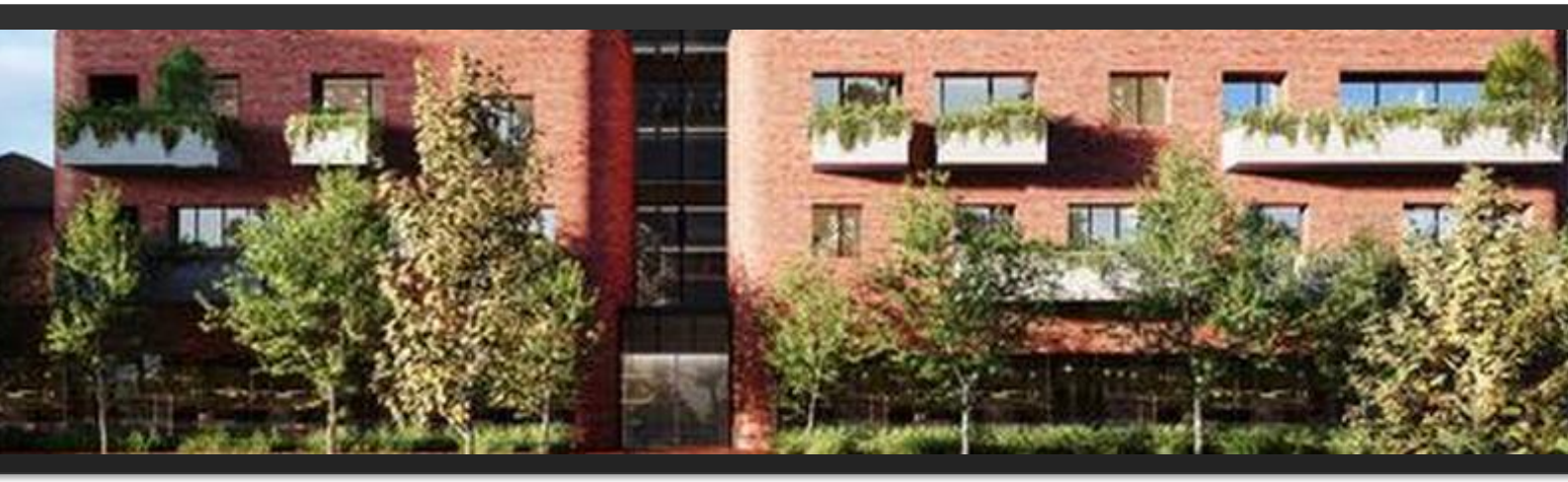
onemilegrid
TRAFFIC ENGINEERING

8 Louise Street, Melbourne

Transport Impact Assessment



210166TIA001D-F

4 August 2021

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DOCUMENT INFORMATION

Prepared for	8 Louise St Pty Ltd		
File Name	210166TIA001D-F	**Report Date**	4 August 2021
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1 INTRODUCTION

onemile**grid** has been requested by 8 Louise St Pty Ltd to undertake a Transport Impact Assessment of the proposed mixed-use development at 8 Louise Street, Melbourne.

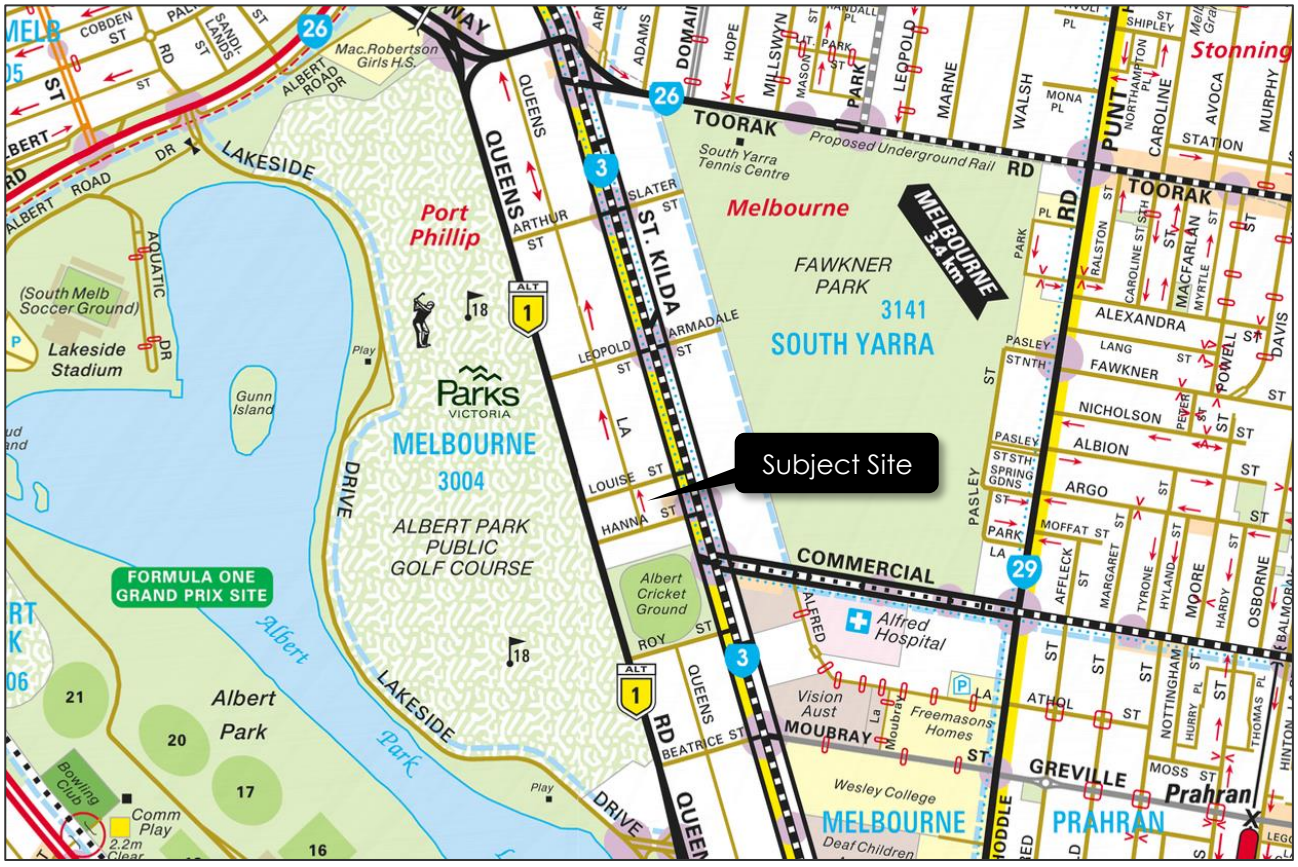
As part of this assessment the subject site has been inspected with due consideration of the development proposal, traffic and parking data has been sourced and relevant background reports have been reviewed.

2 EXISTING CONDITIONS

2.1 Site Location

The subject site is located at the southeast corner of the intersection of Louise Street and Queens Lane, as shown in Figure 1.

Figure 1 Site Location



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The site is rectangular in shape and has a frontage of approximately 41 metres to Louise Street and approximately 30 metres to Queens Lane.

The site is currently occupied by a low-rise brick apartment building, which comprises 2 x 1-bedroom and 18 x 2-bedroom apartments. The complex provides car parking in a combination of at-grade spaces and garage spaces generally located along the southern and western boundaries of the site, with a total of 11 spaces provided on-site. With a reduced provision of parking on-site and the age of the existing building. It is noted that any future development of the site will not be eligible for parking permits.

Site access is provided via three crossovers, occupying most of the site's western frontage to Queens Lane.

Land use in the immediate vicinity of the site is mixed in nature, and includes high density residential buildings and office buildings focussed along St Kilda Road and Queens Road, with Albert Park Lake to the west, Fawkner Park to the east and Albert Tennis World and Cricket Ground to the south.

An aerial view of the subject site is provided in Figure 2.

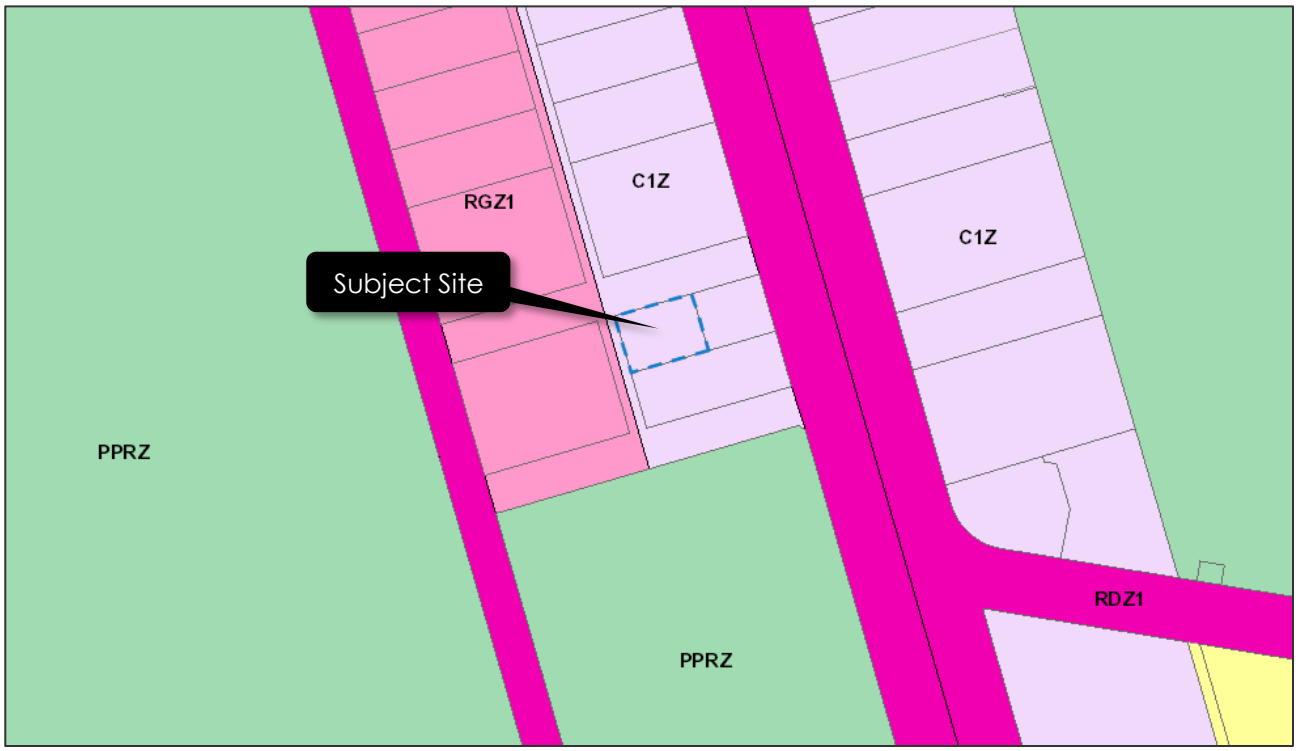
Figure 2 Site Context (11 March 2021)

Copyright Nearmap

2.2 Planning Zones and Overlays

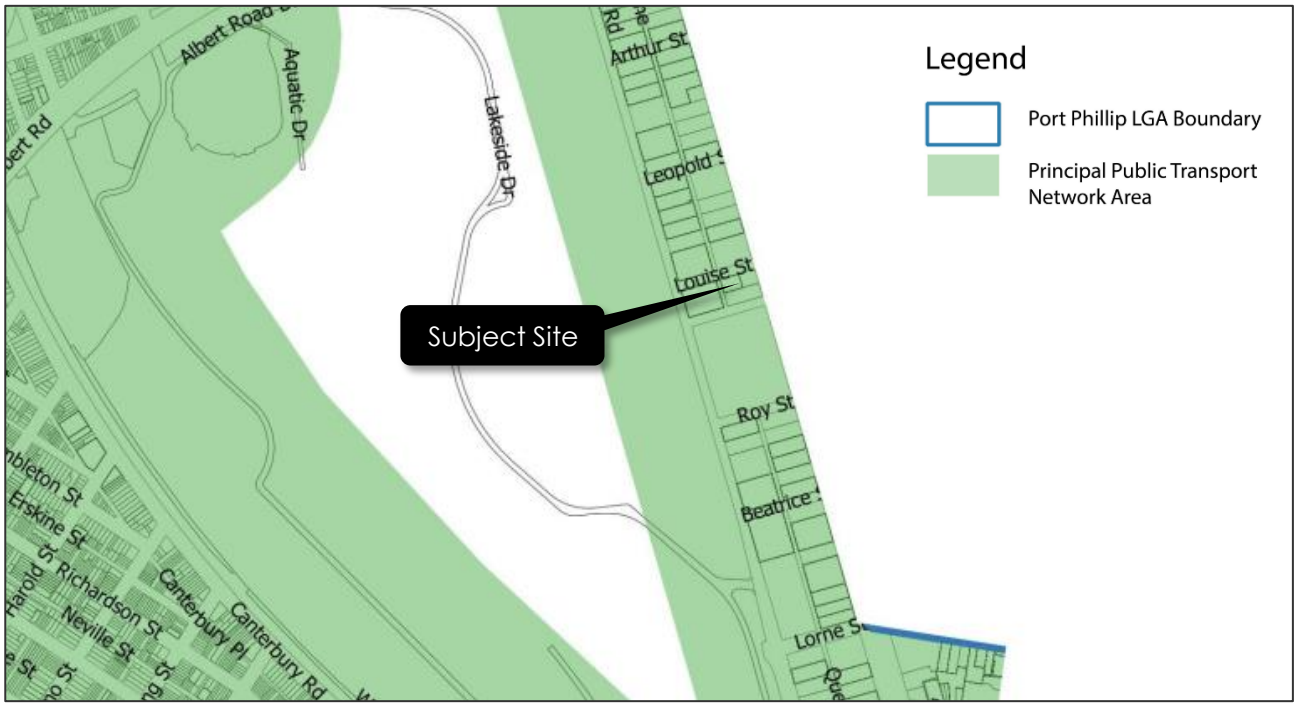
It is shown in Figure 3 that the site is located within a Commercial 1 Zone (C1Z).

Figure 3 Planning Scheme Zones



The site falls within the Principal Public Transport Network Area, as shown in Figure 4.

Figure 4 Principal Public Transport Network Area Map



2.3 Road Network

2.3.1 Louise Street

Louise Street is a local road generally aligned east-west, running between St Kilda Road in the east, and Queens Road in the west. Louise Street facilitates traffic movements in each direction with separate lanes for parking adjacent to the site. Parallel kerbside parking is provided on the south side of the street, with angled spaces provided on the north side of the street. Kerbside parking is generally restricted to 1-hour ticket parking on the north side of the street between 8:00am and 6:00pm, Monday to Friday, with the south side of the street mostly restricted to permit parking with a few 1-hour spaces. Furthermore, a dedicated GoGet car share space is provided on the north side of the street toward St Kilda Road.

The cross-section of Louise Street at the frontage of the site is shown in Figure 5.

Figure 5 Louise Street, looking east with the subject site on the right

Figure 6 Louise Street, looking west towards the subject site

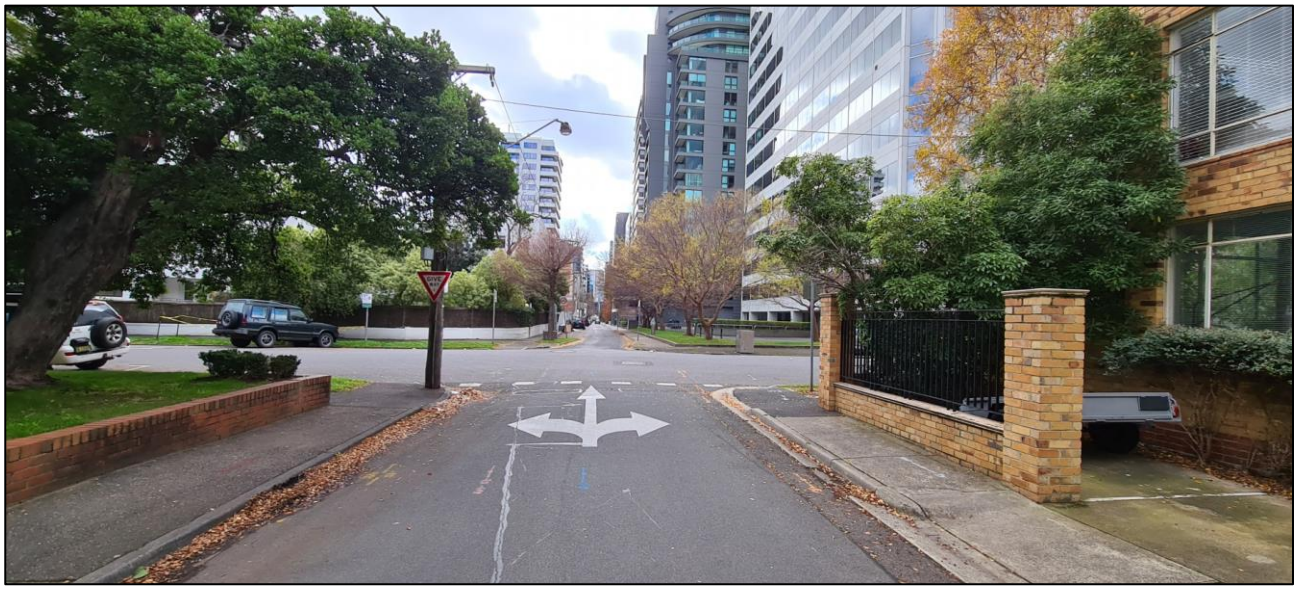
2.3.2 Queens Lane

Queens Lane is a local road generally aligned north-south, running between Bowen Crescent in the north and Hanna Street in the south. Queens Lane is restricted to one-way northbound movements only. Kerbside parking is provided on the west side of the road and is restricted to a 15-minute Loading Zone between 8:00am and 6:00pm, Monday to Friday.

The cross-section of Queens Lane at the frontage of the site is shown in Figure 7.

Figure 7 Queens Lane, looking south with the subject site on the left

Figure 8 Queens Lane, looking north with the subject site on the right



2.3.3 St. Kilda Road

St Kilda Road is an arterial road generally aligned north-south, running between Flinders Street in the north, and Nepean Highway in the south.

St Kilda Road operates as a divided carriageway with northbound and southbound traffic separated by a tram reservation. In addition, the north and south bound lanes are also separated by an outer separator with a single traffic lane within the main carriageway and two traffic lanes and a bicycle lane in the outer carriageway.

Kerbside parking is provided on the outside of the main carriageway lanes, as well as along the outside of the outer separated lanes. Each lane of kerbside parking is subject to parking restrictions, which are summarised below:

- Outside Northbound:
  - 1-hour ticket parking between 8:00am and 6:00pm, Monday to Friday.
- Inner Northbound:
  - 2-hour ticket parking between 10:00am and 6:00pm, Monday to Friday;
  - Clearway between 7:00am and 10:00am, Monday to Friday.
- Outer Southbound:
  - 1-hour ticket parking between 7:30am and 6:30pm, Monday to Friday.
- Inner Southbound:
  - 2-hour ticket parking between 7:30am and 4:30pm, Monday to Friday;
  - 2-hour ticket parking between 7:30am and 12:30pm, Saturdays;
  - Clearway between 4:30pm and 6:30pm, Monday to Friday.

A 40km/h speed limit applies to St Kilda Road in the vicinity of the site.

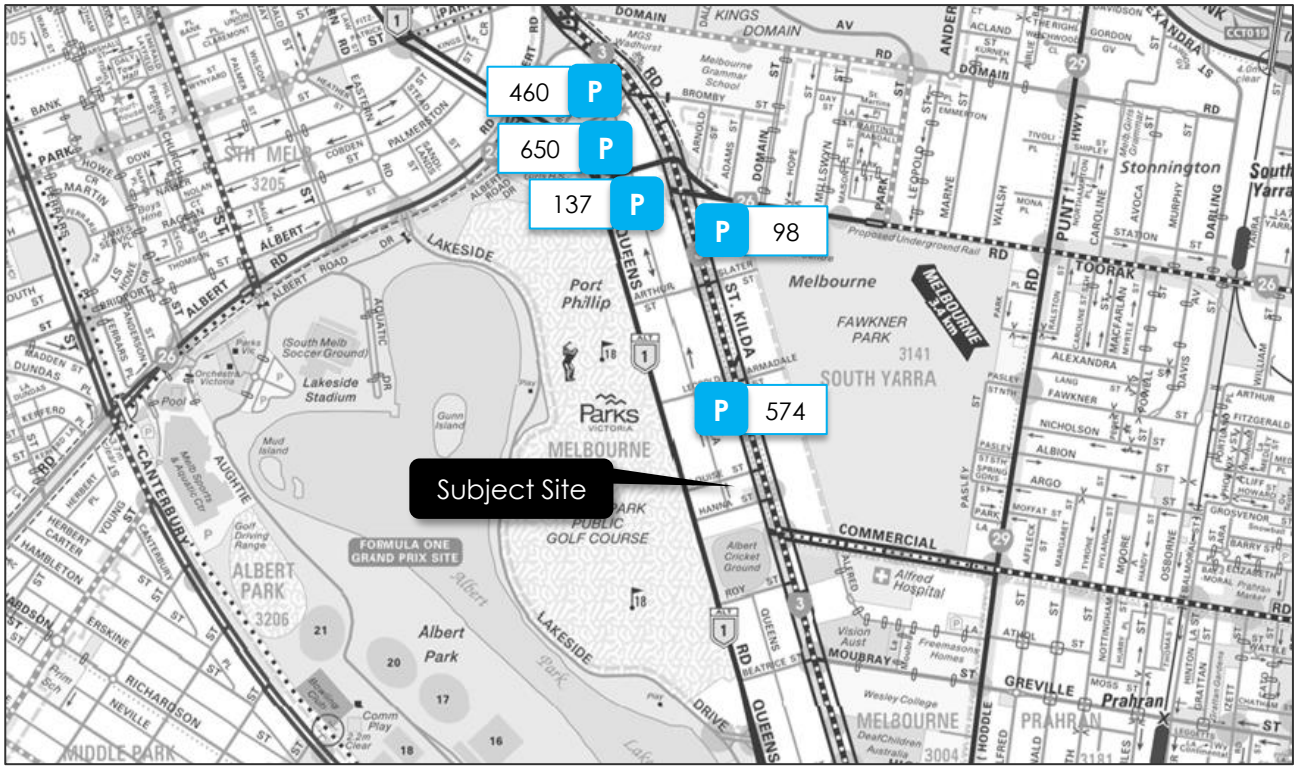
The cross-section of St Kilda Road at the frontage of the site is shown in Figure 9.

Figure 9 St Kilda Road, looking northbound

2.4 Car Parking

A number of commercial off-street car parks are located in the vicinity of the site, as indicated in Figure 10, containing in excess of 1,900 spaces.

Figure 10 Car Parking Locations



Source: au.parkopedia.com

2.5 Sustainable Transport

2.5.1 General

An extract of the TravelSmart Map for the City of Port Phillip is shown in Figure 11, highlighting the public transport, bicycle and pedestrian facilities in the area.

Figure 11 TravelSmart Map

It is noted that the Anzac Train station and Domain Interchange construction and upgrade respectively are currently underway which will provide additional public transport connections for the site approximately 1.2 kilometres to the north.

2.5.2 Public Transport

The site has excellent public transport accessibility, with a wide variety of transport modes and services servicing the immediate vicinity of the site. The full public transport provision in the vicinity of the site is shown in Figure 12 and detailed in Table 1.

Figure 12 Public Transport Provision

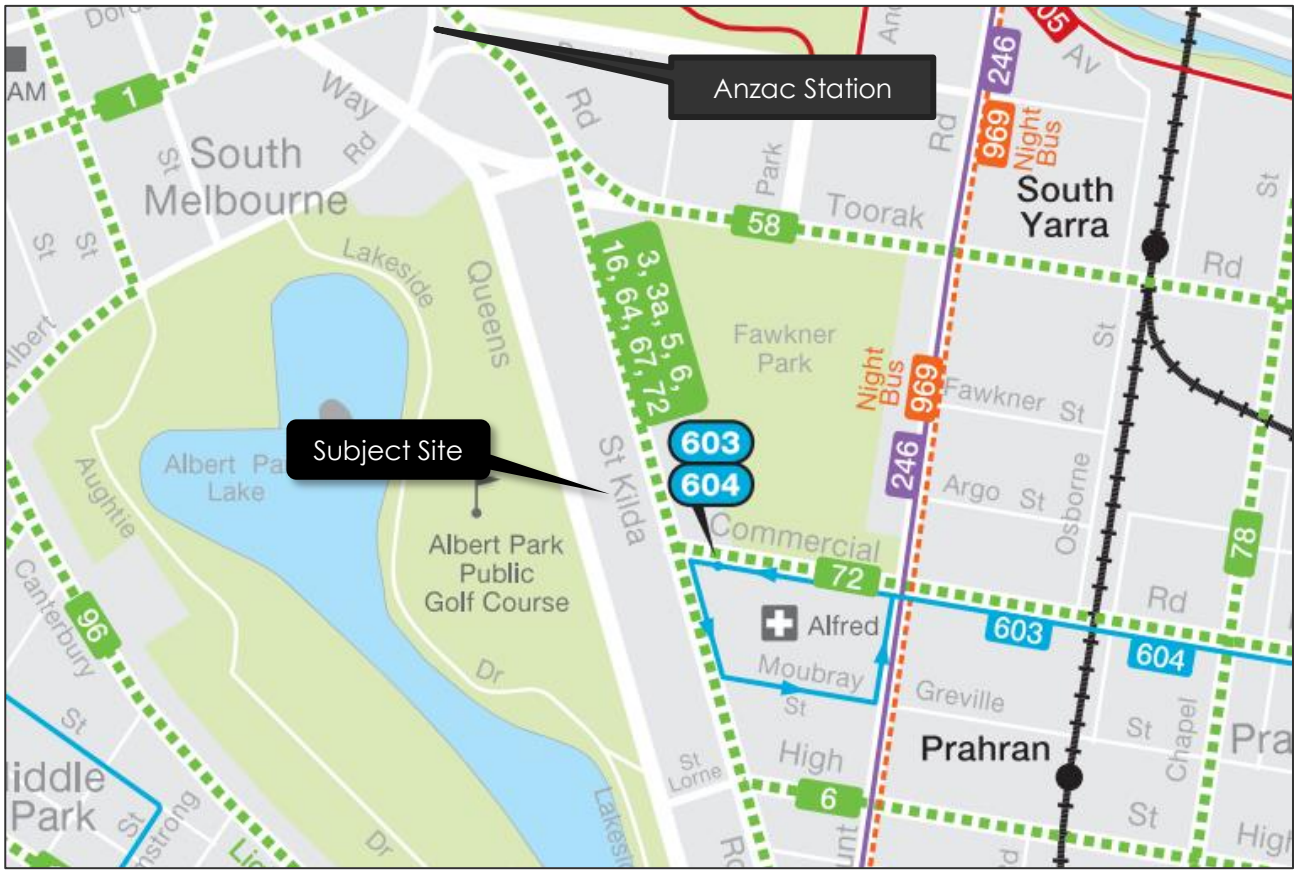


Table 1 Public Transport Provision

Mode	Route No.	Route Description	Nearest Stop/Station
Train		Sandringham Line	Prahran Station
		Pakenham Line	Anzac Station (under construction)
		Cranbourne Line	
Tram	3/3a	Melbourne University - East Malvern	Commercial Rd / St Kilda Rd
	5	Melbourne University - Malvern	
	6	Moreland - Glen Iris	
	16	Melbourne University - Kew via St Kilda Beach	
	58	West Coburg - Toorak	Fawkner Park
	64	Melbourne University - East Brighton	Commercial Rd / St Kilda Rd
	67	Melbourne University - Carnegie	
	72	Melbourne University - Camberwell	
Bus	246	Elsternwick - Clifton Hill via St Kilda	Paisley St Sth / Punt Rd
	603	Brighton Beach - Alfred Hospital via Elsternwick Station	Alfred Hospital
	604	Gardenvale - Alfred Hospital via Toorak Station	
	969	Night Bus - City - Caulfield - Ferntree Gully Rd - Rowville - Wantirna - Ringwood	

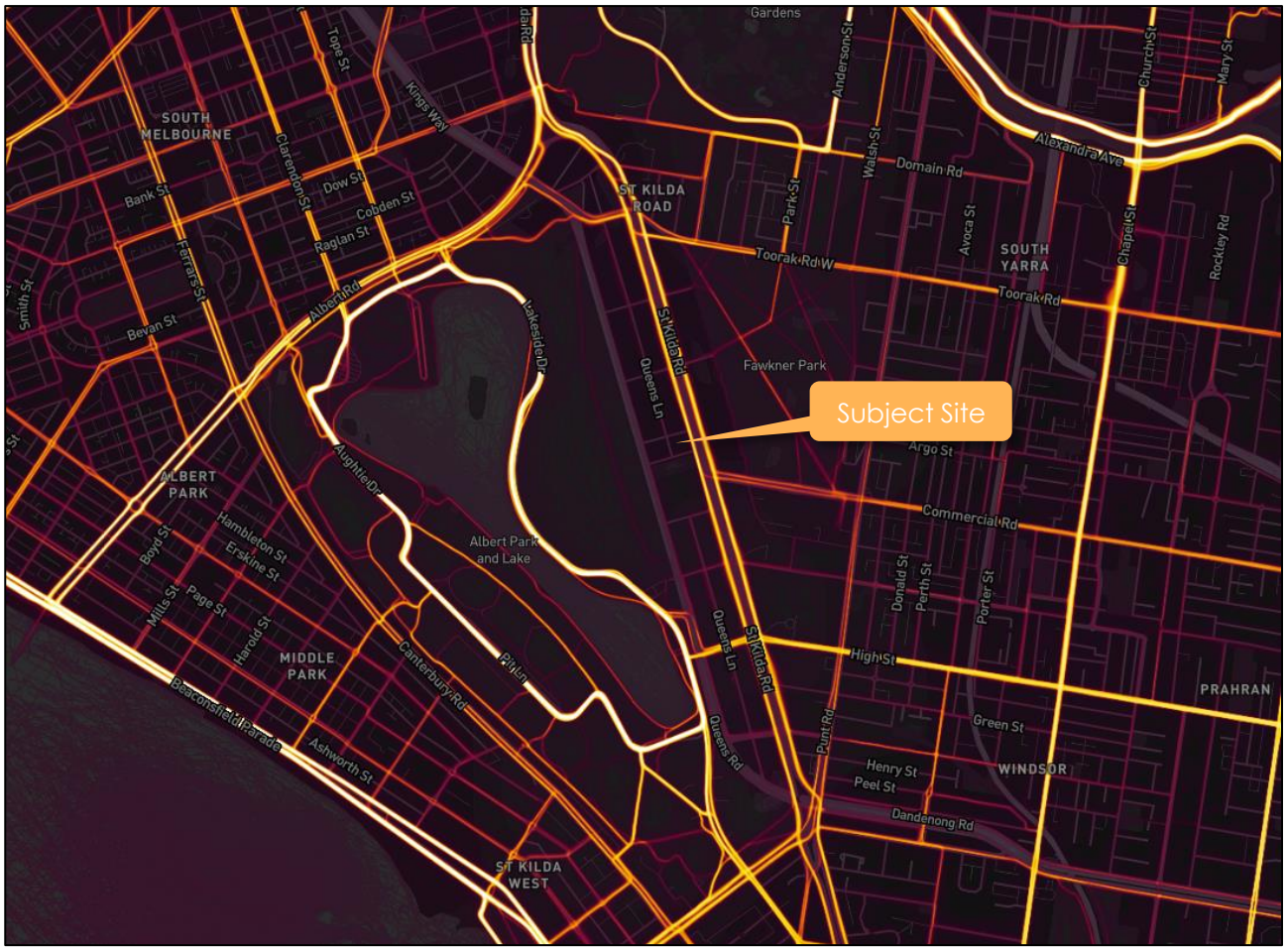
2.5.3 Bicycle Facilities

Strava is a social network and training tool for cyclists, runners and swimmers. Users record their physical activity using a dedicated GPS device or utilise the mobile app and upload the file to their profile.

Strava anonymised this information and makes it available through their "Global Heatmap" tool, showing aggregated all public activities over the last two years across the world.

A view of the cycling heatmap in proximity to the study area is provided below in Figure 13. Routes of higher usage are brighter in colour.

Figure 13 Strava Cycling Heatmap



As shown above, primary routes in and out of the study area comprise:

- St Kilda Road;
- Lakeside Drive; and
- High Street.

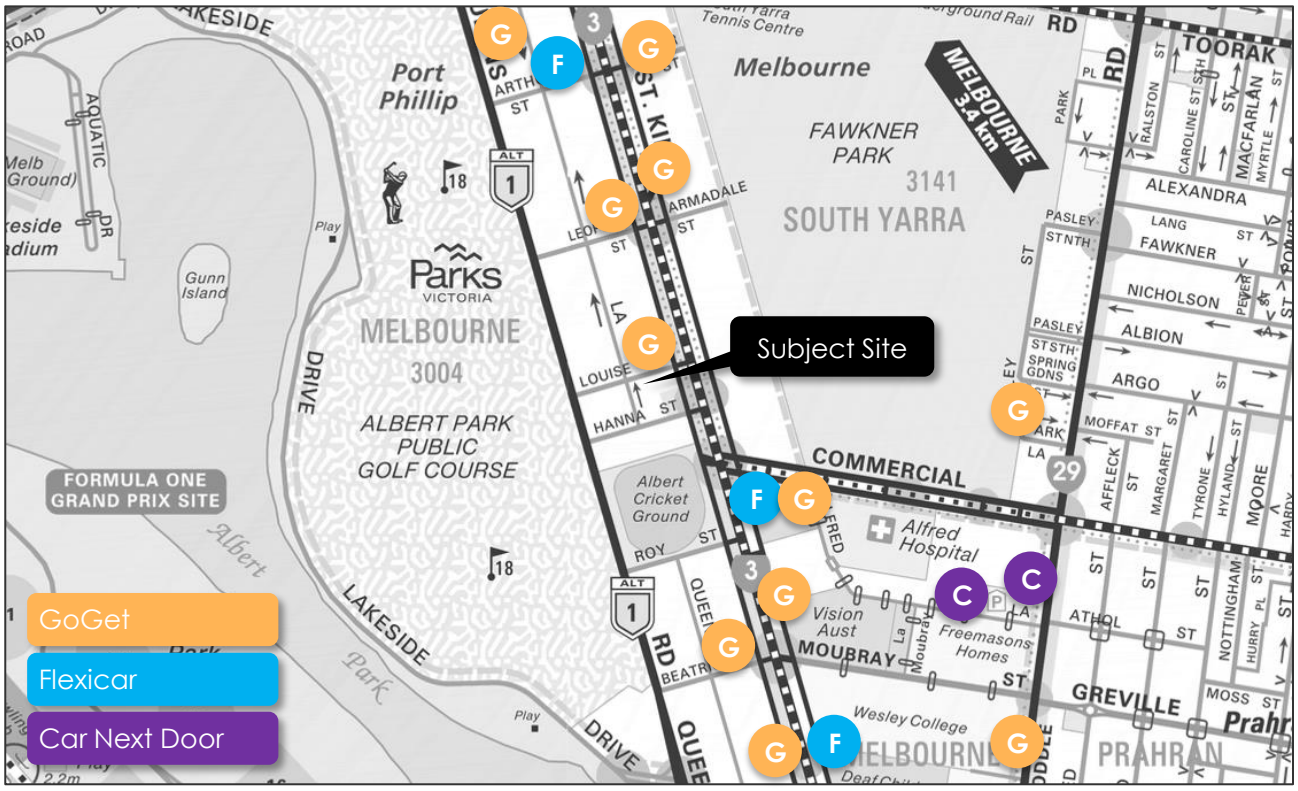
It is noted that this information includes all cycling activities recorded on the platform, inclusive of weekend trips, and all trips throughout the day. Additionally, the data is skewed towards sports cyclists, given that the bulk of commuter and recreational cyclists will not be tracking their rides.

2.5.4 Share Cars

Car sharing is becoming increasingly popular within highly populated areas for both employees and residents, where parking is restrictive and expensive. Car sharing operates similar to a car rental company, except users join as members and are charged on an hourly rate rather than a daily.

The location of the share cars within close proximity of the site are shown in Figure 14 with a GoGet pod located directly opposite the site.

Figure 14 Share Car Locations



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2.5.5 Walkability

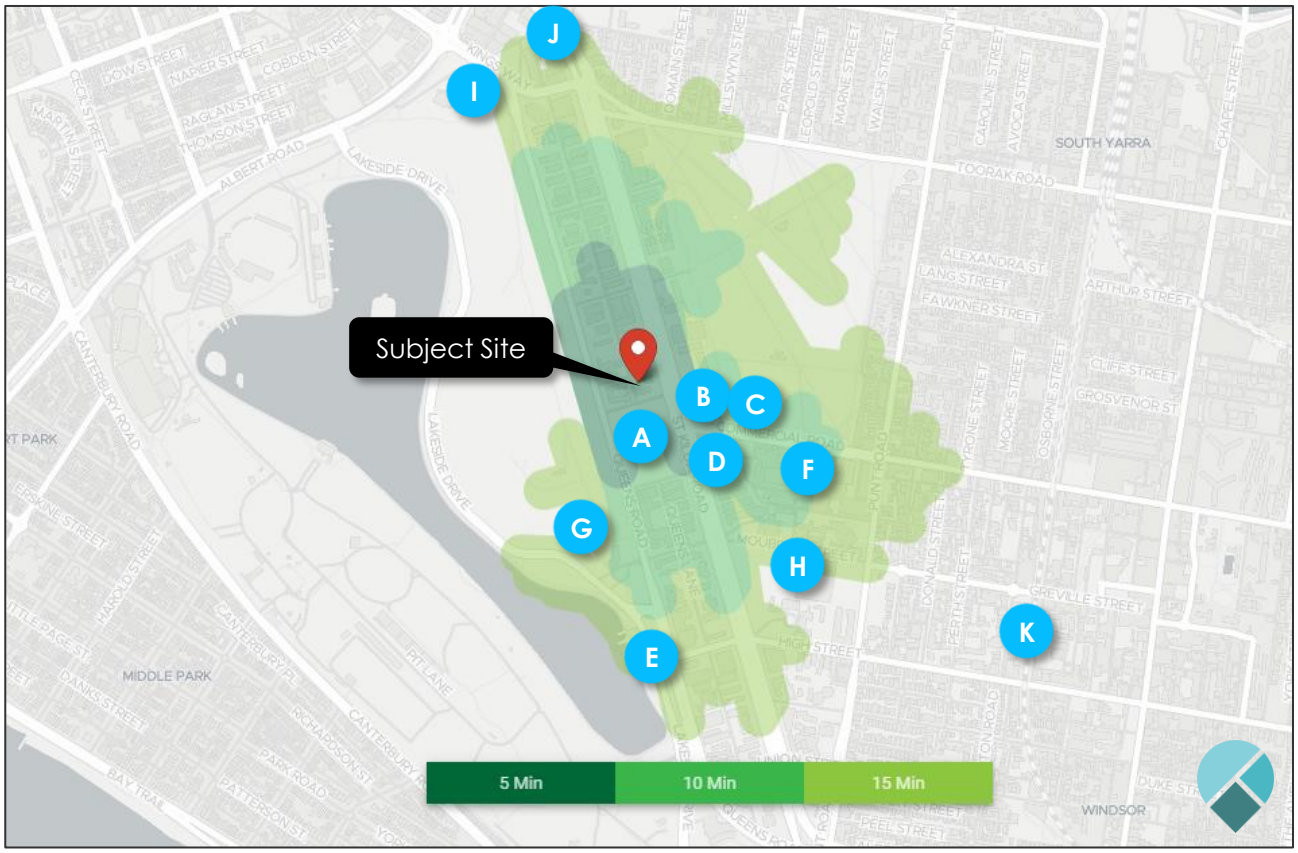
Walkability is a measure of how friendly an area is to walking. Walkability has many health, environmental, and economic benefits. Factors influencing walkability include the presence or absence and quality of footpaths or other pedestrian rights-of-way, traffic and road conditions, land use patterns, building accessibility, and safety.

The site has a Walk Score rating of 92/100 and is considered a 'walker's paradise', with most errands able to be accomplished on foot.

2.5.6 Pedestrian Accessibility

In addition to having good access to public transport modes, the site is well-located for pedestrian accessibility, with a number of recreation, education, shopping and employment uses located within 10 - 15 minutes' walk of the site. Figure 15 shows a pedestrian walk time map for the site, with the major facilities in the vicinity of the site identified in Table 2.

Figure 15 Pedestrian Walk-Time Map



Courtesy of Targomo

Table 2 Site Facilities

Ref	Facility	Approx. Distance
A	Albert Reserve Tennis World	100m
B	Pharmacy 517	300m
C	Fawkner Park	400m
D	IGA Express Melbourne	400m
E	Albert Park Lake	650m
F	The Alfred Hospital	650m
G	Albert Park Golf Course	700m
H	Wesley College	800m
I	Mac Robertson Girls High School	1.1km
J	Anzac Station & Domain Interchange	1.25km
K	Prahran Station	1.5km

3 DEVELOPMENT PROPOSAL

3.1 General

It is proposed to develop the subject site for the purposes of a mixed-use development, containing a ground floor retail / food & drink use fronting Louise Street, with residential apartments above. The development will provide a high level of residential amenity with a ground floor communal area for residents which will include a gym, pool, cinema, and dining room which can be used as a multipurpose space.

A summary of the development is provided in Table 3.

Table 3 Proposed Development

Use	*Component*	*No./Area*
Dwellings	1-Bedroom Dwelling	13
	2-Bedroom Dwelling	69
	3-Bedroom Dwelling	16
	4-Bedroom Dwelling	6
	Sub-Total	**104**
Retail / Food & Drink		175 m^2
Communal Space	Gym, cinema, dining / multipurpose	268 m^2

3.2 Car Parking and Vehicular Access

The development includes a basement car park which will accommodate not only car parking for residents but also a car wash bay and dog wash bay on the third basement level.

A total of 89 standard car spaces are proposed in three basement levels, with access via modifications to one of the existing crossovers to Queens Lane. All remaining crossovers will be reinstated with kerb and channel. The site access from Queens Lane will operate left in / left out due to the orientation of Queens Lane and provide access to a loading bay and then lead to the basement ramp.

All car parking is to be allocated to residents, with the spaces to be allocated as follows:

- 0 spaces to the Retail Premises
- 0 spaces to the 13 x 1 Bedroom Dwellings (0 / dwelling)
- 53 spaces to the 69 x 2 Bedroom Dwellings (0.77 / dwelling)
- 24 spaces to the 16 x 3 Bedroom Dwellings (1.5 / dwelling)
- 12 spaces to the 6 x 4 Bedroom Dwellings (2 / dwelling)

In addition, resident car spaces are included with an over bonnet storage cage to be mounted on the wall in front of the space.

3.3 Bicycle Parking

A total of 86 bicycle spaces are proposed across the development for use by residents, staff and visitors. The bicycle provisions include:

- 60 vertical spaces, located securely within the basement levels;
- 22 horizontal spaces, provided in hoops, secured within the basement levels; and
- 4 horizontal spaces, provided in two ground mounted hoops in the Louise Street nature strip.

3.4 Loading and Waste Collection

A loading area is proposed on the ground level of the development accessed from the driveway to Queens Lane. The loading area is located adjacent to the bin storage room.

General waste streams are to be collected by a private contractor using a mini-rear loader waste collection truck. Hard waste will also be collected directly from the loading area.

Nevertheless, flexibility is available to utilise the loading zone opposite the site should a larger truck be required for either deliveries or waste collection.

4 GREEN TRAVEL INITIATIVES

The proposed development will include initiatives to promote sustainable transport usage. The final initiatives will be determined in conjunction with the body corporate however could include the following to reduce the reliance on private motor vehicle ownership/use and promote sustainable transport mode choices.

4.1 Walkability

By virtue of the location of the site, the proposed development is well positioned for future residents to walk to nearby services and facilities. As identified, there are a number of facilities within convenient walking distance to the site especially as the site is considered a 'walkers paradise'.

4.2 Cycling

The proposed development includes bicycle parking facilities far in excess of the requirements of Clause 52.34 of the Planning Scheme. As a green travel initiative, it is suggested that the body corporate includes regular maintenance of these areas and promote the use of the bike parking for both residents and visitors.

4.3 Public Transport

The subject site has excellent access to existing public transport services. To encourage the use of these existing services it is suggested that each resident be provided with information on the ease of access to these services including the provision of maps within an online portal for the building.

4.4 Car Share Services

The development is located directly opposite a car share pod and in close proximity to a number of different car share services.

As a green travel initiative, it is suggested that the body corporate could partner with a provider to provide an introductory offer, below the market rate. Noting the location of the car share pod on Louise Street, it is recommended to approach GoGet as a first point of action.

4.5 Car Parking

It is accepted that the proposed development will not be eligible for Council parking permits as part of the application.

4.6 Car Wash Bay

The development proposes to provide a car wash bay within the basement garage. By providing a suitable location for residents to wash their car, they will be discouraged from travelling elsewhere to undertake cleaning.

5 DESIGN ASSESSMENT

5.1 Port Phillip Planning Scheme – Clause 52.06

onemile**grid** has undertaken an assessment of the car parking layout and access for the proposed development with due consideration of the Design Standards detailed within Clause 52.06-9 of the Planning Scheme. A review of those relevant Design Standards is provided in the following section.

5.1.1 Design Standard 1 – Accessways

A summary of the assessment for Design Standard 1 is provided in Table 4.

Table 4 Clause 52.06-9 Design Assessment – Design Standard 1

Requirement	*Comments*
Be at least 3 metres wide	Satisfied – minimum width of accessway is 6.1 metres
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide	Satisfied – accessways are no less than 6.1 metres wide at changes of direction
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre	N/a – private car park
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres	Satisfied – a minimum height clearance of 2.6 metres is achieved
If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction	Satisfied – all vehicles can exit the site in a forward direction
Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Road Zone	Satisfied – A passing area has been provided at the entrance to the site, with the proposed driveway designed to operate two-way allowing for vehicles to pass as shown on the attached swept paths.
Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	Generally satisfied – the full pedestrian splay to the north is provided by virtue of the adjacent entry lane, while to the south, the pedestrian splay is obstructed by the boundary wall. Notwithstanding, to the south there is an offset provided which will partially provide visibility to pedestrians. Furthermore, noting the low level of traffic generated by the proposal, the low speed of vehicles approaching the footpath and the low pedestrian volumes expected on this side of the road, this arrangement is considered acceptable. If necessary, a mirror could be installed to improve visibility.
If an accessway to four or more car parking spaces is from land in a Road Zone, the access to the car spaces must be at least 6 metres from the road carriageway.	N/a – does not connect to a Road Zone

5.1.2 Design Standard 2 – Car Parking Spaces

A summary of the assessment for Design Standard 2 is provided in Table 5.

Table 5 Clause 52.06-9 Design Assessment – Design Standard 2

Requirement	*Comments*
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 of Design Standard 2.	Satisfied - Car parking spaces are typically dimensioned in accordance with Table 2. It is noted that space #20 in the second and third basement levels has been designed to the Australian Standard dimensions, which is also considered acceptable.
A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1 of Design Standard 2, other than: - A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1. - A structure, which may project into the space if it is at least 2.1m above the space.	Satisfied - The car park is designed in accordance with Diagram 1. A height clearance of 2.6m is provided.
Car spaces in garages or carports must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space measured inside the garage or carport.	N/a – Spaces are within a car park.
Where parking spaces are provided in tandem (one space behind the other) an additional 500mm in length must be provided between each space.	N/a – No tandem spaces are provided
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	Satisfied – All spaces are under cover
Disabled car parking spaces must be designed in accordance with Australian Standard AS2890.6-2009 (disabled) and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 of Design Standard 2 by 500mm.	N/a – No accessible spaces are provided or required

Car spaces on-site are typically proposed with a minimum width of 2.6 metres, length of 4.9 metres and are accessed from aisles of no less than 6.4 metres. Spaces adjacent to walls have been suitably widened in accordance with Design Standard 2 of the Planning Scheme.

Space #20 on B02 and B03 has been designed with a length of 5.4 metres a minimum width of 2.4 metres in accordance with the Australian Standard for Off-Street Car Parking AS2890.1. It is noted that Design Standard 2 recommends the use of the Planning Scheme dimensions in preference to the Australian Standard however the Australian Standard dimensions still provides for safe and efficient access to car spaces and is considered acceptable. Swept paths have been prepared and are attached demonstrating suitable access to this car space.

Furthermore, it is noted that the presence of the column adjacent Space #20 encroaches on the adjacent access aisle, locally reducing the width to approximately 6.3 metres for Spaces #3 and #4. While this encroachment does not meet the Planning Scheme requirements, the north-south access aisle to the west provides room for vehicles to manoeuvre and as demonstrated in the attached swept paths, each of the spaces is still easily accessible.

5.1.3 Design Standard 3 – Gradients

A summary of the assessment for Design standard 3 is provided in Table 6.

Table 6 Clause 52.06-9 Design Assessment – Design Standard 3

Requirement	*Comments*
Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage. This does not apply to accessways serving three dwellings or less.	Satisfied – the first 5 metres from the property boundary is flat
Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 (of Design standard 3) and be designed for vehicles travelling in a forward direction.	Satisfied – a maximum grade of 1:4 is proposed
Where the difference in grade between two sections of ramp or floor is greater that 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.	Satisfied – a maximum change in grade of 12.5 % is proposed

The ramp grades do not exceed 1:4, and transitions are provided where changes of grade exceed 12.5%, and transition lengths have been designed to prevent potential scraping, in accordance with the requirements of Design Standard 3.

5.2 Loading and Waste Collection

A bin storage area is located on the ground level of the development adjacent to a service area. It is intended to utilise a private contractor for the collection and disposal of all waste generated by the proposed development.

On collection days, the waste truck will enter the site in a forward direction and reverse into the service bay. The dimensions of the service bay will result in the truck protruding into the common driveway however as the driveway is flat in this location and widens to 7.3 metres this is considered acceptable and will not impact on the ability for cars to access the basement.

Bins or hard waste will be transferred directly from the bin storage room to the waiting waste truck, by the contractor for collection.

In relation to loading, deliveries for residents will be managed by the body corporate through a booking process, commensurate with the operations plan of similar multi-storey residential developments.

It is noted that for flexibility, the existing loading bays opposite the site could be utilised if required. Nevertheless, all loading and waste collection can occur on-site.

Refer to the Waste Management Plan for further information.

5.3 Over-Bonnet Storage Review

Over-bonnet storage cages are an efficient means of providing storage for residents and have been installed in numerous developments in and around Melbourne. Within the basement car park, it is proposed to provide an over-bonnet storage cage above each of the standard car spaces. The storage cages will sit no less than 1.2 metres above the finished floor level of the basement and will extend no more than 1.0 metre into the space.

Reference is made to studies undertaken by other consultants which indicates that the 85th percentile height of a vehicle approximately 1 metre from the front of the vehicle is 1.13 metres. Distinction should be made between this measure and the height of the vehicle 1 metre from the end of the car space, as many vehicles will measure less than 4.9 metres length, effectively providing increased height clearance to the storage cage above.

It is acknowledged that strictly, a clear height of 2.1 metres is required above each car space. In this regard, it is considered that based on the recorded typical dimensions, the fact that spaces are allocated to permanent residents where the occupier of the space will be familiar with the car space and any potential restrictions, this is acceptable.

In view of the above the proposed over-bonnet storage cages are considered acceptable.

5.4 Bicycle Parking

Bicycle parking is proposed to be provided in a mixture of vertically mounted and staggered bicycle racks and on-ground bicycle hoops.

The vertically mounted racks have been designed in accordance with the Australian Standards; specifically, they are located at 500 mm centres, with an envelope of 1.2 metres provided for bicycles and a 1.5 metre access aisle.

The bicycle hoops have been designed in accordance with the Australian Standards; specifically, they are provided at one metre centres, with an envelope of 1.8 metres provided for bicycles and a 1.5 metre access aisle.

In addition, 26 of the 86 bicycle parking spaces proposed have been provided as on-ground hoops exceeding the Australian Standard requirement for 20% of spaces being provided on-ground.

6 LOADING

Clause 65 (Decision Guidelines) of the Port Phillip Planning Scheme identifies that "*Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate: The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*"

A loading area has been provided which connects to the waste room, at the ground level. The loading area allows vehicles up to a 6.4 m rear-lift waste collection vehicle (mini-loader) to reverse in, propping partially within the loading area and partially across the basement access. While the vehicle is required to temporarily prop within the basement access aisle, a vehicle can still pass along the ramp. Swept paths have been prepared to show this and are attached in Appendix A.

Furthermore, an existing on-street loading area is provided on Queens Lane opposite the site, from which it is proposed to accommodate additional loading requirements. The on-street Loading Zone provides for exclusive loading use between 8:00am and 6:00pm, Monday to Friday.

The provision for loading is therefore considered appropriate for the proposed use.

7 BICYCLE PARKING

The bicycle parking requirements for the subject site are identified in Clause 52.34 of the Port Phillip Planning Scheme, which specifies the following requirements for the different components of the proposed development.

Table 7 Clause 52.34 – Bicycle Parking Requirements

Component	*No/Area*	*Requirement*	*Total*
Dwelling	104 dwellings	1 space per 5 dwellings for residents 1 space per 10 dwellings for visitors	21 10
Retail	175 m^2	1 space per 300m^2 for employees 1 space per 500m^2 for visitors	1 0
Total		**Residents** **Visitors** **Employees**	**21** **10** **1**

It is proposed to provide a total of 86 bicycle parking spaces across the development including 4 spaces at the site frontage for use by visitors and 72 secured spaces within the basement levels, available for resident, staff and visitor use. Furthermore, it is considered appropriate for residential visitor bicycle parking to be provided within the basement car park, as residents will simply allow the visitor access to the basement.

The provision for bicycle parking exceeds the requirements of the Planning Scheme and is therefore considered acceptable.

8 CAR PARKING

8.1 Statutory Car Parking Requirements

8.1.1 Car Parking Requirements – Clause 52.06

The car parking requirements for the subject site are identified in Clause 52.06 of the Port Phillip Planning Scheme. In this regard, Clause 52.06 also identifies that where any part of the land is identified as being within the Principal Public Transport Network Area, the Column B car parking rates apply to the proposed development. As shown in Figure 4 the site is located within the Principal Public Transport Network Area, and therefore, the Column B rates apply, as shown below.

Table 8 Clause 52.06 – Car Parking Requirements

Use	*No/Area*	*Rate*	*Car Parking Measure*	*Total*
Dwelling	82	1	to each one or two bedroom dwelling, plus	82
	22	2	to each three or more bedroom dwelling (with studies or studios that are separate rooms counted as bedrooms), plus	44
	104	0	for visitors to every 5 dwellings for developments of 5 or more dwellings	0
Retail / Food & Drink	175m^2	3.5	to each 100m^2 of leasable floor area	6
Total				**132**

Based on the above calculations, a total of 132 parking spaces are required for the proposed development.

8.1.2 Proposed Car Parking Provision

It is proposed to provide a total of 89 car parking spaces on-site, which equates to a shortfall of 43 spaces when compared to the Planning Scheme requirements.

Clause 52.06-7 of the Port Phillip Planning Scheme indicates that an application to reduce (including reduce to zero) the requirement for car spaces must be accompanied by a Car Parking Demand Assessment. The Assessment must assess the car parking demand likely to be generated by the proposed development, having consideration to:

- The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.
- The variation of car parking demand likely to be generated by the proposed use over time.
- The short-stay and long-stay car parking demand likely to be generated by the proposed use.
- The availability of public transport in the locality of the land.
- The convenience of pedestrian and cyclist access to the land.
- The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.
- The anticipated car ownership rates of likely or proposed visitors to or occupants (residents or employees) of the land.
- Any empirical assessment or case study.

8.2 Car Parking Demand Assessment

8.2.1 Residential

Car ownership data from the 2016 Census for the City of Port Phillip was sourced from the Australian Bureau of Statistics (ABS). For development types similar to that proposed, the data is outlined in Table 9.

Table 9 2016 Census Car Ownership – City of Port Phillip

Dwelling Type	*No of Bedrooms*	*Average Car Ownership*
Flat, unit or apartment	1	0.80
	2	1.10
	3	1.39
	4	1.63

Application of the above rates to the proposed apartment mix gives an estimated average parking demand for 118 spaces. It should be recognised, however, that this data covers the entire municipality, including areas that do not enjoy the same level of public transport connectivity as the subject site.

The ABS data was further assessed to determine the proportion of dwellings where residents do not own or otherwise have the need to park a vehicle at their place of residence, as well as those where residents of dwellings with 3 bedrooms or more, do not own more than one vehicle. For development types similar to that proposed, Table 10 provides a summary of this data.

Table 10 2016 Census Car Ownership – City of Port Phillip

Dwelling Type	*No of Bedrooms*	*% Dwellings with no Vehicles*	*% Dwellings with 1 or less Vehicles*
Flat, unit or apartment	1	30.1%	-
	2	16.5%	-
	3	15.4%	59.2%
	4	11.0%	32.9%

The ABS data clearly indicates that there is a market for dwellings that do not provide, and therefore do not attract the price premium associated with a car parking space. Given the site's location with respect to public transport services and other services, it is expected that dwellings within the subject site would be particularly appealing to potential owners/tenants who do not have the need to park a vehicle at their place of residence.

Furthermore, it should be recognised that resident parking demands are, in part, dependent on car parking provisions, insofar as an owner/tenant with the need to park a vehicle is unlikely to occupy a dwelling that does not provide a car parking space. This is particularly true in areas where on-street parking is restricted to short durations or permit zones, meaning on-street parking is not a viable alternative to on-site parking for residents. This in turn supresses resident car parking demands.

With the site's location with respect to public transport and other amenities, and on-street parking in the area generally being restricted to 1P ticket parking or a permit zone, it is considered that resident parking demands generated by the proposed dwellings will amount to the parking provision of 89 spaces.

8.2.2 Retail

With respect to the ground floor retail / food and drink tenancy, it is anticipated that the bulk of patronage will be generated by the upper levels, residents in the area and from other nearby uses. As a result, most parking demands are expected to be attributable to staff.

For the purposes of the following assessment, the ground floor tenancy will be assumed to generate staff parking demands at a rate of 1 space per 100m². Application of this rate to the proposed retail area of 175m² gives an anticipated staff demand for 2 spaces.

Notwithstanding the above, staff demands are typically dictated by supply of parking and availability of on-street parking. With no provision for staff parking, nor the ability to park on-street nearby, staff will need to seek alternate transportation means when commuting. Alternatively, a number of paid parking garages are located within the immediate vicinity of the site available for employees who still wish to drive to work.

8.3 Review of Car Parking Provision

8.3.1 Port Phillip's Sustainable Transport Strategy

The City of Port Phillip have prepared a sustainable transport strategy, aimed at achieving a connected city where residents and workers can live and travel car free.

The goals set in place to achieve this outcome is governed by the increase of walking, bike riding and public transport facilities. An extract of Council's road user hierarchy in order of priority is shown below in Figure 16.

Figure 16 Port Phillip Council Road User Hierarchy (Highest to Lowest)

As shown above, Council's policy is targeted towards moving people in a safe and sustainable manner, which is targeted towards a decreasing reliance on private vehicles. This policy is in line with the further direction and strategies prepared by Council over a number of years with the primary goal to vehicle trips and car ownership within the municipality. It is clear that there are a number of benefits of reducing car parking provision on overall cost, congestion, environmental and social. These benefits are paramount when considering future development and should take precedence.

8.3.2 Impact of Parking Supply on Traffic Congestion

A VCAT decision (Ronge v Moreland CC [2017] VCAT 550 (9 May 2017)) highlighted the value of reduced car parking provision with regard to traffic congestion, identifying the potential adverse impact of providing parking to comply with Clause 52.06, as below:

"*Our roads are already congested and will be unimaginably so if a 'business-as-usual' approach is accepted through until 2050. The stark reality is that the way people move around Melbourne will have to radically change, particularly in suburbs so well served by different modes of public transport and where cycling and walking are practical alternatives to car based travel.*

A car parking demand assessment is called for by Clause 52.06-6 [now Clause 52.06-7] *when there is an intention to provide less car parking than that required by Clause 52.06-5.*
However, discussion around existing patterns of car parking is considered to be of marginal value given the strong policy imperatives about relying less on motor vehicles and more on public transport, walking and cycling. Census data from 2011 or 2016 is simply a snapshot in time, a base point, but such data should not be given much weight in determining what number of car spaces should be provided in future, for dwellings with different bedroom numbers.

Policy tells us the future must be different.

Oversupplying parking, whether or not to comply with Clause 52.06, has the real potential to undermine the encouragement being given to reduce car based travel in favour of public transport, walking and cycling."

8.3.3 On-Street Parking Restrictions

For developments with reduced parking supply, and where on-street parking in the area is unrestricted, it is often observed that long term resident or employee parking may occur on-street. Conversely, where on-street parking surrounding a development with a reduced parking supply is restricted, residents with lower car ownership levels are encouraged to occupy the development, knowing that long-term parking is generally unavailable in the area if they are not provided with an on-site parking space (or only one on-site parking space). Furthermore, staff who are not allocated a parking space are expected to travel to the site via alternative transportation means.

A review of parking restrictions in the area surrounding the proposed development indicates that on-street parking is heavily restricted, and there is limited opportunity for long term parking in the area.

These restrictions are therefore expected to ensure that residents or retail employees who are not allocated a parking space, do not own a vehicle or drive to work, as they will not be able to conveniently park their vehicle long-term on-street in the vicinity of the site.

8.3.4 Parking Credit

It is understood that the existing residential development on the site provides a total of 2 x 1-bedroom and 18 x 2-bedroom apartments, with a total provision of 11 on-site car parking spaces.

Based on the current Planning Scheme requirements, the existing development on the site generates a parking requirement of 20 parking spaces. With a provision of 11 car spaces on-site, the existing development includes a shortfall of 9 spaces.

Due to the age of the building, current residents are eligible for on-street car parking permits. The proposed redevelopment and subsequent residents will not be eligible for permits therefore promoting the reduction in car parking demand whilst also releasing pressure to current on-street parking demands.

8.3.5 Alternative Modes of Transport

As indicated in Section 2.5, the site has excellent access to Public Transport, with numerous tram and bus services in the immediate vicinity. In addition, the site is located approximately 1.2 kilometres from the future Anzac train station and upgraded Domain interchange providing a significant intensification of public transport accessibility. In this regard, the provision of excellent public transport ensures that staff and residents will have good access to alternate transportation modes.

In addition to the availability of public transport, the site is well serviced by formal and informal cycling routes. The provision of additional bicycle parking and facilities will also ensure that residents are able to easily park their bikes.

The site is serviced by a suite of other transport modes allowing for the easy adoption of walking, cycling or public transport travel.

8.3.6 Adequacy of Proposed Car Parking Provision

It is expected that the proposed supply of car parking is appropriate for the proposed development, considering the following:

- The site has an existing car parking credit for 9 spaces;
- 2016 Census data identifies that a market exists for 1 and 2-bedroom apartments without a parking space;
- The proposed development provides bicycle parking in excess of the Planning Scheme requirements, therefore providing an alternate means of transportation;
- The development is within easy walking distance of amenities, including shops, education, entertainment and recreational facilities;
- The site has excellent access to public transport, with numerous tram and bus services in the immediate vicinity, providing access options for residents and employees with no on-site parking space;
- A car share pod is located opposite the site;
- The site is in close proximity to numerous share car spaces, providing access to a car for residents when the need arises;
- Existing parking restrictions in the area will encourage residents and employees with low car ownership rates, ensuring they do not park long-term on-street; and
- Reduced car parking provision assists with the desired reduction in private vehicle usage, therefore minimising traffic impacts in the vicinity.

8.4 Overview of Car Parking

Car parking for the proposed development will generally be provided for the larger dwellings at 2 spaces per dwelling, whilst the smaller dwellings will have a reduced provision of car parking. Specifically, all 1-bedroom dwellings and 23% of 2-bedroom dwellings will not be allocated car parking, while a mixture of 3-bedroom products will be available, with some provided no car parking, and others provided 1 or 2 spaces. It is considered that the reduced provision of car parking across the site is appropriate and will support sustainable transport options for future residents. The benefits of reducing car parking from an environmental point of view are significant and with the site's accessibility to alternate modes of transport will ensure that those without car parking and can still travel as required.

9 TRAFFIC

9.1 Traffic Generation

Surveys undertaken by other traffic engineering firms at residential dwellings have shown that the daily traffic generation rates vary depending on the size, location and type of the dwelling, the parking provision and proximity to local facilities and public transport.

Medium to high density dwelling in inner areas generate traffic with rates between 3.0 and 6.0 movements per dwelling. Considering the location of the subject site and moreover the excellent access to public transport, it is expected that generation rates will be towards the lower end of the range. Nevertheless, for the purposes of this assessment a daily rate of in the order of 5.0 movements per day per dwelling will be adopted with 10% occurring during the peak hours.

Application of the above rates indicates that the 78 dwellings with car parking will generate 390 movements per day, inclusive of 39 vehicle movements during the morning and afternoon peak hours.

Furthermore, during the morning peak, it is estimated that 80% of the residential traffic will be outbound, while during the afternoon peak, 60% of the residential traffic will be inbound

Based on the above, the anticipated traffic generated by the proposed development is shown in Table 11.

Table 11 Anticipated Traffic Generation

Period	*Inbound*	*Outbound*	*Total*
AM Peak	31	8	39
PM Peak	16	23	39

9.2 Traffic Impact

Reviewing the volumes above, it is noted that a maximum of 39 vehicle movements per hour are expected for any one movement, equivalent to less than two vehicle trips every three minutes. Even when focussed into one access point, the traffic volumes generated by the proposed development are low, and are expected to be easily absorbed into the surrounding road network.

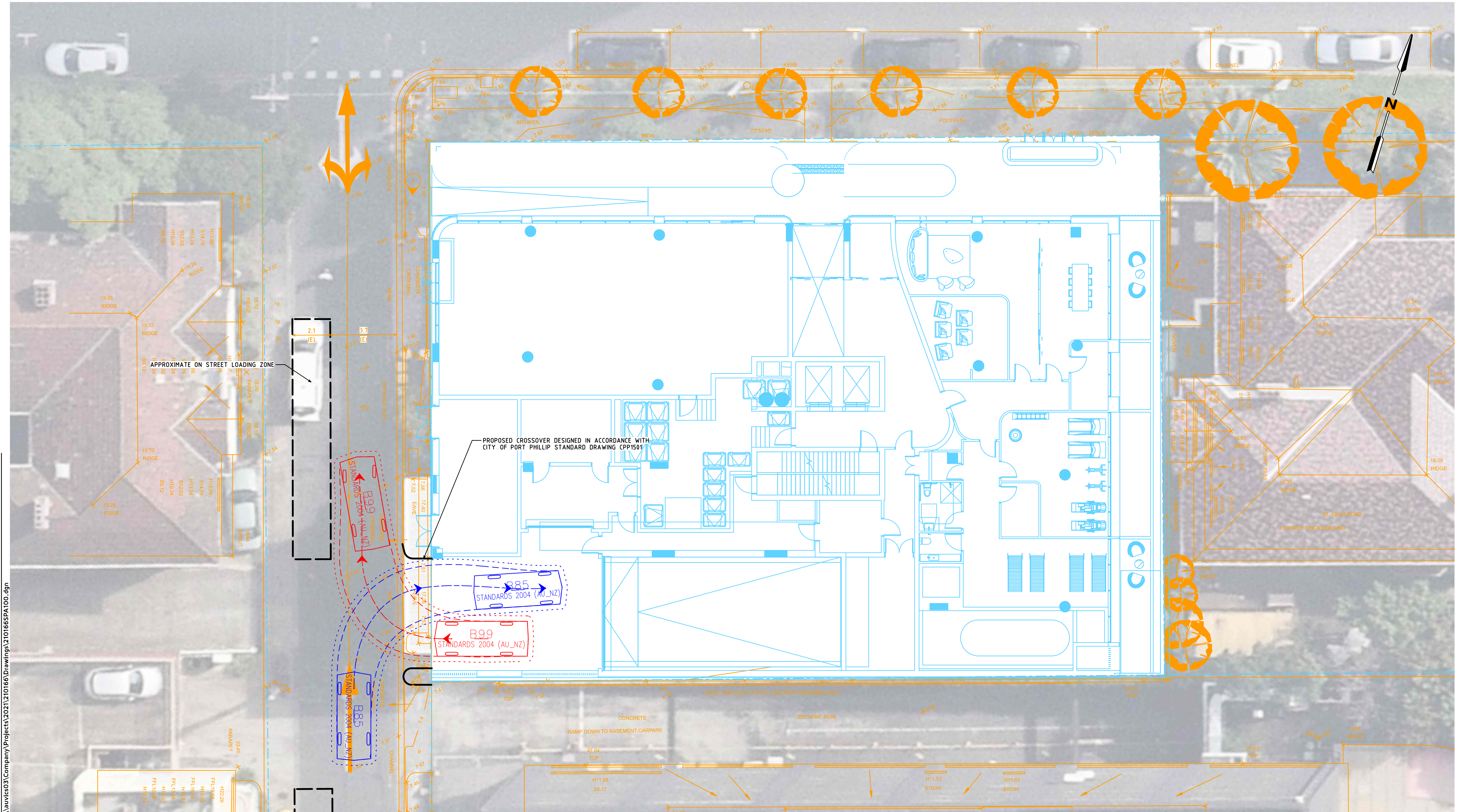
10 CONCLUSIONS

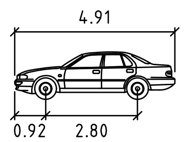
It is proposed to develop the subject site for the purposes of a mixed-use development, with a ground floor retail space and residential apartments in the levels above.

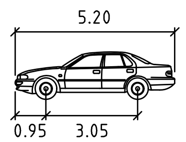
Considering the analysis presented above, it is concluded that:

- The car parking layouts and accesses have been designed generally in accordance with the requirements of the Planning Scheme and are considered appropriate;
- The loading provisions are expected to accommodate the site requirements;
- The proposed provision of bicycle parking exceeds the Planning Scheme requirements, and is therefore considered acceptable;
- The proposed provision of car parking generates a shortfall of 43 spaces when compared to the Planning Scheme requirements;
- The proposed car parking provision is considered acceptable for the proposed development, with due consideration of:
  - The Port Phillip Sustainable Design Strategy;
  - The existing credit for 9 spaces;
  - 2016 Census data for apartment style dwellings in the City of Port Phillip;
  - On-street parking in the vicinity of the site is heavily restricted;
  - The location of a car share pod on Louise Street, opposite the site;
  - The provision of bicycle parking above the statutory requirements; and
  - The site is afforded excellent access to public transport, cycling infrastructure, shops and amenities.
- The anticipated traffic volumes generated by the development is not expected to have an impact on the operation of the surrounding road network; and
- There are no traffic engineering reasons which would preclude a permit from being issued for this proposal.

Appendix A Swept Path Diagrams







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Steering Angle	: 34.1

B99	meters
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Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

SWEPT PATH LEGEND

- - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
.... 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Drawing Title		
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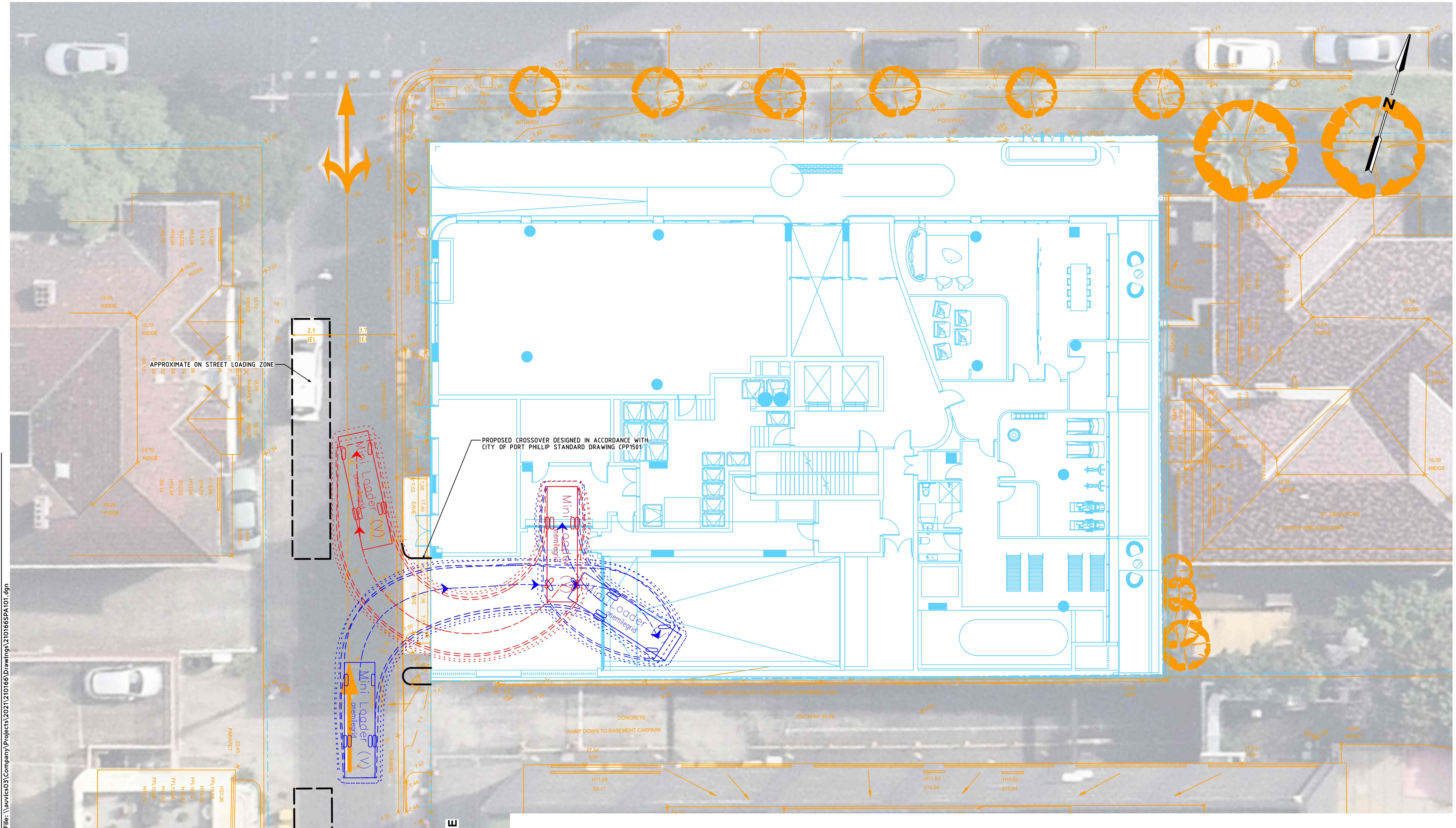

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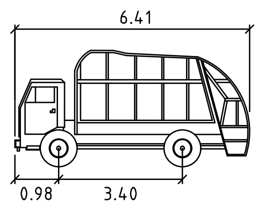

WASTE MINI LOADER meters

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Steering Angle	: 33.6

SWEPT PATH LEGEND

DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Drawing Title
8 LOUISE STREET MELBOURNE
SITE VEHICLE ACCESS - G
SWEPT PATH ANALYSIS

Designed	Approved	Melway Ref
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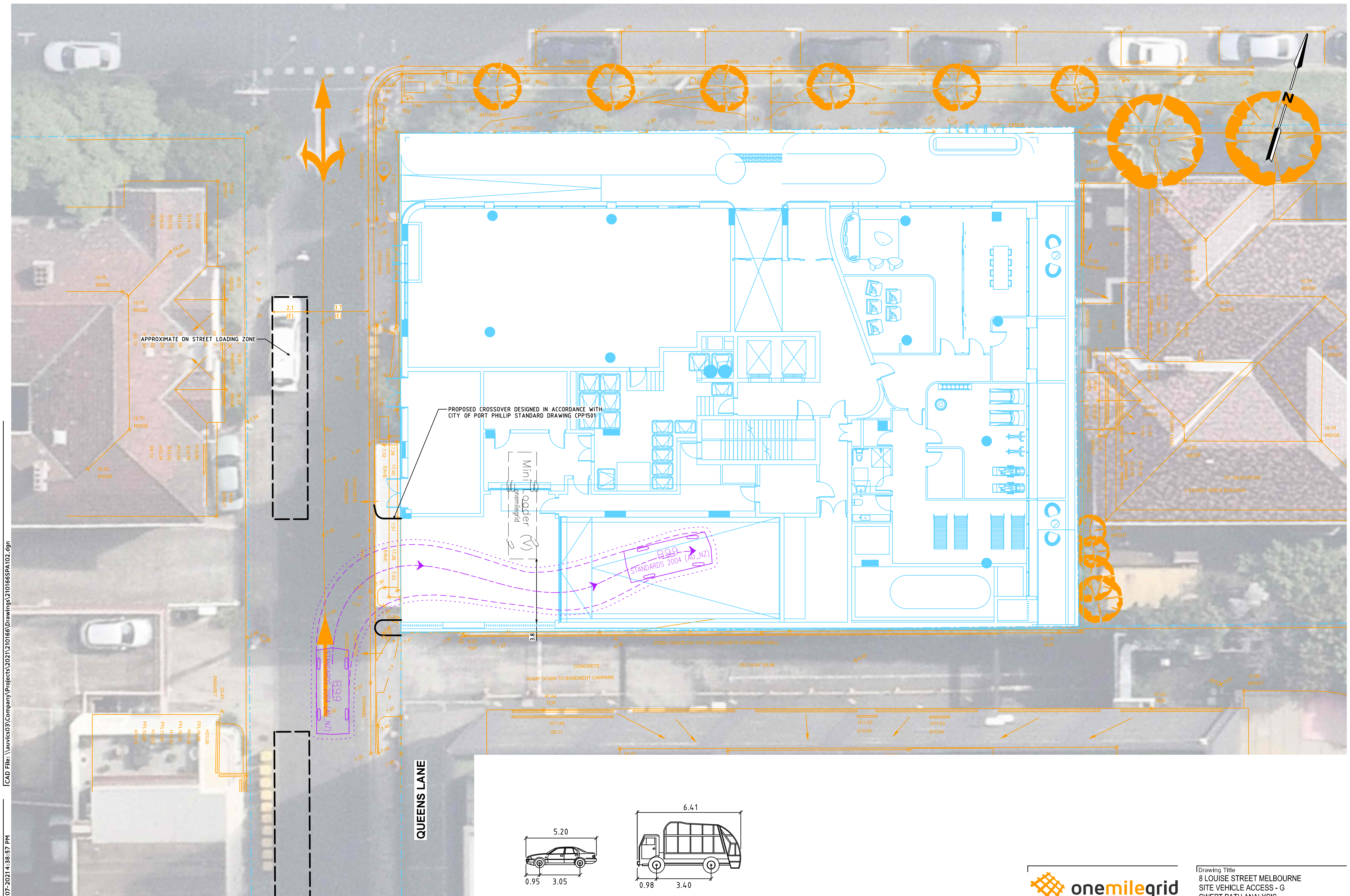

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Steering Angle	: 33.9

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Track	: 1.85
Lock to Lock Time	: 4.0
Steering Angle	: 33.6

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SWEPT PATH LEGEND

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Drawing Title
8 LOUISE STREET MELBOURNE
SITE VEHICLE ACCESS - G
SWEPT PATH ANALYSIS

Designed	Approved	Melway Ref
MOB	VG	58 A4

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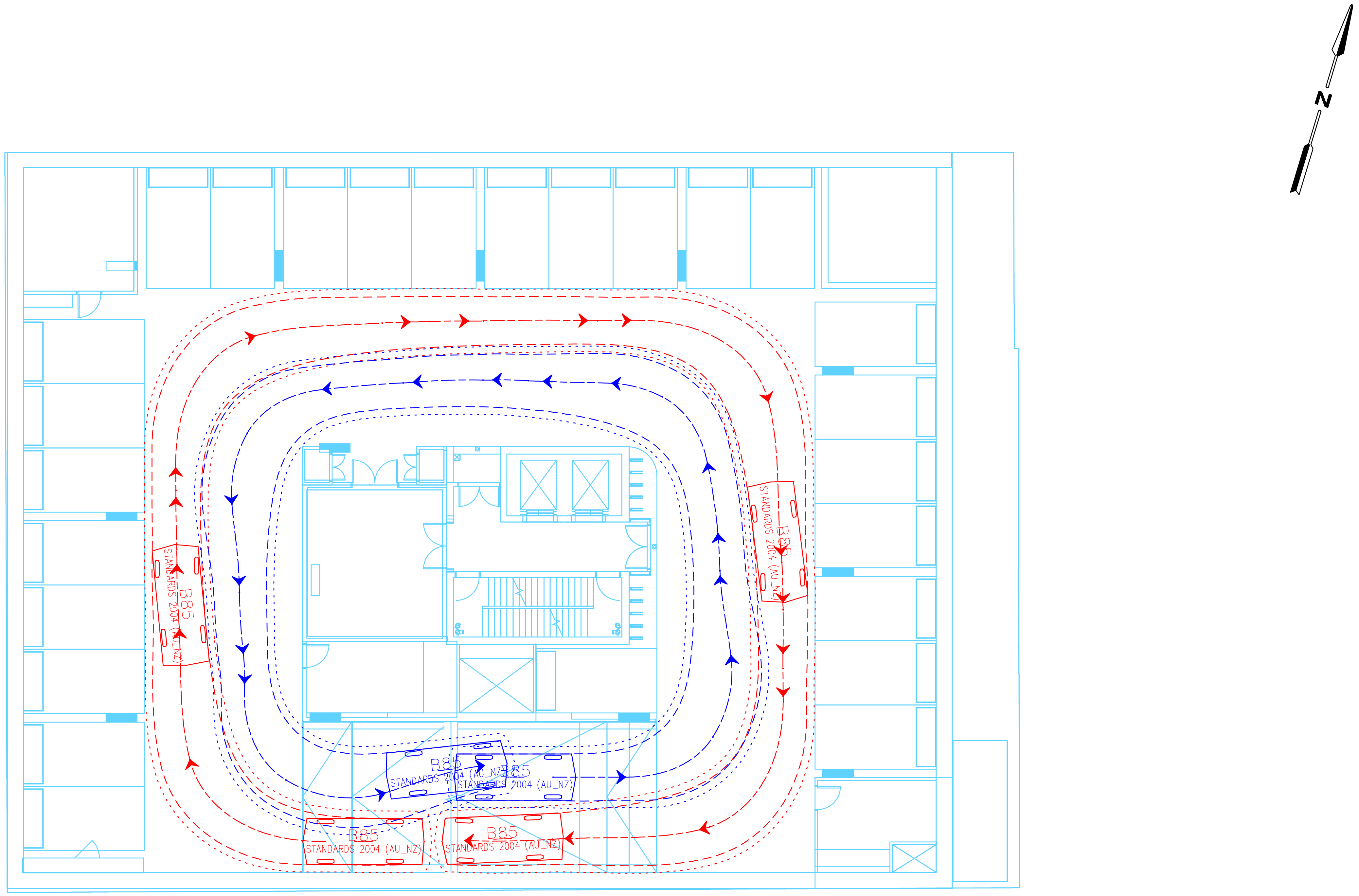

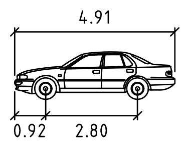

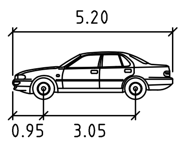

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Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

SWEPT PATH LEGEND

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.... 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Drawing Title
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SITE VEHICLE ACCESS - B1
SWEPT PATH ANALYSIS

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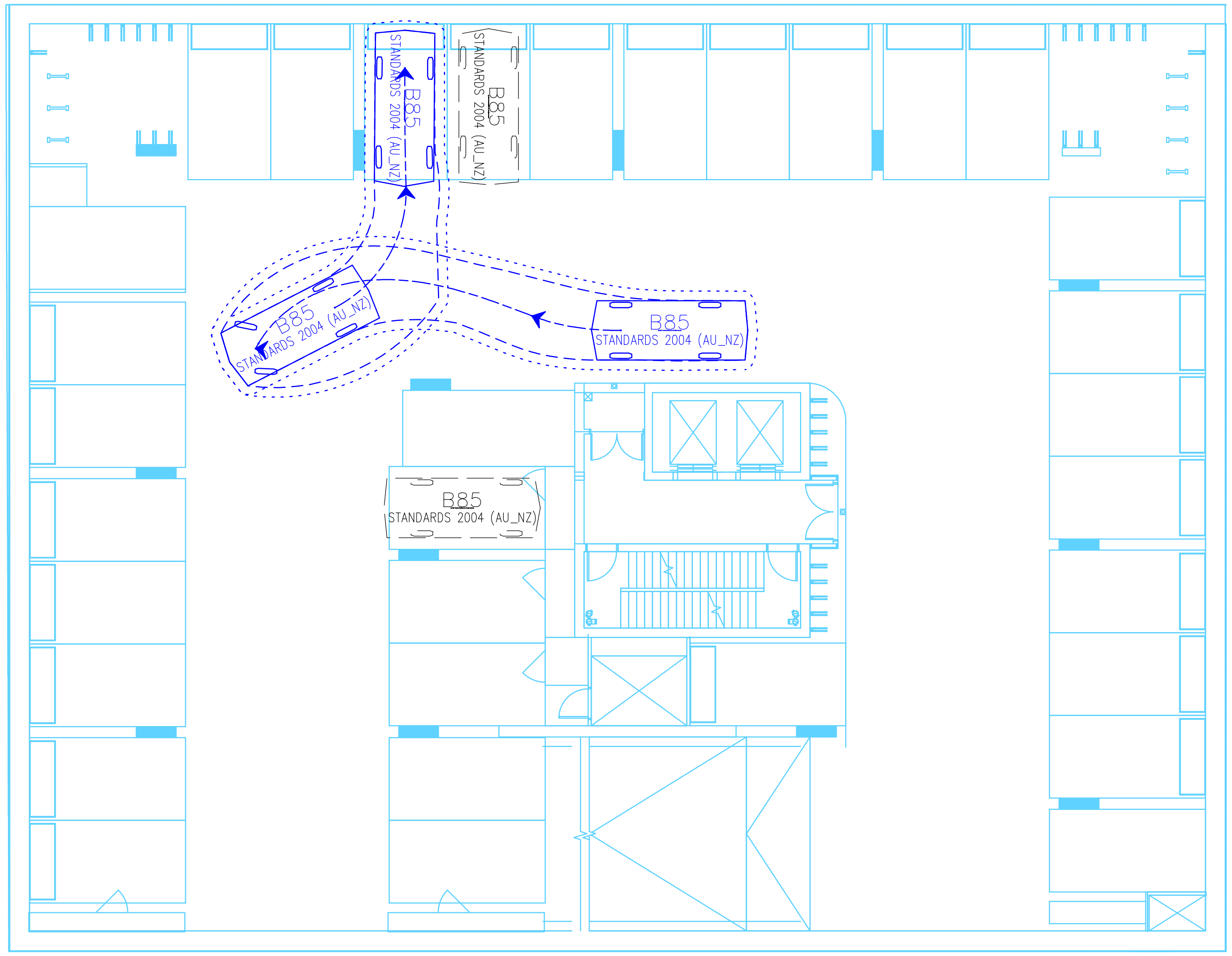

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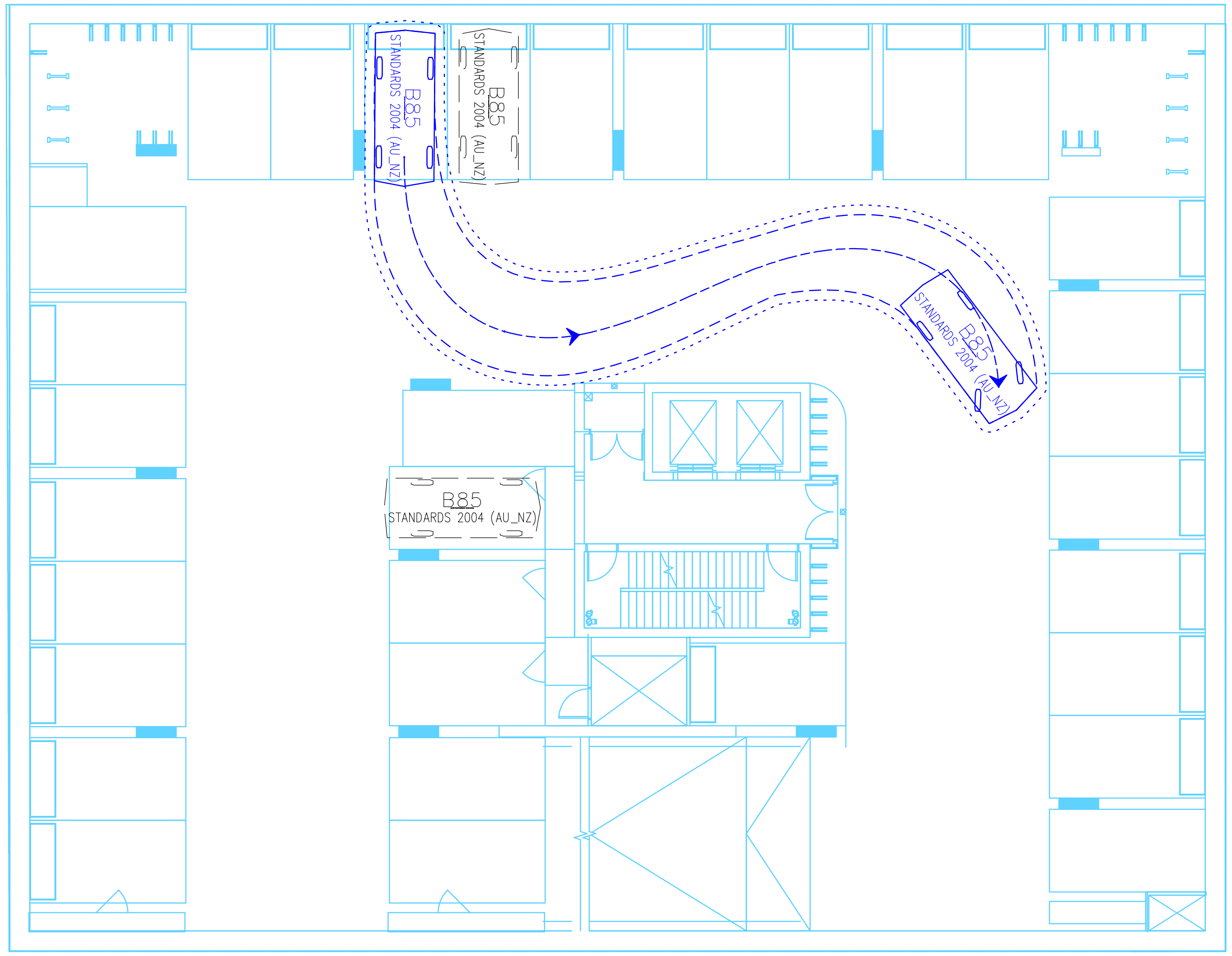

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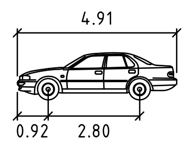

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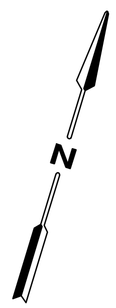

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Drawing Title
8 LOUISE STREET MELBOURNE
SITE VEHICLE ACCESS - B3
SWEPT PATH ANALYSIS

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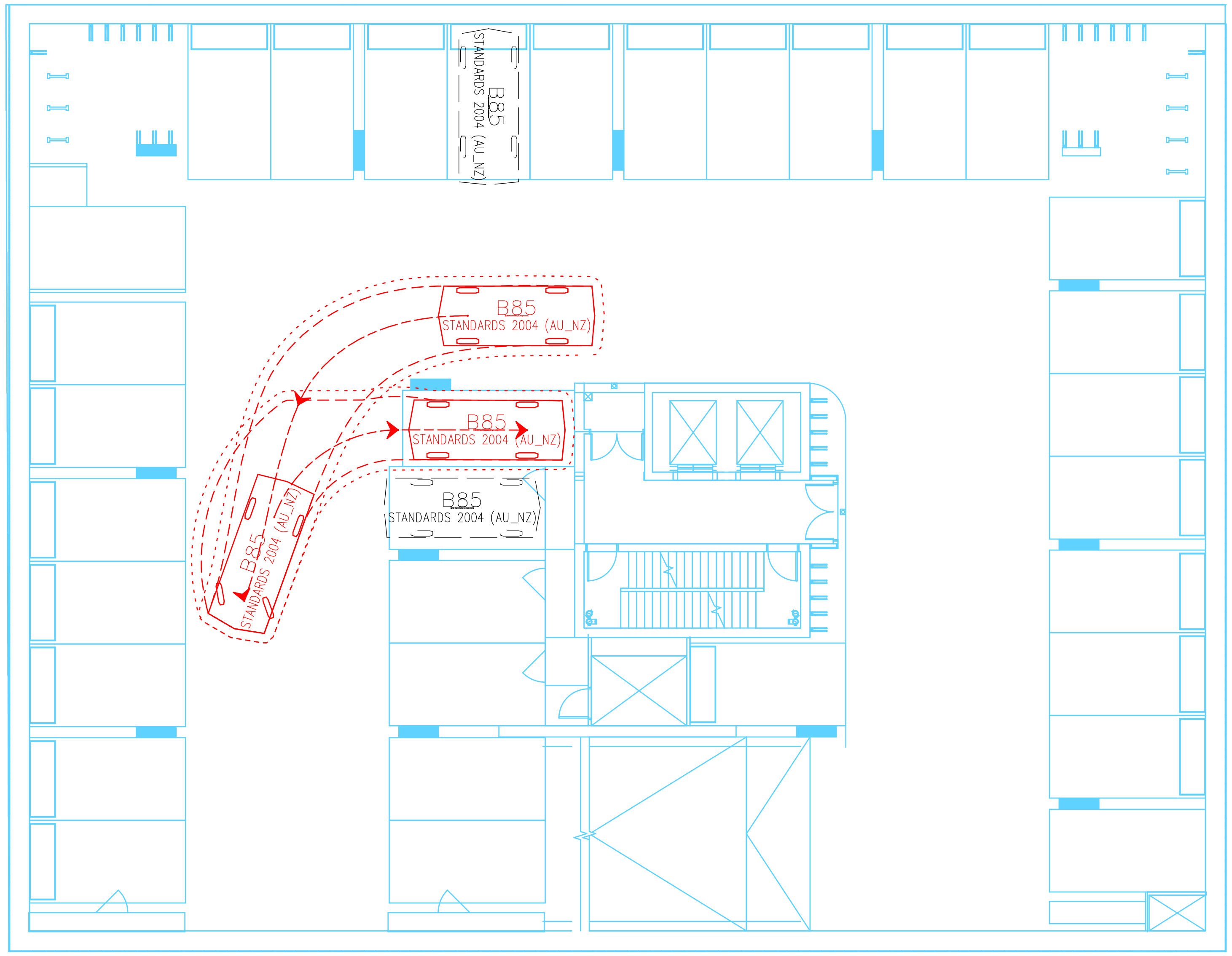

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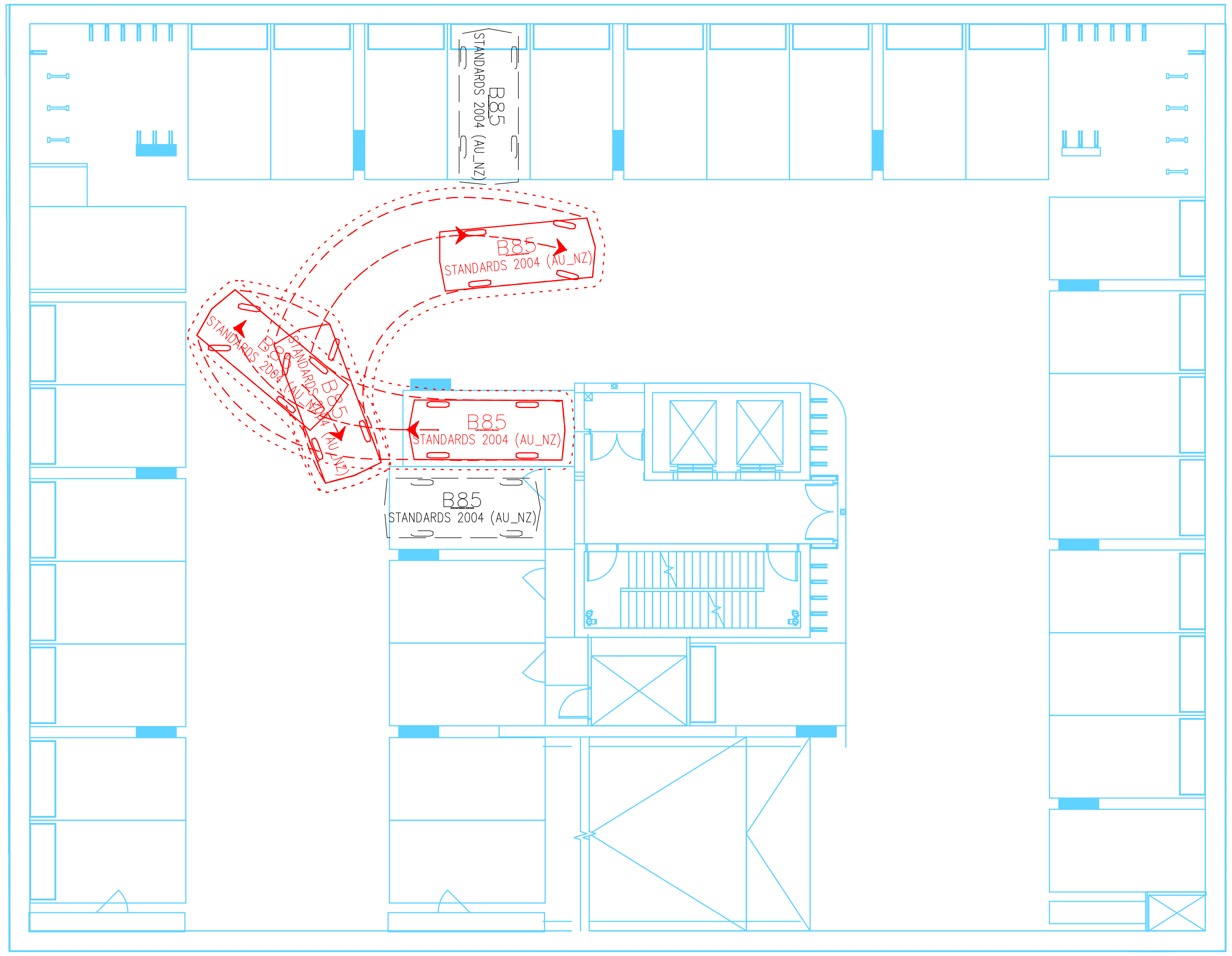

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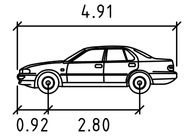

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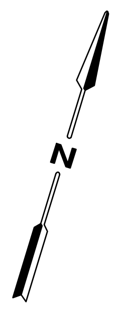

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Drawing Title
8 LOUISE STREET MELBOURNE
SITE VEHICLE ACCESS - B3
SWEPT PATH ANALYSIS

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14 October 2021

Urbis

Via email: jlittlewood@urbis.com.au

Attention: James Littlewood

8 Louise Street, Melbourne
Traffic Advice

Dear James,

onemile**grid** has previously undertaken a Transport Impact Assessment of the proposed residential development at 8 Louise Street, Melbourne. A planning application (Application for Planning Permit No. PDPL/01019/2021) was submitted to Council, and a preliminary assessment dated 10 September 2021was subsequently received.

onemile**grid** has reviewed the traffic engineering relates matters, and provides the following information in response.

C. Traffic, Access and Parking

The loading bay access is impeded by an outward opening door and is reliant on the basement security door being open to facilitate reversing into the area, please amend accordingly.

The loading bay will be managed to ensure that access is available at all times when loading is required to take place.

You may wish to check with your Building Surveyor that the open security fencing / screen to the southern property boundary would meet relevant Building Regulations. Planning officers have no in-principle issue with arrangement as it would provide improved visibility upon egress from the site.

N/a – agreed

Following from the above point, we note that there would be five accesses within proximity on Queens Lane. This is similar to the existing arrangement but the number of traffic movements from this site would be much greater. Please provide additional commentary on the acceptability of this arrangement.

It is acknowledged that the level of traffic generated by the proposed development will be an increase on existing volumes. Queens Lane however is suitably designed to comfortably accommodate this level of traffic with appropriate traffic management in place with the one-way operation and intersection connections to the north and south.

In relation to the nearby access points, due to the one-way nature of Queens Lane, all movements to all sites are restricted to single direction entry and single direction exit movements. At each site access, there are appropriate sight lines available to motorists at other site access points and travelling along Queens Lane. Furthermore, and most importantly due to the short length of Queens Lane vehicles will be travelling at a slow speed thus representing a significantly reduced

risk. In this context the proposed access arrangements and integration with others is considered appropriate.

D. Landscaping:

Please remove bicycle parking from within the tree protection zone of a street tree asset. All visitor bicycle parking should be located within the title boundary.

The bicycle parking has been removed however the inclusion of verge bike parking is considered to be a practical inclusion for visitor parking as they are easily identifiable to cyclists and moreover are available to the greater public and not just the subject site.

Please do not hesitate to contact me should you wish to discuss the above.

Yours sincerely

Valentine Gnanakone

Director

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