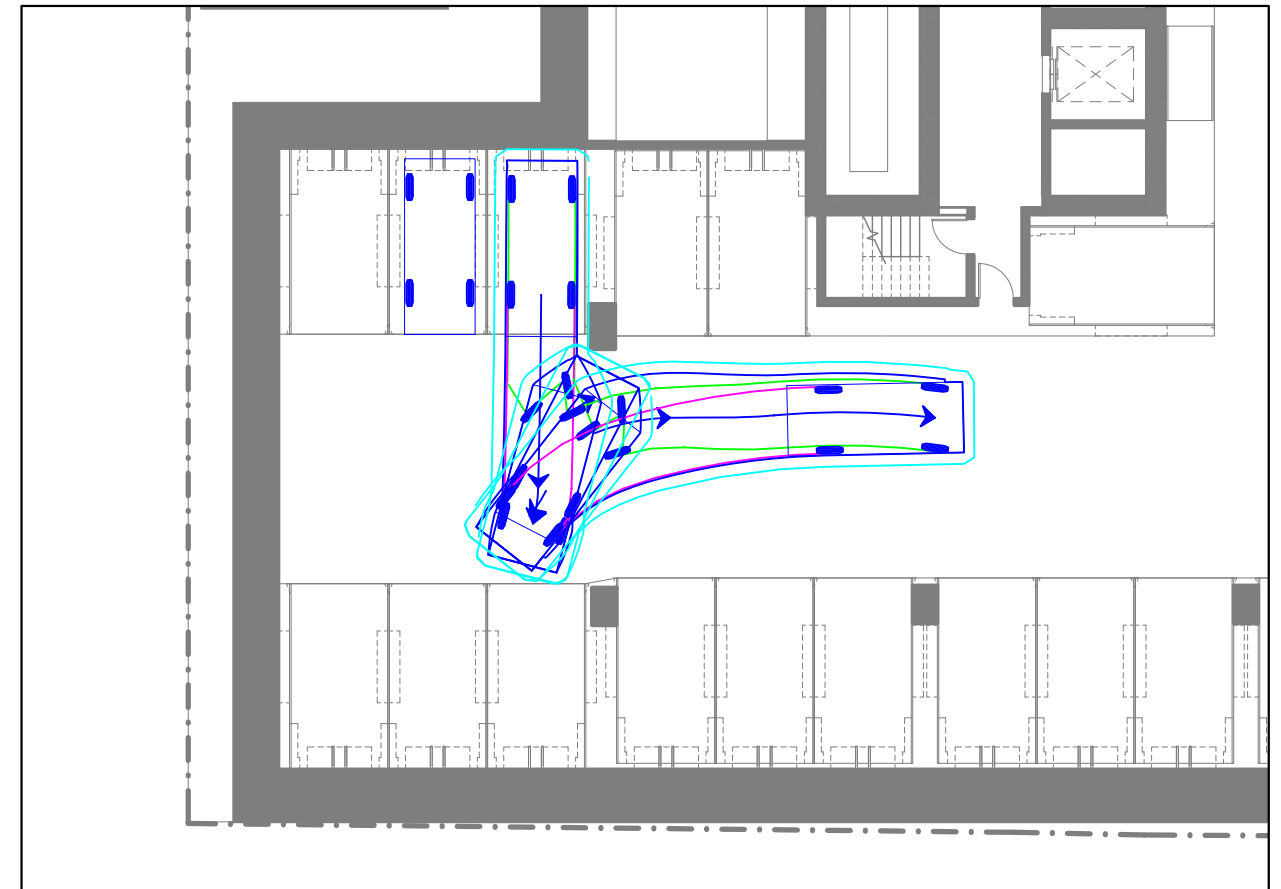
BASEMENT LEVEL 5 SMALL CAR SPACE ACCESS - EGRESS (B85)



BASEMENT LEVEL 5 CRITICAL CAR SPACE ACCESS - INGRESS (B85)



BASEMENT LEVEL 5 CRITICAL CAR SPACE ACCESS - EGRESS (B85)



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A	18/04/2023	TOWN PLANNING	H. ROBERTSON	C. ROCHE

607-623 COLLINS STREET, MELBOURNE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:
BASE PLANS PREPARED BY CARR, RECIEVED
18/04/2023.

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