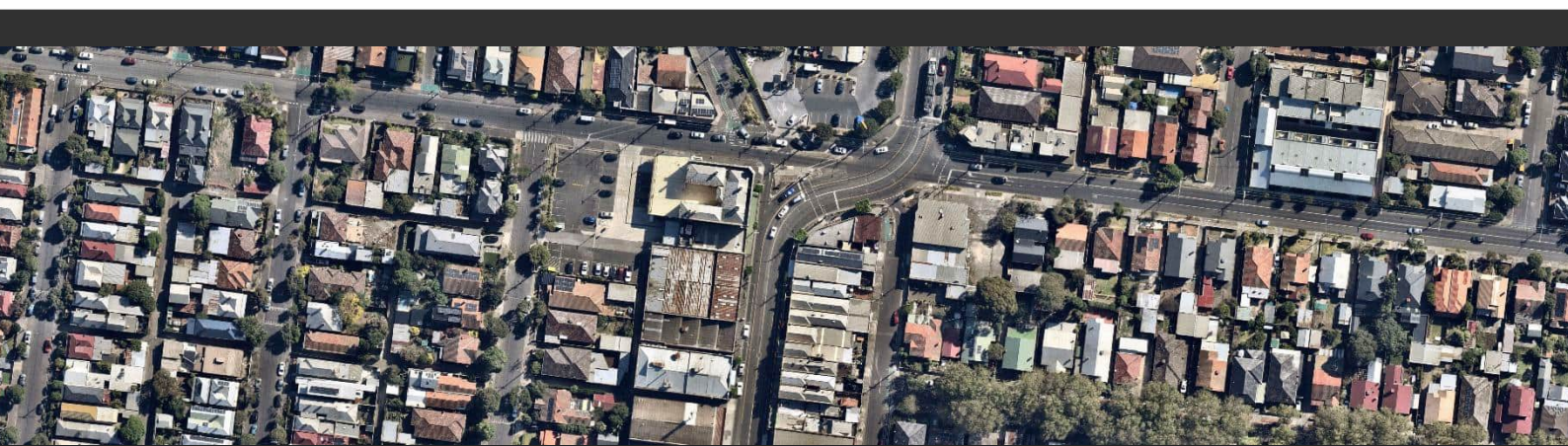


# ***495 - 511 Lygon Street, Brunswick East***

## **Transport Impact Assessment**



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30 October 2025

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## 1 INTRODUCTION

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**onemilegrid** has been requested by VMCC Joint Venture Pty Ltd to undertake a Transport Impact Assessment of the proposed mixed-use development at 495 - 511 Lygon Street, Brunswick East.

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

## 2 EXISTING PERMIT

---

The subject site has received planning permission (Planning Permit no. MPS/23020/57) for the development of a multi storey building comprising 52 apartments, 4 commercial tenancies (totalling 586 m<sup>2</sup>), a function centre (529 m<sup>2</sup> with a max. 100 patrons) and a reduction in the car parking requirement.

A total of 101 car parking spaces were proposed as part of the approved Planning Permit, located on the ground floor (accessed directly from the laneway) and across 2 basement levels, with access to the basement car parking levels from the western boundary via the laneway.

The Permit was issued on 17 February 2022.

It is proposed to amend the permit to reflect the updated set of plans. In relation to car parking and traffic matters, the following changes to the plans are worth noting:

- Minor changes to apartment mix, with 46 total apartments proposed;
- Changes to retail and function centre floor areas and layout, with the same number of function centre patronage (100 patrons) still proposed and three retail tenancies;
- Changes to bicycle parking location, design and provision;
- Minor changes to basement car park design;
- Reduction in car parking spaces located on the ground floor accessed directly from the laneway; and
- Reduction in overall car parking provision to 80 spaces.

As such, this Transport Impact Assessment has been provided as an update to reflect these changes to the plans and accompany the proposed amendment to the Permit application.

## 3 EXISTING CONDITIONS

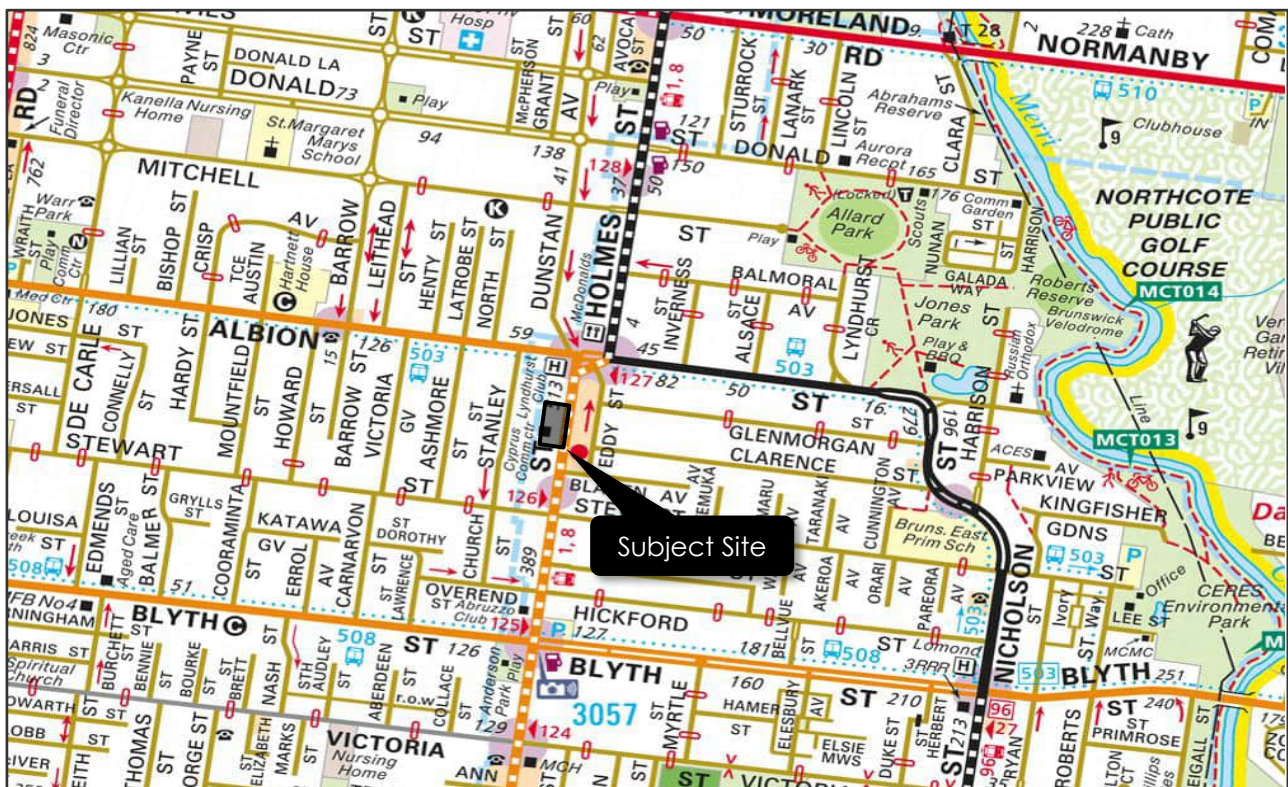
### 3.1 Site Location

The subject site is located at 495 - 511 Lygon Street, Brunswick East, as shown in Figure 1. The site is situated approximately 60 metres to the south of the Albion Street / Lygon Street intersection. The site is generally rectangular in shape with a frontage to Lygon Street of approximately 52 metres and a site depth of approximately 32 metres with a rear and southern boundary abuttal to laneways.

The site is currently occupied by a single storey retail use and the Cyprus Community Centre each with pedestrian access via Lygon Street. The building also provides a loading bay at the rear of the site accessed via the laneway from Stanley Street. The surrounding land uses are predominantly retail and residential uses. Of note, directly to the north is a Dan Murphy's store, with the site located within the actively developing Lygon Street strip.

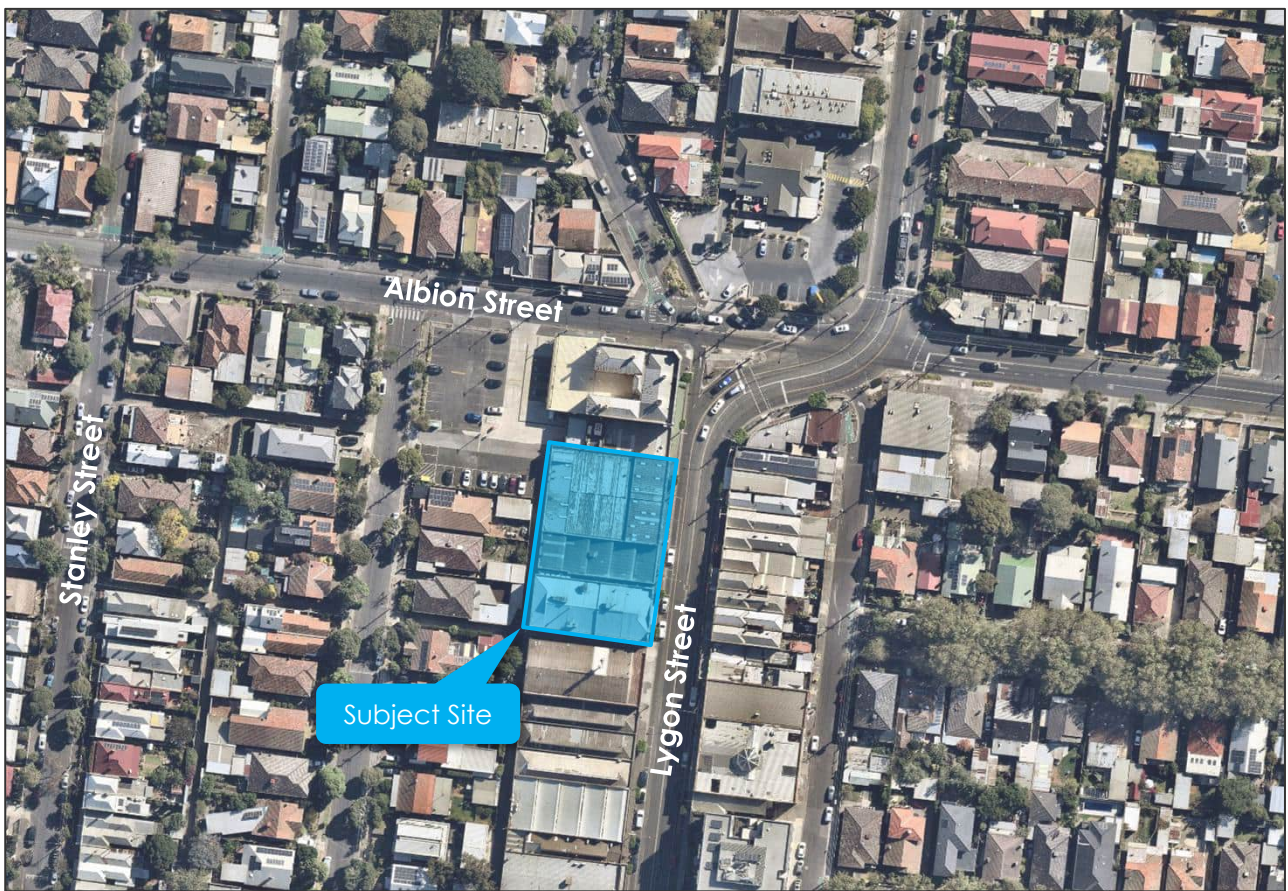
An aerial view of the site is provided in Figure 2.

**Figure 1 Site Location**



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**Figure 2 Site Context (17 March 2024)**



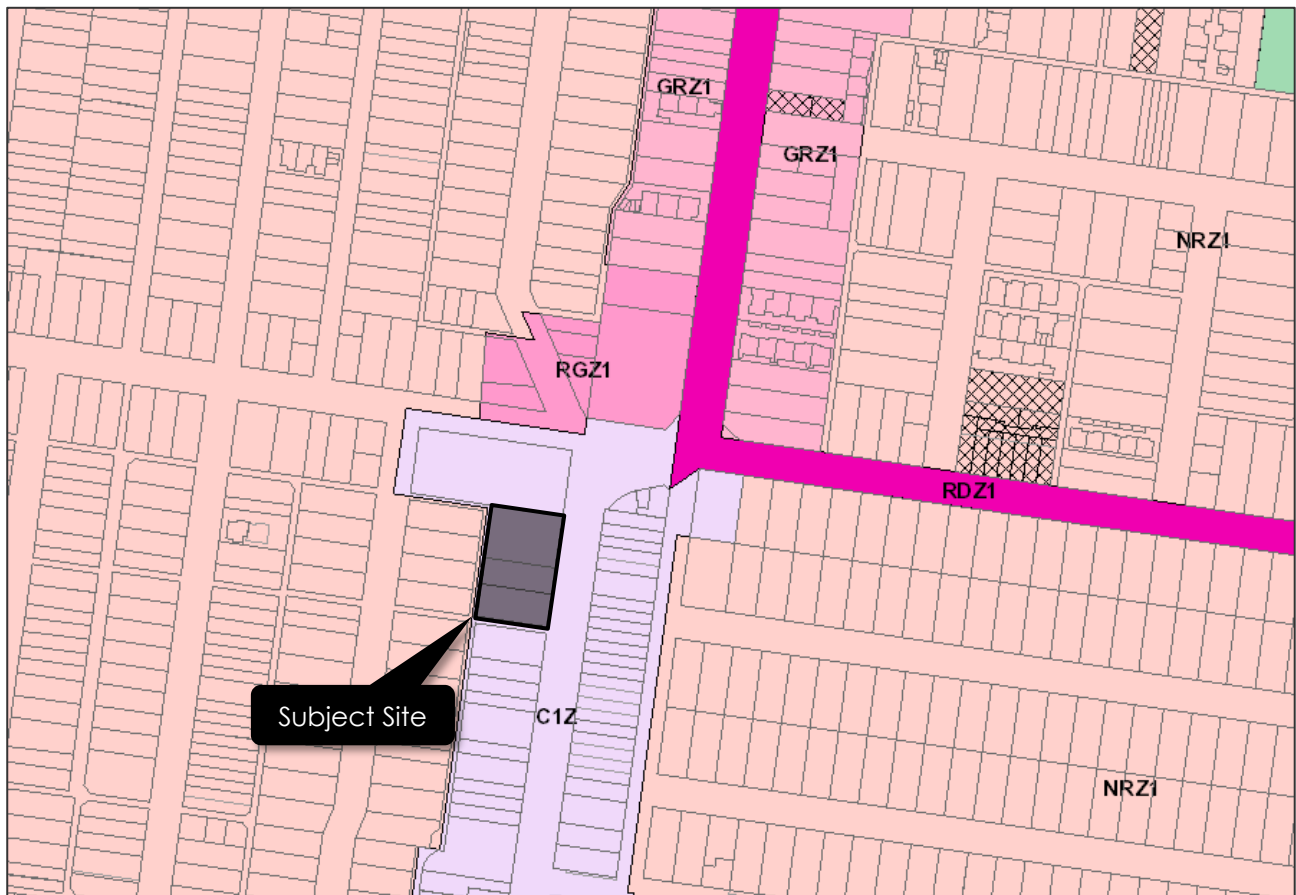
Copyright Nearmap

## 3.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located within a Commercial 1 Zone (C1Z), for which permitted uses are listed in Clause 34.01 of the Merri-bek Planning Scheme.

Furthermore, a Parking Overlay (PO1) applies to the subject site.

**Figure 3 Planning Scheme Zones**



## 3.3 Road Network

### 3.3.1 Lygon Street

Lygon Street is an arterial road generally aligned north-south, running between Albion Street in the north, and Blyth Street in the south. Lygon Street provides a single traffic lane, bike lane and parallel kerbside parking lane in each direction adjacent to the site. The traffic lane is shared with centrally located tram lines whilst the kerbside lane is subject to Clearway restrictions, permitting traffic movement during peak periods.

Kerbside parking on the west side of the road is generally restricted to 2-hour parking between 8am to 4pm, Monday to Thursday, whilst on Fridays, 1-hour parking restrictions apply 8am to 4pm on Fridays and 8am-1pm on Saturdays. Clearway restrictions are in place 4pm-6pm, Monday to Friday.

Kerbside parking on the east side of the road is generally restricted to 2-hour parking between 9am to 6pm, Monday to Thursday, whilst on Fridays, parking restrictions apply 9am to 6pm on Fridays and 9am-1pm on Saturdays. Clearway restrictions are in place 7am-9am, Monday to Friday.

The cross-section of Lygon Street at the frontage of the site is shown in Figure 4 below.

**Figure 4** Lygon Street, looking south from the subject site



A 40 km/h speed limit applies to Lygon Street between 7am and midnight, 60km/h all other times.

### 3.3.2 Albion Street

Albion Street is a local road generally aligned east-west, running between Lygon Street in the east, and Sydney Road in the west. Albion Street provides a single traffic lane in each direction adjacent to the site. Kerbside parking is provided on both sides of the road, generally restricted to 2-hour parking between 8am and 6pm, Monday to Friday on the north side and unrestricted on the southern side.

The cross-section of Albion Street is shown in Figure 5 below.

**Figure 5** Albion Street, looking east



A 40km/h speed limit applies to Albion Street in the vicinity of the site.

### 3.3.3 Stanley Street

Stanley Street is a local road generally aligned north-south, running between Albion Street in the north, and Stewart Street in the south. Stanley Street provides a single traffic lane in each direction adjacent to the site. Kerbside parking is provided on both sides of the road, generally restricted to 2-hour parking between 8am and 6pm, Monday to Saturday on the west side of the road and generally unrestricted on the east side.

The cross-section of Stanley Street is shown in Figure 6 below.

**Figure 6 Stanley Street, looking south**



A 40km/h speed limit applies to Stanley Street in the vicinity of the site.

### 3.3.4 Right-Of-Way Laneway Network

A network of laneways operate in the vicinity of the site primarily comprising of traditional bluestone laneways. A section of the laneway runs generally east-west between Lygon Street and Stanley Street along the subject site's southern boundary, whilst a second section of laneway aligned generally north-south, runs along the subject site's western boundary from a car parking area in the north, crossing the east-west laneway, terminating at Stewart Street in the south.

In addition, a concrete laneway which is aligned east – west connects to Stanley Street through the Dan Murphy's car park, intersecting with the north – south aligned laneway in the northwest corner of the site.

The laneways generally provide a trafficable width of between 3 – 3.5 metres in the vicinity of the site with approximately 3.35 metres adjacent to the site.

The cross-section of the north – south aligned laneway adjacent to the site is shown in Figure 4 below.

**Figure 7 Laneway looking south adjacent to the western boundary of the site**



### 3.4 Historical Car Parking Conditions

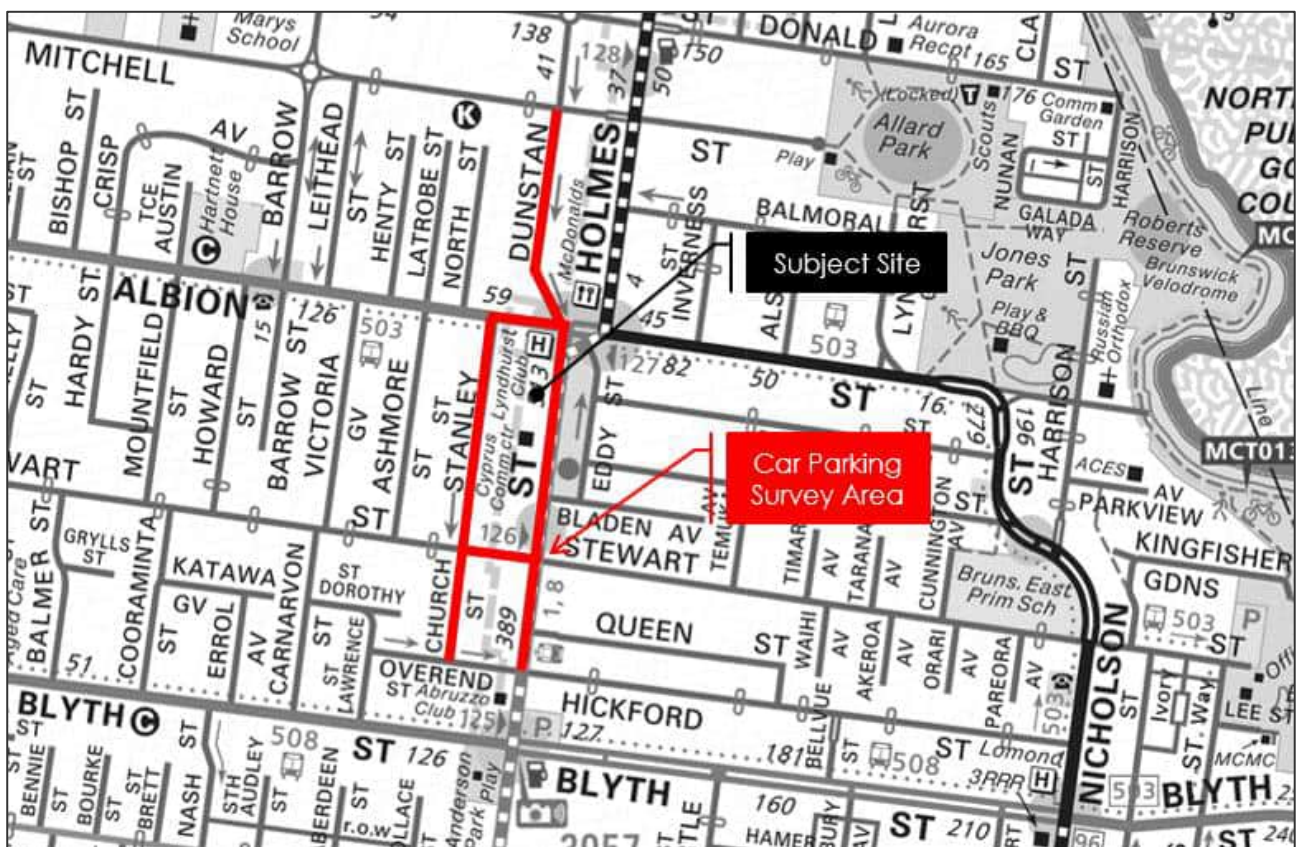
As a part of previous work undertaken for the site, **onemilegrid** commissioned Trans Traffic survey to undertake car parking occupancy surveys in the vicinity of the site during the following periods:

- Thursday 14<sup>th</sup> February 2019 between 10am and 8pm; and
- Saturday 16<sup>th</sup> February 2019 between 10am and 8pm.

It is acknowledged that these surveys were undertaken 5 years prior to the preparation of this report, to originally assess the availability of public car parking in the vicinity of the site. These results are intended to provide context for the car parking supply and historical occupancy rates in the vicinity of the site.

The survey area is shown in Figure 8 below.

**Figure 8 Survey Area**

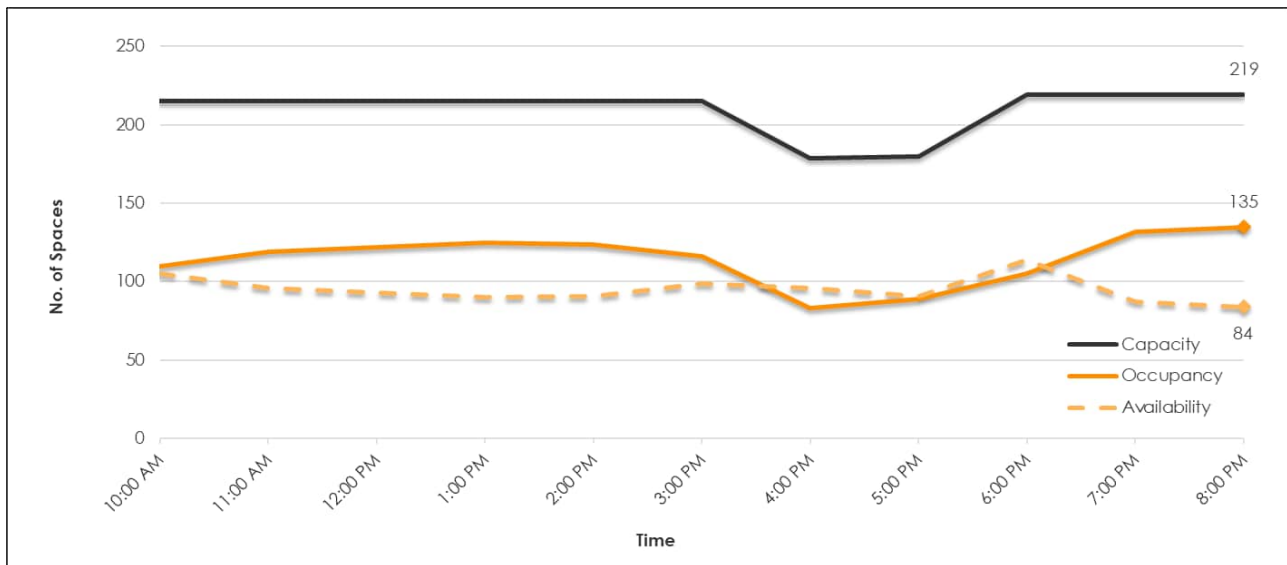


In assessing the survey results, any permit zones, loading zones, or time restrictions allowing for less than a 1-hour stay were excluded from the results.

On the Thursday, the surveys identified a supply of between 179 and 215 parking spaces, with the variation in supply attributable to changing parking restrictions throughout the survey period. Peak occupancy occurred at 8pm when 135 spaces were occupied, leaving no fewer than 84 spaces available for use. Parking utilisation varied between 46% and 62% of capacity throughout the survey period.

The Thursday parking profile is provided in Figure 9 below.

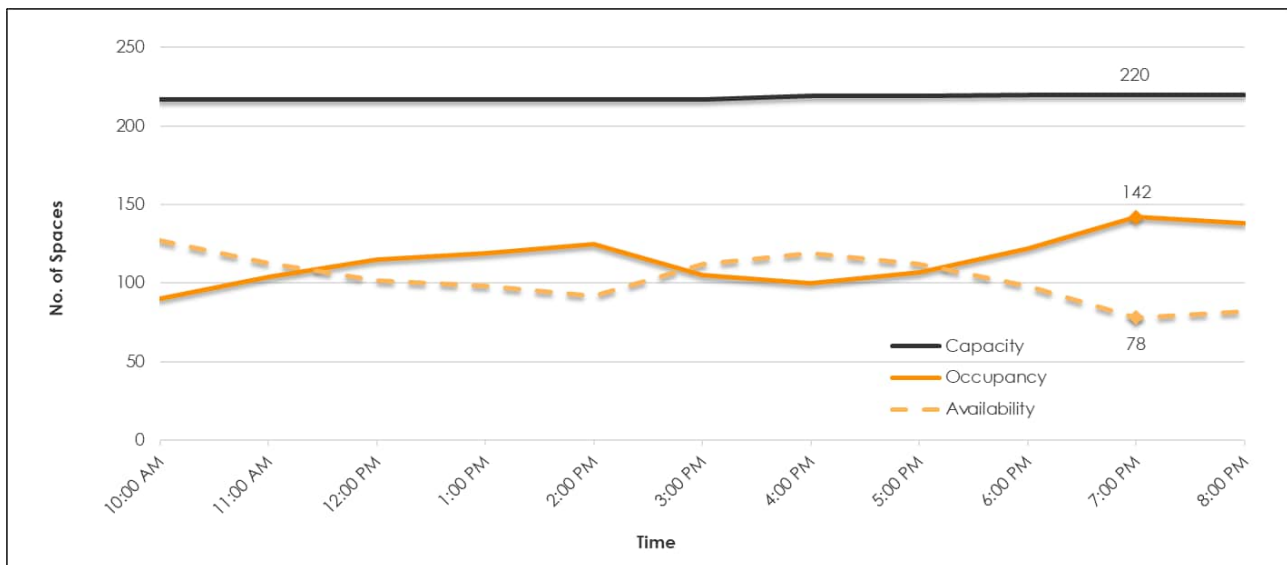
**Figure 9 Car Parking Occupancy Profile (Friday 14<sup>th</sup> February 2019)**



On the Saturday, the surveys identified a supply of between 217 and 220 parking spaces, with the variation in supply attributable to changing parking restrictions throughout the survey period. Peak occupancy occurred at 7pm when 142 spaces were occupied, leaving no fewer than 78 spaces available for use. Parking utilisation varied between 46% and 65% of capacity throughout the survey period.

The Saturday parking profile is provided in Figure 10 below.

**Figure 10 Car Parking Occupancy Profile (Saturday 16<sup>th</sup> February 2019)**



## 3.5 Sustainable Transport

### 3.5.1 General

The site has excellent access to sustainable transport modes with 2 tram lines running along Lygon Street, 7 nearby bus routes, 2 accessible train lines and a network of formal and informal bicycle routes.

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

**Figure 11 TravelSmart Map**

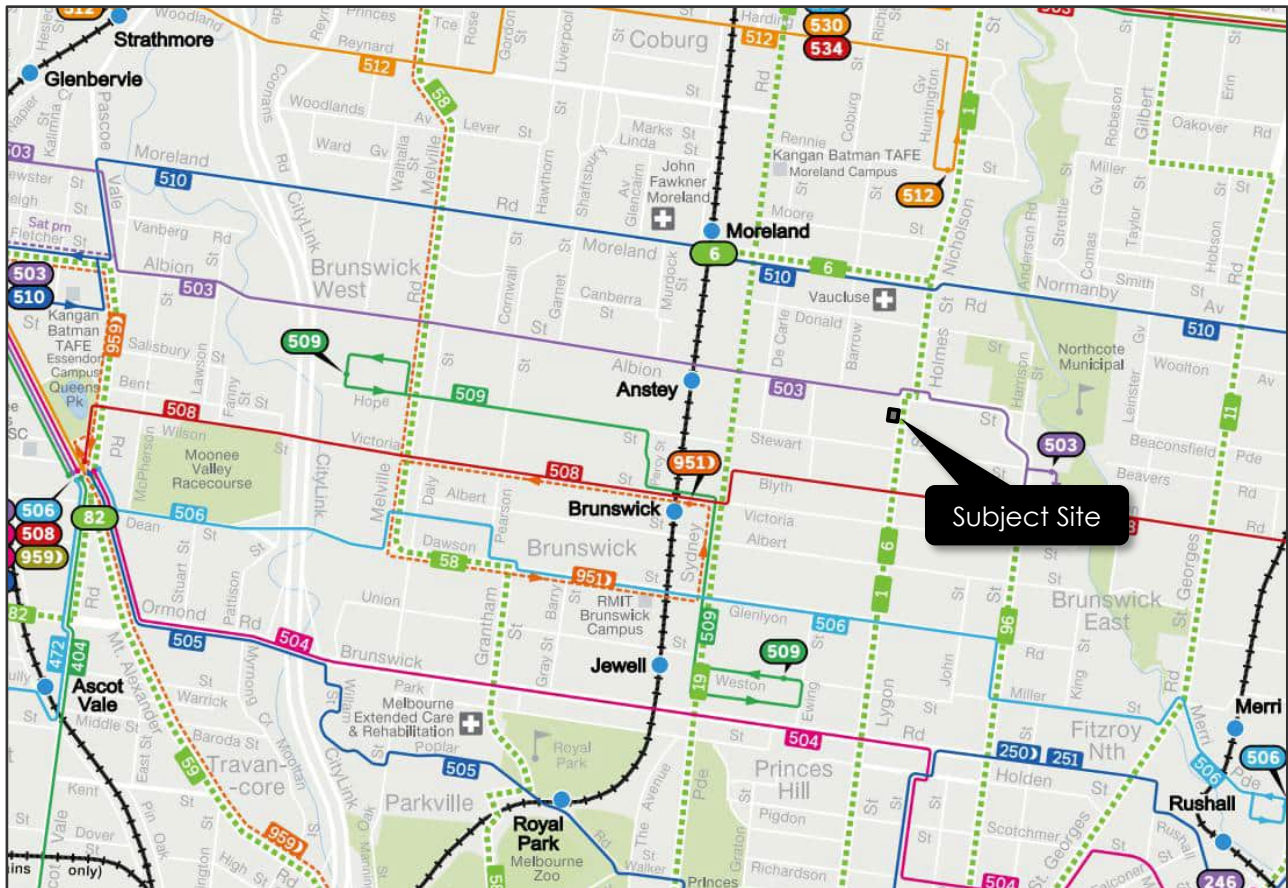


### 3.5.2 Public Transport

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		Upfield Line	Anstey Railway Station
Tram	1	East Coburg - South Melbourne Beach	Albion St/Lygon St
	6	Moreland - Glen Iris	Albion St/Sydney Rd
	19	North Coburg - Flinders Street Station, City	Albion St/Lygon St
Bus	503	Essendon - East Brunswick via Albion Street	Blyth St/Lygon St
	508	Alphington - Moonee Ponds via Northcote & Brunswick	Sydney Rd/Victoria St
	509	Brunswick West - Barkly Square SC via Hope St, Sydney Rd	Holmes St/Moreland Rd
	510	Essendon - Ivanhoe via Brunswick, Northcote, Thornbury	Victoria St/Sydney Rd
	951	Brunswick Station - Glenroy Station via West Coburg	

### 3.5.3 Principal Public Transport Network

A view of the Principal Public Transport Network (PPTN) in the vicinity of the site is shown in Figure 13 below, which demonstrates that the site is located within the PPTN.

**Figure 13 Principal Public Transport Network – Merri-Bek**



## 4 DEVELOPMENT PROPOSAL

### 4.1 Overview

It is proposed to amend the existing Planning Permit (permit no. MPS/23020/57) for the construction of a mixed-use development, comprising of the following key components:

- Two level basement car park providing 80 spaces, accessed via a ramp from the rear laneway;
- An on-site loading dock located adjacent to the ramp to the basement;
- A secondary loading bay located on basement level 01;
- Ground floor retail tenancies;
- Community hall on the ground floor;
- Community facilities on the first floor;
- Residential lobby on the ground floor;
- Bicycle parking on the ground floor;
- Residential and employee bicycle parking on basement level 02; and
- 5 levels of residential apartments (total of 46 apartments).

It is proposed to access the basement car park using a ramp via the laneway from Stanley Street. This ramp will provide access to the residential and commercial parking, as well as the bin storage areas for waste collection vehicles.

Access to the loading dock is also provided via the laneway from Stanley Street.

### 4.2 Development Schedule

An overview of the proposed amended development schedule is provided in Table 2 below.

**Table 2 Development Summary**

Use	Type	No/Area
Dwelling	One-bedroom Apartment	7
	Two-bedroom Apartment	26
	Three-bedroom Apartment	11
	Four-bedroom Apartment	2
	<b>Sub-total</b>	<b>46 dwellings</b>
Retail	3 x Retail Tenancies (Ground Floor)	401 m <sup>2</sup>
Community Hall (Ground Floor)		545 m <sup>2</sup> (max 100 patrons)
Community Facilities (First Floor)		162 m <sup>2</sup>

It is understood that the community hall will replace the existing Cyprus Community Centre, however, will be available for a greater market due to the improved facilities that will be available following the development of the site.

## 4.3 Car Parking and Vehicular Access

A total of 80 car spaces are proposed as part of the development across two levels of basement car parking. The basement car park is accessed via the rear laneway parallel to Lygon Street and provides 17 commercial parking spaces (inclusive of one accessible space) and 63 residential spaces.

Each level will be accessed via internal ramps, with the car parking location and intended allocation detailed in Table 3 below.

**Table 3 Car Parking Location & Allocation**

Level	Car Parking Spaces		
	Residential	Commercial	Total
Basement 2	42	-	42
Basement 1	21	17*	38
<b>Total</b>	<b>63</b>	<b>17</b>	<b>80</b>

\*Including 1 accessible bay

## 4.4 Bicycle Parking

A total of 57 bicycle spaces are proposed across the ground floor and the second basement level and are allocated to the various components of the development. A summary of the proposed bicycle allocation is provided in Table 4 below.

**Table 4 Bicycle Parking Allocation**

Level	Location	Comment	Number of Spaces
Basement 02	Access via the stairs from the residential lifts.	Wall mounted spaces. To be utilised by residents and residential visitors.	11 spaces
	Secure bike storage room opposite the central lifts and stairs.	Cora double tier bike stacker system. To be utilised by residents, residential visitors & commercial staff.	38 spaces
Ground Floor	At the Lygon Street frontage, adjacent to the building entrance.	2 x existing on-street ground mounted hoops. To be utilised by commercial customers.	4 spaces
	Adjacent to the airlock from Lygon Street, internal to the building.	2 x ground mounted hoops. To be utilised by commercial customers.	4 spaces
<b>Total</b>			<b>57 spaces</b>

## 5 DESIGN CONSIDERATIONS

### 5.1 General

onemilegrid 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.

### 5.2 Design Standard 1 – Accessways

A summary of the assessment for Design Standard 1 is provided in Table 5 below.

**Table 5** Clause 52.06-9 Design Assessment – Design Standard 1

Requirement	Comments
Be at least 3 metres wide	Satisfied – minimum width of ramp 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 – changes in direction along accessway wider than 4.2 metres
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 2.1 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 enter and 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 – the initial ramp to the basement at the entrance of the site measures 6.1 metres wide for greater than 7 metres
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.	Satisfied – sight triangle is provided on the exit side (south side) of the accessway.  By virtue of the crossover width, the sight line is also provided on the north side of a departing vehicle.
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 – not connected to a Road Zone

Swept path diagrams have been prepared and are provided within Appendix A demonstrating access to and from the rear laneway and circulation into the basement car park with a B99 design vehicle (99.8th percentile length). Clear sight lines are available between motorists on the ramp and those arriving to the site to allow for vehicles to wait and pass as necessary.

In addition, the swept paths illustrate that a B99 vehicle and a B85 vehicle can simultaneously pass one another at the bottom of the initial site access ramp on the first basement level.

Swept paths have also been tested for the laneway along southern boundary of the site to determine if access to the western laneway, and as such the basement car park, can be achieved from the south. The swept path assessment (attached in Appendix A) demonstrates that the intersection between the two laneways is too tight for a B99 design vehicle to turn from the western side of the laneway due to existing property boundaries, which is common for a laneway network. However, vehicles can access the site from the east side of the laneway due to the proposed building splay, giving vehicles a secondary access route to the site.

The laneway network is only expected to be utilised by those accessing the at-grade rear laneway parking spaces and it is considered likely that most, if not all, vehicles accessing the basement car park will do so via the Dan Murphy's car park rather than circulating through the laneway network. Furthermore, it is noted that the Dan Murphy's access is more direct than utilising the laneway.

### 5.3 Design Standard 2 – Car Parking Spaces

All standard car spaces on-site are proposed with a minimum width of 2.8 metres, length of 4.9 metres and are accessed from aisles of no less than 5.8 metres in line with the requirements of the Planning Scheme. Additionally, two of the commercial spaces are marked as small car bays and measure 2.3 metres wide and 5.0 metres in length, in accordance with the with the Australian Standards.

The accessible bay is provided with a length of 5.4 metres and a width of 2.4 metres, and an adjacent shared area of the same dimensions, in accordance with the with the Australian Standard for Off-Street Parking for People with Disabilities AS2890.6.

The column within the shared area is located 400 mm to the east of the central bollard, providing a minimum accessible path of 1.0 metre on the western side of the shared area. Additionally, the column is set back no further than 1.75 metres from the access aisle, providing appropriate offset to the accessible space in accordance with the Australian Standards.

Swept paths have been prepared and are attached in Appendix A demonstrating access to and from the critical car spaces with an 85<sup>th</sup> percentile passenger vehicle (B85). The swept paths illustrate that vehicles are able to appropriately access the critical car spaces, and circulate the internal basement ramps, across the basement levels.

The two (2) small car spaces have been tested with a 50<sup>th</sup> percentile passenger vehicle (B85), demonstrating they can exit each space with one corrective manoeuvre.

### 5.4 Design Standard 3 – Gradients

The first 2.6 metres of the ramp from the laneway is proposed to be flat and the grade for the remainder of the ramp is no more than 1:5, in accordance with the requirements of Design Standard 3. Transitions are provided where changes of grade exceed 12.5%, and transition lengths have been designed to prevent potential scraping.

## 5.5 Access Control

Access control in the form of an electric gate is provided on Basement 1B to separate access to resident spaces from the commercial car parking spaces in the initial portion of the basement car park. Residents will be provided with a clicker (or similar) to access the residential parking section of the car park.

A secure door will be provided within the gate to allow for lift / stair access for the 2 commercial spaces on Basement 1B.

## 5.6 Waste Collection

A bin storage area is located adjacent to the loading bay on the first basement level, where bins are proposed to be collected by a private contractor.

Swept paths demonstrating access to and from the loading bay by a mini rear loader waste collection vehicle are included within Appendix A.

Refer to the Waste Management Plan for further information.

## 5.7 Loading

It is proposed to accommodate waste collection within the loading bay on the first basement level, which has been designed to accommodate a 6.4 m rear-lift waste collection vehicle (mini-loader).

A loading dock is proposed on the ground level accessed from the laneway, which has been designed to accommodate vehicles up to a 6.4 m small rigid vehicle (SRV).

Swept paths demonstrating access to and from the two loading areas have been prepared and are attached in Appendix A.

## 5.8 Bicycle Parking

Bicycle parking is proposed to be provided in a mixture of ground mounted hoops, vertically mounted bicycle racks and double tier stacker spaces.

The ground mounted bicycle hoops have been designed in accordance with the Australian Standard; 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.

The vertical mounted racks have been provided with 400 mm spacing, an envelope of 1.2 metres and a 1.5-metre access aisle. The double tiered bicycle racks have been provided with 400 mm spacing, and are accessed via a 2.1-metre access aisle.

Both the single and double vertical mounted racks will be offset in height by a minimum of 300mm, and are provided with a 400mm spacing between racks, in accordance with Australian Standard for Parking facilities, Part 3: Bicycle parking (AS 2890.3:2015). A minimum 350mm clearance is provided from the centre of racks adjacent to walls, as per the product specification sheets.

The product specification sheets of the Cora Double Tier Bike Rack and Cora E3VR-DYN Vertical Rack have been provided in Appendix B and Appendix C respectively, for reference.

Furthermore, access to the bicycle spaces located on the second basement level have been provided with an adjacent ramp for cyclists, to roll their wheels alongside the stairs, as per Condition 1(m) of the planning permit. The bicycle parking spaces on the ground level are provided in a secured area, in accordance with Condition 1(q) of the planning permit.

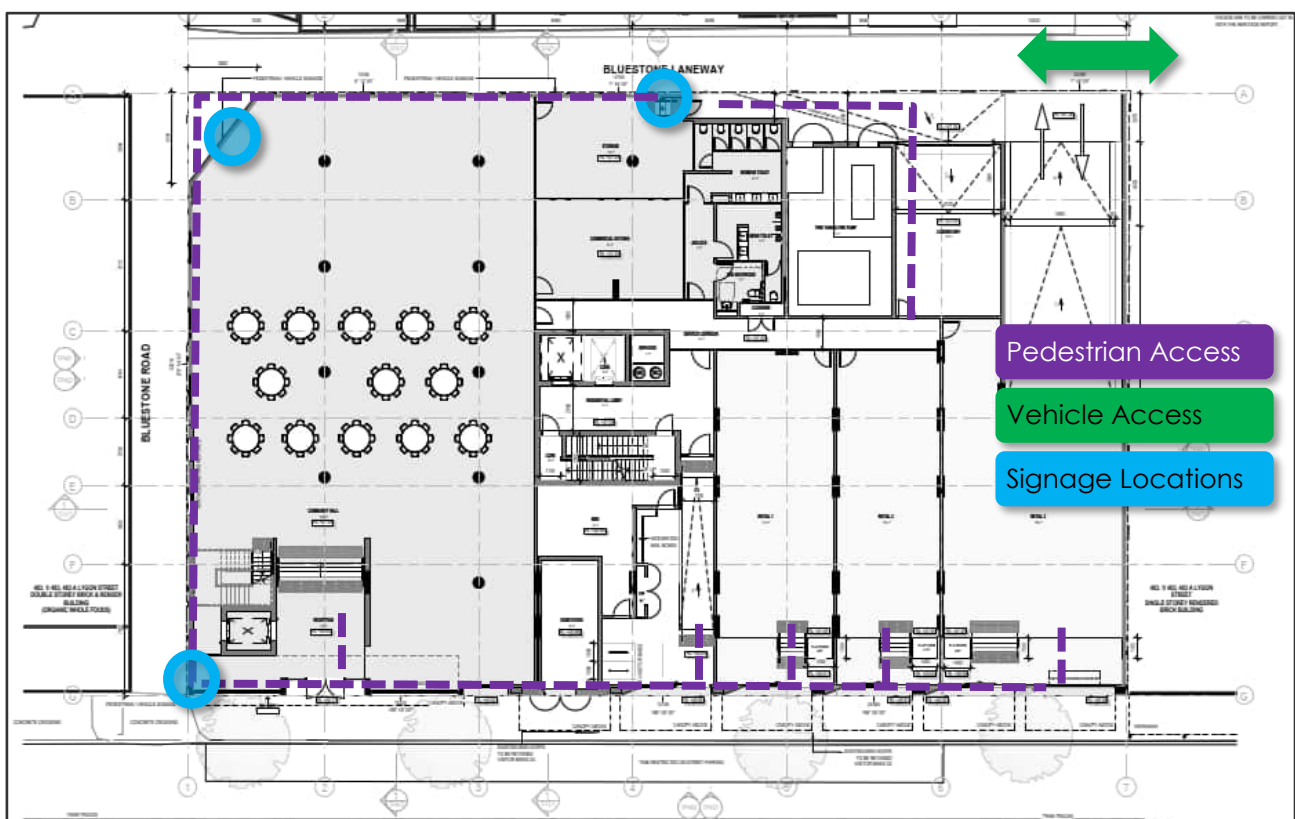
## 5.9 Pedestrian Access

Noting that the main direct pedestrian access to the building is provided via Lygon Street, it is generally expected that pedestrians would access the building via the Lygon Street frontage, rather than the rear laneway. In this regard, pedestrian activity along the laneway is expected to be relatively low.

Additionally, it is anticipated that the laneway will operate with relatively low traffic speeds and volumes. As such, given the relatively low vehicle and pedestrian activity along the laneway, it is anticipated that the probability of vehicle and pedestrian conflict will be very low.

Nonetheless, to provide additional safety measures for pedestrians, typical warning signage could be provided at the several locations along the side / edge of the building, as shown below in Figure 14, to ensure vehicles are aware of the potential presence of pedestrians in the laneway, with an example of the warning signage shown in Figure 15.

**Figure 14 Laneway Signage Locations**



**Figure 15 Example Warning Signage**



## 6 BICYCLE PARKING

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

**Table 6 Clause 52.34 – Bicycle Parking Requirements**

<b>Component</b>	<b>No/Area</b>	<b>Requirement</b>	<b>Total</b>
Dwelling (four or more storeys)	46 dwellings	1 space per 5 dwellings for residents	9
		1 space per 10 dwellings for visitors	5
Retail	401 m <sup>2</sup>	1 space per 300m <sup>2</sup> for employees	2
		1 space per 500m <sup>2</sup> for visitors	1
Community Hall (place of assembly)	707 m <sup>2</sup>	1 space per 1,500m <sup>2</sup> for employees	1
		2 spaces, plus 1 space per 1,500m <sup>2</sup> for visitors	3
<b>Total</b>	<b>Residents</b>		<b>9</b>
	<b>Employees</b>		<b>3</b>
	<b>Residential Visitors</b>		<b>5</b>
	<b>Visitors</b>		<b>4</b>
	<b>Total</b>		<b>21</b>

As shown above, a total of 21 bicycle parking spaces are required for the development.

It is proposed to provide a total of 49 spaces in the secure bike parking areas on the ground floor and basement level 2 to cater for resident, residential visitors and employee bicycle parking – in excess of the Planning Scheme requirements. It is considered appropriate to have residents provide access to these areas for their visitors as required.

It is also proposed to provide a total of 8 customer parking spaces on the ground floor along the Lygon Street frontage and internal of the building near the entrance to Lygon Street, in excess of the requirements above.

The proposed provision of bicycle parking exceeds the requirements of the Planning Scheme and is therefore considered appropriate.

## 7 LOADING

Clause 65 (Decision Guidelines) of the Merri-bek 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 ground level loading dock is proposed on the western side of the building, adjacent to the ramp to the basement levels, and an additional loading bay is provided on basement level 1. It is anticipated that the ground floor loading dock will be utilised for loading and deliveries associated with the commercial tenancies, including the community hall, whereas the basement level loading area will be utilised for waste collection and resident loading (e.g. moving in / moving out of the building).

The ground floor loading area has been designed to accommodate vehicles up to a 6.4-metre-long Small Rigid Vehicle (SRV), with swept paths attached in Appendix A.

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

## 8 CAR PARKING

### 8.1 Statutory Car Parking Requirements

The car parking requirements for the subject site are identified in Clause 52.06 of the Merri-bek Planning Scheme. As previously mentioned, the subject site is located within the PPTN and therefore the Column B car parking rates apply for the proposed development, as outlined below.

**Table 7 Clause 52.06 – Car Parking Requirements**

Use	No/Area	Rate	Car Parking Measure	Total	Provision
Dwelling	33	1	to each one or two-bedroom dwelling, plus	33	63
	13	2	to each three or more-bedroom dwelling (with studies or studios that are separate rooms counted as bedrooms), plus	26	
	46	0	for visitors to every 5 dwellings for developments of 5 or more dwellings	0	
Retail	401 m <sup>2</sup>	3.5	to each 100m <sup>2</sup> of leasable floor area	14	4
Community Hall (place of assembly)	100 patrons	0.3	to each patron permitted	30	13
<b>Total</b>				<b>103</b>	<b>80</b>

Based on the above calculations, a total of 103 parking spaces are required for the proposed development.

It is proposed to provide 80 car parking spaces on-site, comprising 63 residential and 17 commercial car parking spaces. As shown above, the provision of parking equates to a shortfall of 27 car parking spaces compared with the Planning Scheme requirements – 10 of which are associated with the retail spaces, and 17 of which for the community hall.

Clause 52.06-7 of the Merri-bek 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.

Planning Practice Note 22 (August 2023) specifies that the provisions for reducing car parking requirements draw a distinction between the assessment of the likely demand for parking spaces (the Car Parking Demand Assessment), and whether it is appropriate to allow the supply of fewer spaces than assessed by the car parking demand assessment. These are two separate considerations, one technical while the other is more strategic. Different factors are taken into account in each consideration.

Accordingly, the applicant must satisfy the responsible authority that the provision of car parking is appropriate on the basis of a two-step process, which has regard to:

- The car parking demand likely to be generated by the use; and
- Whether it is appropriate to allow fewer spaces to be provided than the likely demands generated.

An assessment of the likely parking demands and the appropriateness of reducing the car parking provision below them is set out as follows.

## **8.2 Car Parking Demand Assessment**

### **8.2.1 Residents**

For the purposes of this assessment, the car parking requirements relevant to the residential component of the proposed development will be assumed to represent the demand to be generated by the proposed use. This equates to a demand for 59 car parking spaces.

With 63 spaces provided on-site, parking demands for the residents within the development are met by the supply of spaces.

### **8.2.2 Retail Tenancies**

Typically, the car parking demands of retail premise tenancies are broken up into two components: staff demand and visitor/customer demand. It is generally accepted that staff demand for the types of retail premise tenancies proposed in an activity centre environment is 1 space per 100 m<sup>2</sup> of floor area, which has been adopted for this assessment.

This equates to the staff demand of 4 car parking spaces.

The retail tenancies are located within a commercial strip which has a variety of shops, cafes, educational uses and supermarkets. In a retail precinct arrangement such as Lygon Street, it is reasonable to assume that individual retail tenancies do not generate their own visitor/customer parking demand specific to the site, but that visitors will utilise the development as part of the overall precinct. Regardless, for the purposes of assessment, the remaining portion of the Planning Scheme rate (2.5 spaces per 100m<sup>2</sup>) will be adopted to calculate the retail tenancy visitors/customer demands.

This equates to the visitors/customers demand of 10 car parking spaces.

It is proposed to provide a total of 4 car parking spaces for staff of the retail tenancies and no parking spaces for visitors/customers. Therefore, staff parking demands for the retail tenancies within the development are met by the supply of spaces, with a shortfall in visitor car parking.

### **8.2.3 Community Hall**

For the purposes of this assessment, the car parking requirements relevant to the community hall component of the proposed development will be assumed to represent the demand to be generated by the proposed use. This equates to a demand for 30 car parking spaces.

With 13 spaces provided on-site for the community hall, there is a shortfall of 17 spaces for this component of the development.

### **8.2.4 Car Parking Demand Summary**

Based on the Car Parking Demand Assessment, the provision of 80 car parking spaces for the long-term demands are considered appropriate to satisfy the parking demands of staff and residents of the development.

No provision of parking for short-term visitor and/or customer demands are proposed to be catered for on-site, leaving a shortfall of 27 spaces (comprising 10 spaces for retail customers and 17 spaces for the community hall), based on the assessment present above.

A review of the acceptability of that shortfall for the short-term parking demand has been undertaken below by assessing the availability of alternative car parking in the locality of the site.

## **8.3 Review of Car Parking Provision**

### **8.3.1 Likelihood of Multi-Purpose Trips**

Multi-purposed trips involve customers visiting more than one premises during a single trip to the area. As a result of multi-purposed trips, traffic generation and the car parking demand in locations such as the subject site are typically lower.

Given that the development proposes to have various retail tenancies / services, customers are likely to visit other establishments as part of a single trip.

As a result, the car parking demand is expected to be lower than the car parking requirements within the Planning Scheme for short-stay demand.

### **8.3.2 Existing Retail Premises**

The existing retail premises located on the subject site do not provide on-site car parking for customers, with several of the tenancies providing no on-site car parking at all.

This demonstrates an existing arrangement in the area whereby customers and visitors to residential land commercial uses utilise publicly available on and off-street car parking rather than dedicated on-site parking. This is a typical arrangement in a commercial strip such as Lygon Street.

### **8.3.3 Off-Street Parking in Vicinity of Subject Site**

As outlined in Section 3.4, there are in excess of 200 on-street car parking spaces within close walking distance of the subject site. Historical car parking surveys reveal that these spaces are typically 60-65% occupied during their peak (in the early evening) and provide no fewer than 78 spaces available for use during the times surveyed.

Whilst it is recognised that these surveys are not recently collected, they represent a pattern of moderate occupancy throughout the day when the three retail tenancies would be operating and generating customer/visitor parking demands.

Additionally, it is expected that parking demands for the community hall will peak during the evening period, when the retail tenancies are not operating. As such, the 4 on-site commercial spaces can accommodate parking demands for the community hall, reducing the reliance of on-street parking to 13 spaces during the evening period. The survey data suggests that a minimum of 84 car spaces were available at 8:00pm on the Friday, and minimum 78 spaces at 7:00pm on the Saturday. Although the survey period is limited to data capture prior to 8:00pm, an upward trend in parking availability is noted across the late evening, and therefore it can be anticipated that parking availability may continue increase across the evening when the community centre is in peak operation.

In this regard, the over 200 off-street parking spaces will help to accommodate the shortfall of 10 short-stay car parking demand during the day, and 13 spaces during the evening, generated by the proposed development.

### **8.3.4 On-Street Parking Restrictions**

As previously mentioned, on-street parking restrictions in the streets directly surrounding the proposed development are generally restricted to one or two-hour parking during the day. These restrictions are therefore well suited to accommodate the high turnover, short-stay demands generated by the proposed development that are not provided for on-site.

Noting that parking restrictions generally apply during business hours, it is expected that unrestricted parking opportunities will be available for visitors to the community centre during the evening period.

### **8.3.5 Alternative Modes of Transport**

As indicated in Section 3.5, the site has access to Public Transport, with numerous train and bus services in the immediate vicinity. The provision of public transport ensures that residents, staff, visitors and customers will have good access to alternate transportation modes.

In addition, the provision of on-site bicycle parking for visitors available on the ground level is in excess of the Planning Scheme requirements and provides an enhanced opportunity for visitors and customers to travel to the site via bicycle.

### **8.3.6 Adequacy of Proposed Car Parking Provision**

Based on the above, the proposed on-site parking provision of 80 spaces will be able to accommodate the long-term parking demand generated by the proposed development.

Additionally, the existing parking facilities in the vicinity of the subject site, which includes over 200 on-street car spaces, will be able to satisfy the short-stay demand generated by the proposed development.

The proposed car parking provision is considered satisfactory.

## 8.4 Accessible Car Parking

The National Construction Code specifies the minimum requirements for provision of accessible car parking.

The proposed retail use, classified as Class 6 buildings, requires provision of one accessible car space for every 50 car parking spaces or part thereof for the first 1,000 spaces, and then 1 space per 100 car parking spaces or part thereof in excess of 1,000 spaces.

The proposed place of assembly, classified as a Class 9B building, requires provision of one accessible car space for every 50 car parking spaces or part thereof for the first 1,000 spaces, and then 1 space per 100 car parking spaces or part thereof in excess of 1,000 spaces.

Noting the proposed provision of 17 commercial car spaces on-site, the National Construction Code (NCC) requires one accessible car space (per use) on-site.

The proposed provision of one space thus satisfies the NCC requirements.

## 9 TRAFFIC CONSIDERATIONS

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### 9.1 Traffic Generation

#### 9.1.1 General

The proposed amendment to the Permit provides less on-site car parking spaces than the approved plans. As such, the proposed amended development scheme is expected to generate less traffic and have a reduced impact on the surround road network and is therefore considered acceptable.

Regardless, for the purposes of completeness, a traffic assessment has been undertaken below.

#### 9.1.2 Residential

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 46 dwellings with car parking will generate 230 movements per day, inclusive of 23 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. It is therefore anticipated that the 23 projected vehicle movements will comprise 5 arrivals and 18 departures during the AM peak and 14 arrivals and 9 departures during the PM peak.

### 9.1.3 Commercial Uses

The traffic generation rates for staff of a commercial development are directly impacted by the provision of on-site car parking, where reduced car parking provision promotes the use of alternative transport modes and a reduced traffic generation rate for the development.

It is also worth noting that the community hall will likely run events that operate outside of peak commuter periods, thus generating fairly lower traffic inflows and outflows from the site at the critical times.

Regardless, for the purposes of a conservative assessment, it is assumed that 50% of the commercial car parking spaces will fill during the morning peak hour (inbound movements) and 50% of the commercial car parking spaces will empty during the afternoon peak hour (outbound movement) – with a 5% counter movement occurring during both peak periods.

The remaining commercial parking spaces are then accessed outside of the peak hours.

This equates to 9 arrivals and 1 departure during the AM peak and 1 arrival and 9 departures during the PM peak.

### 9.1.4 Total Traffic Generation

Based on the above, it is projected that the development will generate 33 movements during the peak hours as detailed in Table 8.

**Table 8 Anticipated Traffic Generation**

<i>Period</i>	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
AM Peak	14	19	33
PM Peak	15	18	33

## 9.2 Traffic Impact

It is projected that the proposed development will generate a total of 33 vehicle movements during peak periods which equates to approximately 1 movement every 2 minutes during the peak hours. This level of traffic is considered low in nature and is expected to be comfortably absorbed by the surrounding road network.

As noted, there are passing areas at the site access point and along the site's frontage to the laneway to ensure that there are no conflicts in the laneway and by virtue of the connection to Stanley Street, multiple opportunities for vehicles to pass. In view of this, the level of traffic generated is expected to be suitable accommodated by the surrounding road network.

## 10 CONCLUSIONS

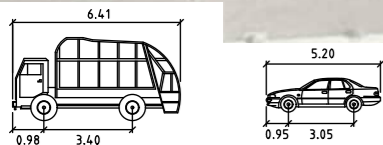
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It is proposed to amend the existing Planning Permit (permit no. MPS/23020/57) for the construction of a mixed-use development with changes to the car and bicycle parking design, commercial floor areas and a provision of 80 car parking spaces. Considering the analysis presented above, it is concluded that:

- The proposed car parking, bicycle parking and access design is considered appropriate;
- The proposed provision of resident, employee and visitor bicycle parking exceeds the requirements of the Planning Scheme, and is therefore considered appropriate;
- The proposed supply of car parking is appropriate for the proposed development; and
- The traffic generated by the proposed development is expected to be comfortably absorbed by on the surrounding road network; and
- There are no traffic engineering reasons which would preclude an amended permit from being issued for this proposal.

## ***Appendix A    Swept Path Analysis***



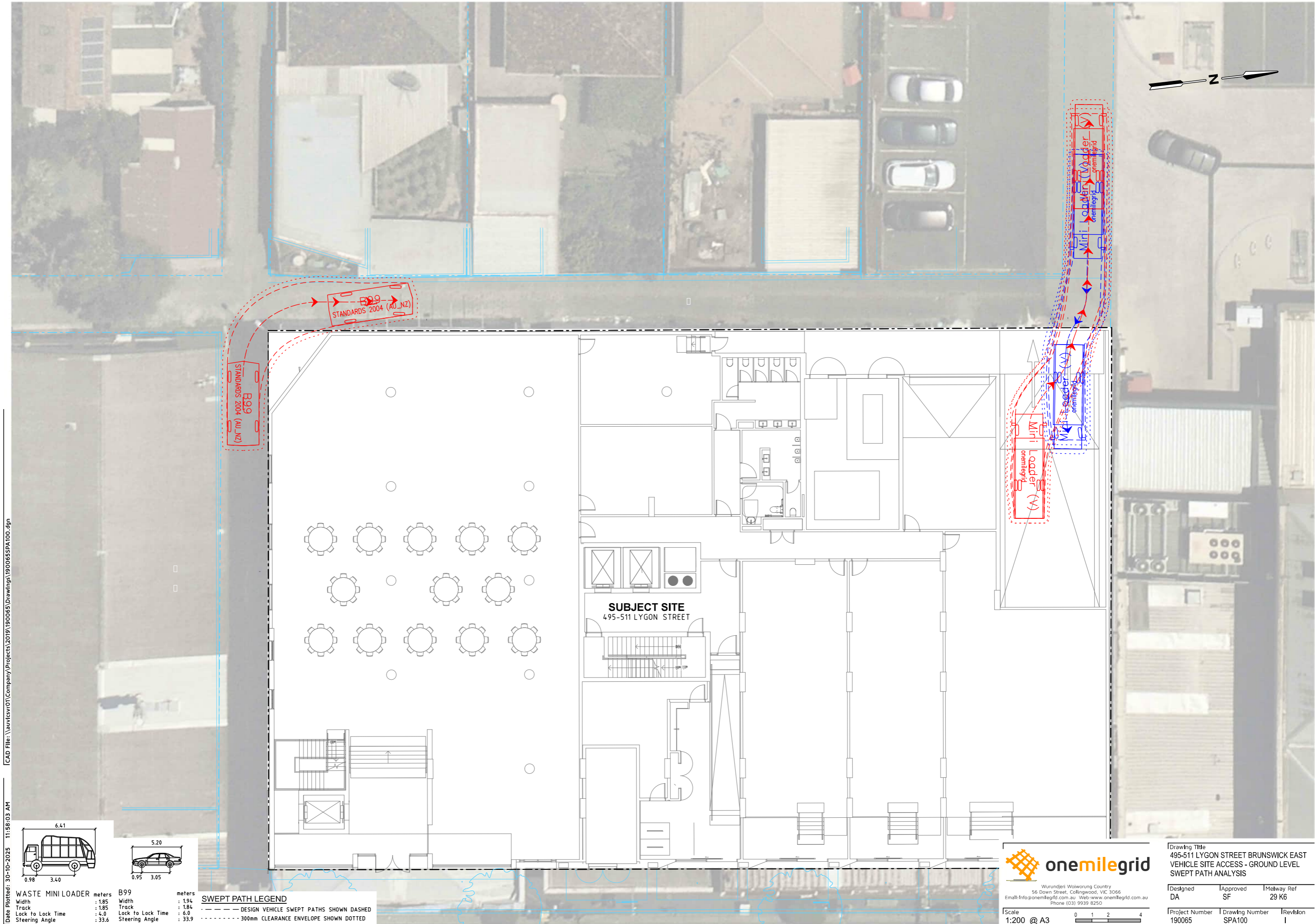


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Steering Angle	: 33.6		Steering Angle	: 33.9

<b>SWEPT PATH LEGEND</b>	
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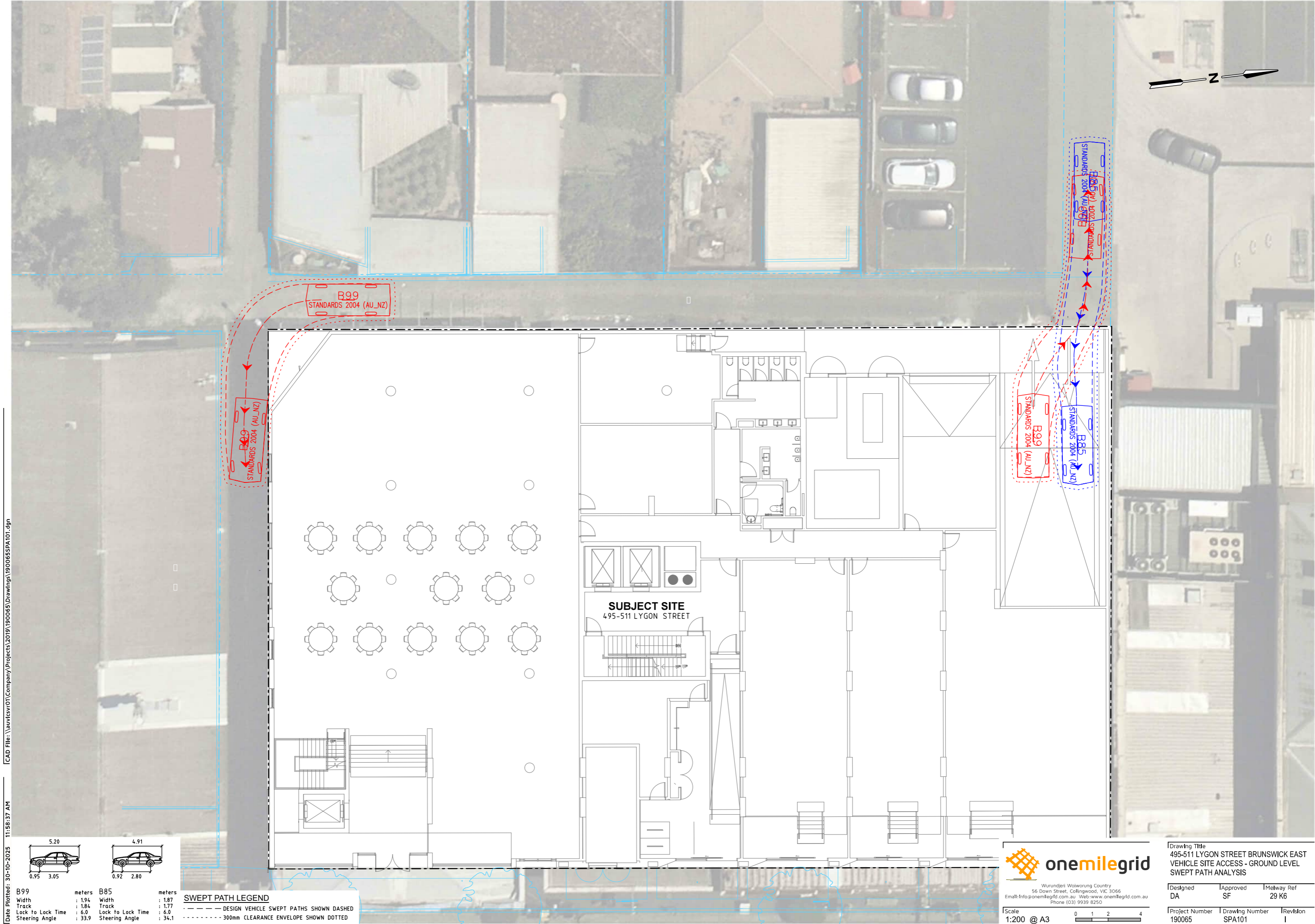


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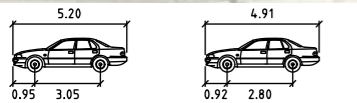
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<b>Designed</b> DA	<b>Approved</b> SF	<b>Metway Ref</b> 29 K6
<b>Project Number</b> 190065	<b>Drawing Number</b> SPA100	<b>Revision</b> 1



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Date Plotted: 30-10-2025



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Steering Angle	: 33.9	Steering Angle	: 34.1

**SWEPT PATH LEGEND**  
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..... 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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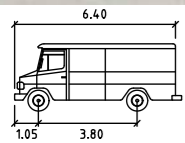
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Designed DA	Approved SF	Metway Ref 29 K6
Project Number 190065	Drawing Number SPA101	Revision 1



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#### SWEPT PATH LEGEND

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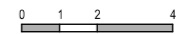
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**SUBJECT SITE**  
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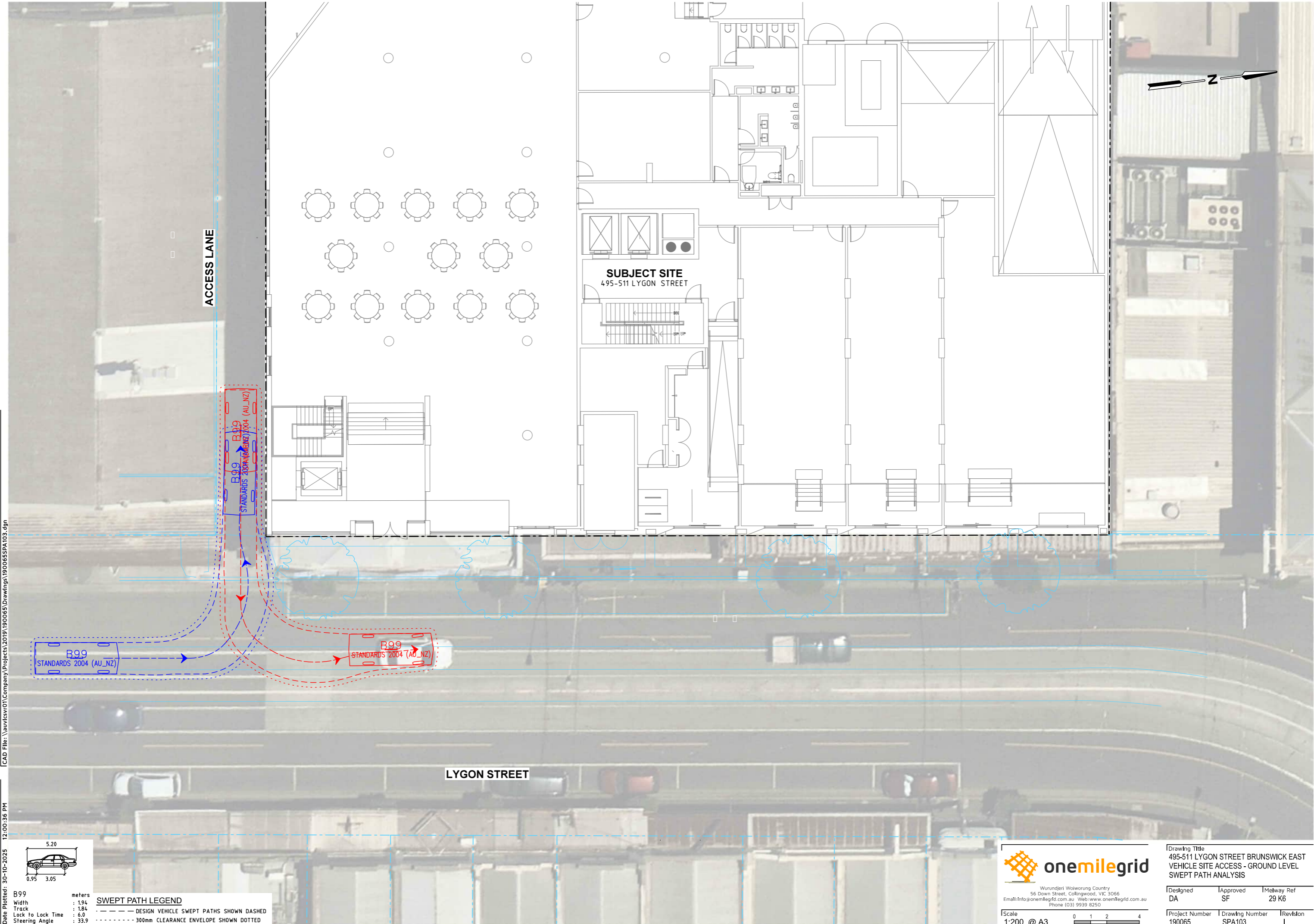
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VEHICLE SITE ACCESS - GROUND LEVEL  
SWEPT PATH ANALYSIS

Designed DA	Approved SF	Metway Ref 29 K6
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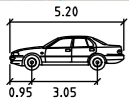
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Steering Angle : 33.9

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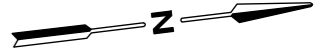


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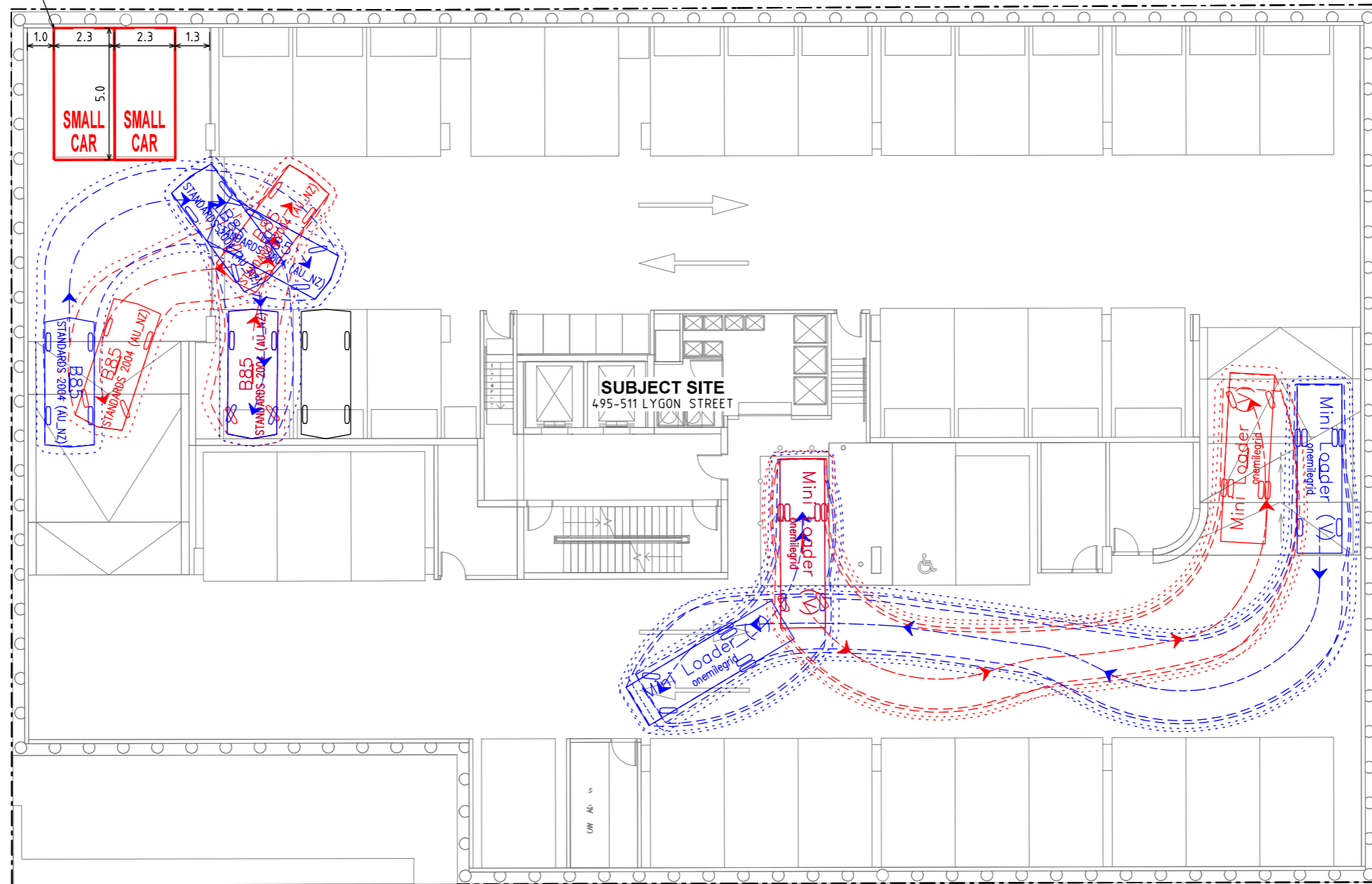
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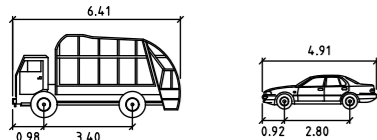


PROPOSED 2x SMALL CAR SPACE (2.3m x 5.0m)



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Track	: 1.85	Track	: 1.77
Lock to Lock Time	: 4.0	Lock to Lock Time	: 6.0
Steering Angle	: 33.6	Steering Angle	: 34.1

**SWEPT PATH LEGEND**  
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- - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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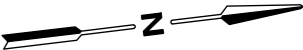


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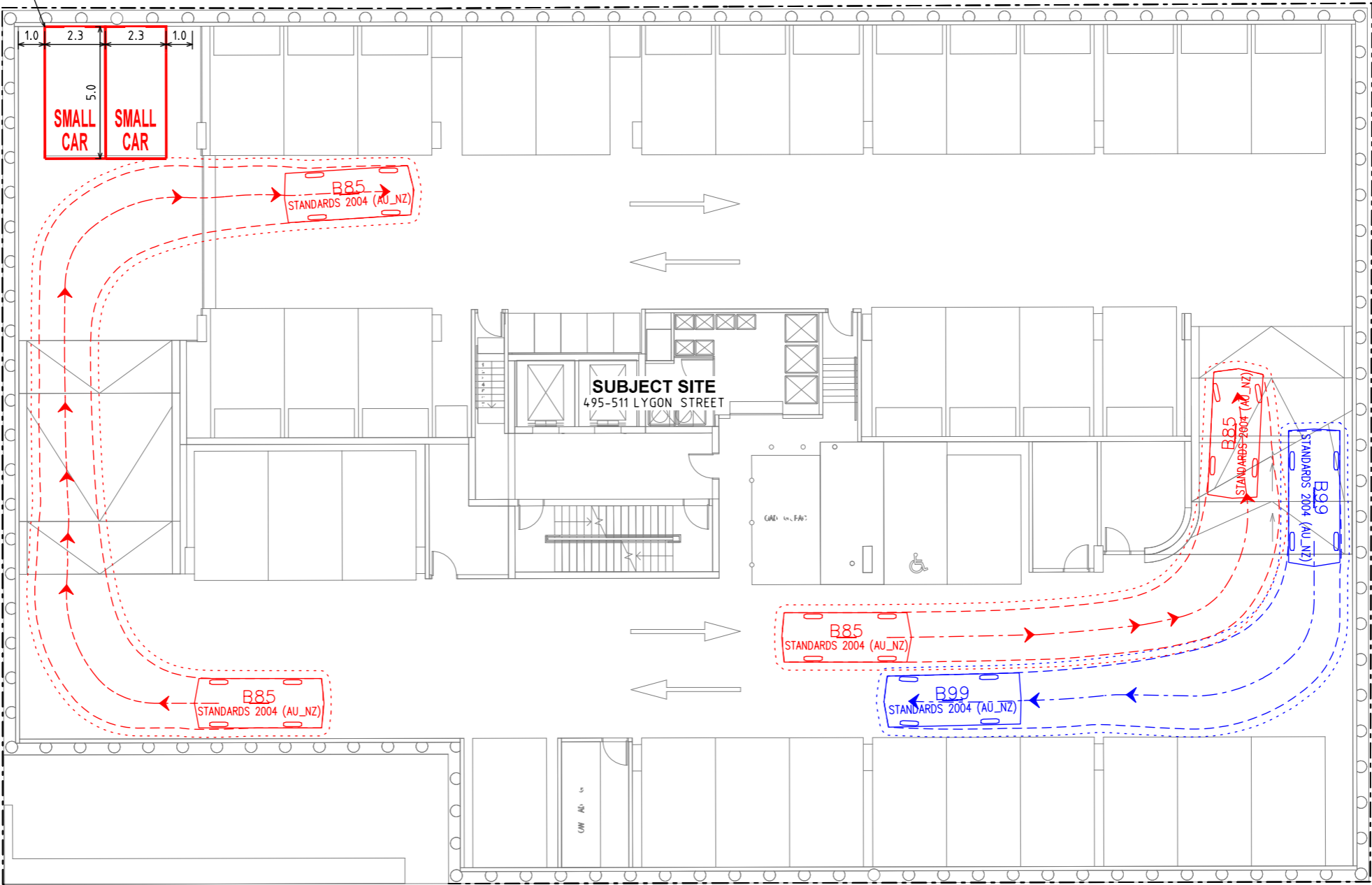
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Project Number 190065	Drawing Number SPA200	Revision 1

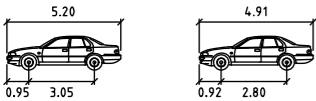


PROPOSED 2x SMALL CAR SPACE (2.3m x 5.0m)



CAD File: \\auitsv01\Company\Projects\2019\190065\Drawings\190065SPA201.dgn

Date Plotted: 30-10-2025 12:58:25 PM



	B99	meters	B85	meters
Width	: 1.94		: 1.87	
Track	: 1.84		: 1.77	
Lock to Lock Time	: 6.0		: 6.0	
Steering Angle	: 33.9		: 34.1	

#### SWEPT PATH LEGEND

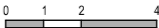
--- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED  
- - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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56 Down Street, Collingwood, VIC 3066  
Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au  
Phone: (03) 9939 8250

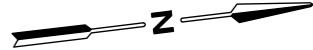
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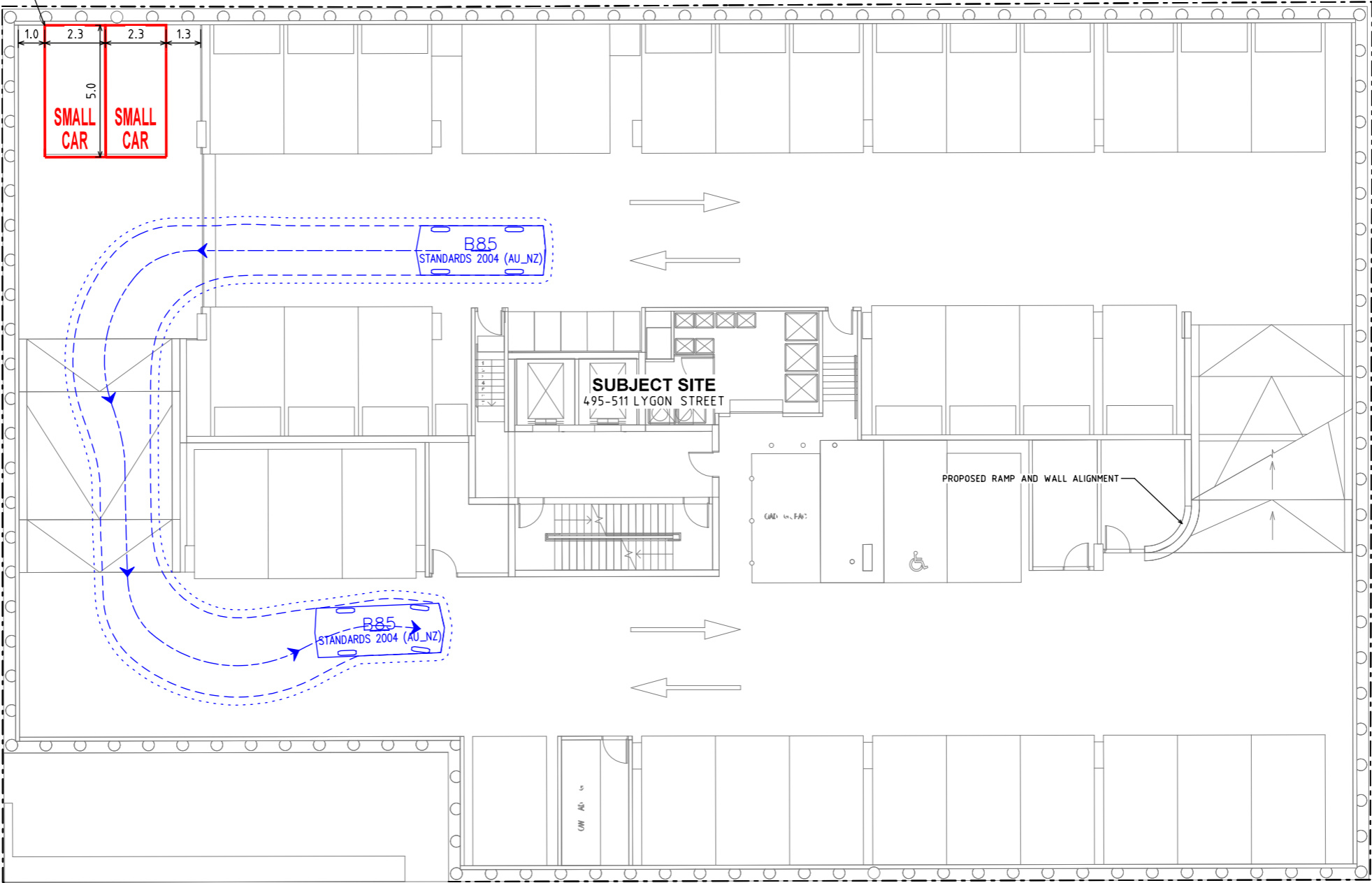
Drawing Title  
495-511 LYGON STREET BRUNSWICK EAST  
VEHICLE SITE CIRCULATION - BASEMENT LEVEL 1  
SWEPT PATH ANALYSIS

Designed DA	Approved SF	Metway Ref 29 K6
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Project Number 190065	Drawing Number SPA201	Revision 1
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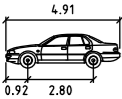


PROPOSED 2x SMALL CAR SPACE (2.3m x 5.0m)



CAD File: \\auvtsv01\\Company\\Projects\\2019\\190065\\Drawings\\190065SPA202.dgn

Date Plotted: 30-10-2025 1:02:23 PM



B85  
Width : 1.87  
Track : 1.77  
Lock to Lock Time : 6.0  
Steering Angle : 34.1

SWEPT PATH LEGEND

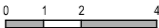
--- DESIGN VEHICLE SWEPT PATHS SHOWN DASHED  
----- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Scale 1:200 @ A3

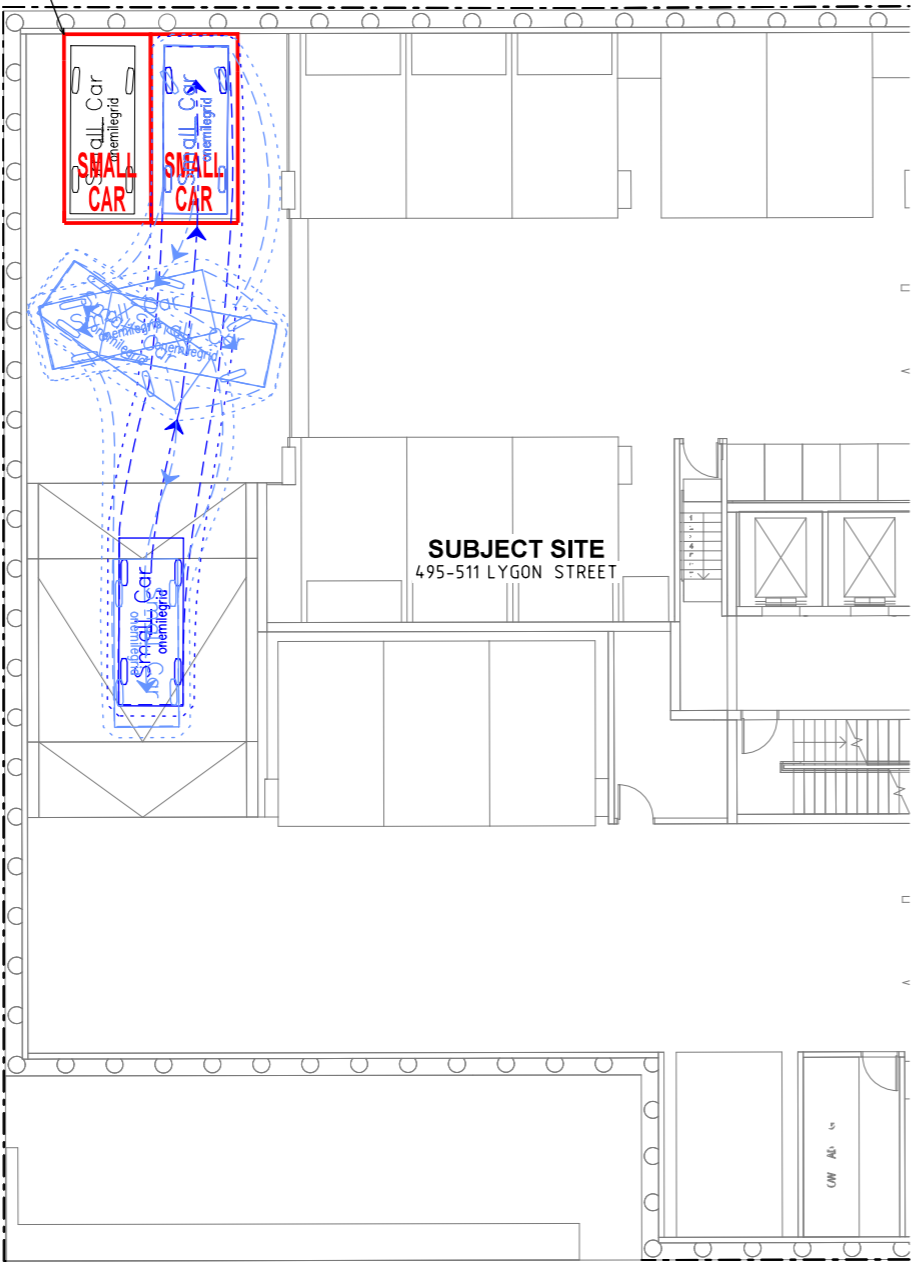


Drawing Title  
495-511 LYGON STREET BRUNSWICK EAST  
VEHICLE SITE CIRCULATION - BASEMENT LEVEL 1  
SWEPT PATH ANALYSIS

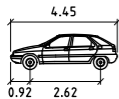
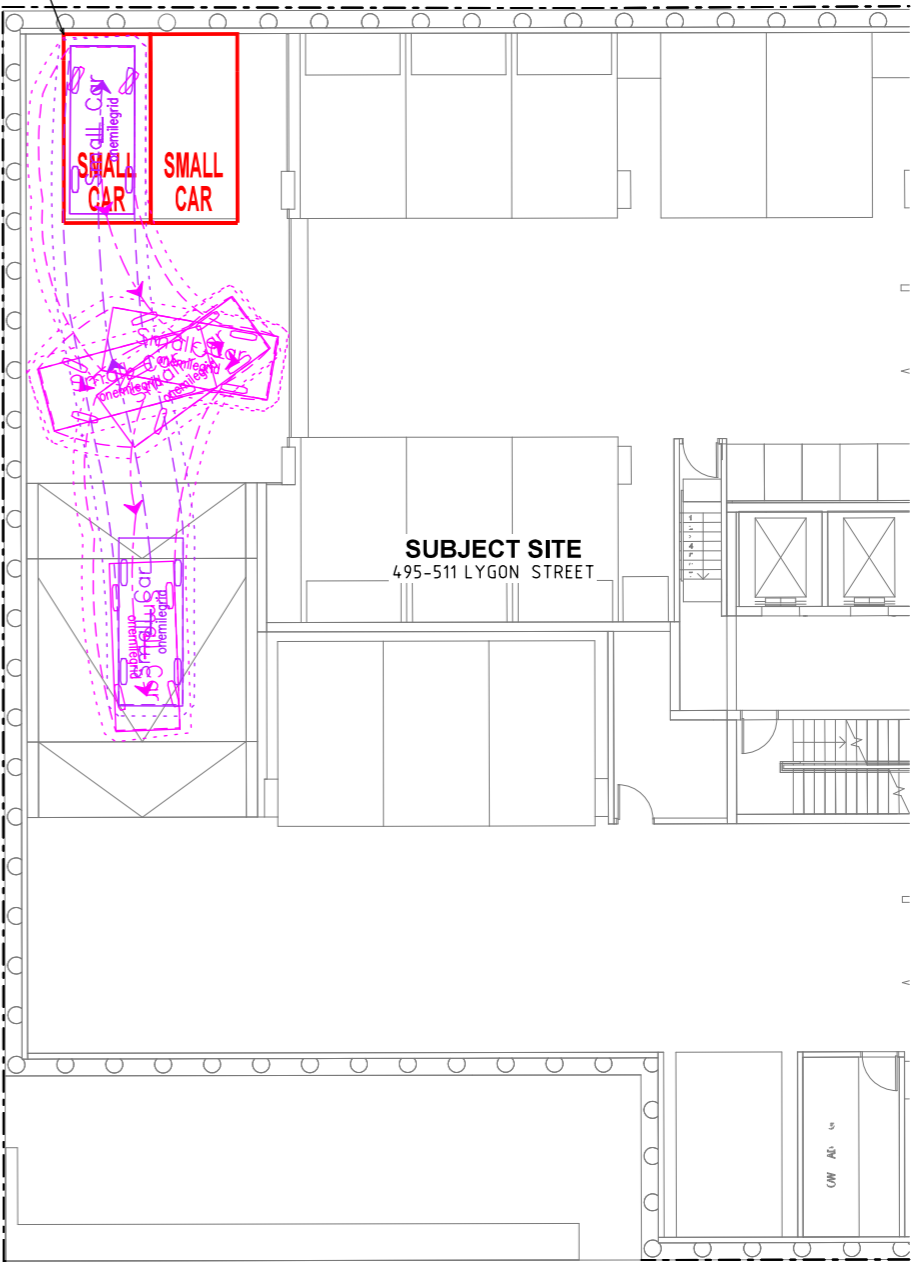
Designed DA	Approved SF	Metway Ref 29 K6
----------------	----------------	---------------------

Project Number 190065	Drawing Number SPA202	Revision 1
--------------------------	--------------------------	---------------

PROPOSED 2x SMALL CAR SPACE (2.3m x 5.0m)



PROPOSED 2x SMALL CAR SPACE (2.3m x 5.0m)



**SMALL CAR** meters  
Width : 4.45  
Track : 0.92  
Lock to Lock Time : 2.62  
Steering Angle : 34.2

**SWEPT PATH LEGEND**  
- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED  
- - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Scale 1:200 @ A3  
0 1 2 4

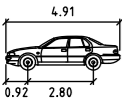
Drawing Title  
495-511 LYGON STREET BRUNSWICK EAST  
VEHICLE ACCESS - BASEMENT LEVEL 1  
SWEPT PATH ANALYSIS

Designed	Approved	Matway Ref
DA	SF	29 K6

Project Number	Drawing Number	Revision
190065	SPA203	1

CAD File: \\auitsv01\Company\Projects\2019\190065\Drawings\190065SPA300.dgn

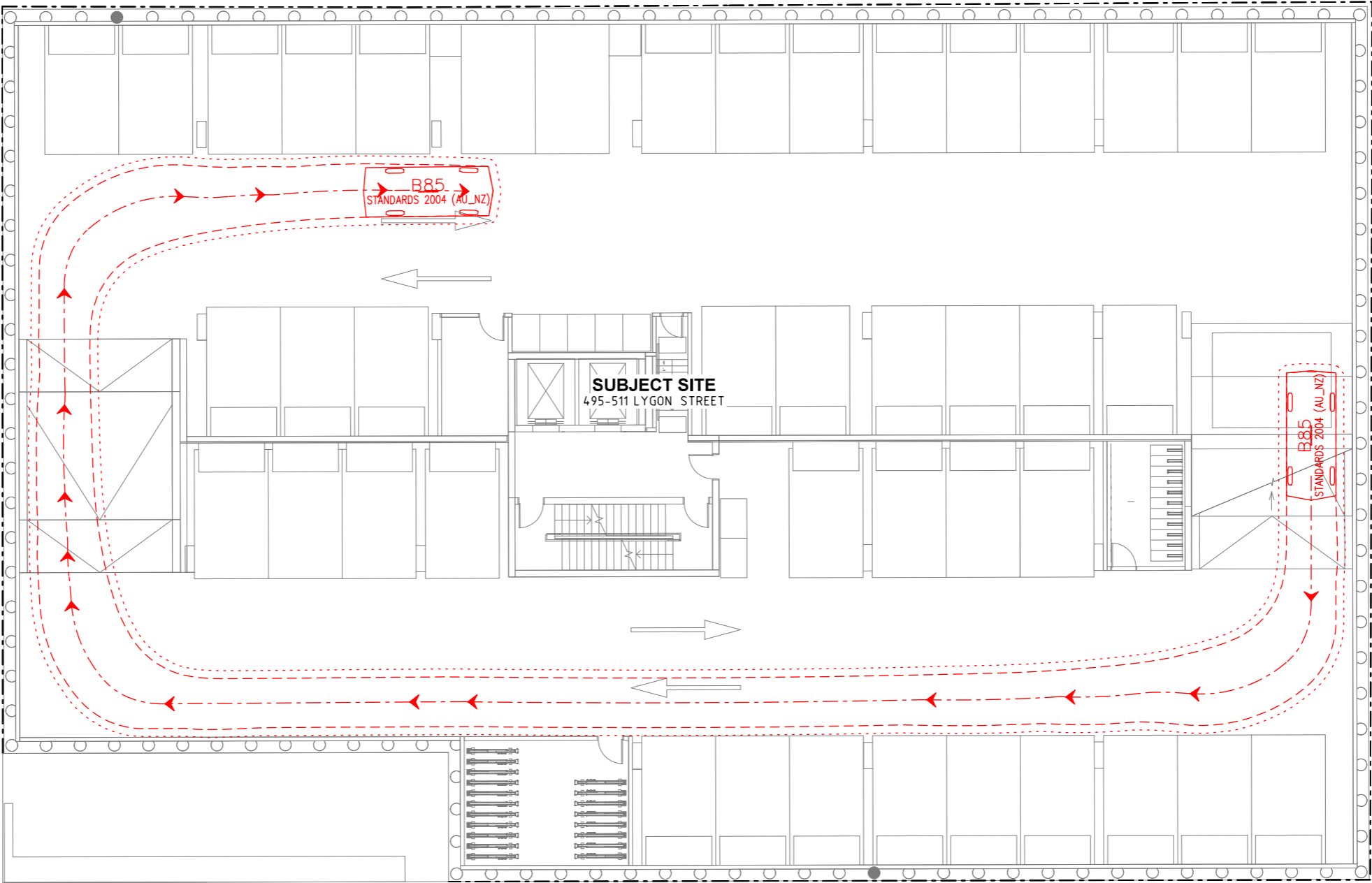
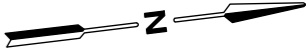
Date Plotted: 30-10-2025 1:04:08 PM




B85  
Width : 1.87  
Track : 1.77  
Lock to Lock Time : 6.0  
Steering Angle : 34.1

**SWEPT PATH LEGEND**  
- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED  
- - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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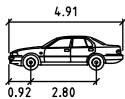


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Scale  
1:200 @ A3



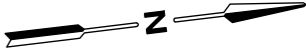
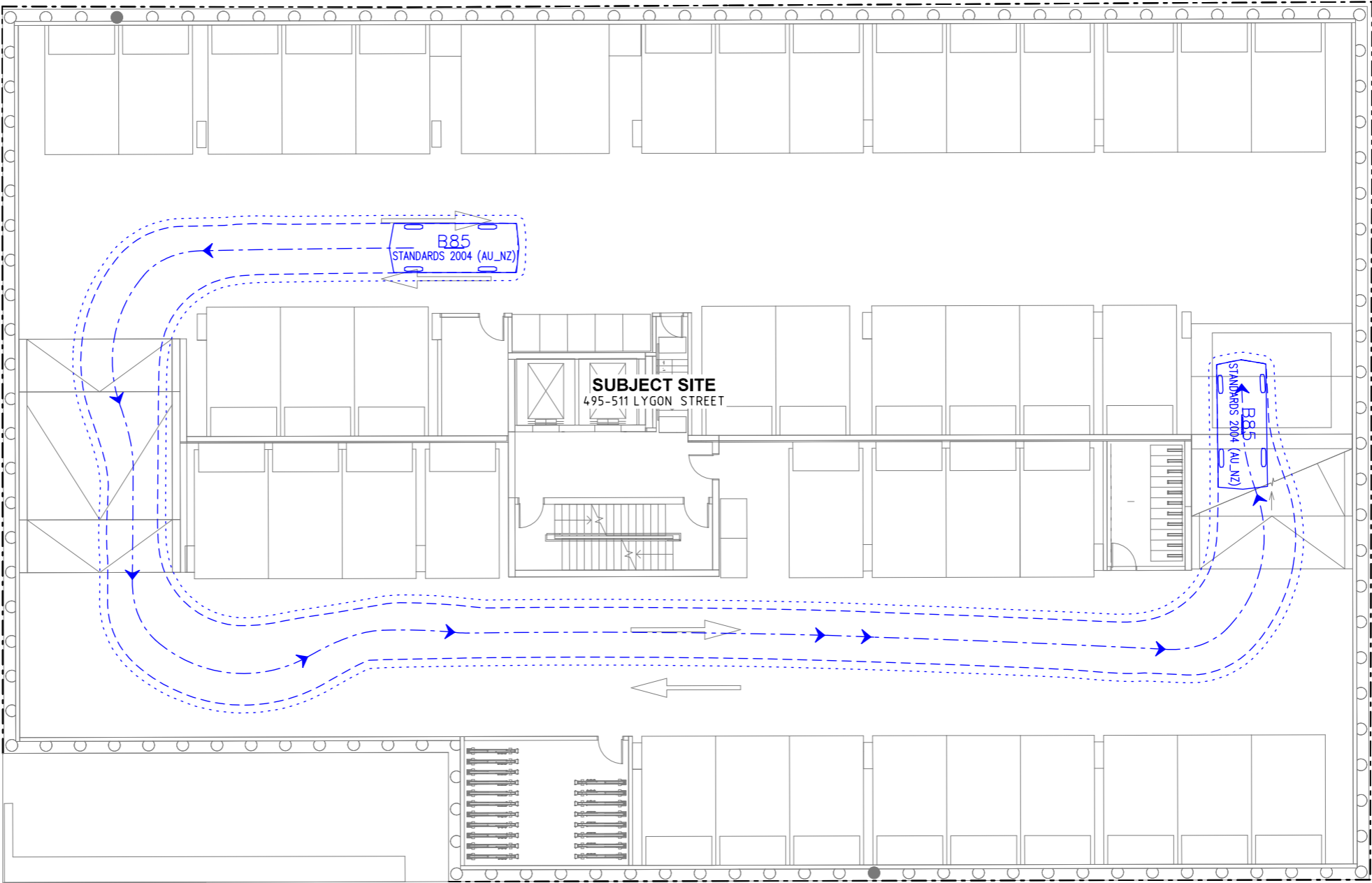
Drawing Title 495-511 LYGON STREET BRUNSWICK EAST VEHICLE SITE CIRCULATION - BASEMENT LEVEL 2 SWEPT PATH ANALYSIS		
Designed DA	Approved SF	Metway Ref 29 K6
Project Number 190065	Drawing Number SPA300	Revision 1



**B85**  
Width : 1.87  
Track : 1.77  
Lock to Lock Time : 6.0  
Steering Angle : 34.1

**SWEPT PATH LEGEND**  
- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED  
- - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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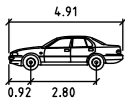


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Scale  
1:200 @ A3



Drawing Title 495-511 LYGON STREET BRUNSWICK EAST VEHICLE SITE CIRCULATION - BASEMENT LEVEL 2 SWEPT PATH ANALYSIS		
Designed DA	Approved SF	Metway Ref 29 K6
Project Number 190065	Drawing Number SPA301	Revision 1

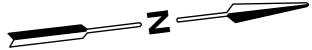
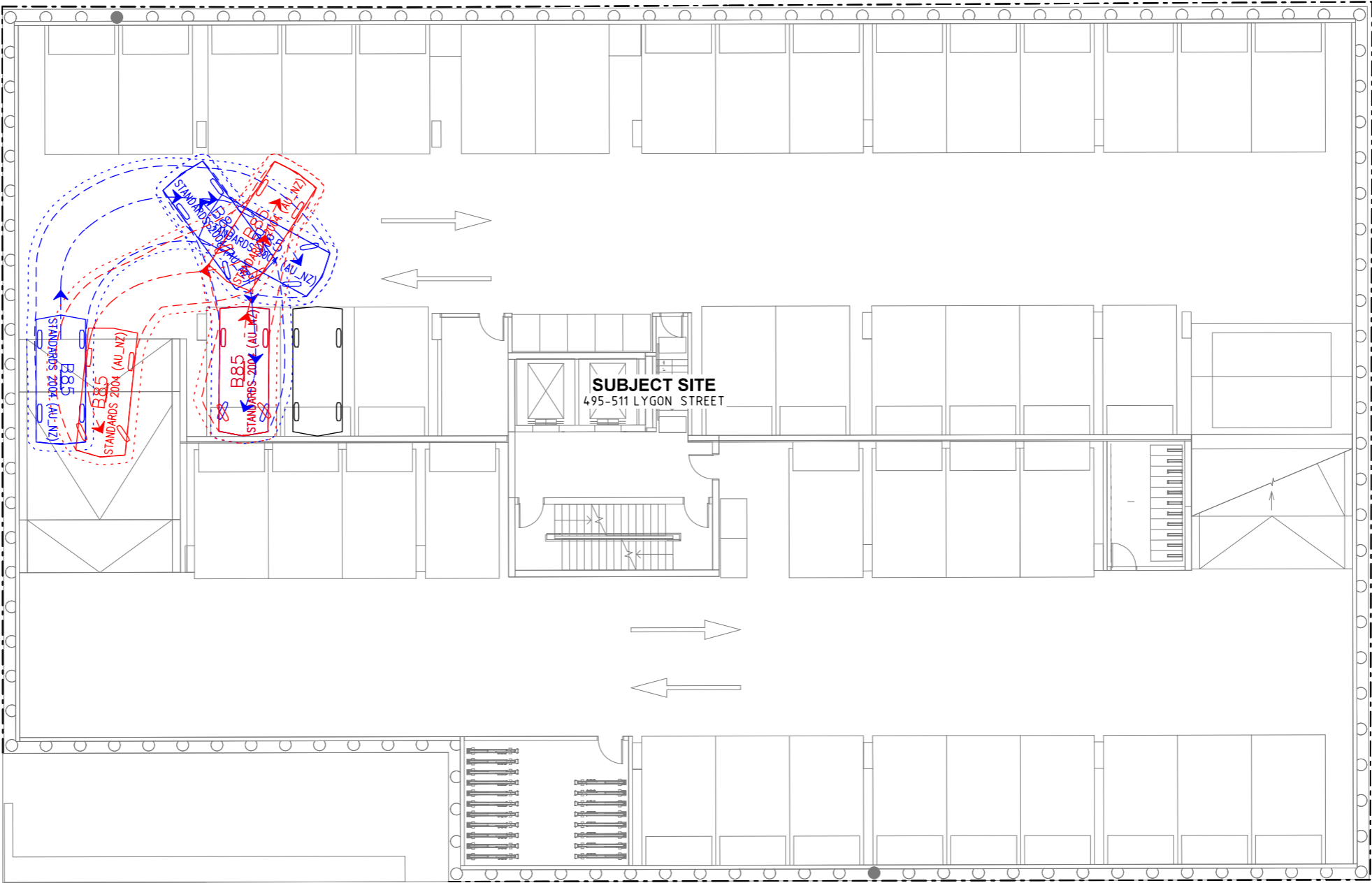


B85  
Width : 1.87  
Track : 1.77  
Lock to Lock Time : 6.0  
Steering Angle : 34.1

**SWEPT PATH LEGEND**  
- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED  
- - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Scale  
1:200 @ A3



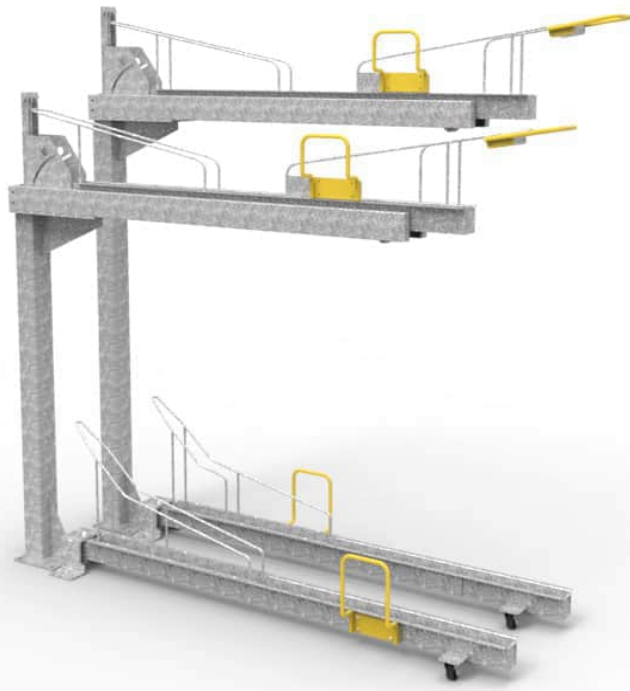
Drawing Title 495-511 LYGON STREET BRUNSWICK EAST VEHICLE SITE CIRCULATION - BASEMENT LEVEL 2 SWEPT PATH ANALYSIS		
Designed DA	Approved SF	Metway Ref 29 K6
Project Number 190065	Drawing Number SPA302	Revision 1

# ***Appendix B     Cora Double Tier Bike Rack – Specification Sheet***



# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET



## E3DT SERIES

E3DT-GP

DYNAMIC UPPER TIER  
DYNAMIC LOWER TIER

Australia's ONLY fully dynamic 2 tier system to provide reduced AS2890.3 compliant spacing of 400mm on both tiers. A Dynamic upper tier combined with a dynamic lower tier provides the maximum capacity possible. Upper tier includes gas assist lift for ease of use and is available in alternating heights. Lower tier uses the E3GP bike ground pivot rack that allows users to move the rack left or right for ease of access.

### Capacity

- E3ST-H: 1 bike
- E3ST-L: 1 bike
- E3GP-F: 1 bike
- E3GP-B: 1 bike

### Construction

- Heavy duty high quality steel

### Fixings

M10 anchor bolts with security nuts

### Finishes

- Galvanised with powder coated accents on handles
- Option - Colour Powder Coat (Cora standard colour range)

### Assembly

- Supplied partially assembled for assembly and mounting on site

### Compliance

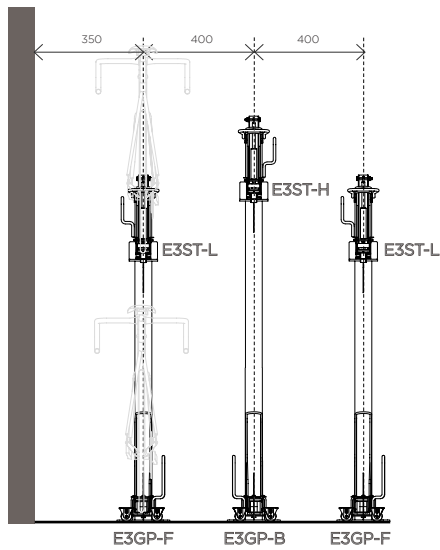
- Rack is AS2890.3 (2015) compliant



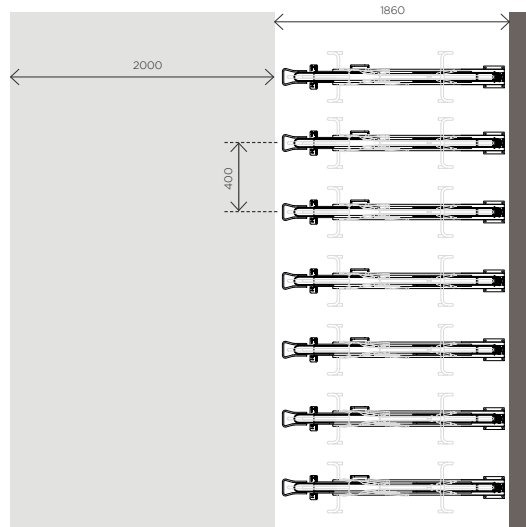
# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET

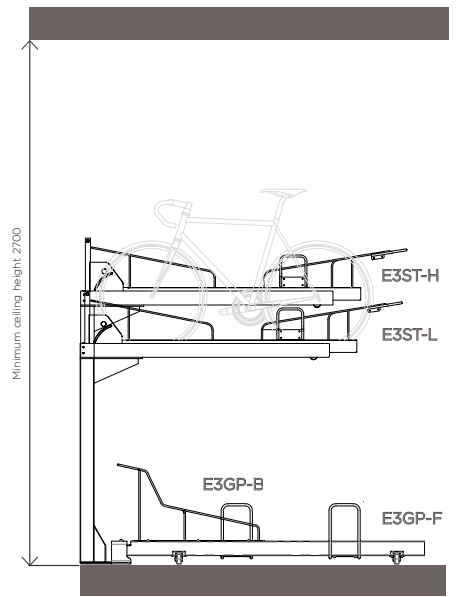
### STAGGERED LAYOUT



Front view

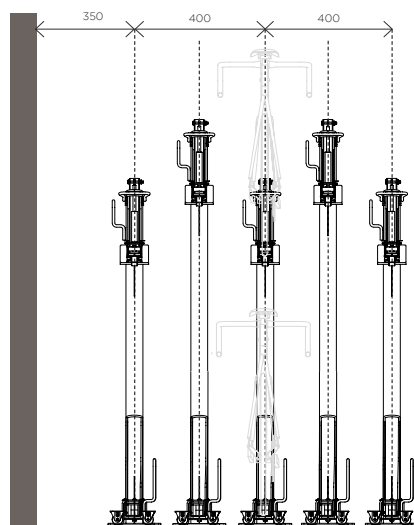


Top view

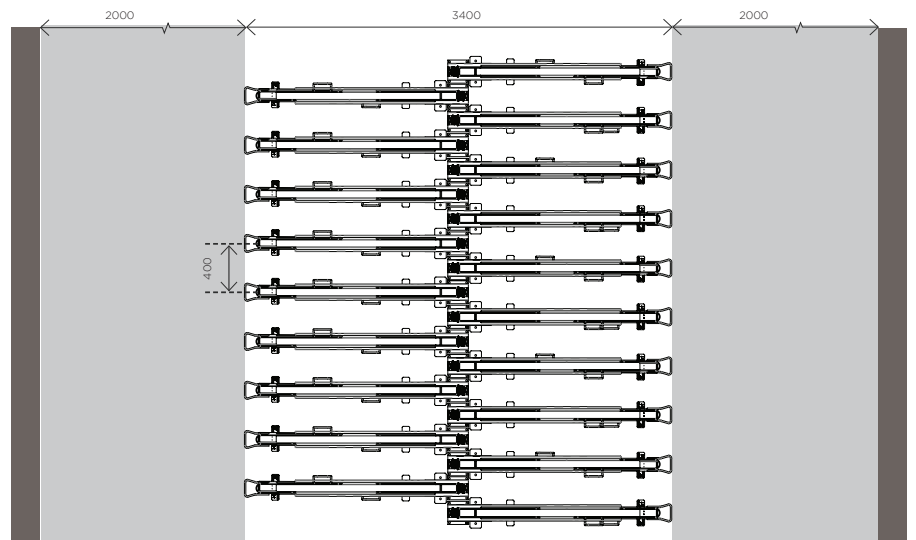


Side view

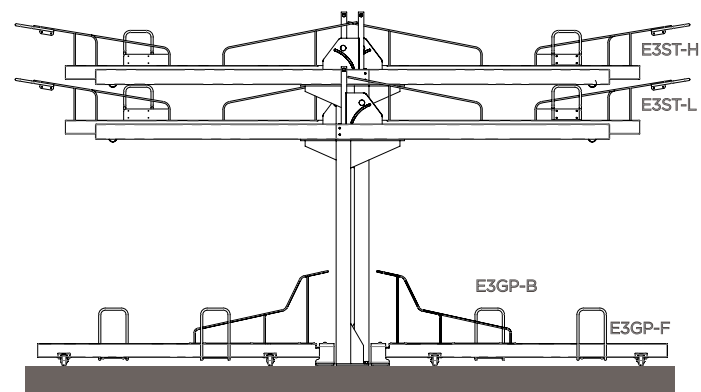
### NESTED LAYOUT



Front view



Top view



Side view

### E3DT-GP DYNAMIC UPPER AND LOWER TIER LAYOUT GUIDE

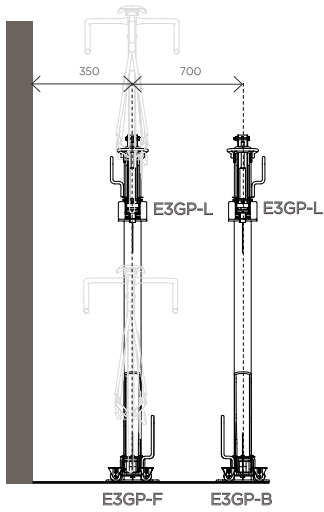
For specific assembly and installation instructions relating to E3DT-GP series racks, please refer to individual instruction information sheets.

Racks should not be installed, based on the information on this sheet alone.

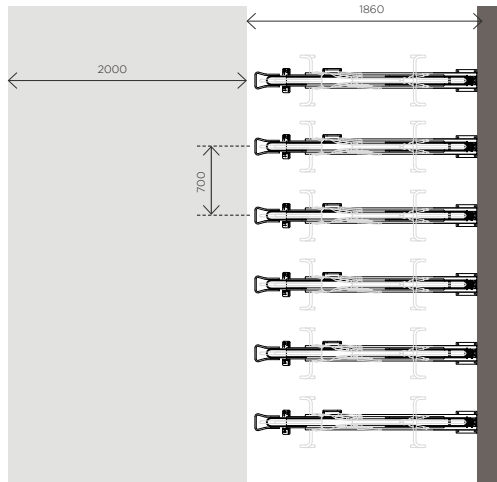
# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET

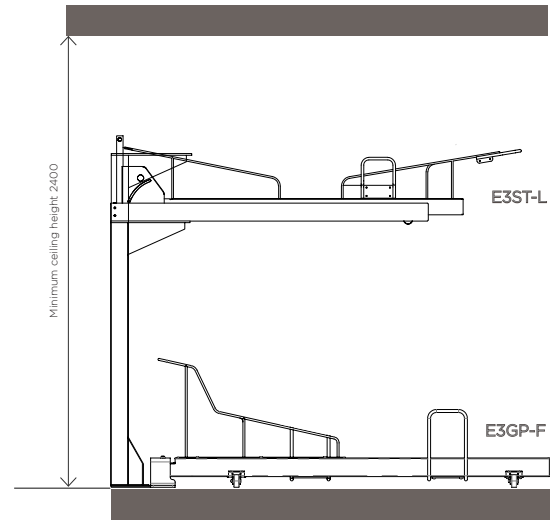
### SINGLE LEVEL LAYOUT



Front view



Top view



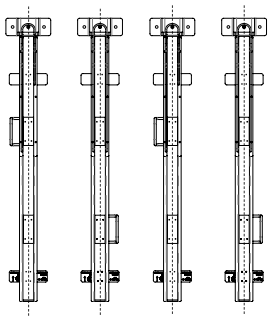
Side view

### E3DT-GP DYNAMIC UPPER AND LOWER TIER LAYOUT GUIDE

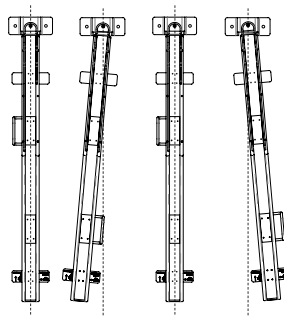
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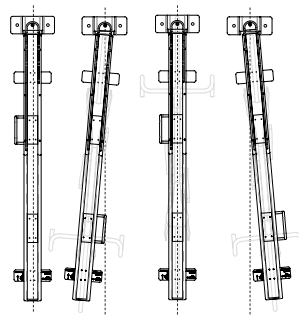
#### Dynamic side to side movement of lower rack



Racks in neutral position



Racks Pivoted  
Racks either side of free rack, can be pivoted, to increase access for racking or removal



Bike placed in rack  
Bike is wheeled in to rack, either front or rear wheel-in first depending on rack type



**CORA**  
BIKERACK

PH 1800 249 878

[sales@cora.com.au](mailto:sales@cora.com.au)

[www.cora.com.au](http://www.cora.com.au)

# ***Appendix C   Cora E3VR-DYN Bike Rack – Specification Sheet***



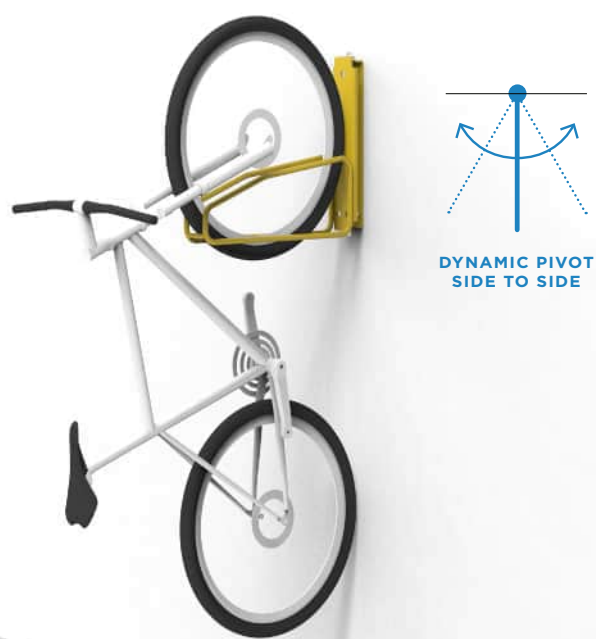
# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET

### E3VR-DYN

- Increase capacity by 20%
- The **E3VR-DYN** provides a dynamic pivot motion to allow reduced spacings for maximum capacity and AS2890.3 compliance
- The rack can be mounted directly to existing walls or to the **E3VR-P** mounting post

A DYNAMIC **PIVOTING** VERTICAL BIKE RACK WALL OR POST MOUNTED



WALL MOUNTED

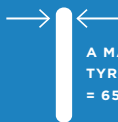


POST MOUNTED  
(Single or double sided)

DESIGNED FOR  
BIKES WITH



A WHEEL  
DIAMETER OF  
= 20-29"



A MAXIMUM  
TYRE WIDTH OF  
= 65mm / 2.5"



A MAXIMUM  
WEIGHT OF = 30KG

NO FENDERS /  
MUDGUARDS

#### SPECIFICATIONS

Capacity	Finish	Fixings	Assembly	Construction	Compliance
1 bike per rack	Cora yellow powder coat (ex stock) or select from Cora colour range	3 x M8 x 40mm pin head torx security screws with tool, washers and wall plugs included	Supplied fully welded and assembled (E3VR-P required for post mount option)	Mild steel / 16mm CHS x 1.2mm	AS2890.3 (2015) compliant

# CORA BIKE RACK

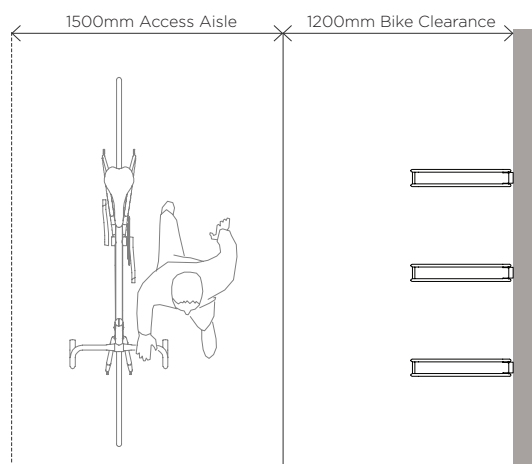
## PRODUCT SPECIFICATION SHEET

### E3VR-DYN

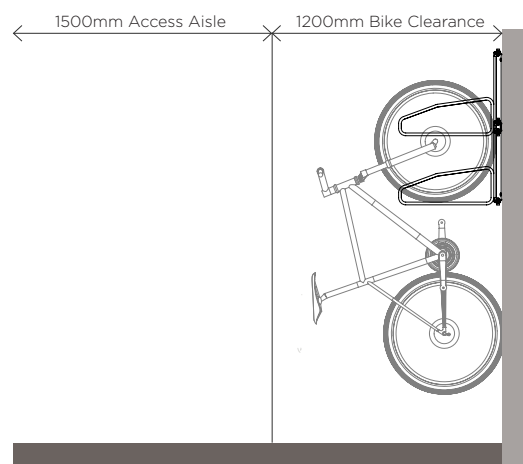
## WALL MOUNTED BIKE RACK LAYOUT GUIDE

To comply with AS2890.3 (2015), minimum spacing between rack centres must be:

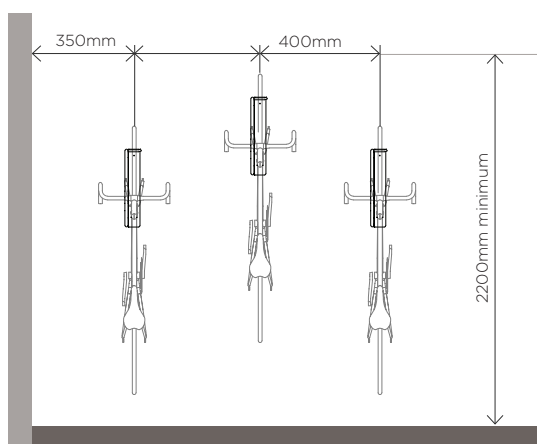
- ▶ 400mm if adjacent racks are offset in height by 300mm; or
- ▶ 600mm if adjacent racks are not offset in height



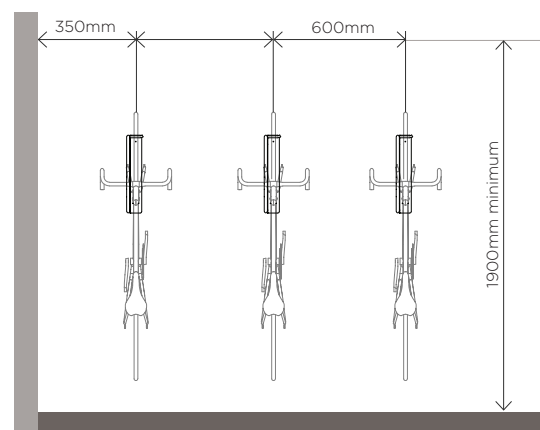
TOP VIEW



SIDE VIEW



FRONT VIEW STAGGERED RACKS



FRONT VIEW NON STAGGERED RACKS

Refer to Installation Instructions sheet for specific installation and assembly guidelines. Racks should **NOT** be installed based on this sheet alone.

# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET

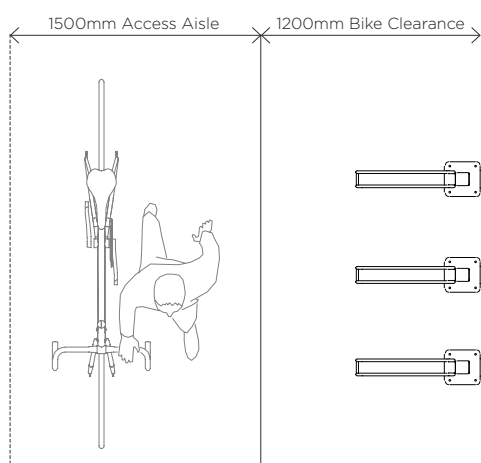
### E3VR-DYN

## POST MOUNTED BIKE RACK

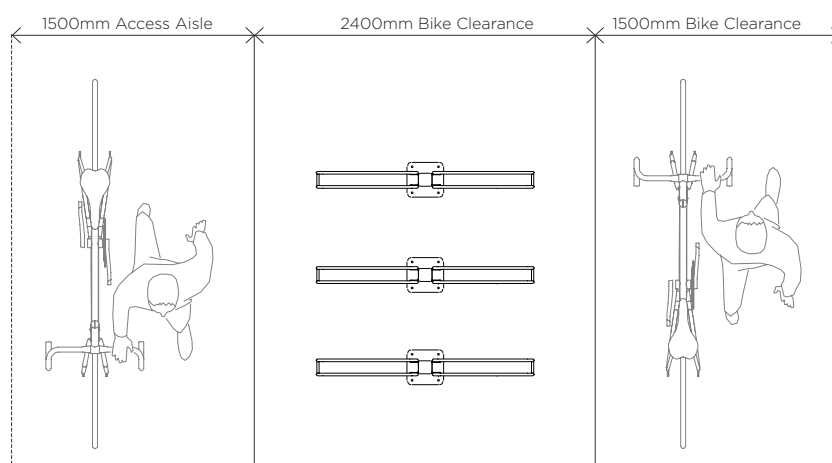
### LAYOUT GUIDE \*E3VR-P POST REQUIRED

To comply with AS2890.3 (2015), minimum spacing between rack centres must be:

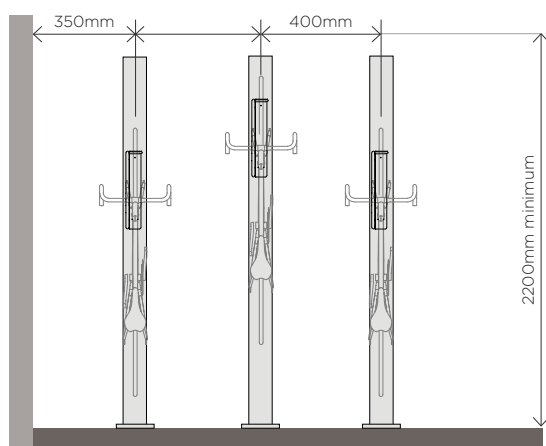
- ▶ 400mm if adjacent racks are offset in height by 300mm; or
- ▶ 600mm if adjacent racks are not offset in height.



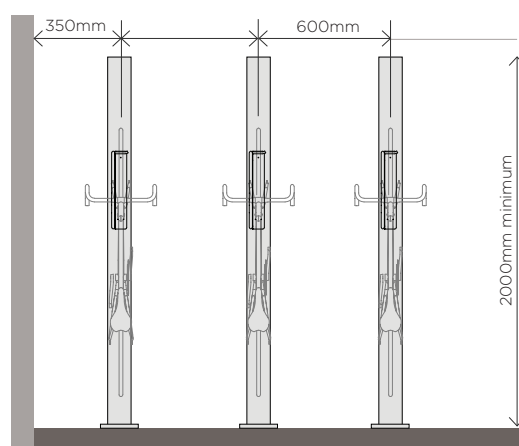
TOP VIEW SINGLE SIDED



TOP VIEW DOUBLE SIDED



FRONT VIEW STAGGERED RACKS



FRONT VIEW NON STAGGERED RACKS

Refer to Installation Instructions sheet for specific installation and assembly guidelines. Racks should **NOT** be installed based on this sheet alone.