Client
Alma Road Developer Pty Ltd

Date
5 July 2024

Transport Impact Assessment

97 Alma Road, St Kilda East

Planning
Transport
Urban Design
Waste Management

ratio:

ratio.com.au

Project
97 Alma Road, St Kilda East

Prepared for
Alma Road Developer Pty Ltd

Our reference
19329T

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F01	28/11/2022	Final	J. Hamill-Beach	P. Malley
F02	27/07/2023	Revised Final	J. Hamill-Beach	P. Malley
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F04	05/07/2024	Minor Updates	J. Hamill-Beach	P. Malley

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1. Introduction

1.1. Introduction

A planning permit (Ref No. PDPL/00823/2022) was issued by City of Port Phillip on 22 March 2024 pursuant to the land addressed as 97 Alma Road in St Kilda East, which allows for:

"Construction of multiple dwellings on a lot and use and development of the land as a 'food and drink' premises."

The permit applicant is seeking to amend the abovementioned planning permit.

The amended application proposes to provide a total of 67 dwellings on the subject site, comprising the following typologies:

— 47 apartments, comprising:

- Ten (10) x one-bedroom apartments;
- 24 x two-bedroom apartments; and
- 13 x three-bedroom apartments.

— 20 x three-bedroom townhouses; and

— F&B tenancy on ground level with a total floor area of 33 sqm.

Ratio Consultants has been engaged by the permit applicant to undertake a transport impact assessment of the development proposal.

1.2. Purpose & Structure of this Report

This report sets out an assessment of the anticipated parking, traffic and transport implications of the proposed development, including consideration of the:

— Existing traffic and car parking conditions in the vicinity of the site;

— Proposed pedestrian, bicycle and public transport access arrangements to/from the site;

— Adequacy of the proposed bicycle parking arrangements in terms of supply (quantum) and layout;

— Parking demand likely to be generated by the proposed development;

— Suitability of the proposed car parking in terms of supply and layout;

— The adequacy of the proposed access arrangements for typical vehicular traffic, loading and waste collection vehicles; and

— Traffic generating characteristics of the proposed development and impact on the surrounding road network.

1.3. References

In preparing this report, reference has been made to the following:

- Plans for the proposed development, prepared by Kerstin Thompson Architects Pty Ltd, Rev 4, dated 03 July 2024;
- Port Phillip Planning Scheme;
- Australian / New Zealand Standard, Parking Facilities Part 1: Off-Street Car Parking (AS2890.1:2004);
- Australian / New Zealand Standard, Parking Facilities Part 2: Off-Street Commercial Vehicle Facilities (AS2890.2:2018);
- Australian / New Zealand Standard, Parking Facilities Part 3: Bicycle Parking (AS2890.3:2015);
- A desktop inspection of the subject site and its surrounds; and
- Other documents as nominated.

2. Existing Conditions

2.1. Subject Site

The subject site is located at 97 Alma Road in St Kilda East, situated on the southern side of Alma Road.

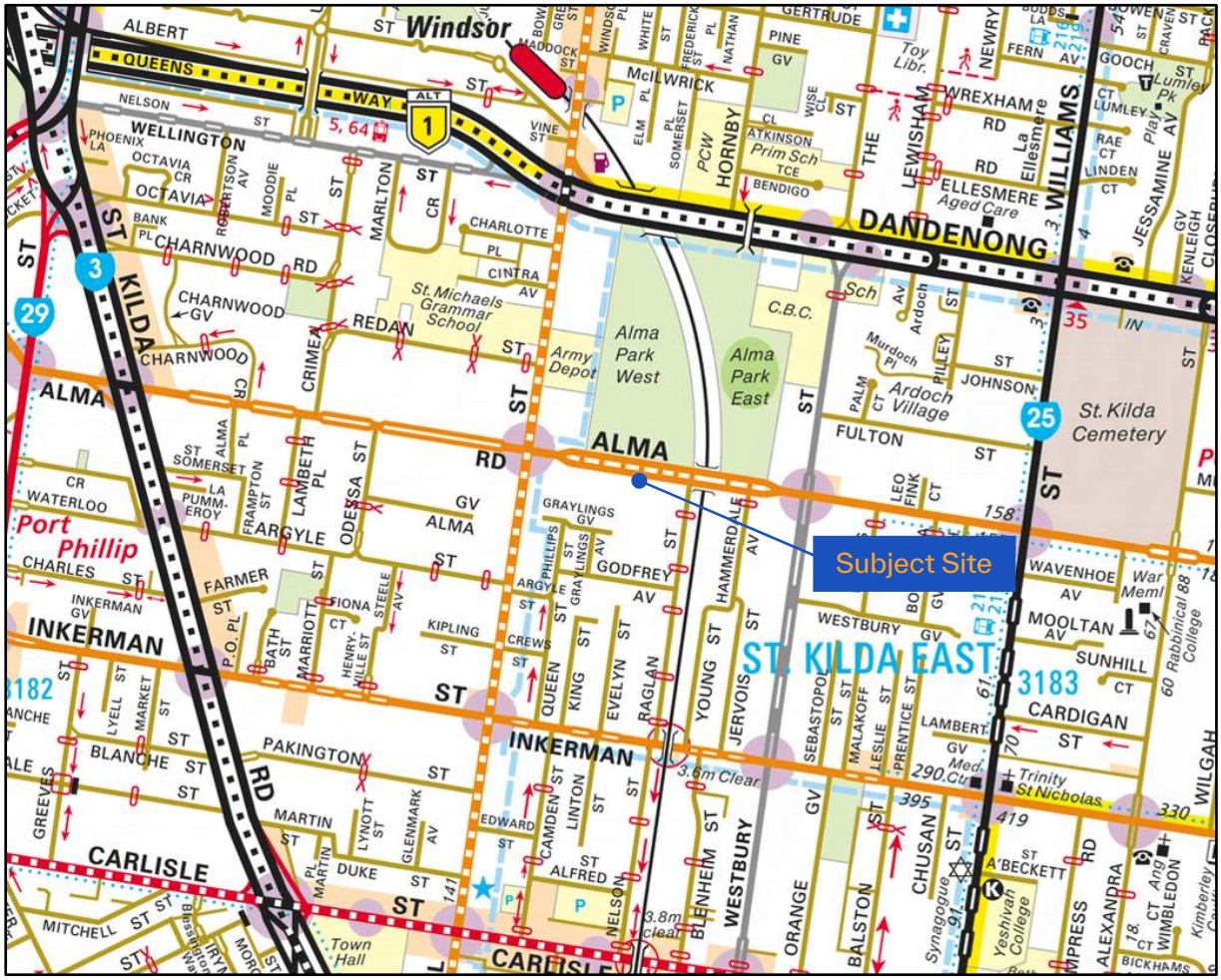
The site is generally rectangular in shape, with a 38.3 metre northern frontage to Alma Road and an overall site area of approximately 4,997 sqm.

A single commercial building of approximately 1,400sqm floor area occupies the northern portion of the site, which is jointly occupied by Fitness First and Kingswim. The southern portion of the site is comprised by two (2) synthetic futsal fields.

A total of seven (7) on-site car parking spaces (including two (2) parking spaces for people with disabilities) are provided within a concrete apron along the northern frontage, accessed directly via Alma Road. All other parking demand for the site is currently accommodated on-street.

The location of the subject site and its surrounding environs is shown below in Figure 2.1 and an aerial context is also provided in Figure 2.2.

Figure 2.1: Site Locality



(Source: Melway Online)

Figure 2.2: Site Location & Its Surrounds

(Source: Nearmap, image dated 14 September 2022)

The site is located within the General Residential Zone (GRZ1) and is subject to the Special Building Overlay – Schedule 2.

Land uses in the vicinity of the site are predominantly residential in nature. Other notable uses also in the nearby vicinity include:

— Alma Park West, immediately north of the subject site;

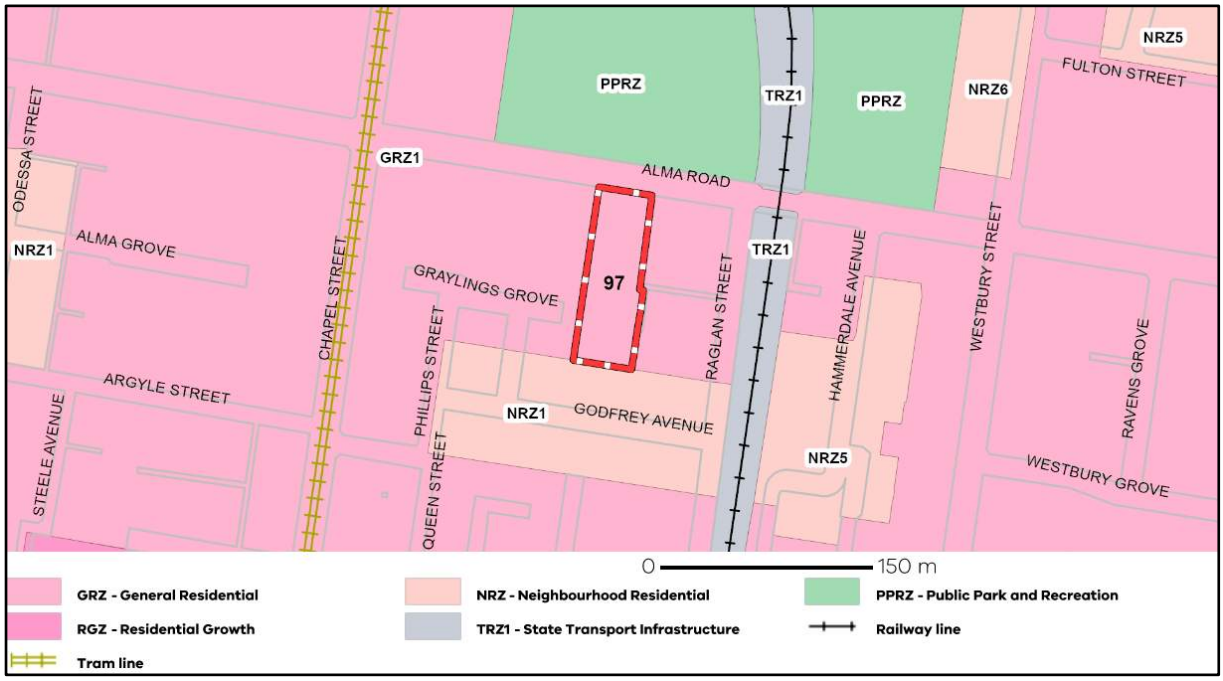
— Windsor Railway Station, approximately 750 metres northwest of the subject site;

— Balaclava Railway Station, approximately 1,000 metres south of the subject site; and

— Carlisle Street Activity Centre, approximately 900 metres south of the subject site.

The site's location and relevant planning zones are shown in Figure 2.3.

Figure 2.3: Site Location & Planning Zones



(Source: Vicplan)

2.2. Road Network

Alma Road is a Council managed major road. It generally runs in an east-west alignment between Barkly Street to the west and Hawthorn Road to the east.

In the vicinity of the subject site, Alma Road has an approximate carriageway width of 15 metres, accommodating one (1) traffic lane and bicycle lane in each direction, with kerbside parallel parking on both sides of the road and a central linemarked median.

Parking restrictions in the vicinity of the site are 'permit zone' southern side of the road and unrestricted on the northern side.

Alma Road has a posted speed limit of 50 km/hr, with constructed footpaths on both sides of the road.

For context, street view images of Alma Road along the site frontage are shown in Figure 2.4 and Figure 2.5.

Figure 2.4: Alma Road, looking east

(Source: Google Street View, image dated October 2019)

Figure 2.5: Alma Road, looking west

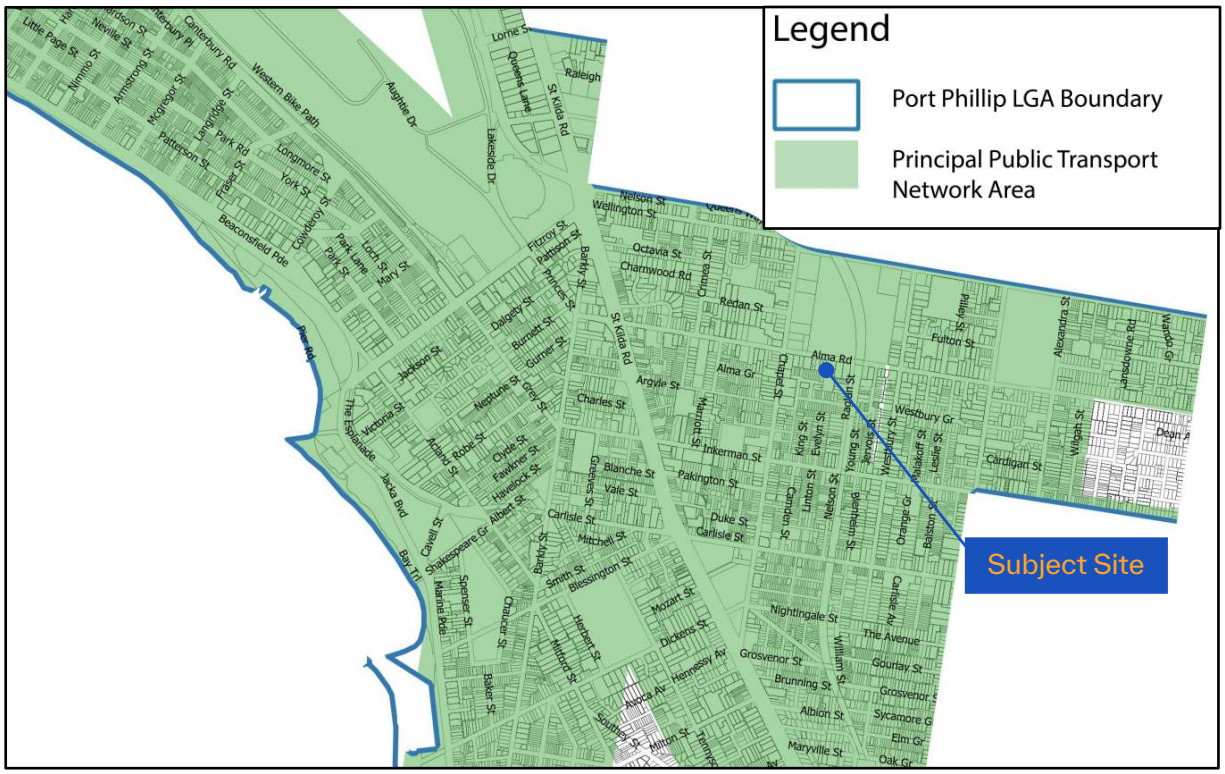
(Source: Google Street View, image dated October 2019)

2.3. Sustainable Transport

Public Transport

The subject site, as shown in Figure 2.6, is located within the Port Phillip Principal Public Transport Network (PPTN) area.

Figure 2.6: City of Port Phillip - Principal Public Transport Network Area



(Source: Department of Environment, Land, Water and Planning)

The site has access to high quality public transport services, as described in Table 2.1 and Figure 2.7.

Table 2.1: Public Transport Services in the Vicinity of the Site

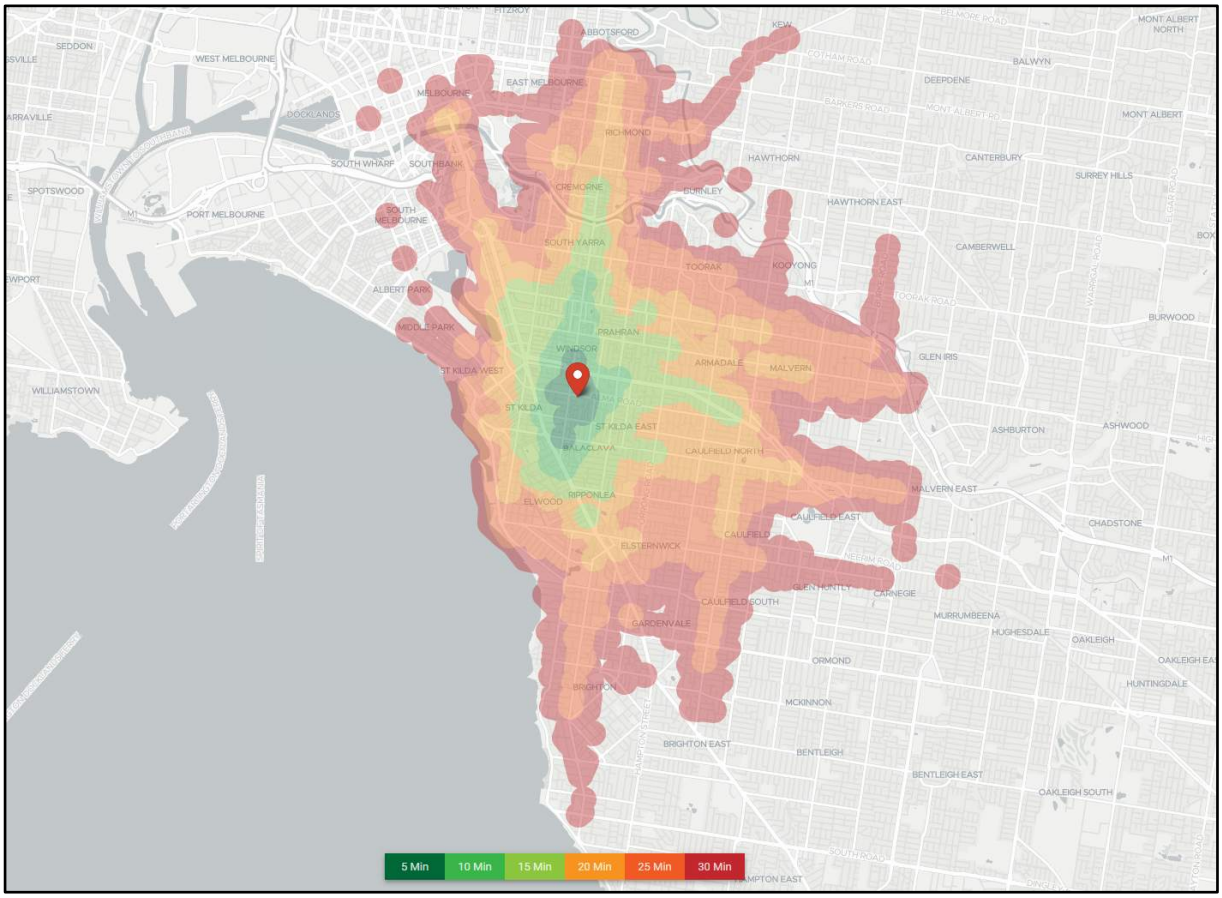
Service	Route	Route Description	Nearest Stop	Walking Distance & Time
Train	Sandringham Line	CBD - Sandringham	Windsor Station	850 metres 11 minutes
			Balaclava Station	1,000 metres 12 minutes
Tram	78	North Richmond – Balaclava	Alma Road / Chapel Street	200 metres 3 minutes
	3/3a	Melbourne University – East Malvern	Alma Road / St Kilda Road	850 metres 11 minutes
	67	Melbourne University – Carnegie		
	5	Melbourne University – Malvern	Hornby Street / Dandenong Road	600 metres 8 minutes
	64	Melbourne University – East Brighton		
Bus	603	Brighton Beach – Alfred Hospital via Elsternwick Station	Alma Road / Hotham Street	650 metres 8 minutes

Figure 2.7: Public Transport Services in the Vicinity of the Site

(Source: Public Transport Victoria)

Based on the available public transport services, Figure 2.8 presents an isochrone drawing of the area accessible from the subject site's location in a 30-minute public transport journey.

Figure 2.8: Public Transport Catchment Area (from subject site)



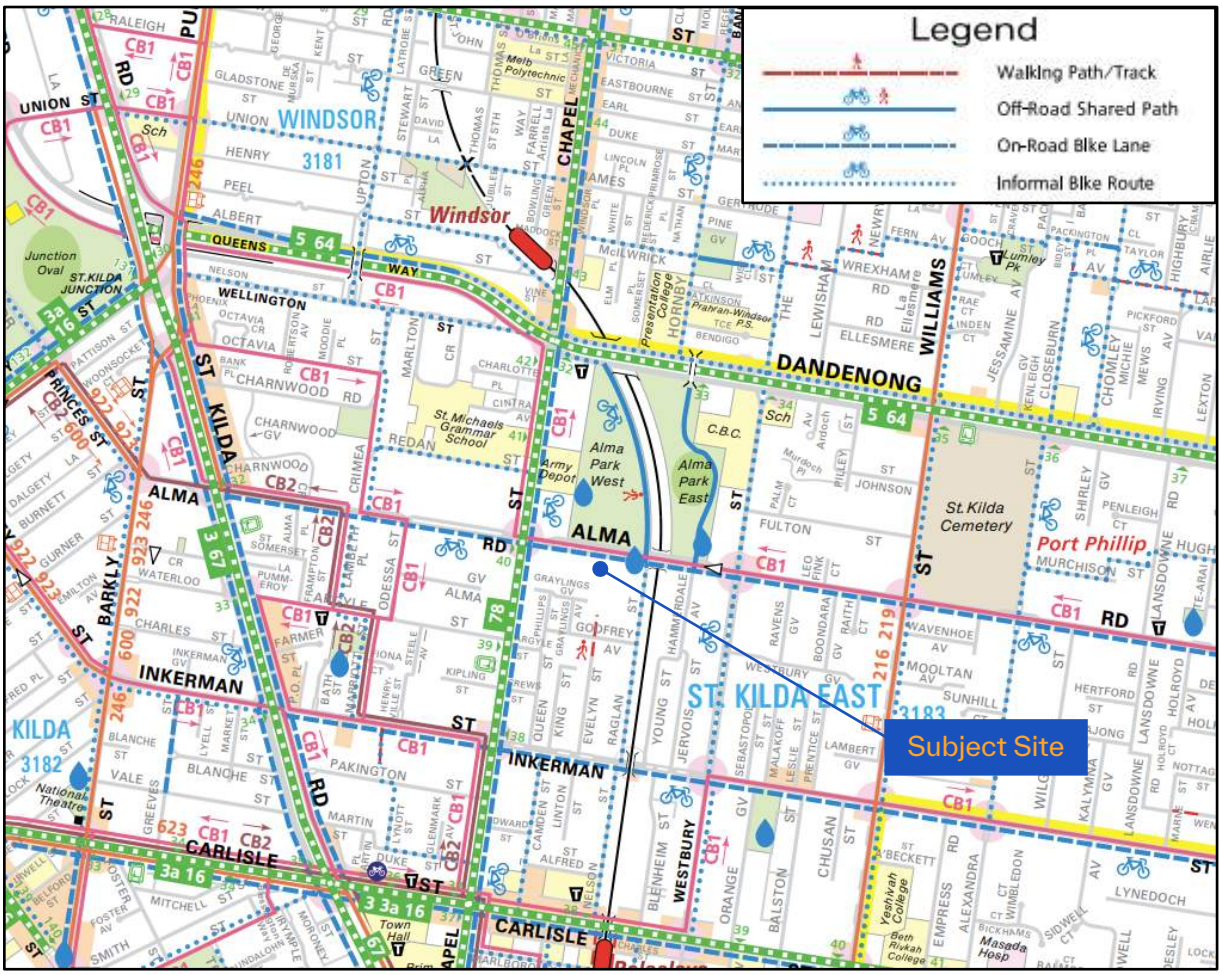
(Source: Targomo)

Figure 2.8 indicates that the subject site has ample access to public transport facilities which provide access to all of the surrounding suburbs as well as each of the major train stations within the Melbourne CBD via a 30-minute public transport journey. Each of the abovementioned services operate seven (7) days per week and at regular intervals, providing a regular connection to/from the site for future residents.

Bicycle Network

The site has access to the existing bicycle network, with bicycle routes provided within close proximity to the subject site as shown in Figure 2.9.

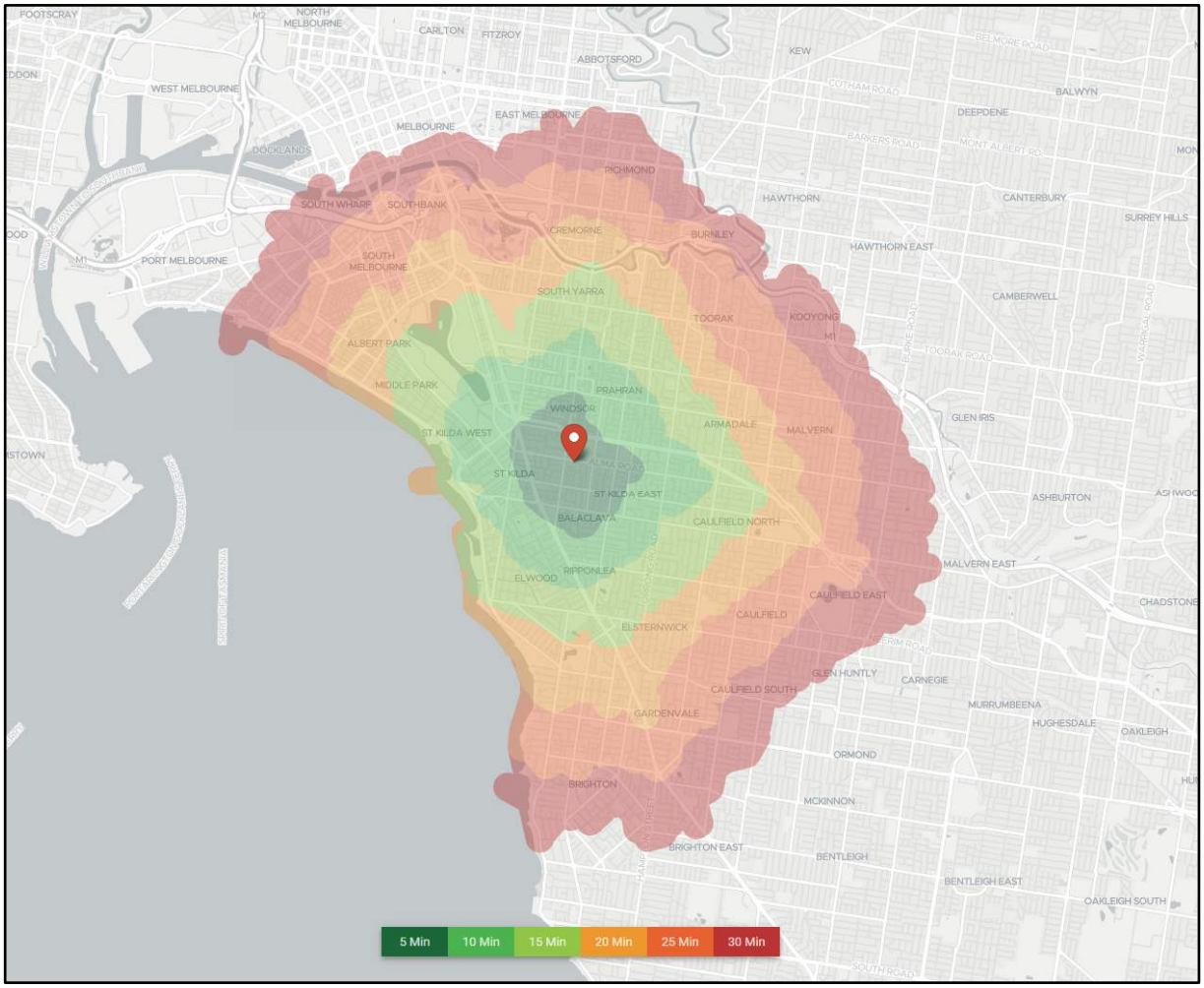
Figure 2.9 Bicycle Infrastructure in the Vicinity of the Site



(Source: City of Port Phillip)

Figure 2.9 indicates that there are various formal and informal bicycle routes in the vicinity of the site, including on-road bicycle lanes in both directions along Alma Road. The available cycling infrastructure provides an extensive cycling catchment encompassing the surrounding suburbs. The 30-minute cycling catchment for the subject site is presented within Figure 2.10. This catchment area is considered an acceptable range where residents could be reasonably expected to cycle to/from work as a regular mode of transport.

Figure 2.10 Cycling 30-minute Catchment (From the Subject Site)



(Source: Targomo)

Pedestrian Network

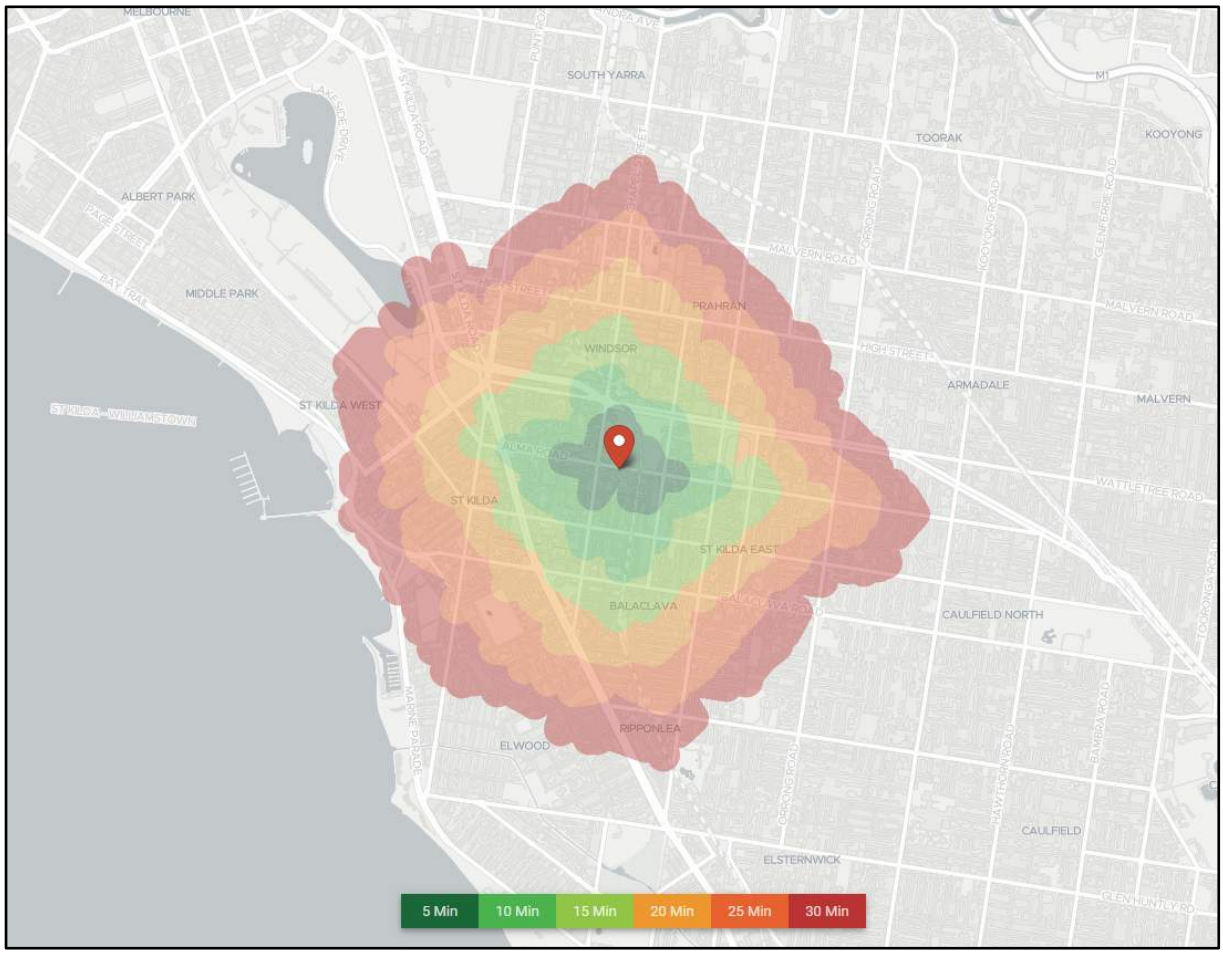
The subject site and its immediate surrounds are provided with a well-connected pedestrian network, with pedestrian footpaths provided along both sides of the majority of streets in the vicinity of the site.

The subject site achieves a walk score of 89 out of 100 (on walkscore.com), which suggests that the site and the area is *'very walkable'* and that most errands can be accomplished on foot. The Walk Score of an area is calculated by determining the distance required to walk from an origin to nearby amenities. It also assesses block sizes and intersection density to determine the permeability of an area.

As such, the subject site exhibits the characteristics to support walking as a primary mode of travel for future residents of the proposed development.

The 30-minute walking catchment area from the subject site is shown in the isochrone map presented in Figure 2.11. Of note, the 15-minute shading within the isochrone map indicates that the Carlisle Street Activity Centre and various amenities and services along Chapel Street are both accessible in a 15-minute walk. Accordingly, future residents of the site will be able to undertake errands and/or leisure activities without requiring the use of their private motor vehicle.

Figure 2.11 Walking Catchment Area (From the Subject Site)



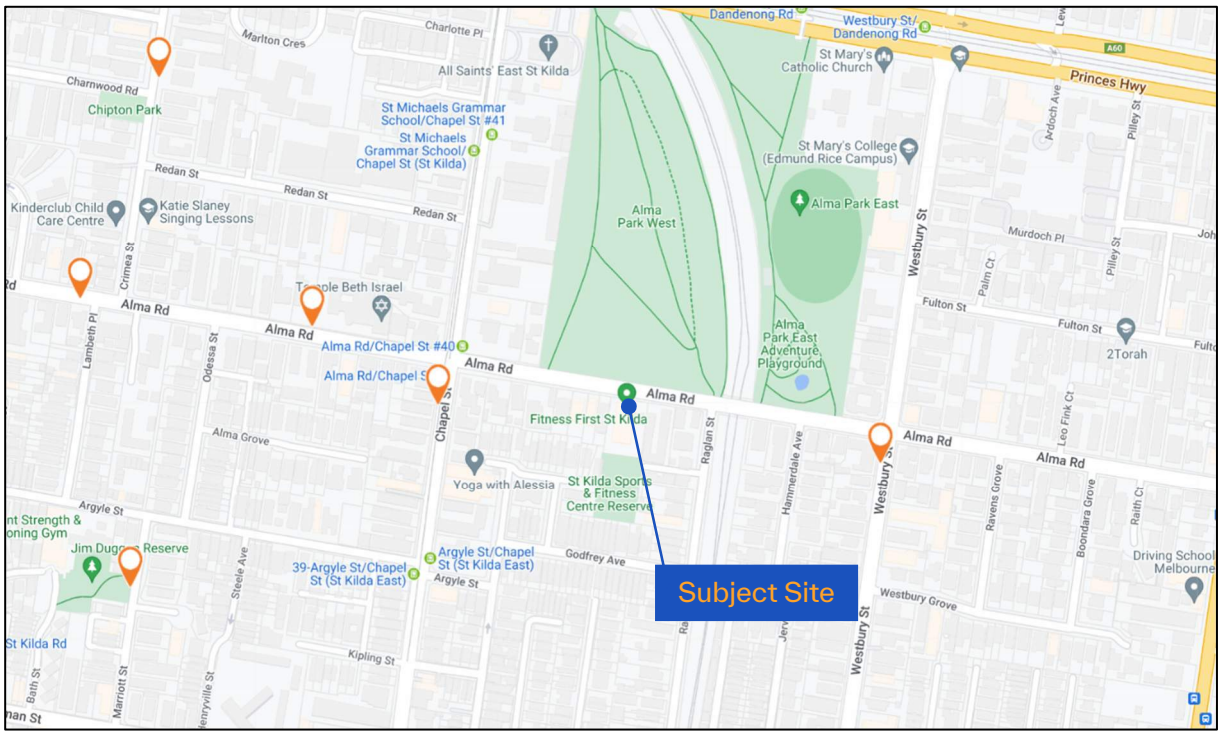
(Source: Targomo)

Car Share

Car share offers a viable mode of travel for those that only occasionally require the use of a private motor vehicle. The subject site has convenient access to a number of car share pods operated by Flexicar and GoGet.

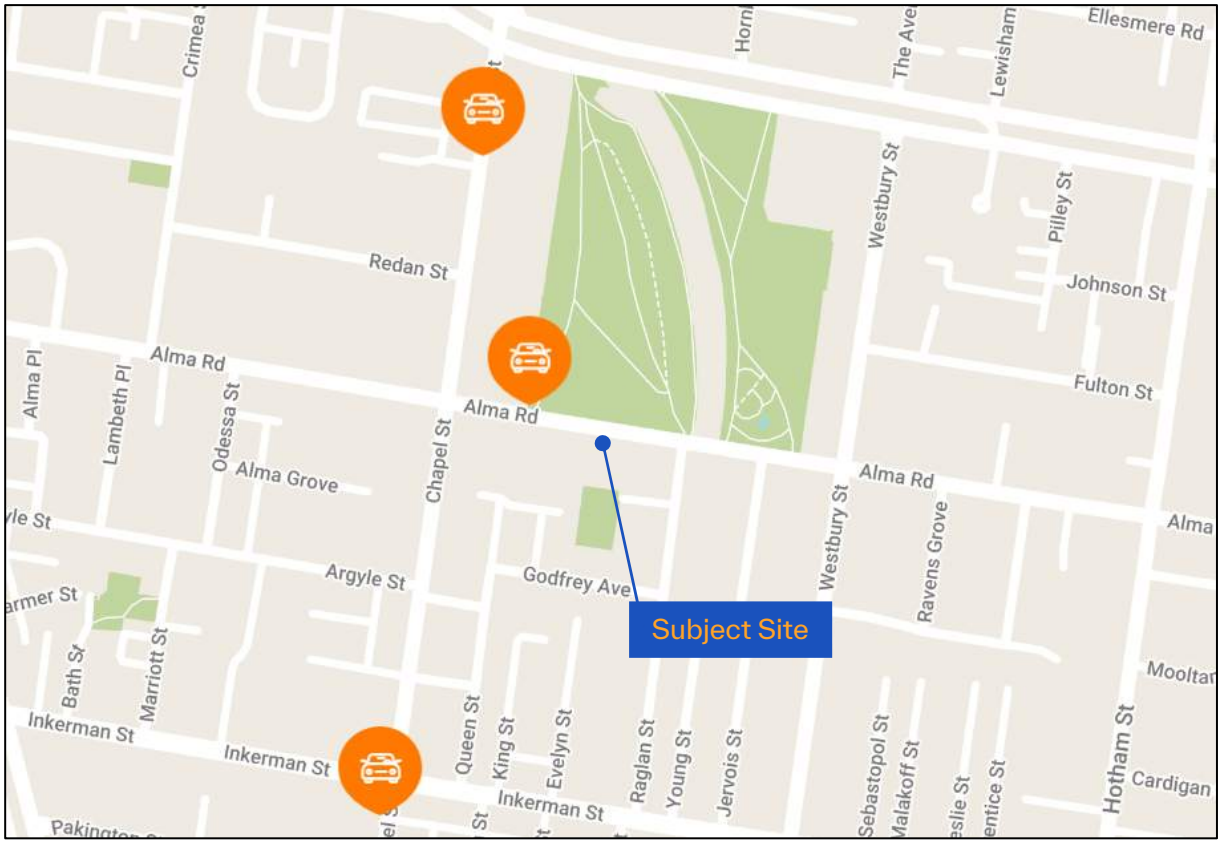
A summary of the car share pods within close proximity of the subject site by two major provides, GoGet and Flexicar, is illustrated in Figure 2.12 and Figure 2.13. There are found to be six (6) Go Get car share pods and three (3) Flexicar car share pods within convenient walking distance of the subject site.

Figure 2.12: Location of GoGet Car Share Pods Near the Site



(Source: goget.com.au/car-rental/melbourne)

Figure 2.13: Location of Flexicar Car Share Locations Near the Site



(Source: flexicar.com.au/)

3. Development Proposal

3.1. Development Overview

The amended application proposes to provide a total of 67 dwellings on the subject site, comprising the following typologies:

— 47 apartments, comprising:

- Ten (10) x one-bedroom apartments;
- 24 x two-bedroom apartments; and
- 13 x three-bedroom apartments.

— 20 x three-bedroom townhouses; and

— F&B tenancy on ground level with a total floor area of 33 sqm.

3.2. Parking Provision

The amended application seeks to provide a total of 74 on-site car parking spaces and five (5) motorcycle parking spaces within a single level basement car park.

Bicycle parking will be provided as follows:

— 16 spaces for visitors on ground level;

— 70 spaces for residents and employees within a secure bicycle parking area within the basement level, comprising:

- 26 spaces within a vertical arrangement; and
- 44 spaces within a two-tier horizontal arrangement.

3.3. Site Access

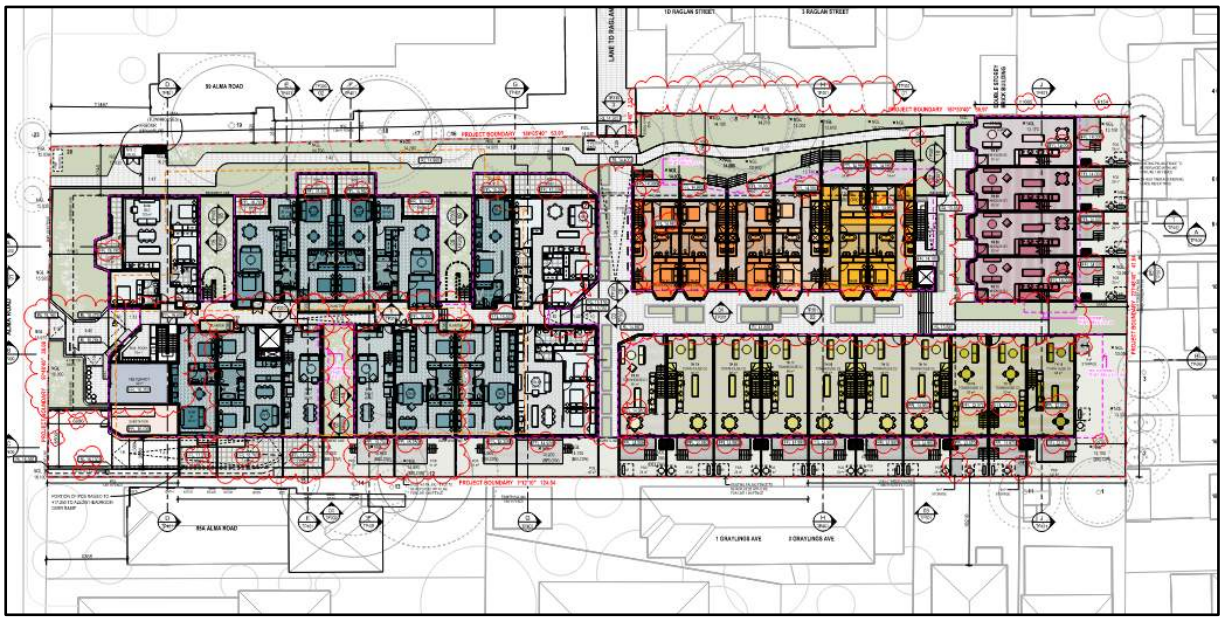
Pedestrian access to the site will be provided via connections to the existing footpath along Alma Road, provided midblock and in the northeast corner of the frontage to Alma Road. A pedestrian connection will also be provided midblock along the eastern site boundary, to/from the laneway that extends to Raglan Street.

Vehicular access to/from the basement car park will be provided via a reconfigured crossover to Alma Road in the northwest corner of the site. This crossover will be widened to 6.4 metres to provide access to a passing bay directly adjacent to the ramp on the eastern side and a 3.6-metre-wide ramp to/from the basement level.

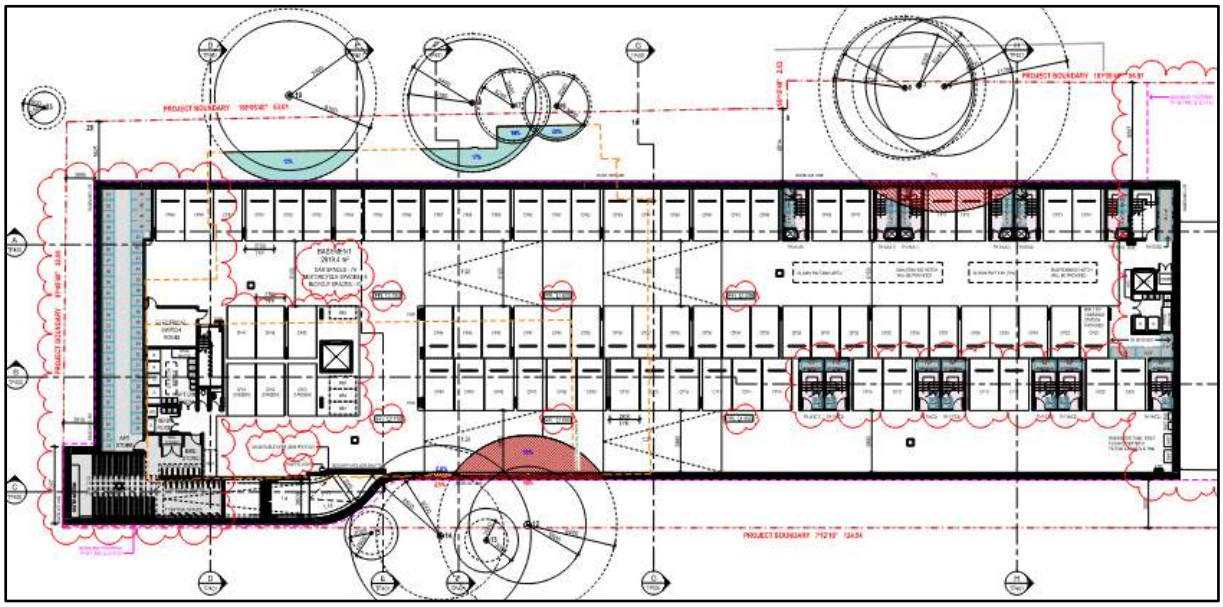
It is noted that the existing crossover and access to existing car parking midblock along Alma Road will be reinstated as kerb and channel as part of the application.

An excerpt of the proposed ground and basement level layouts is provided in Figure 3.1, with the full site plan for all relevant levels of the development provided in Appendix A of this report.

Figure 3.1: Proposed Site Layout



(Source: Kerstin Thompson Architects Pty Ltd – GA Plan – Level Ground)



(Source: Kerstin Thompson Architects Pty Ltd – GA Plan – Level Basement B1)

4. Car Parking Assessment

4.1. Clause 52.06 – Car Parking Requirements

Car parking requirements for new developments are set out within Clause 52.06 of the Port Phillip Planning Scheme. The purpose of Clause 52.06 if defined in the scheme as follows:

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

Table 1 of Clause 52.06 sets out the car parking requirements that apply to a use listed in the Table. A car parking requirement in Table 1 is calculated by multiplying the figure in Column A or Column B (whichever applies) by the measure in Column C.

Column B applies if:

- *Any part of the land is identified as being within the Principal Public Transport Network Area, as shown on the Principal Public Transport Network (PPTN) Area Maps (State Government of Victoria 2018), or*
- *A schedule to the Parking Overlay specifies the number of car parking spaces required for the use.*

As shown previously in Figure 2.6, the subject site is located within the PPTN and is therefore, subject to the Column B rates under Clause 52.06 of the Port Phillip Planning Scheme.

Accordingly, the statutory car parking requirements for the development proposal are set out in Table 4.1.

Table 4.1: Statutory Car Parking Requirement

Land Use	Description	Size/No.	Column B Parking Rate	Car Parking Requirement
Dwelling	One-bedroom dwelling	10 dwellings	1 space to each one- or two-bedroom dwelling	10 spaces
	Two-bedroom dwelling	24 dwellings		24 spaces
	Three-bedroom dwelling	33 dwellings [1]	2 spaces to each three or more-bedroom dwelling	66 spaces
	Visitors	67 dwellings	No requirement	0 spaces
F&B tenancy	Food & drink premises	33 sqm	3.5 spaces to each 100 sqm of leasable floor area	1 space

[1] Inclusive of the 15 x three-bedroom apartments and 20 x three-bedroom townhouses.

Based on the above assessment, the amended application has a statutory requirement to provide 101 car parking spaces on-site, including 100 spaces for the residential dwellings and one (1) space for the F&B tenancy.

4.2. Car Parking Allocation

Based on information provided by the permit applicant, it is understood that car parking will be allocated for the proposed land uses as follows.

Table 4.2: Proposed Car Parking Allocation

Use	Parking Requirement	Parking Provision	Difference
Dwelling (residents)	100 spaces	73 spaces	- 27 spaces
F&B tenancy	1 space	1 space	Meets requirement
Total	101 spaces	74 spaces	- 27 spaces

Based on the above assessment, the proposed provision of resident car parking represents a shortfall of 27 spaces against the statutory requirement.

As such, the amended application is seeking a permit to reduce the statutory car parking requirements outlined in Clause 52.06 of the Port Phillip Planning Scheme.

For situations where the car parking requirement is not met on-site, Clause 52.06-7 of the Port Phillip Planning Scheme outlines that decision guidelines for an application to reduce the car parking requirement draw a distinction between the likely demand for parking spaces and whether it is appropriate to allow the provision of fewer spaces. These are two separate considerations, the former is technical while the latter is strategic.

The demand for parking spaces is considered more pertinent in this instance and will be considered in the following section.

4.3. Car Parking Demand Assessment

Clause 52.06-7 of the Port Phillip Planning Scheme specifies that an application to reduce (including to zero) the number of car parking spaces required under Clause 52.06-5, or in a

schedule to the Parking Overlay, must be accompanied by a Car Parking Demand Assessment.

The assessment must consider the following matters to the satisfaction of the responsible authority:

- *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 proposed visitors to or occupants (residents or employees) of the land; and*
- *Any empirical assessment or case study.*

The factors relevant to the sought parking dispensation are discussed below.

Public Transport

As discussed in Section 2.3, the site is situated within the City of Port Phillip's Principal Public Transport Network area and accordingly, has a range of train, tram and bus services operating seven (7) days a week in proximity of the subject site.

Given the convenient access to a range of sustainable transport options, future residents of the site will be able to travel for various purposes without relying on the use of a private motor vehicle.

Pedestrian & Cyclist Accessibility

Footpaths are provided on both sides of all major roads and the majority of local streets in the nearby vicinity and are generally in excellent condition.

The development proposal seeks to provide two (2) direct links to the existing footpath along Alma Road, providing a convenient link to the surrounding pedestrian network for future residents.

In addition, there are a number of formal and informal bicycle routes in the vicinity of the site.

These facilities provide a viable means for future residents to reduce their reliance on private motor vehicles when traveling for various purposes or when accessing nearby services and amenities.

Bicycle Parking Provision

The proposal includes a generous provision of 86 on-site bicycle parking spaces for users of the development. This provision is more than four (4) times the statutory requirement for the site, which will assist in promoting cycling as a method of transport to/from the site in lieu of private vehicles.

Car Ownership Rates

The 2016 Census by the Australian Bureau of Statistics (ABS) has been sourced to understand existing car ownership rates for the suburb of St Kilda East and the broader Port Phillip municipality.

The 2016 Census identified the following:

— Flat, unit or apartment in a one or more storey block within St Kilda East – 4,052 dwellings; and

— Semi-detached, row or terrace house, townhouse etc with two or more storeys within St Kilda East – 291 dwellings;

— Flat, unit or apartment in a one or more storey block within Port Phillip – 33,972 dwellings; and

— Semi-detached, row or terrace house, townhouse etc with two or more storeys within Port Phillip – 5,295 dwellings.

Critically, the average vehicle ownership for one-, two- and three-bedroom dwellings within St Kilda East and the entire Port Phillip municipality have been assessed are presented below in Table 4.3.

Table 4.3: Average Car Ownership Rates

	Average Vehicle Ownership (St Kilda East)	Average Vehicle Ownership (Port Phillip)
One-bedroom	0.81 vehicles	0.80 vehicles
Two-bedroom	1.14 vehicles	1.10 vehicles
Three-bedroom	1.47 vehicles	1.40 vehicles
Three-bedroom (townhouses)	1.57 vehicles	1.58 vehicles

The above assessment indicates that the average vehicle ownership of one- and three-bedroom dwellings is lower than the respective statutory requirement. It is noted that the average vehicle ownership for two-bedroom dwellings is slightly higher than the statutory requirement.

It is also noted that the average vehicle ownership within St Kilda East is comparable to or slightly higher than the corresponding results for the broader Port Phillip municipality.

Furthermore, it is accepted that there is an ongoing trend away from private vehicle usage (particularly within inner urban areas). Given that the 2016 Census was undertaken eight (8) years ago, the average vehicle ownership values listed in Table 4.3 are considered a conservative representation of the car ownership rates of future residents of the site.

Anticipated Car Parking Demand

For the purpose of a robust assessment, the car ownership rates for St Kilda East will be used to estimate the car parking demand that will be generated by future residents of the site.

This assessment is presented in Table 4.4.

Table 4.4: Anticipated Car Parking Demand (Residents)

Dwelling Type	No. of Dwellings	Car Parking Rate	Car Parking Demand
One-bedroom apartment	10 dwellings	0.81 vehicles per dwelling	8 spaces
Two-bedroom apartment	24 dwellings	1.14 vehicles per dwelling	27 spaces
Three-bedroom apartment	13 dwellings	1.47 vehicles per dwelling	19 spaces
Three-bedroom townhouse	20 dwellings	1.57 vehicles per dwelling	31 spaces
	Total		**85 spaces**

4.4. Appropriateness of Allowing Fewer Spaces

Clause 52.06-7 within the Port Phillip Planning Scheme specifies that before granting a permit to reduce (including to zero) the number of car parking spaces required under Clause 52.06-5, the responsible authority must consider the following as appropriate:

- *The Car Parking Demand Assessment;*
- *Any relevant local planning policy or incorporated plan;*
- *The availability of alternative car parking in the locality of the land, including:*
  - *Efficiencies gained from the consolidation of shared car parking spaces;*
  - *Public car parks intended to serve the land;*
  - *On-street parking in non-residential zones; and*
  - *Streets in residential zones specifically managed for non-residential parking.*
- *On street parking in residential zones in the locality of the land that is intended to be for residential use;*
- *The practicality of providing car parking on the site, particularly for lots of less than 300 square metres;*
- *Any adverse economic impact a shortfall of parking may have on the economic viability of any nearby activity centre;*
- *Any car parking deficiency associated with the existing use of the land;*
- *Any credit that should be allowed for car parking spaces provided on common land or by a Special Charge Scheme or cash-in-lieu payment;*
- *Local traffic management in the locality of the land;*
- *The impact of fewer car parking spaces on local amenity, including pedestrian amenity and the amenity of nearby residential areas;*
- *The need to create safe, functional and attractive parking areas;*
- *Access to or provision of alternative transport modes to and from the land;*
- *The equity of reducing the car parking requirement having regard to any historic contributions by existing businesses;*
- *The character of the surrounding area and whether reducing the car parking provision would result in a quality/positive urban design outcome;*
- *Any other matter specified in a schedule to the Parking Overlay; and*
- *Any other relevant consideration.*

The factors relevant to the assessment are underlined above and discussed below.

Car Parking Demand Assessment

The Car Parking Demand Assessment presented in Section 4.3 of this report provides an assessment of the anticipated car parking demand that will be generated by the proposed land use.

The anticipated car parking demand is summarised previously in Table 4.4 which indicates an anticipated car parking demand of 85 spaces.

The proposed allocation of 73 spaces to residents represents a shortfall of 12 spaces against the anticipated car parking demand.

As such, the development proposal is actively seeking to supress the supply of car parking for residents of the site. This is considered to represent a progressive approach to reducing the reliance on private motor vehicle-based travel.

Various factors supporting this approach are detailed as follows.

Relevant Local Planning Policies or Incorporated Plans

There are a number of policies set out within the Port Phillip Planning Scheme which support sustainable transport initiatives for new and existing developments within the municipality. These are summarised as follows.

CLAUSE 18.02-4L – CAR PARKING: CAR PARKING PROVISION

This Clause outlines Port Phillip Council's policy to "support a reduction in the required number of car parking spaces where the following are met:

- The site is located within a short walking distance to high frequency public transport; or the site is located within Activity Centre or areas immediately adjacent to Activity Centres;
- The provision of sustainable transport infrastructure / initiatives, including higher quantities of bicycle parking can reduce the demand for parking through increased use of alternative modes of transport: walking, cycling, and public transport;
- The development or use is unlikely to result in unreasonable adverse impacts on existing on-street parking; and
- It results in an improved heritage outcome (where relevant)."

As discussed in Section 2.3, the proposed development is well serviced by public transport, including the 78 tram route which is only a three (3) minute walk away among four (4) other tram routes, two (2) train stations and one (1) bus route operating within walking distance of the subject site. The site is also provided with good access to local bicycle infrastructure and is supported by a good pedestrian network throughout the local residential area.

There is also an increased provision of bicycle parking spaces for both residents and visitors with a provision for residents that is more than three (3) times the statutory requirement specified in Clause 52.34 and more than double the statutory requirement for visitors.

PORT PHILLIP INTEGRATED TRANSPORT STRATEGY

The Port Phillip Integrated Transport Strategy, adopted by Council in 2018, outlines initiatives to address the increase in demand on the streets with a growing population.

One of the main focuses is to achieve a mode shift away from private car use and instead towards more environmentally sustainable transport modes including walking, cycling and public transport. Council seeks to maintain the current level of traffic congestion even with a growing population by prioritising the creation of safe travel alternative to owning or driving a car.

The Port Phillip Integrated Transport Strategy talks to best practice research from a case study of residential apartments in Melbourne, Australia (2017) which "found that planning provisions that specify the amount of car parking required in apartment developments are resulting in excess parking availability. This comes at a cost to developers and reduces housing affordability."

The vision of the Port Phillip Integrated Transport Strategy is to promote walking and cycling as the preferred modes of transport, to provide good public transport in all areas and facilitate local access to services, education and employment.

Availability of Alternative Car Parking

As outlined in Section 2.2, on-street parking spaces within the vicinity of the site consist of 'Permit Zone' and unrestricted spaces. Residents will have access to the unrestricted spaces. However, from a review of aerial imagery, there seems to be very limited spare unrestricted spaces. Therefore, residents are unlikely to rely on this as a source of off-site parking.

Furthermore, Council does have the option to implement time restrictions on these spaces to encourage turnover and prevent residents from parking there long-term.

Existing Car Parking Deficiency

As noted in Section 2.1, the existing site uses are supported by 7 on-site car parking spaces with the remainder of car parking demands accommodated within the surrounding on-street parking.

Whilst a gymnasium is not a listed use within Table 1 of Clause 52.06 of the Port Phillip Planning Scheme, application of the lowest car parking rate for a gymnasium of 3 spaces/100sqm as set out in the *RMS Guide to Traffic Generating Developments* to the existing building floor area equates to 42 spaces.

Given the existing car on-site car parking supply of 7 spaces, the existing site uses could be considered to have an existing car parking deficiency in the order of 35 spaces. As such, the proposed demolition of the existing gymnasium uses is likely to result in a net increase in on-street car parking availability.

Availability of Alternative Transport Modes

As detailed previously in this report, the subject site has a high level of sustainable transport amenity.

The site is located within convenient walking distance of multiple tram, train and bus services. These services are detailed within Section 2.3. Additionally, the site has good access to the nearby bicycle and pedestrian network. Therefore, to encourage cycling, the development has proposed a significantly higher provision of bicycle parking for residents that is over three (3) times higher than the statutory requirement.

Moreover, the site is located within walking distance of a number of car share pods, which can be used by residents who are not provided a car parking space as a 'mobility gap', for trips that cannot be completed conveniently via other alternative transport modes.

Given the site's access to sustainable transport options, residents are able to travel to and from the site without relying solely on the use of a private motor vehicle. Reducing the number of car spaces provided on-site will encourage a higher uptake of these sustainable modes of transport, producing a more sustainable outcome for the development.

4.5. Adequacy of Proposed Car Parking Provision

It is proposed to provide 74 on-site car parking spaces to meet the parking demands of users of the proposed development.

It is understood that one (1) parking space will be allocated to the food & beverage tenancy. This provision is in accordance with statutory requirement for this use and is therefore considered acceptable.

The remaining 73 parking spaces will be allocated to future residents of the site. This allocation represents a shortfall of 12 spaces against the anticipated car parking demand. As such, the development proposal is actively seeking to supress the supply of car parking for residents of the site. This approach is considered to represent a progressive approach to reducing the reliance on private motor vehicle-based travel and is considered acceptable for the following reasons:

— The site is suitably located to take advantage of access to sustainable transport alternatives such as trains, trams, buses, cycling, walking and car share pods. This will enable future residents and visitors to travel to/from the site using sustainable forms of transport;

— The generous provision of bicycle parking will assist in encouraging the use of cycling as an alternative transport mode to the private motor vehicle;

— The site characteristics which encourage the use of alternative transport modes to the private motor vehicle is consistent with the various objectives outlined within Clause 18.02 of the Port Phillip Planning Scheme;

It is also noted that the number of parking spaces allocated to residents exceeds the proposed number of dwellings, thereby allowing at least one (1) space to be provided to each dwelling, in accordance with condition 17 within the existing permit for the site;

On the basis of the preceding discussion, it is considered that the proposed level of on-site car parking will be suitable to cater for the proposed development and act as an environmentally sustainable outcome.

5. Bicycle Parking Assessment

5.1. Clause 52.34 – Bicycle Parking Requirements

Clause 52.34 of the Port Phillip Planning Scheme sets out the statutory requirements to provide bicycle parking for new developments.

The statutory bicycle parking requirements for the proposed development are set out in Table 5.1.

Table 5.1: Statutory Bicycle Parking Requirements

Land Use	Size	User	Parking Rate	Parking Requirement
Dwelling	67 dwellings	Resident	In developments of four or more storeys, 1 space to each 5 dwellings	13 spaces
		Visitor	In developments of our or more storeys, 1 space to each 10 dwellings	7 spaces
Retail premises [1]	33 sqm	Employee	1 space to each 300 sqm of leasable floor area	0 spaces
		Customer	1 space to each 500 sqm of leasable floor area	0 spaces

[1] Food & drink premises is nested under retail premises in Clause 73.04-11 of the Port Phillip Planning Scheme.

Based on the above assessment, the amended application has a statutory requirement to provide a total of 20 bicycle parking spaces, including 13 spaces for residents and seven (7) spaces for visitors.

Shower / Change Room Requirements

In addition to the bicycle parking requirements outlined above, Table 2 & 3 within Clause 52.34-5 of the Port Phillip Planning Schemes requires that one (1) shower be provided for the first five (5) employee bicycle parking spaces and one (1) shower for each subsequent ten (10) employee bicycle parking spaces (if five (5) or more employee parking spaces are required). A change room or direct access to a communal change room must be provided for each shower.

As the site does not generate a statutory requirement to provide any on-site bicycle parking spaces for employees, there is no requirement to provide shower / change room facilities on-site.

Accordingly, the development proposal is not proposing to provide any shower / change room facilities on-site. This provision is consistent with the requirements of Clause 52.34-5 of the Port Phillip Planning Scheme and is considered acceptable.

5.2. Bicycle Parking Provision

It is proposed to provide a total of 86 bicycle parking spaces to meet the bicycle parking requirements of the proposed development.

A total of 70 bicycle parking spaces will be provided within a secure bicycle parking facility on basement 01, which is accessible via the ramp between the ground and basement levels. Within this provision, it is understood that two (2) spaces will be allocated to employees of the food & beverage tenancy and the balance of 68 spaces will be allocated to residents. This provision exceeds the statutory requirement for both employees and residents of the site and is considered an appropriate bicycle parking provision to encourage cycling as a mode of transport to/from the site.

A total of 16 visitor bicycle parking spaces will be provided, in various locations on ground level. The provision of 16 visitor bicycle parking spaces is more than double the statutory requirement for the site and is considered acceptable.

5.3. Bicycle Parking Layout

The bicycle parking spaces throughout the development will be provided as a mix of horizontal, vertical and two-tier horizontal spaces. The layout of the proposed bicycle parking spaces is described below.

Resident / Employee Spaces

70 bicycle parking spaces are proposed within a secure bicycle parking facility on basement 01.

Within this provision, 44 spaces are proposed within a two-tier horizontal arrangement (provided as Secureabike – Double height bike racks, or similar). Bicycle parking spaces are 2.0 metres long and 0.5 metres wide, accessed from a 2.0-metre-wide aisle, in accordance with AS2890.3:2015.

The remaining 26 spaces are proposed within a vertical arrangement (provided as Secureabike – Space Saver wall mounted rack or similar). Bicycle parking spaces are 1.2 metres long and 0.5 metres wide, accessed from a minimum 1.6-metre-wide aisle, in accordance with AS2890.3:2015.

Visitor Spaces

16 visitor bicycle parking spaces are proposed on ground level within a horizontal arrangement (provided as Arc de Triomphe style bicycle hoops or similar). Bicycle parking spaces are 1.8 metres long and 0.5 metres wide, accessed from a minimum 1.5-metre-wide aisle, in accordance with AS2890.3:2015.

Summary

The proposed bicycle parking provision seeks to provide 38 out of the total 86 spaces (i.e. 44% of spaces) within an at-grade horizontal arrangement, which exceeds the requirement outlined in AS2890.3:2015 that 20% of bicycle parking must be provided in a horizontal arrangement.

Accordingly, it is considered that bicycle parking spaces have been designed appropriately, in accordance with the relevant sections of AS2890.3:2015.

Representative bicycle parking equipment specifications are provided in Appendix B of this report.

5.4. Motorcycle Parking

The Port Phillip Planning Scheme does not outline any specific requirements for the provision of motorcycle parking spaces on-site. However, in order to provide viable alternatives to car-based travel, a total of five (5) motorcycle spaces are proposed within basement 01.

Motorcycle spaces are 1.2 metres wide and 2.6 metres long, in exceedance of the requirements of Figure 2.7 within AS2890.1:2004 and are therefore considered to be designed appropriately.

6. Access Arrangements & Car Parking Layout

6.1. Access Arrangements

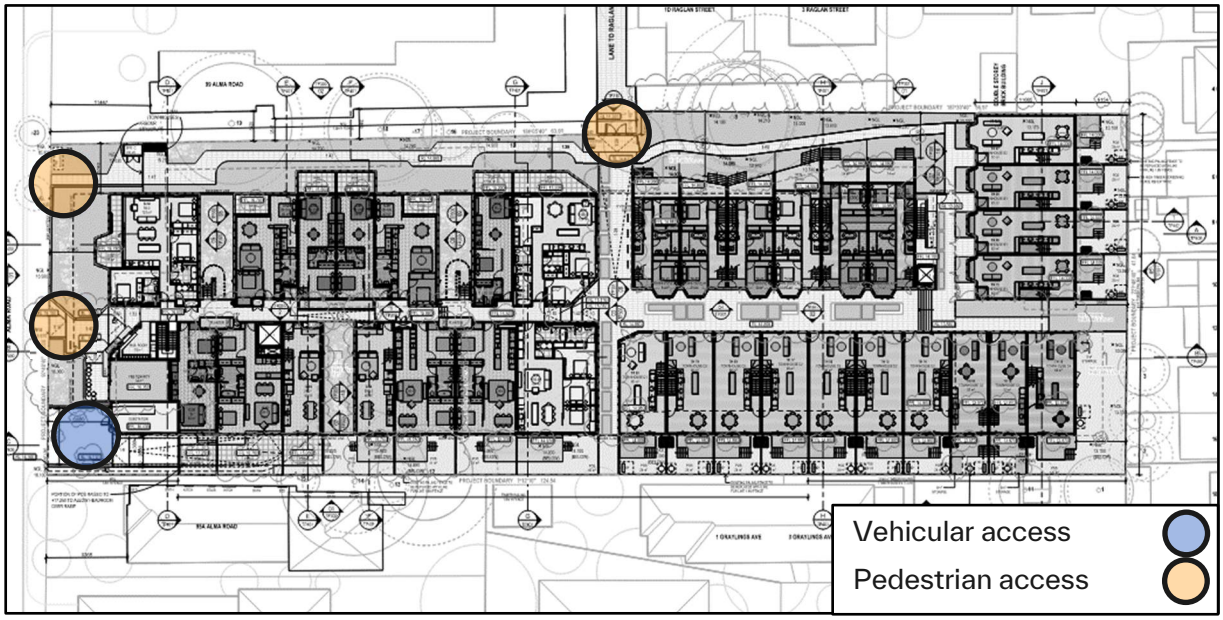
Pedestrian access to the site will be provided via connections to the existing footpath along Alma Road, provided midblock and in the northeast corner of the frontage to Alma Road. A pedestrian connection will also be provided midblock along the eastern site boundary, to/from the laneway that extends to Raglan Street.

Vehicular access to/from the basement car park will be provided via a reconfigured crossover to Alma Road in the northwest corner of the site. This crossover will be widened to 6.4 metres to provide access to a passing bay directly adjacent to the ramp on the eastern side and a 3.6-metre-wide ramp to/from the basement level.

It is noted that the existing crossover and access to existing car parking midblock along Alma Road will be reinstated as kerb and channel as part of the application.

The access arrangements are shown on the excerpt of the site plan in Figure 6.1.

Figure 6.1: Proposed Access Arrangements



(Source: Kerstin Thompson Architects Pty Ltd – GA Plan – Level Ground)

6.2. Car Park Layout

The proposed access arrangements and car parking layout have been assessed against the objectives and design requirements of Clause 52.06-9 of the Port Phillip Planning Scheme and relevant sections of AS/NZS 2890.1:2004 and AS/NZS 2890.6:2022.

Design Standard 1 – Accessways

Design Standard 1 of Clause 52.06-9 relates to the design of accessways. The requirements of Design Standard 1 are assessed against the proposal in

Table 6.1.

Table 6.1: Design Standard 1: Accessways

Requirement	Comments
Must be at least 3 metres wide.	Satisfied – Accessways have been designed with a minimum width of 3.0 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 – The accessways and internal layout have been designed to be at least 4.2 metres wide at all 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.	Not Applicable – The proposed car park will not be publicly accessible. Notwithstanding, the proposed car park has been designed to enable all vehicles to exit the site in a forward direction.
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheelbase of 2.8 metres.	Satisfied – A headroom of at least 2.2 metres will be provided along the ramp and within the basement car park.
If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	Not Applicable – Whilst the accessway serves more than four (4) car spaces, it does not connect to a road in a Transport Zone 2 or Transport Zone 3. Notwithstanding, all vehicles are able to exit the site in a forward direction.
Provide a passing area at the entrance at least 6.1m wide and 7m long if the accessway serves ten or more car parking spaces and is either more than 50m long or connects to a road in a Transport Zone 2 or Transport Zone 3.	Satisfied – Although the accessway serves more than ten (10) car parking spaces, it does not connect to a road in a Transport Zone 2 or Transport Zone 3 nor is it more than 50 metres before passing can occur. Notwithstanding, a passing area measuring 6.5 metres wide and 7.0 metres long is proposed at the site access on ground level.
Have a corner splay or area at least 50% clear of visual obstructions extending at least 2m along the frontage road from the edge of an exit lane and 2.5m 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.	Satisfied – Whilst not specifically notated on plans, adequate sight distance will be provided on both sides of the site access point.

If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway.	Not Applicable – Access to the car spaces is not from a road in a Transport Zone 2 or Transport Zone 3.
If entry to a car space is from a road, the width of the accessway may include the road.	Not Applicable – Car parking spaces are accessed from internal accessways and to directly to/from an adjacent road.

Design Standard 2 – Car Parking Spaces

Design Standard 2 of Clause 52.06-9 relates to the design of car parking spaces. The requirements of Design Standard 2 are assessed against the proposal in Table 6.2.

Table 6.2: Design Standard 2 – Car Parking Spaces

Requirement	Comments
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 of Design Standard 2.	Considered Satisfied – All standard car parking spaces generally are in accordance with the dimensional requirements set out in Table 2 of Design Standard 2. Standard car parking spaces are provided in either of the following: — 2.8 metres wide, 4.9 metres long and are accessed via a minimum 5.8-metre-wide aisle, or — 2.7 metres wide, 4.9 metres long and are accessed via a minimum 6.1-metre-wide aisle. It is noted that 6.1 metres is halfway between the 5.8 metre and 6.4 metre aisle widths outlined in Table 2. Similarly, 2.7 metres is halfway between the 2.6 metre and 2.8 metre space widths outlined in Table 2. Therefore, this combination is generally in line with Table 2 of Design Standard 2.
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 2.1 metres above the space.	Satisfied – The car parking spaces have been designed to accord with Diagram 1 of Design Standard 2. All car parking spaces adjacent to a wall have been provided with a minimum of 300mm clearance to that structure. All columns or solid structures adjacent to a car parking space are located between 250-1,250mm from the open end of the parking space or within 1,750mm from the closed end of the parking space.
Car spaces in garages must be at least 6 metres long and 3.5 metres wide for a single space and 5.5 metres wide for a double space measured inside the garage.	Not Applicable – No garages are proposed.
Where parking spaces are provided in tandem (one space behind the other) an additional	Satisfied – Tandem spaces have an additional 500mm in length between each space.

500mm in length must be provided between each space.	
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	Satisfied – All car parking spaces are undercover.
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.	Not Applicable – No parking spaces for people with disabilities are proposed.

Design Standard 3 – Gradients

Design Standard 3 of Clause 52.06-9 relates to the design of car parking spaces. The requirements of Design Standard 3 are assessed against the proposal in Table 6.3.

Table 6.3: Design Standard 3 – Gradients

Requirement	Comments
Accessway grades must not be steeper than 1:10 (10%) 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 average grade within the first 5 metres of the site frontage is considerably less than 1:10. Indeed, this section is almost 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 – The proposed gradients along the ramp to/from the basement car park are in accordance with Table 3 of Design Standard 3, with a maximum proposed gradient of 1:4.
Where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5%) for a summit grade change, or greater than 1:6.7 (15%) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming. Plans must include an assessment of grade changes of greater than 1:5.6 (18%) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority.	Satisfied – Appropriate transition sections have been provided to prevent scraping or bottoming.

The preceding assessment indicates that the access arrangements and car parking layouts have been designed in general accordance with the requirements of the Port Phillip Planning Scheme and/or the relevant AS2890 documents.

6.3. Swept Path Assessment

In addition to the above, an assessment of site access and circulation has been undertaken using the 'Autodesk Vehicle Tracking' software.

A swept path assessment has been undertaken for the largest vehicle anticipated to access the site, that being a 6.4-metre-long mini rear loader waste collection vehicle. The assessment demonstrates that the mini-rear loader can access the site via the proposed site access point, circulate the accessways within the basement car park and then depart the site to Alma Road in a forward direction. It is noted that the mini-rear loader is able to depart the site in the event that a vehicle is parked in the passing area on ground level.

A swept path has also been completed which demonstrates that a 99th percentile vehicle (B99 as defined by AS2890.1:2004) is able to turn into and park within the passing area on ground level. Once the ramp is clear, the B99 is able to circulate from the passing area to the ramp in a single manoeuvre.

Additionally, a swept path assessment has been undertaken demonstrating that an 85th percentile vehicle (B85 as defined by AS2890.1:2004) is able to enter/exit critical spaces within the site in a suitable manner. Some spaces may require a corrective manoeuvre, which is allowed for by Table 1.1 of AS2890.1:2004 for User Class 1A (residential, domestic and employee parking).

Each of the abovementioned swept paths are provided at Appendix C of this report.

6.4. Adequacy of Access Arrangements & Car Park Layout

Based on the preceding assessment, the proposed access arrangements and car park layout have been designed in appropriately, in accordance with the requirements outlined within Clause 52.06-9 of the Port Phillip Planning Scheme and/or relevant sections of the Australian Standards (AS2890 series).

7. Loading & Waste Collection

7.1. Statutory Requirement

Clause 65.01 'Decision Guidelines' of the Port Phillip Planning Scheme outlines the provision of loading requirements and states the following:

'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.'*

7.2. Loading Arrangements

The site will generate loading and unloading activities associated with deliveries to the food & beverage tenancy, which are expected to occur intermittently. Noting the size of this tenancy, it is expected that deliveries to the food & beverage tenancy will primarily be undertaken by vans or other small vehicles.

The development will also generate loading activities associated with move in / move out requirements for residents. Having regard for the size and type of the proposed dwellings, it is anticipated that the largest vehicle required for residential loading will be equivalent to a 6.4-metre-long small rigid vehicle (SRV as defined by AS2890.2:2018). It is acknowledged that on some occasions, residents may have larger furniture requirements and will therefore require a slightly larger truck to accommodate their move in / move out requirements.

Noting that the ramp between the ground and basement level has not been designed to accommodate service vehicles, loading activities will be undertaken within the on-street parking spaces along Alma Road. Given that on-street parking is provided on both sides of the carriageway, this arrangement is considered acceptable.

It is also noted that from a desktop review, the existing use on the site does not have a dedicated loading area. It is therefore assumed that all loading arrangements are accommodated on-street along Alma Road.

7.3. Waste Collection Arrangements

A waste management plan (WMP) has been prepared for the development by Ratio Consultants.

Two (2) dedicated waste rooms are proposed within the basement level. Based on details within the WMP, it is understood that waste collection will be undertaken by a private contractor, using a 6.4-metre-long rear-loader, twice per week.

It is understood that the waste contractor will wheel waste bins from the bin room to the waste collection vehicle for collection and return the bins to the bin room once collection is complete. As described above, the waste truck will access the site via the proposed site access point and circulate the basement car park to each of the bin rooms. Once collection is complete, the waste truck will complete a three-point turn and then depart the site to Alma Road in a forward direction.

A swept path assessment has been completed which demonstrates that each of the abovementioned movements can be completed suitably by a 6.4-metre-long mini rear loader.

7.4. Adequacy of Loading & Waste Collection

Having regard for the discussion presented above, the proposed loading and waste collection arrangements for the proposed development are considered to be acceptable.

The abovementioned swept path assessments are provided within Appendix C of this report.

8. Traffic Assessment

8.1. Traffic Generation

Residential

Traffic generation rates for residential developments are impacted by a range of factors including housing density, number of car parking spaces provided, availability to proximate alternate transport modes (including public transport services, bicycle network and car share facilities) and proximity to nearby activity centres or other retail facilities and services.

Based on the above discussion and the level of alternate transport amenity available to the site, it is assumed that each dwelling could be expected to generate in the order of three (3) vehicle trips per day. Typically, 10% of this traffic is expected during the AM and PM peak hour periods.

For the purpose of this assessment, a traffic generation rate of three (3) vehicle movements per day and 0.3 vehicle movements per hour during the AM and PM peak hour period has been adopted for each dwelling.

Typical splits between inbound and outbound vehicle movements in the AM and PM peak hour periods for residential traffic have been assumed as follows:

— AM Peak Period: 80% outbound / 20% inbound; and

— PM Peak Period: 40% outbound / 60% inbound.

Application of the preceding assumptions to the proposed 67 dwellings results in the following peak hour traffic generation estimates, as presented in Table 8.1.

Table 8.1: Estimated Traffic Generation – Residential

	AM Peak Hour	PM Peak Hour
Inbound	4 vph	12 vph
Outbound	16 vph	8 vph
Total	**20 vph**	**20 vph**

Food & Beverage Tenancy

A first principles assessment has been undertaken to estimate the traffic generation associated with the food & beverage tenancy.

It is proposed to provide one (1) car parking space on-site for the food & beverage tenancy. As noted previously in this report, it is expected that this parking space will be allocated to and used by an employee. Given this, it is assumed that the traffic generation will entirely be comprised by the employee arriving for work in the AM peak hour and leaving from work during the PM peak hour. This is considered a conservative assessment, as the traffic generation from this use does not typically coincide with the typical road network peak hours.

Accordingly, the anticipated traffic generation from the food & beverage tenancy is presented below in Table 8.2.

Table 8.2: Estimated Traffic Generation – Food & Beverage Tenancy

	AM Peak Hour	PM Peak Hour
Inbound	1 vph	0 vph
Outbound	0vph	1 vph
Total	**1 vph**	**1 vph**

Overall Traffic Generation

Based on the preceding assessment, a summary of the anticipated peak hour traffic generation from the overall development is presented in Table 8.3.

Table 8.3: Total Site Generation

	AM Peak Hour	PM Peak Hour
Inbound	5 vph	12 vph
Outbound	16 vph	9 vph
Total	**21 vph**	**21 vph**

The estimated site generated traffic volumes represent one (1) vehicle on the surrounding road network approximately every three (3) minutes during the AM and PM peak hour periods. This is a relatively low level of traffic from a transport engineering perspective.

8.2. Traffic Impact

The anticipated site generated traffic will enter/exit the site via the proposed site access point to/from Alma Road. Having regard for the configuration of the surrounding arterial road network, it is evident that the site is located in close proximity to Dandenong Road and Nepean Highway, which provide east/west and north/south connections to/from the site respectively.

On this basis, it is expected that the traffic generated by the proposed development will be evenly dispersed on the surrounding road network in each direction, with the specific choice of route depending on the origin and destination of the trip to/from the subject site. It is noted that the surrounding arterial road network is highly permeable, which will reduce the increase in volumes on any one road.

Furthermore, as discussed previously, the estimated overall site generated traffic volumes represent approximately one (1) vehicle movement on the surrounding road network approximately every three (3) minutes.

To understand existing traffic volumes in the vicinity of the subject site, Ratio Consultants has sourced SCATS data from the nearby Alma Road / Chapel Street intersection. Given that this intersection is located approximately 180 metres west of the subject site, it is considered to represent an appropriate estimation of the existing traffic volumes along Alma Road, travelling past the site during the AM and PM peak hour periods.

SCATS data was sourced over a weeklong period, commencing Monday 10 October 2022. The peak hour traffic volumes from this assessment are presented in Table 8.4.

Table 8.4: Existing Traffic Volumes – Alma Road

	Eastbound Traffic [1]	Westbound Traffic
AM Peak Hour	341 vph	423 vph
PM Peak Hour	409 vph	351 vph

[1] For each of the shared through / turn lanes at the Chapel Street / Alma Road intersection, an 80:20 split between through / turning traffic has been assumed for the purpose of this assessment.

Having consideration to the above assessment, the site generated traffic volumes are in the order of 3% of the existing traffic volumes along Alma Road. It is therefore considered that the estimated site generated traffic represents a relatively low level of traffic in the context of the surrounding road network. It is also noted that the existing traffic associated with the operation of Fitness First and Kingswim is captured within the existing traffic volumes. Therefore, the preceding assessment is considered to be conservative on the high side.

Accordingly, it is considered that the expected increase in traffic volume associated with the development proposal can readily be accommodated along Alma Road and the existing surrounding road network in a safe and satisfactory manner without creating any adverse traffic safety or operational impacts.

8.3. Single Width Ramp

To assess the impact of two-way traffic on a single width carriageway within the proposed ramp between ground and basement level, reference has been made to Clause 3.2.2 of AS2890.1:2004, which specifies:

"As a guide, 30 or more movements in a peak hour (in and out combined) would usually require provision for two vehicles to pass on the driveway, i.e. a minimum width of 5.5 metres."

With regard to the above, the proposed ramp between ground and basement level is expected to carry a maximum of 21 vehicle movements during the AM and PM peak hour periods.

Furthermore, it is proposed that a traffic light system will be provided on-site at the top and bottom of the ramp connecting the ground and basement levels, to control vehicle movements to/from the site. It is understood that residents / employees will have a clicker in their vehicle that will allow them to request a green light when entering / exiting the site.

On this basis, the proposed single-width ramp is expected to operate appropriately under post development conditions.

9. Conclusion

The application proposes to provide a total of 67 dwellings on the subject site, comprising the following typologies:

— 47 apartments, comprising:

- Ten (10) x one-bedroom apartments;
- 24 x two-bedroom apartments; and
- 13 x three-bedroom apartments.

— 20 x three-bedroom townhouses; and

— Food & beverage tenancy on ground level with a total floor area of 33 sqm.

It is proposed to provide 74 car parking spaces and 86 bicycle parking spaces on-site to meet the parking needs of the proposed development.

Based on the foregoing assessment, it is concluded that:

— The proposed development generates a statutory requirement to provide a total of 101 car parking spaces on-site;

— It is proposed to provide 74 car parking spaces on-site, which represents a shortfall of 27 spaces against the statutory requirements;

— The existing site land uses (gymnasium) has an estimated existing car parking deficiency of up to 35 spaces and therefore the proposed demolition of the existing uses is likely to result in a net increase in on-street car parking availability;

— It is proposed to allocate one (1) car parking space to the food & beverage tenancy. This provision is in accordance with the statutory requirement for this use and is therefore considered acceptable;

— The balance of 73 parking spaces will be allocated to residents;

— Based on an assessment of historical car ownership data within St Kilda East, the site is expected to generate a car parking demand of up to 85 spaces;

— The proposed provision of 73 spaces for residents of the site therefore represents a shortfall of 12 spaces against the anticipate car parking demand. The site is therefore taking a progressive approach toward supressing car usage, which is considered suitable for the following reasons:

- The site has excellent access to sustainable transport alternatives such as trains, trams, buses, cycling, walking and car share pods. Therefore, future residents will not require a high dependence on their private motor vehicle;
- The bicycle parking provision for residents is three (3) times higher than the statutory requirement, which will encourage cycling as a mode of travel to/from the site and assist in facilitating lower car ownership;
- The sought car parking strategy is consistent with the various objectives outlined within Clause 18.02 of the Port Phillip Planning Scheme; and

- Based on 2016 Census data, there is existing precedent within the suburb of St Kilda East and the broader Port Phillip municipality for residents of each proposed dwelling type owning less vehicles than is required by Clause 52.06.

— It is proposed to provide a total of 86 bicycle parking spaces on-site, including 70 spaces within a secure parking facility on basement level for residents and employees and 16 spaces on ground level for visitors of the site. This provision exceeds the statutory requirement for the site and is therefore considered to be acceptable bicycle parking that will encourage cycling as a mode of transport;

— The proposed bicycle parking layout has been designed in accordance with the requirements of the Australian Standard AS2890.3:2015;

— The proposed access arrangements are considered to be designed appropriately to accommodate the largest vehicle accessing the basement car park (a 6.4 mini rear loader) in a suitable manner;

— The proposed car parking layout has been designed in accordance with the requirements of Design Standard 1, 2 and 3 within Clause 52.06 of the Port Phillip Planning Scheme and/or the relevant sections of the Australian Standards (AS2890 series);

— The loading & waste collection arrangements for the proposed development are considered to be acceptable;

— The proposal is estimated to generate in the order of 21 vehicle movements during the AM and PM peak hour periods; and

— The site generated traffic is considered a relatively low level of traffic. On the basis of the discussions presented in this report, it is expected that the site generated traffic can be readily accommodated by the existing surrounding road network in a safe and satisfactory manner without creating adverse traffic safety or operational impacts.

On the basis of the assessment above, the proposed development is considered to be acceptable from a transport engineering perspective and will not result in any adverse traffic or parking impacts in the area.

Appendix A Proposed Architectural Plans

TP DEVELOPMENT SUMMARY*

SITE	m2
Site Area	**4,997**
Garden Area	**1,806**
Garden Area as percentage of Site Area	**36%**
Site Coverage Area	**2,982**
Site Coverage Area as percentage of Site Area	**60%**
Permeable Area	**1,153**
Permeable Area as percentage of Site Area	**23%**

OPEN SPACE	
Outdoor Communal Open Space required	**117.5m²**
Outdoor Communal Open Space provided	**118m²**

DEEP SOIL PLANTING & TREE CANOPY COVER	
Deep Soil Planting Area required	**750m²**
Deep Soil Planting Area provided	**948m²**
Tree Canopy Cover Area required	**850m²**
Tree Canopy Cover Area provided	**1008m²**

PARKING

CAR PARKING	
Car Spaces (Housing Use)	**73**
Car Spaces (Non-Housing Use)	**1**
Total	**74**

MOTORBIKE PARKING	
Motorbike Spaces (Housing Use)	**5**
Total	**5**

BICYCLE PARKING	
Residents Bicycle Spaces	**68**
Staff Bicycle Spaces	**2**
External Visitor Bicycle Spaces	**16**
Total	**86**

NON-RESIDENTIAL USES	
F&B Tenancy	**33m²**

APARTMENT TYPES AND NUMBERS

Apartment Type	Sub-Type	Apt No.	Unit Size	Comments	No.	%
One-Bedroom	1B-1	G.03	60m²		1	
	1B-2(A)	G.06	58m²		1	
	1B-2(B)	G.07	58m²		1	
	1B-2(C)	3.06	58m²		1	
	1B-2(D)	3.07	58m²		1	
	1B-3	G.09	60m²		1	
	1B-4(A)	2.01, 3.01	60m²		2	
	1B-4(B)	2.11, 3.10	60m²		2	
Total 1B ALL					**10**	**21.3%**
Two-Bedroom	2B-1	G.02	85m²		1	
	2B-2	1.02, 2.02, 3.02	81m²		3	
	2B-3(A)	G.05, 1.04, 3.05	80m²	Accessible (ADGV**)	3	
	2B-3(B)	2.05	83m²	Accessible (ADGV**)	1	
	2B-4(A)	G.08, 1.07, 2.08	82m²	Accessible (ADGV**)	3	
	2B-4(B)	2.06	84m²	Accessible (ADGV**)	1	
	2B-5	G.12, G.13	89m²	Accessible (ADGV**)	2	
	2B-6(A)	1.11, 2.09	86m²	Accessible (ADGV**)	2	
	2B-6(B)	1.12, 2.10, 3.09	86m²	Accessible (ADGV**)	3	
	2B-7			No longer in use		
	2B-8			No longer in use		
Total 2B ALL					**19**	**40.4%**
Two-Bedroom Duplex	2BD-1	G.01	109m²		1	
	2BD-2	G.14	108m²		1	
	2BD-3(A)	1.05	102m²		1	
	2BD-3(B)	1.06	102m²		1	
	2BD-4	1.08	112m²		1	
Total 2BD ALL					**5**	**10.6%**
Three-Bedroom	3B-1			No longer in use		
	3B-2	G.04, 1.03	123m²	Accessible (ADGV**)	2	
	3B-3	2.04	123m²	Accessible (ADGV**)	1	
	3B-4	3.04	132m²	Accessible (ADGV**)	1	
	3B-5	G.10	124m²	Accessible (ADGV**)	1	
	3B-6	1.09	124m²	Accessible (ADGV**)	1	
	3B-7	2.07	139m²	Accessible (ADGV**)	1	
	3B-8	G.11	124m²	Accessible (ADGV**)	1	
	3B-9	1.10, 2.08	118m²	Accessible (ADGV**)	2	
	3B-10	1.02	138m²	Accessible (ADGV**)	1	
	3B-11	2.03	138m²	Accessible (ADGV**)	1	
	3B-12	3.03	146m²	Accessible (ADGV**)	1	
	3B-13			No longer in use		
	3B-14			No longer in use		
Total 3B ALL					**13**	**27.7%**
Total Apartments					**47**	**100%**
Total ADGV Accessible					**28**	**60%**

TOWNHOUSE TYPES AND NUMBERS

Apartment Type	Sub-Type	TH No.	Unit Size***	No.
East Block	A1	TH 01	171m²	1
	A1	TH 02	168m²	1
	A1	TH 03	168m²	1
	A2	TH 04	181m²	1
	A3	TH 05	191m²	1
	A3	TH 06	195m²	1
Total A				**6**
South Block	B1	TH 10	168m²	1
	B1	TH 09	164m²	1
	B1	TH 08	164m²	1
	B2	TH 07	177m²	1
Total B				**4**
West Block	C1	TH 20	166m²	1
	C2	TH 14-19	157m²	6
	C3	TH 12-13	146m²	2
	C4	TH 11	137m²	1
Total C				**10**
Total Townhouses				**20**

General Notes:

*Residential NSA and commercial GLA areas have been calculated in accordance with the Property Council of Australia Method of Measurement. All figures are preliminary and are subject to Planning Approval.
**ADGV - Apartment Design Guidelines for Victoria Feb 2021
***excludes basement TH stairs and voids

No.	Date	Description
4	03.07.2024	Amended TP Submission for VCAT

TOWN PLANNING
NOT FOR CONSTRUCTION

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KTA
Kerstin Thompson Architects Pty Ltd
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6 Lothian St, North Melbourne VIC 3051
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kta@kerstinthompson.com
www.kerstinthompson.com

DRAWING TITLE
DEVELOPMENT SUMMARY

PROJECT
97 Alma Road
AT St Kilda East
FOR Neometro

DATE	DRAWN BY	DRAWING NO.	REV.
03.07.2024	KTA	TP001	4
SCALE (A1)	PROJECT 2202		

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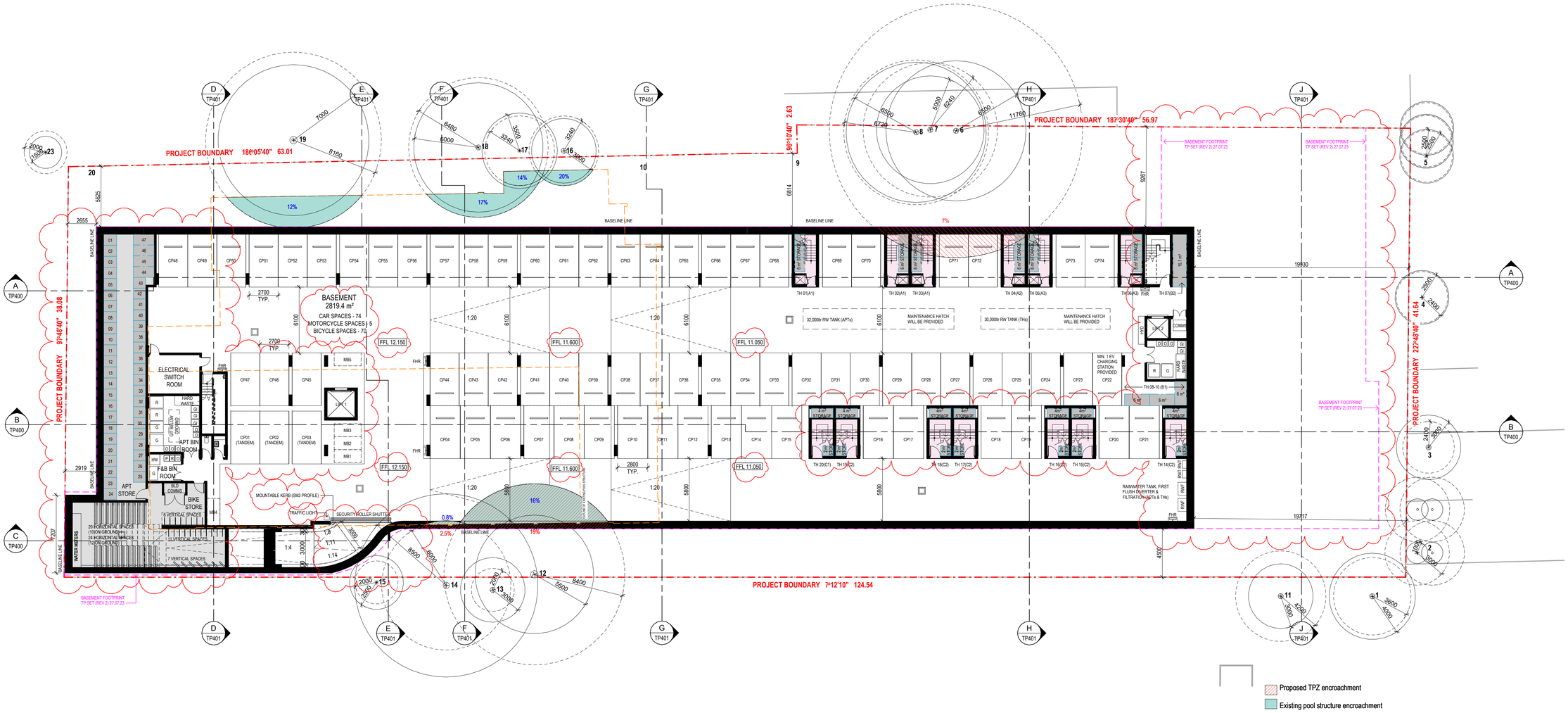

GA PLAN - BASEMENT B1
SCALE 1 : 200

Document Set ID: 8249558
Version: 1, Version Date: 14/08/2024

GENERAL NOTES

SURVEY:
EXISTING SITE INFORMATION IS TAKEN FROM VERIS SURVEY NUMBER 303981-BG DATED 05/07/2023 AND IS PROVIDED HERE FOR ILLUSTRATIVE PURPOSES ONLY. FOR FULL SURVEY DETAILS REFER TO SURVEY DOCUMENTS PROVIDED WITHIN APPENDICIES.

LANDSCAPE DESIGN:
LANDSCAPE DESIGN IS SHOWN INDICATIVELY. FOR FULL LANDSCAPE DETAILS REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION.

EXISTING TREE WITHIN PROJECT BOUNDARY TO BE RETAINED.
TREE NUMBER, TPZ AND CANOPY AS PER ARBORIST REPORT

ABBREVIATIONS

AC	AIR CONDITIONING CONDENSER UNIT
COM	COMMS RISER
CL	CLOTHES LINE
ELEC	ELECTRICAL RISER
FEX	FIRE EXTINGUISHER
FFL	FINISHED FLOOR LEVEL
FHR	FIRE HOSE REEL
FHY	FIRE HYDRANT
FIP	FIRE INDICATOR PANEL
HP	HOT WATER PUMP
HYDR	HYDRAULIC RISER
HW	HOT WATER UNIT
NGL	NATURAL GROUND LEVEL
REF	REFRIDGERANT RISER
RL	RELATIVE LEVEL
OW	OPERABLE WINDOW
PV	PV PANEL
RFL	ROOF LIGHT

MATERIALS

BRK1	BRICK WORK
BRK2	HIT & MISS BRICK WORK
BRK3	GLAZED BRICK
CON1	CONCRETE PLANTER
FCS1	PAINTED FIBRE CEMENT SHEET
TL1	EXTERNAL TILE
SC1	SUN SHADESCREEN
GL1	DOUBLE GLAZING - CLEAR
GL2	REEDED GLAZING
MS1	TENSILE WIRE CABLES
MS2	MESH FENCING
MT1	ALUMINIUM (POWDERCOATED DULL BRONZE)
MT2	ALUMINIUM CANOPY (POWDERCOATED GREEN)
MT3	PERFORATED ALUMINIUM CLADDING (POWDERCOATED DULL BRONZE)
SR1	SAFETY GUARD RAIL
SC1	SUNSHADE SCREEN (GREEN)
ACP1	ACOUSTIC WALL PANEL
TM1	PAINTED TIMBER SCREEN
TL1	TILE (GREEN)

ESD:
1. THE PROJECT ACHIEVES A TOTAL BESS SCORE OF 73% WITH NO MANDATORY CATEGORY (EQ, ENERGY, WATER, STORMWATER) BELOW 50%.
2. 100% (47 OUT OF 47) OF THE DEVELOPMENT'S APARTMENTS AND 100% (20 OUT OF 20) OF THE DEVELOPMENT'S TOWNHOUSES ARE NATURALLY CROSS-VENTILATED.
3. DAYLIGHT MODELLING HAS BEEN CONDUCTED FOR A REPRESENTATIVE SAMPLE OF APARTMENTS. THE SUMMARY RESULT IS AS FOLLOWS:
• 85% OF LIVING FLOOR AREA ACHIEVES >60% ABOVE DF 1
• 88% OF BEDROOM FLOOR AREA ACHIEVES >90% ABOVE DF0.5
4. THE NON-RESIDENTIAL AREAS ARE TARGETING A 2% UP TO 40% OF THE NOMINATED AREA.
5. 38% (18 OUT OF 47) OF APARTMENTS ACHIEVE AT LEAST 3 HOURS OF SUNLIGHT.
6. THE DEVELOPMENT IS PROVIDED WITH A COMPREHENSIVE SHADING STRATEGY.
7. THE DEVELOPMENT IS TO ACHIEVE A 7.5 STAR AVERAGE NATHERS ENERGY RATING RESULT FOR THE APARTMENTS AND A 7.0 STAR AVERAGE NATHERS ENERGY RATING RESULT FOR THE TOWNHOUSES.
8. THE NON-RESIDENTIAL AREAS AIM TO REDUCE HEATING AND COOLING ENERGY CONSUMPTION BELOW THE REFERENCE CASE (BCA SECTION J 2019).
9. THE DEVELOPMENT IS TO UTILISE ELECTRIC HEAT PUMP HOT WATER SYSTEM.
10. A 9.6KW SOLAR PV SYSTEM IS TO BE LOCATED ON THE ROOF OF THE APARTMENT BUILDING.
11. A 2KW SOLAR PV SYSTEM IS TO BE PROVIDED FOR EACH TOWNHOUSE.
12. INDIVIDUAL COLD WATER AND ELECTRICITY METERS WILL BE PROVIDED TO THE APARTMENTS, TOWNHOUSES AND COMMUNAL AREAS.
13. WATER EFFICIENT FITTINGS AND FIXTURES ARE APPLIED THROUGHOUT.
14. A 32,000-LITRE RAINWATER TANK AND A 30,000-LITRE RAINWATER TANK WILL HARVEST RAINWATER FROM THE APARTMENT ROOF AND TOWNHOUSE ROOFS RESPECTIVELY. THESE TANKS WILL BE CONNECTED TO ALL TOILETS.
15. A MELBOURNE STORM RATING OF 108% IS ACHIEVED.
16. ALL LANDSCAPING IS TO BE NATIVE SPECIES OR LANDSCAPING IRRIGATION IS TO BE CONNECTED TO THE RAINWATER TANK ONLY.
17. A MINIMUM OF 67 BICYCLE SPACES ARE TO BE PROVIDED FOR RESIDENTS.
18. IN TOTAL 2 BICYCLE SPACES ARE TO BE PROVIDED FOR STAFF.
19. IN TOTAL 14 BICYCLE SPACES ARE TO BE PROVIDED FOR RESIDENTIAL VISITORS; AND 2 BICYCLE SPACES ARE TO BE PROVIDED FOR NON-RESIDENTIAL VISITORS.
20. ONE CHARGING POINT FOR ELECTRICAL VEHICLES IS INTEGRATED IN THE PROPOSED DEVELOPMENT.
21. 140M2 OF COMMUNAL SPACE (INCLUDING CLOTHES LINE) WILL BE PROVIDED AT THE APARTMENT BUILDING ROOFTOP DECK.
22. 27M2 OF COMMUNAL FOOD PRODUCTION AREA WILL BE PROVIDED.

REFER TO ESD CONSULANTS DOCUMENTATION FOR FULL DETAILS.

No.	Date	Description
4	03.07.2024	Amended TP Submission for VCAT

TOWN PLANNING

NOT FOR CONSTRUCTION

0 2 4 m

KTA

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6 Lothian St, North Melbourne VIC 3051
T **+61 3 8662 8800**
kta@kerstinthompson.com
www.kerstinthompson.com

DRAWING TITLE
GA PLAN - LEVEL BASEMENT B1

PROJECT
97 Alma Road
AT St Kilda East
FOR Neometro

DATE	DRAWN BY	DRAWING NO.	REV.
03.07.2024	KTA	TP1B1	4
SCALE	PROJECT		
As indicated(A1)	2202		

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GA PLAN - LEVEL GROUND
SCALE 1 : 200

GENERAL NOTES

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TPZ
CANOPY
12

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TREE NUMBER, TPZ AND CANOPY AS PER ARBORIST REPORT

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No.	Date	Description
4	03.07.2024	Amended TP Submission for VCAT

TOWN PLANNING
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DRAWING TITLE
GA PLAN - LEVEL GROUND

PROJECT
97 Alma Road
AT St Kilda East
FOR Neometro

DATE	DRAWN BY	DRAWING NO.	REV.
03.07.2024	KTA	TP100	4
SCALE	PROJECT		
As indicated(A1)	2202		

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Appendix B Bicycle Parking Specifications

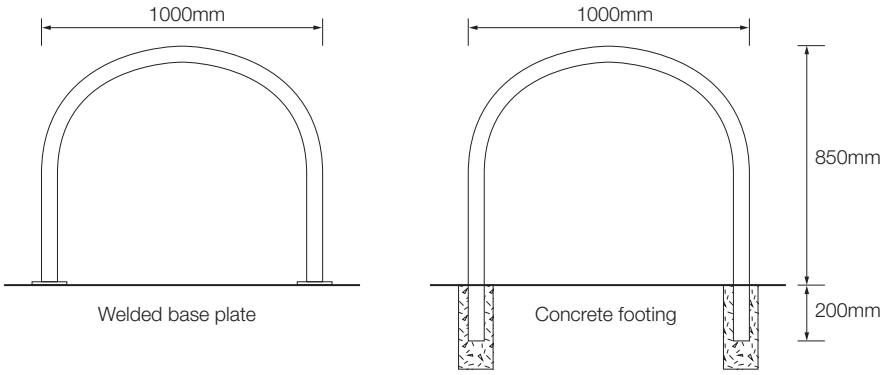
Arc de Triomphe™

Galvanised finish / Stainless Steel finish

Features

- Each rail supports two adult bikes in an upright position
- Can be either bolted to a concrete slab or concreted in situ
- Available in stainless steel or galvanised steel
- Provides the ability to lock both wheels and frame
- Suitable for foyers and entry areas

Dimensions



Specifications

Material options

- Galvanised (Duragal)
- 316 Marine grade stainless steel

Fixing options

- Welded flange - Bolt on
- In situ

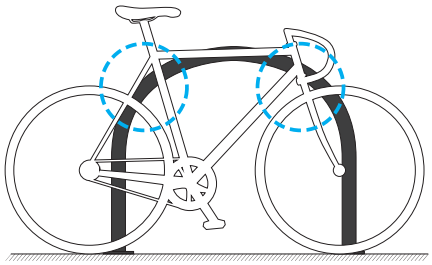
Recommended fasteners

- Galvanised Dynabolts (M10 x 65mm)
- Stainless Dynabolts (M10 x 65mm)
- Shear Nut security fasteners

Dimensions

1000mm [w] x 850mm [h]

Locking Points



BICYCLE NETWORK BIKE PARKING

DESIGN. SUPPLY. INSTALL.

Bicycle Network ABN 41 026 835 903

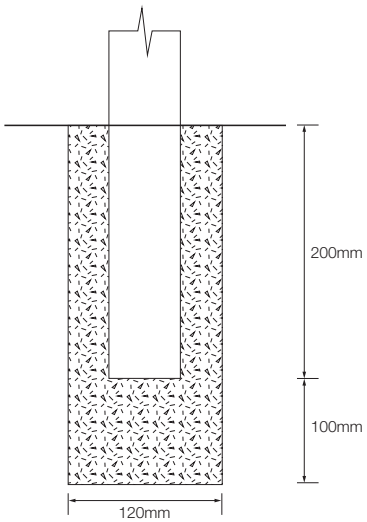
p. 1300 727 563 e. parking@bicyclenetwork.com.au bikeparking.com.au

VIC Level 4, 246 Bourke Street, Melbourne VIC 3000 NSW 234 Crown Street, Darlinghurst NSW 2010

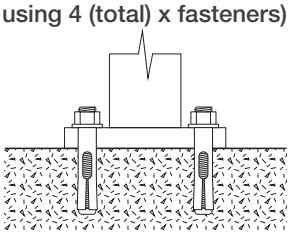
TAS 210 Collins Street, Hobart TAS 7000 NT Suite 5, 18-20 Cavenagh Street, Darwin 0800

Fixing options

In situ (Concrete footing)

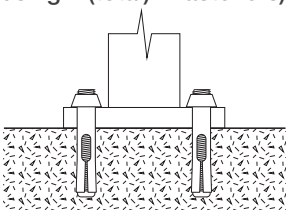


Welded flange (Bolt on)
using 4 (total) x fasteners)



Shown with M10 x 65mm fastener

Welded flange (Security heads)
using 4 (total) x fasteners)

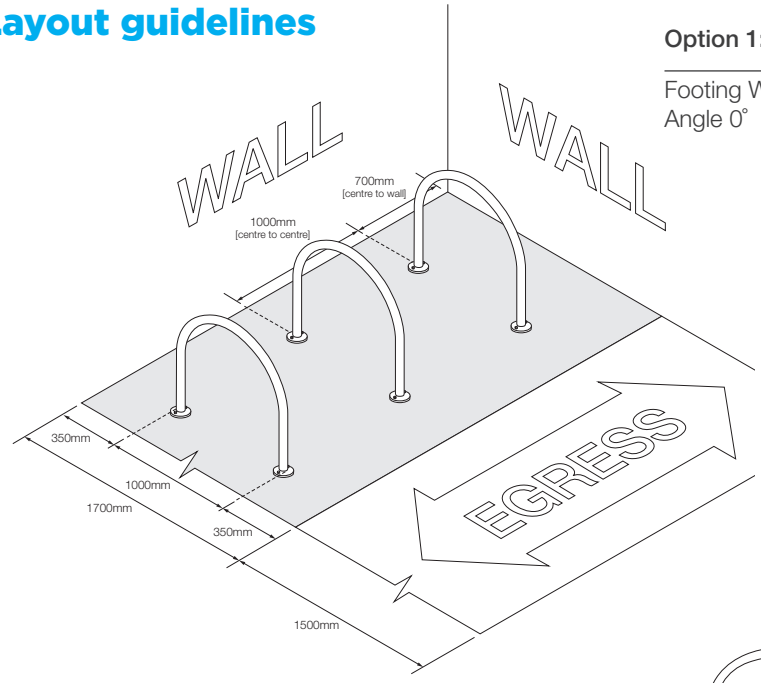


Shown with M10 x 65mm Shear Nuts

Layout guidelines

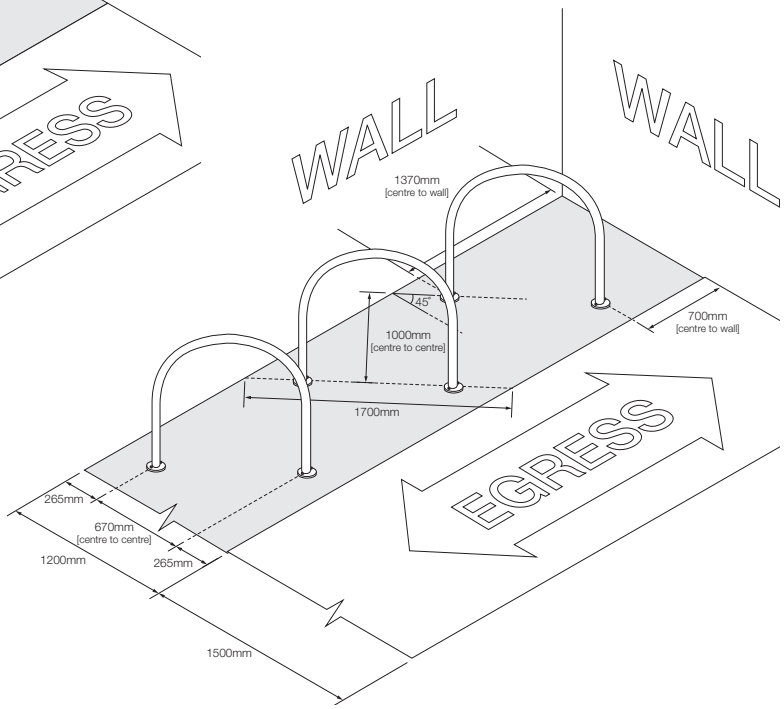
Option 1:

Footing Width 1700mm
Angle 0˚

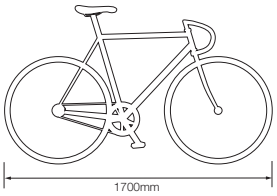


Option 2:

Footing Width 1200mm
Angle 45˚



Typical Bicycle Length



BICYCLE NETWORK BIKE PARKING

DESIGN. SUPPLY. INSTALL.

Bicycle Network ABN 41 026 835 903
p. 1300 727 563 e. parking@bicyclenetwork.com.au bikeparking.com.au
VIC Level 4, 246 Bourke Street, Melbourne VIC 3000 NSW 234 Crown Street, Darlinghurst NSW 2010
TAS 210 Collins Street, Hobart TAS 7000 NT Suite 5, 18-20 Cavenagh Street, Darwin 0800

Bicycle Racks > Horizontal

CBR2GS
Dual Height

2 BIKE PARKING

Gas Strut Lift

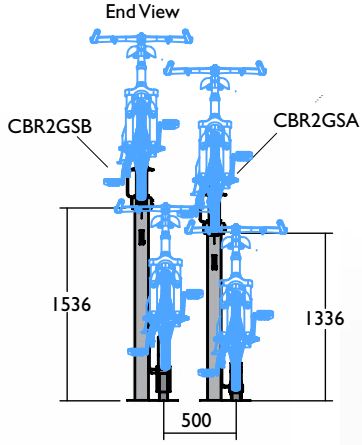
CBR2GSA top tier 1336mm high
CBR2GSB top tier 1536mm high
So you can stagger heights, be sure to nominate the quantity of each required.

Provides the maximum utilisation of allocated horizontal storage and parking, and is easy to use.
Simply pull out the sliding base rail until it reaches its pivot point, and fold down to allow easy positioning of your bicycle.

ASSISTED LIFT

PLEASE NOTE:
This product comes in galvanised finish as standard. However, it can be powder coated in a range of colours at an additional cost to suit requirements.

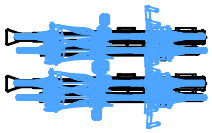
End View



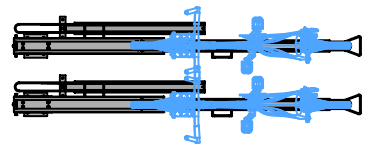
Supplied in knock-down kit form for easy assembly on site.

Each CBR2GS rack can park a single bicycle on the upper and lower levels for a total of 2 bicycles.

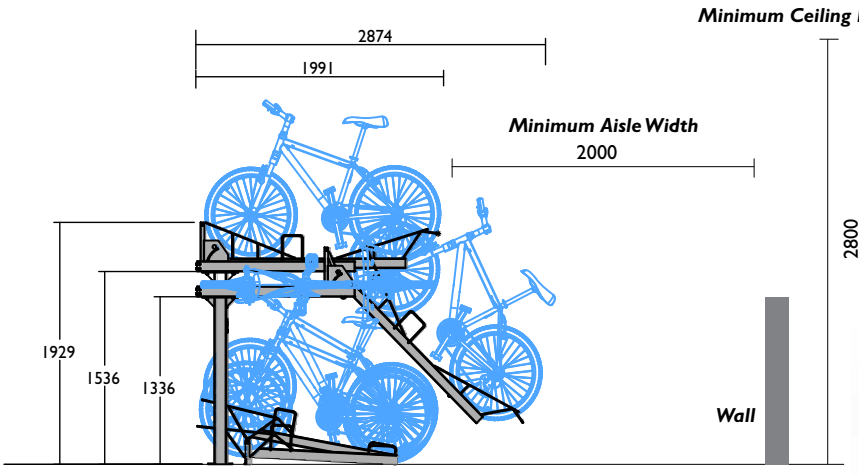
Top View



Top View



AS2890.3 COMPLIANT



CBR2GS is also available in a double storey locker. Refer ***Lockers*** section.

Material Specifications (General)
Frame 125 x 75 x 3mm RHS / Hot dipped galvanised

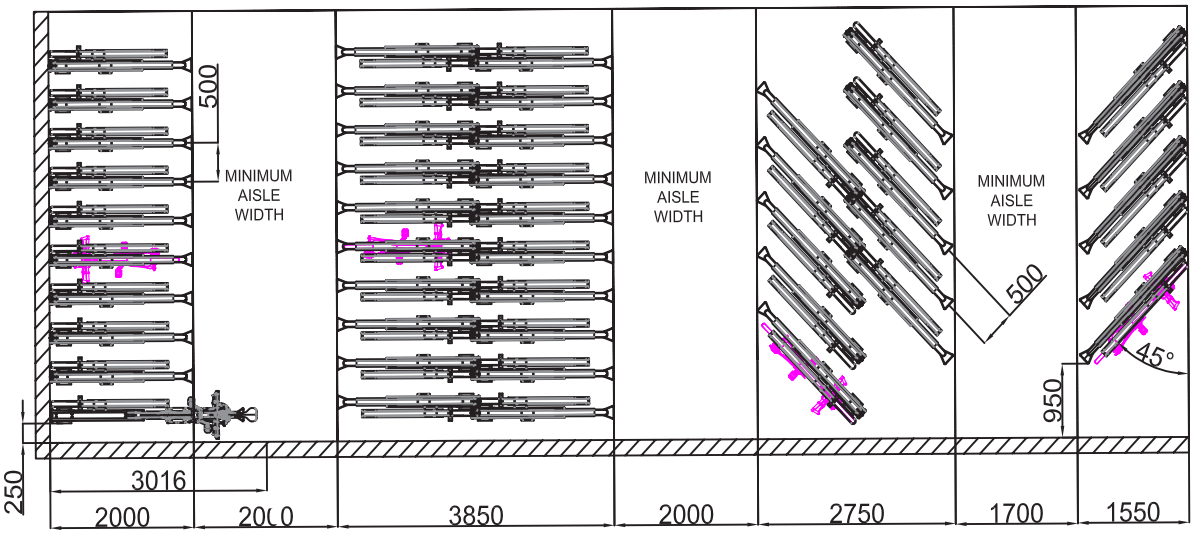
SECURITY CLASS 3

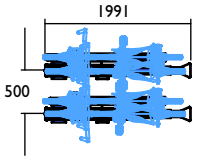
CBR2GS
Dual Height

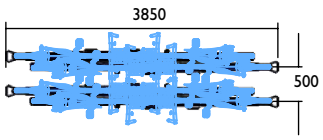
Installation layouts

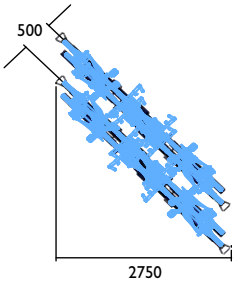
Securabike offers a free design and layout service to assist architects and builders.
Alternativly you can also use the information below to plan the best use of the space available for bicycle parking.
The CBR2GS system is designed to maximise the number of bicycles that can be accommodated.

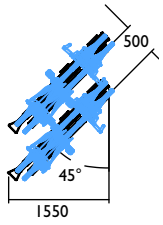
Racks can be angled for smaller width rooms



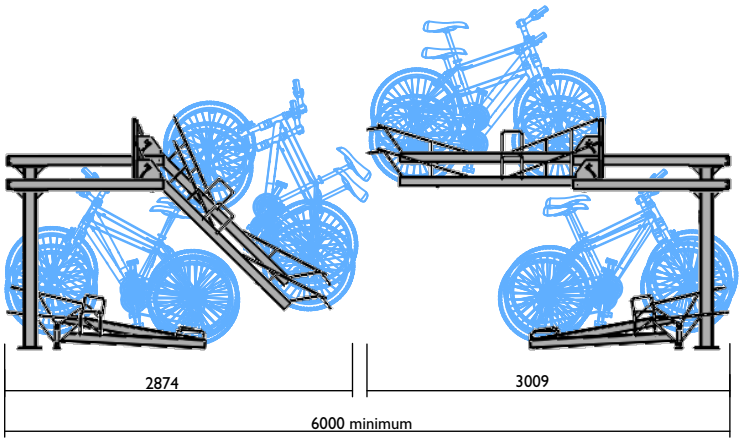








Double Installation with Aisle



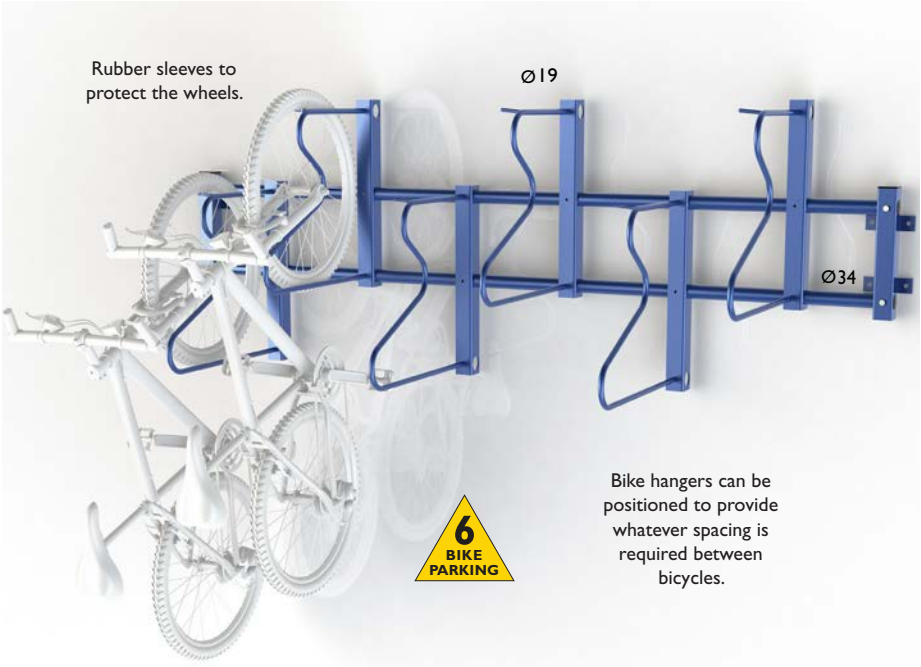
Ebikes can be parked in lower levels ONLY

Material Specifications (General)
Frame 125 x 75 x 3mm RHS / Hot dipped galvanised

BRV6WM
Wall Mount

Space Saver Rack
Wall mounted single sided. Versatility of the design allows to park more bikes in allocated area.

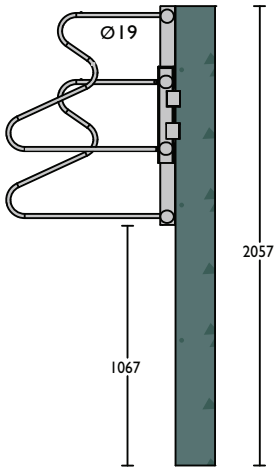
Comes in flat pack for easy assembly onsite & reduced transportation costs.



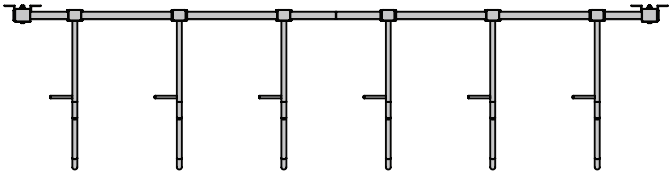
PLEASE NOTE:
This product comes in galvanised finish as standard. However, it can be powder coated in a range of colours at an additional cost to suit requirements.

NEW SPACE SAVER RACK

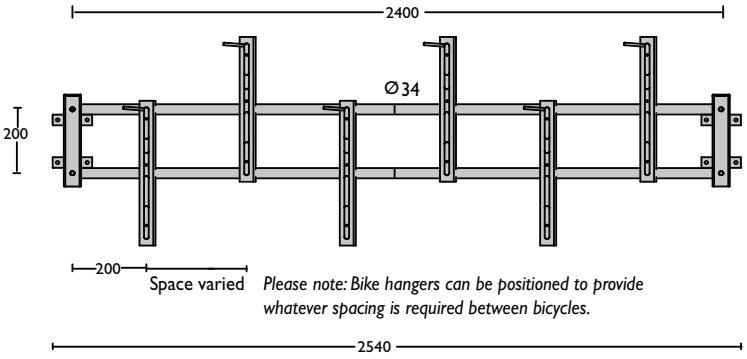
Side View



Top View



Front View

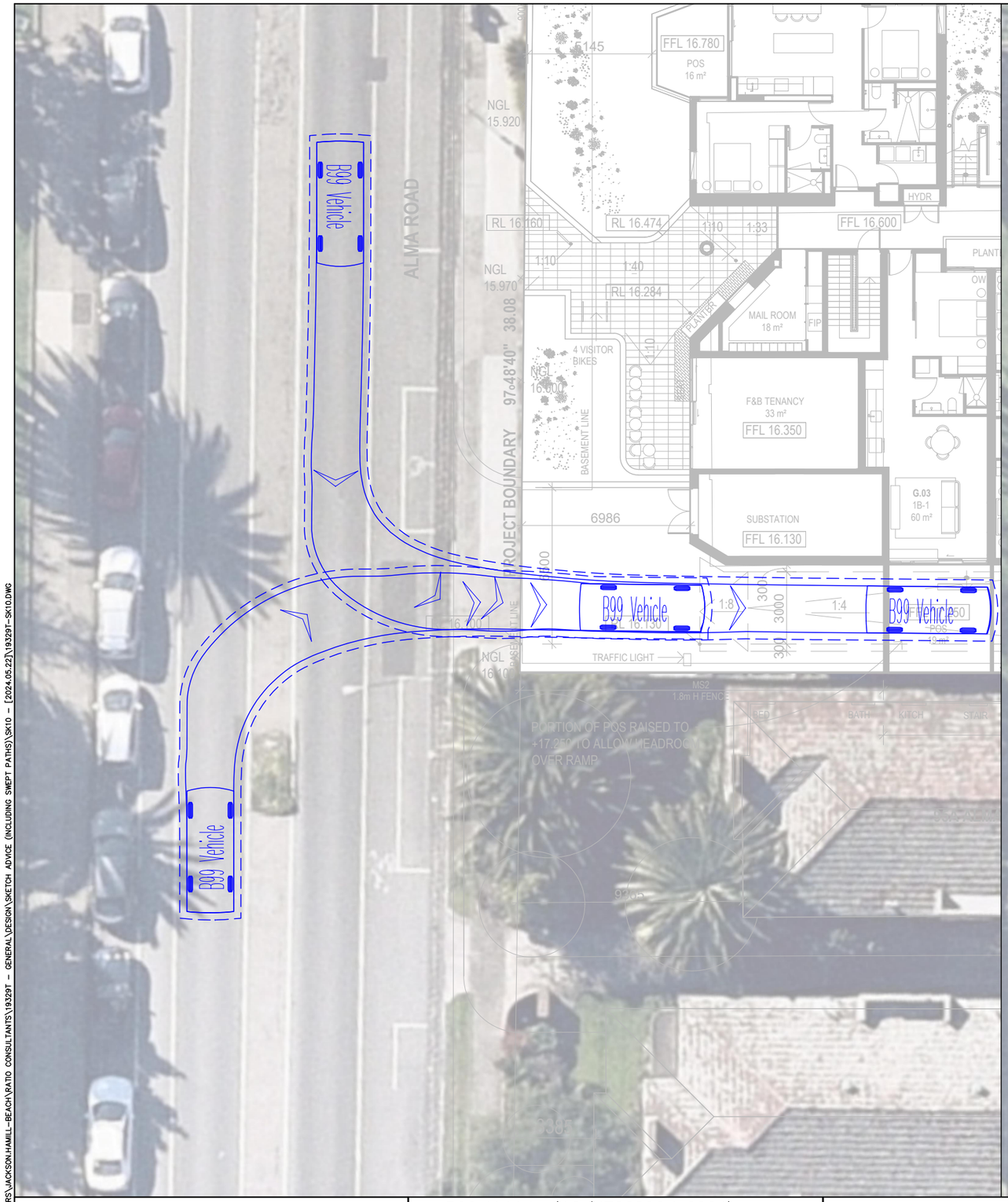


Please note: Bike hangers can be positioned to provide whatever spacing is required between bicycles.

Material Specifications (General)
34 x 3mm Beam / 60 x 30 x 2mm Angle
19 OD x 1.2mm Rail / Hot dipped galvanised

SECURITY CLASS 3

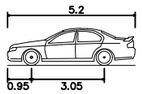
Appendix C Swept Path Assessment



ratio:

RATIO CONSULTANTS PTY LTD
ABN 005 422 104
8 GWYNNE STREET
CREMORNE, VICTORIA 3121
TELEPHONE (03)9429 3111
FACSIMILE (03)9429 3011

B99 Vehicle (AS/NZS2890.1:2004)



VEHICLE ENVELOPE (FORWARD)
300mm CLEARANCE (FORWARD)
VEHICLE ENVELOPE (REVERSE)
300mm CLEARANCE (REVERSE)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	2.200m
Min Body Ground Clearance	0.312m
Track Width	1.840m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.30m

Proposed Residential Development
97 Alma Road, St Kilda East
Swept Path Assessment - Ground Level

NOTE:
1) Base Plan Supplied by Kerstin Thompson Architects Pty Ltd, dated 20 May 2024
2) Maximum Design Speed 5km/h

RATIO REFERENCE	SHEET No.	SCALE	DATE
19329T-SK10/JHB	01 of 07	1:200@A3	27/05/2024

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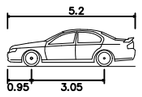
27/05/2024 2:53:14 PM

ratio:

RATIO CONSULTANTS PTY LTD
ABN 005 422 104
8 GWYNNE STREET
CREMORNE, VICTORIA 3121
TELEPHONE (03)9429 3111
FACSIMILE (03)9429 3013

B99 Vehicle (AS/NZS2890.1:2004)



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97 Alma Road, St Kilda East
Swept Path Assessment - Ground Level

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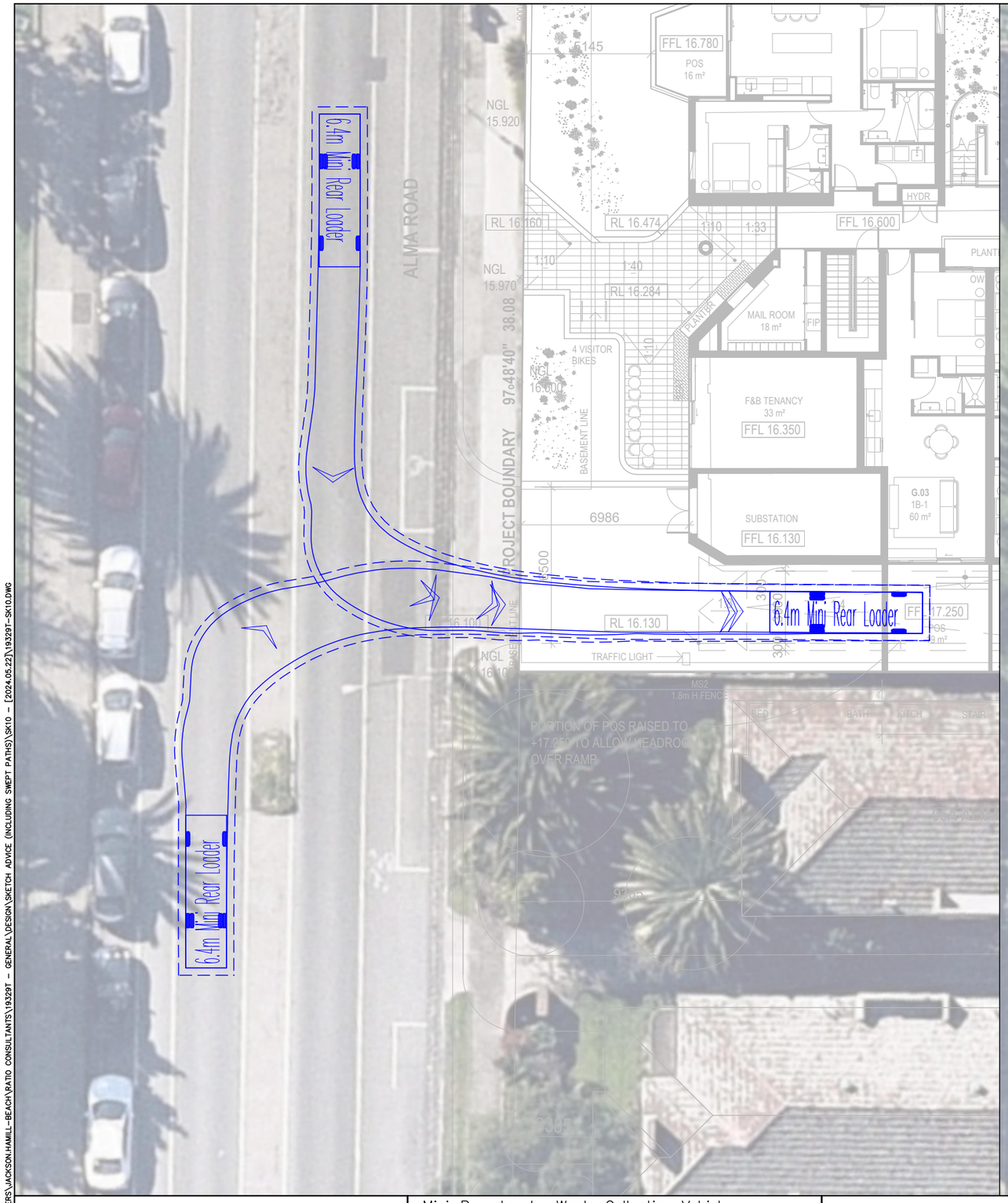
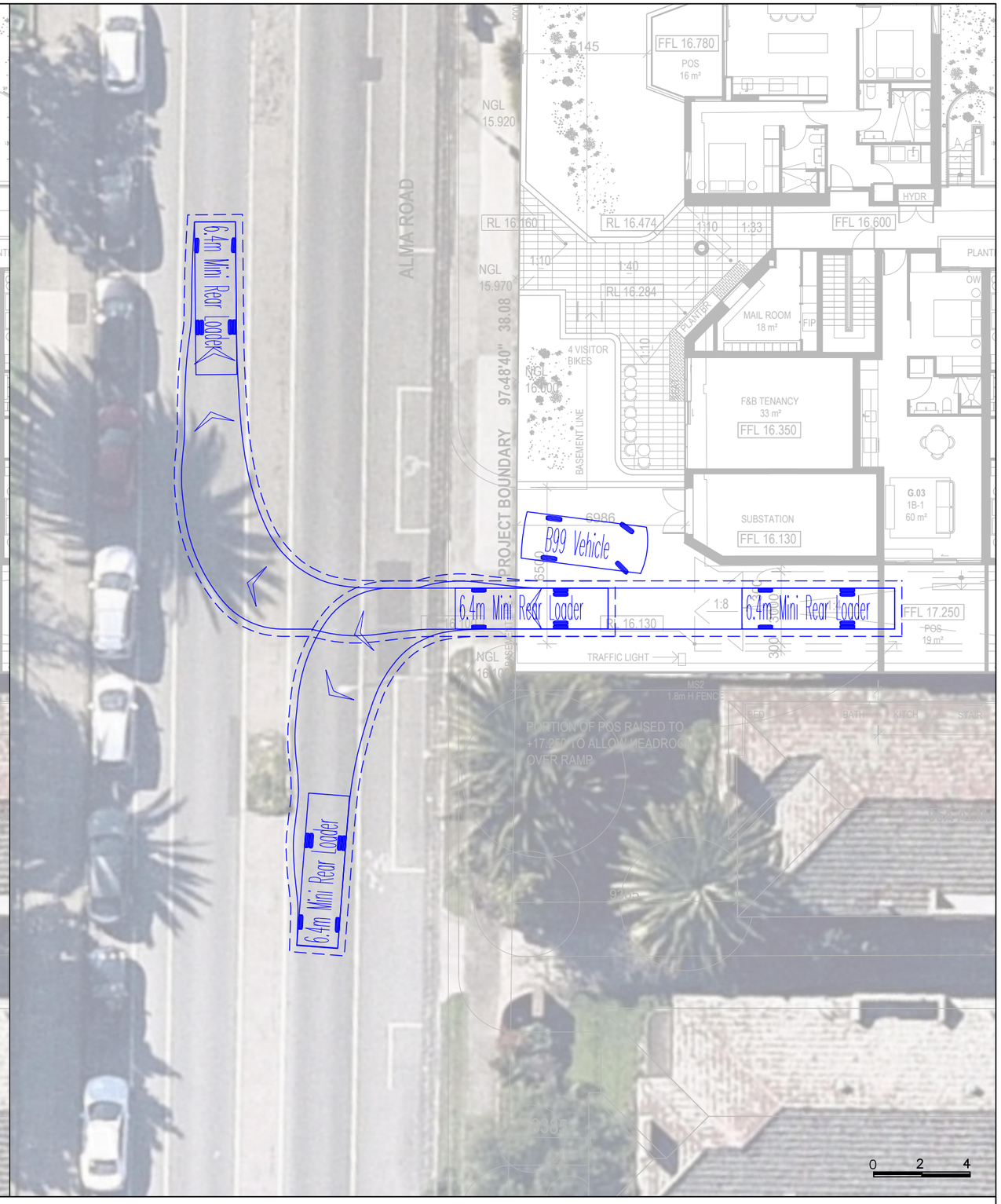
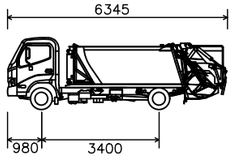
19329T-SK10/JHB	02 of 07	1:200@A3	27/05/2024





ratio:
RATIO CONSULTANTS PTY LTD
ABN 005 422 104
8 GWYNNE STREET
CREMORNE, VICTORIA 3121
TELEPHONE (03)9429 3111
FACSIMILE (03)9429 3011

Mini–Rear Loader Waste Collection Vehicle



VEHICLE ENVELOPE (FORWARD)
300mm CLEARANCE (FORWARD)
VEHICLE ENVELOPE (REVERSE)
300mm CLEARANCE (REVERSE)

Overall Length	6.345m
Body Width	1.700m
Overall Body Height	2.080m
Min Body Ground Clearance	0.205m
Track Width	1.670m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.450m

Proposed Residential Development
97 Alma Road, St Kilda East
Swept Path Assessment - Ground Level

NOTE:
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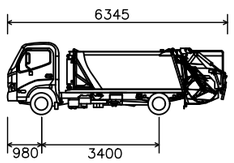
BASEMENT
2819.4 m²
CAR SPACES - 74
MOTORCYCLE SPACES - 5
BICYCLE SPACES - 70

FFL 12.150

ELECTRICAL SWITCH ROOM
HARD WASTE
GIT BELOW GROUND
APT BIN ROOM
F&B BIN ROOM
APT STORE
BLD COMMS
BIKE STORE
8 VERTICAL SPACES
11 VERTICAL SPACES
7 VERTICAL SPACES
LIFT 1
MB1
MB2
MB3
MB4
MB5
CP01 (TANDEM)
CP02 (TANDEM)
CP03 (TANDEM)
CP04
CP05
CP06
CP07
CP41
CP42
CP43
CP44
CP45
CP46
CP47
CP48
CP49
CP50
CP51
CP52
CP53
CP54
CP55
CP56
CP57
CP58
CP59
CP60
2700 TYP.
6100
5800
3000
300
MOUNTABLE KERB (SM3 PROFILE)
TRAFFIC LIGHT
SECURITY ROLLER SHUTTER
BASELINE LINE
12%
14%
16%
17%
19%
0.8%
2.5%
1:4
1:11
1:14
1:20
FHR

6.4m Mini Rear Loader

Mini–Rear Loader Waste Collection Vehicle



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0 2 4

ratio:
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8 GWYNNE STREET
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TELEPHONE (03)9429 3111
FACSIMILE (03)9429 3011

Proposed Residential Development
97 Alma Road, St Kilda East
Swept Path Assessment - Basement Level

NOTE:
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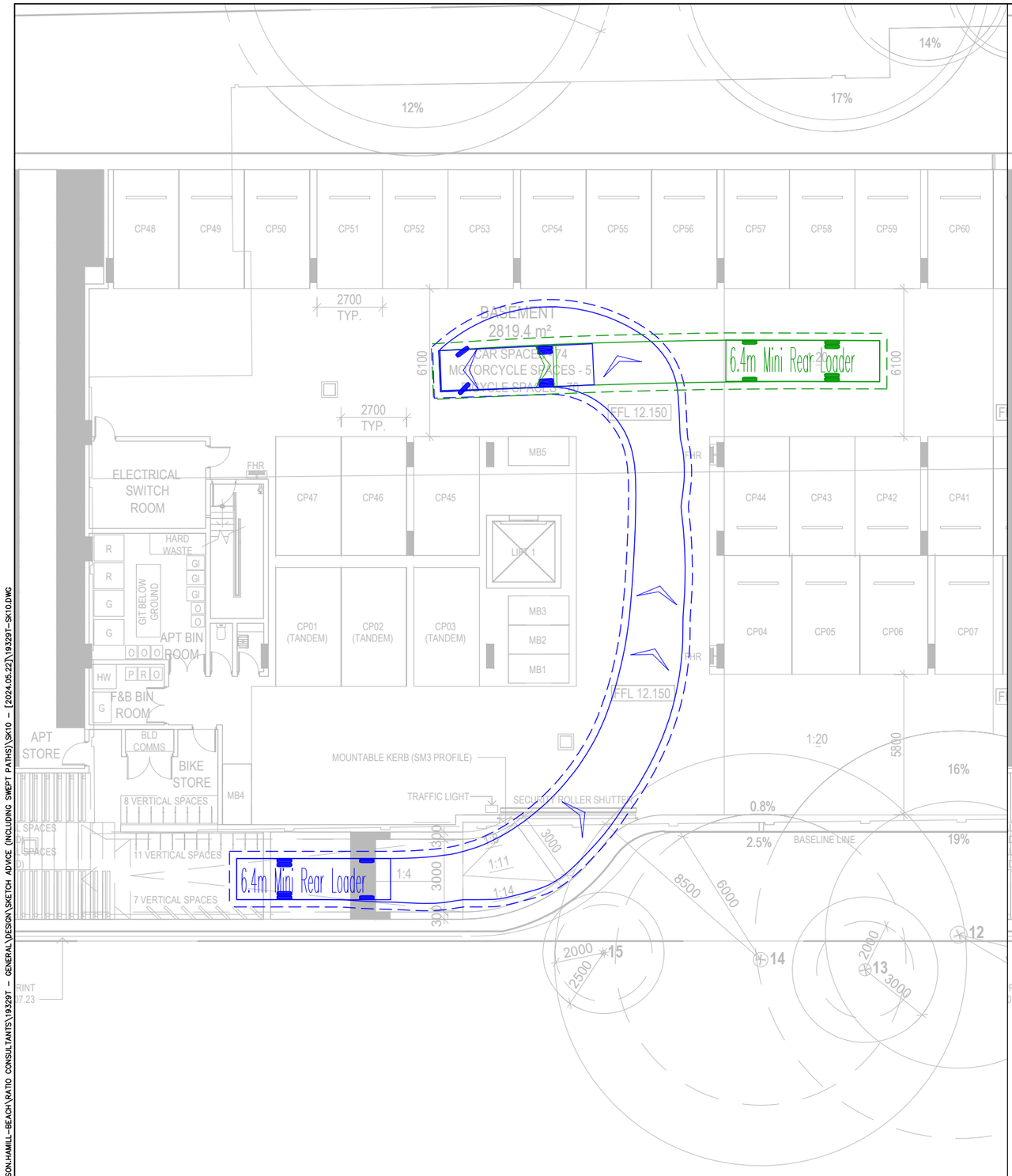
RATIO REFERENCE	SHEET No.	SCALE	DATE
19329T-SK10/JHB	04 of 07	1:200@A3	27/05/2024



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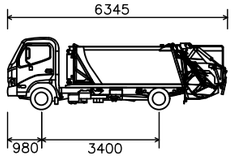

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Proposed Residential Development
97 Alma Road, St Kilda East
Swept Path Assessment - Basement Level

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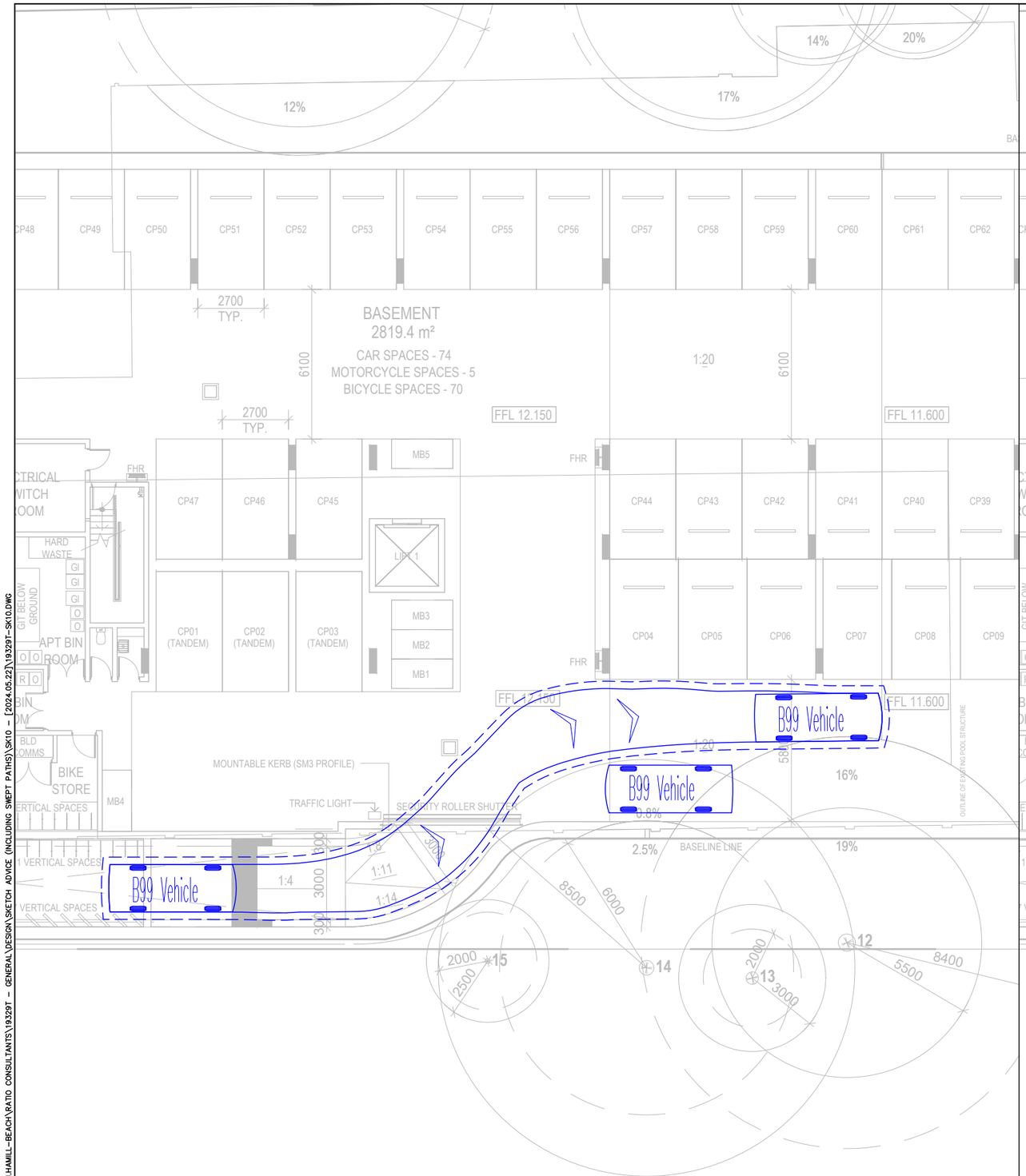
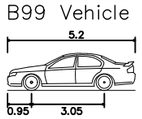


ratio:

RATIO CONSULTANTS PTY LTD
ABN 005 422 104
8 GWYNNE STREET
CREMORNE, VICTORIA 3121
TELEPHONE (03)9429 3111
FACSIMILE (03)9429 3011

B99 Vehicle (AS/NZS2890.1:2004)



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Proposed Residential Development
97 Alma Road, St Kilda East
Swept Path Assessment - Basement Level

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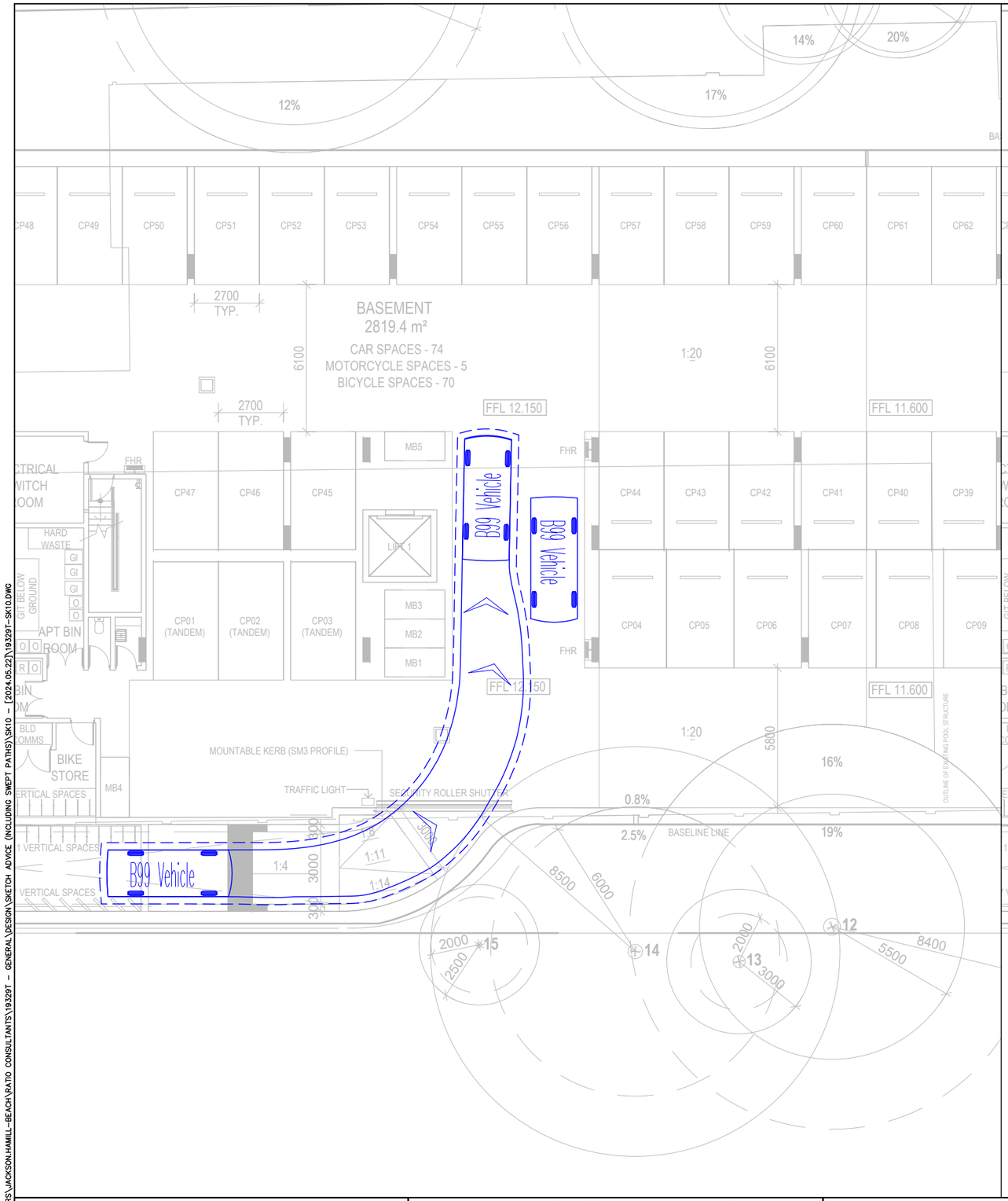
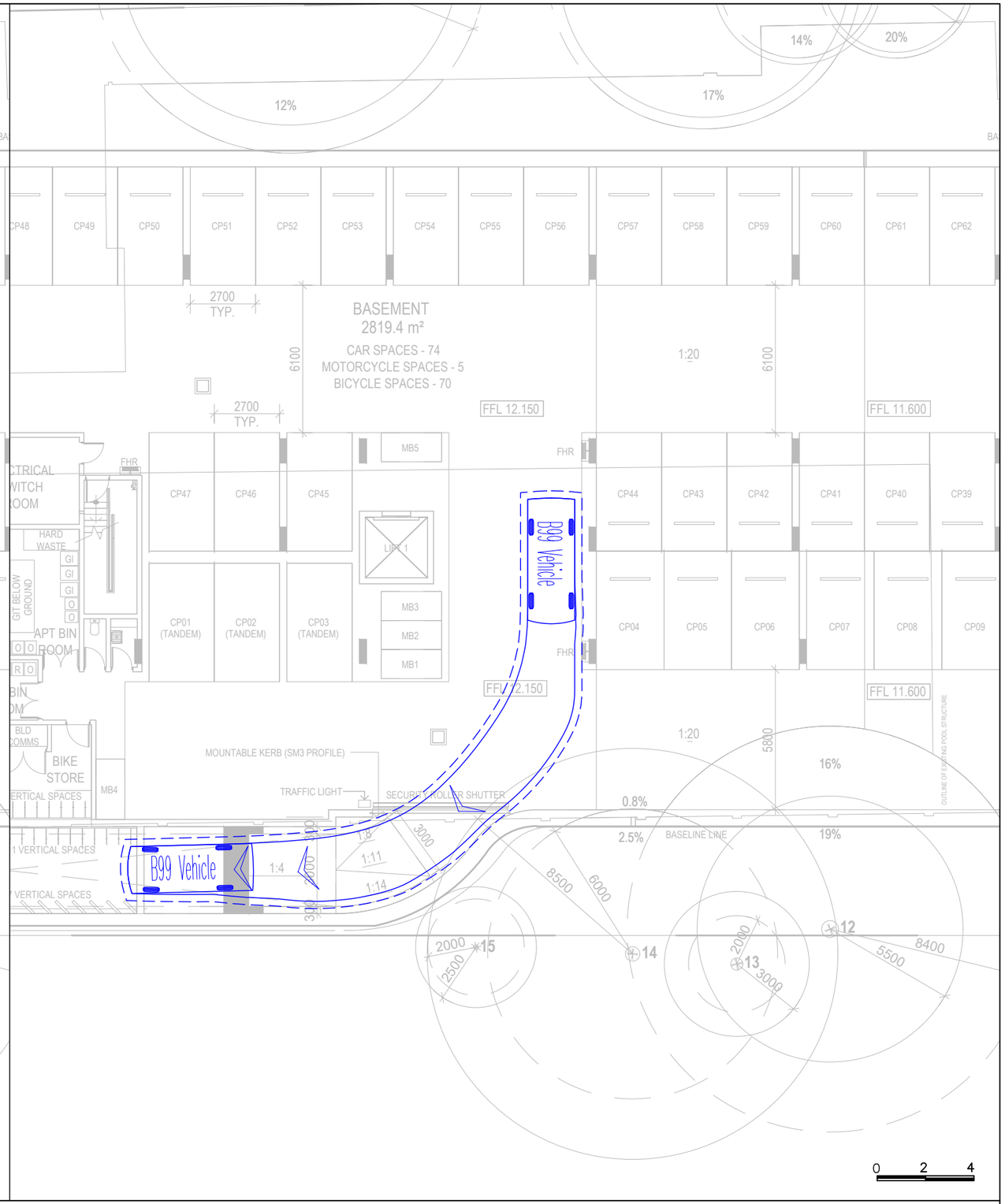
19329T-SK10/JHB	06 of 07	1:200@A3	27/05/2024





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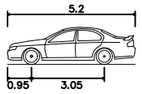

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Swept Path Assessment - Basement Level

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