Report Prepared for Auyin Property Developments Pty Ltd

Proposed Mixed Use Development

7-15 Horne Street, Elsternwick

22 December 2020

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Ratio Consultants was commissioned by Auyin Property Developments Pty Ltd to assess the traffic and parking implications of the proposed mixed-use development at 7-15 Horne Street, Elsternwick.

This report has been prepared to address the traffic and parking needs of the proposed development and is based on surveys and observations in the vicinity of the site and on previous studies of similar developments elsewhere in Melbourne.



2.1 Location and Environment

The site of the proposed development is located on the south-western side of Horne Street, between Glen Huntly Road and Rusden Street, in Elsternwick. The site's location relative to the surrounding road network is shown in Figure 2.1.



Figure 2.1: Site Location

Source: www.nearmaps.com.au

The subject site is rectangular in shape with a frontage to Horne Street of 44.2 metres, a side abuttal to the adjacent Right-of-Way (ROW) of 28.0 metres, and an overall site area of approximately 1280 square metres.

The site currently comprises three separate lots as follows:

- 7 Horne Street comprises a double storey building currently occupied by the 'Daily Planet'. Vehicular access to the lot is currently provided via the ROW located at the rear of the lot.
- 13 Horne Street comprises a three-storey building occupied by an office tenancy.
- 15 Horne Street comprises a single-storey building which is currently occupied by 'Mubu Home Furniture & Homewares'.

The subject site is located within the Elsternwick Activity Centre and within a Commercial 1 Zone (C1Z). The site is also subject to the following overlays:

- An Environmental Audit Overlay (EAO);
- Design and Development Overlay Schedule 10 (DDO10); and
- Parking Overlay Precinct 2-3 Schedule (PO2-3).

The location of the site relative to the Parking Overlay – Precinct 2-3 Schedule (PO2-3) is shown in Figure 2.2.

Figure 2.2: Parking Overlay (PO2-3)



Surrounding land use within the vicinity of the site is a mixture of residential, commercial and retail uses. Some other key land uses within the vicinity of the site include:

- Several commercial, retail, restaurant, bars and cafes, located along Horne Street and Glen Huntly Road, within the immediate vicinity of the subject site.
- Elsternwick Station Reserve, located approximately 200 metres east of the subject site.
- Elsternwick Park Bowling Club and Elsternwick Golf Club, located approximately 400 metres west of the subject site.
- Sholem Aleichem College, located approximately 450 metres north of the subject site.
- Elsternwick Library, located approximately 600 metres east of the subject site.
- Elsternwick Park, located approximately 750 metres south-west of the subject site.
- Elsternwick Park Tennis Centre, located approximately 900 metres west of the subject site.

Figure 2.3 below shows an aerial view of the site and its surrounds.

Figure 2.3: Aerial View of the Site and Surrounds



Source: www.nearmap.com

2.2 Road Network

Horne Street is a Council managed road that effectively runs in a northwest to south-east alignment between Glen Huntly Road and its continuation as McMillan Street, in Elsternwick. The road is classified as a Major Road, between Glen Huntly Road and Rusden Street and a Local Road, south of Rusden Street. The road has a default speed limit applicable to a built-up area of 50km/hr.

Within the vicinity of the site, Horne Street has an approximate carriageway width of 12.5 metres, accommodating one lane of traffic in each direction, a central flush and physical median and sections of parallel kerbside parking. To the south of Rusden Street, kerbside parallel public parking is provided on both sides of the road and there is no central median.

Figure 2.4 below shows a photograph of Horne Street within close proximity to the subject site.

Figure 2.4: Horne Street, facing south



Gien Huntly Road essentially runs in an east-west alignment between Marine Parade, in Elwood and Truganini Road, in Carnegie. The road is classified as a Council managed Major Road to the east of Nepean Highway and a Department of Transport managed Secondary State Arterial Road to the west of Nepean Highway. Within the vicinity of Horne Street, Glen Huntly Road has an approximate carriageway width of 13.2 metres, with central lanes operating as shared traffic and tram lanes. The road also accommodates kerbside parallel parking on both sides of the road and a bicycle lane in each direction.

Concrete footpaths are provided on both sides of the road and it has a posted speed limit of 40km/hr from 8:00am to Midnight, Monday to Saturday. A speed limit of 60km/hr applies outside of these times.

Rusden Street is a Council managed Major Road, that runs in a northeast-southwest alignment between New Street and Horne Street, in Elsternwick.

Typically, Rusden Street has an approximate carriageway width of 12.0 metres, accommodating one traffic lane, a dedicated bicycle lane and a dedicated kerbside parking lane in each direction.

There is a 3.05 metre wide concrete **Right-of-Way (ROW)** that essentially runs in a northwest-southeast alignment along the western boundary of the site and provides rear access to the commercial properties fronting Horne Street. It has direct access to Rusden Street within 25 metres of the site and connects to an east-west aligned ROW running between Horne Street and Ross Street.

Figure 2.5 and Figure 2.6 below shows photographs of the ROW within close proximity of the subject site.

Figure 2.5 – ROW, facing north



Figure 2.6 – ROW, facing north



2.3 Relevant Planning Policies

General

There is significant support within the Glen Eira Planning Scheme for new developments which encourage the use of sustainable transport alternatives from the private motor vehicle, including those listed and discussed below.

Clause 15.02-1S – Energy and Resource Efficiency

Clause 15 of the Glen Eira Planning Scheme is the State Planning Policy on Built Environment and Heritage. Clause 15.02 is in relation to sustainable development, with Clause 15.02-1S in relation to energy and resource efficiency.

Of particular relevance to this report, Clause 15.02-1S states the following strategy:

"Support low energy forms of transport such as walking and cycling."

Clause 18.02-15 – Sustainable Personal Transport

Clause 18 of the Glen Eira Planning Scheme is the State Planning Policy on Transport. Clause 18.02 is in relation to movement networks, with Clause 18.02-1S in relation to sustainable personal transport.

Of particular relevance to this report, Clause 18.02-1S states the following strategy:

"Ensure development.... provides opportunities to promote walking and cycling."

Clause 18.02-2R – Principal Public Transport Network

Clause 18.02-2R is in relation to principal public transport network.

Of particular relevance to this report, Clause 18.02-2R states the following strategy:

"Maximise the use of existing infrastructure and increase the diversity and density of development along the Principal Public Transport Network, particularly at interchanges, activity centres and where principal public transport routes intersect."

Clause 18.02-4S - Car Parking

Clause 18.02-4S is in relation to car parking.

Of particular relevance to this report, Clause 18.02-4S states the following strategy:

"Allocate or require land to be set aside for car parking subject to the existing and potential modes of access including public transport, the demand for off-street car parking, road capacity and the potential for demand management of car parking."

Clause 21.12 – Transport

Clause 21.12 of the Glen Eira Planning Scheme is the Local Planning Policy in relation to transport. The key objectives of Clause 21.12 are as follows:

- To advocate and encourage the provision of a safe, convenient and efficient transportation network which meets the needs of Glen Eira's residents, businesses and through traffic.
- To encourage increased access and use of public transport.
- To minimise the adverse effects of vehicular traffic, especially in Glen Eira's residential areas.
- To ensure the adequate provision of car parking in appropriate locations to serve the needs of business and its customers.

2.4 Parking Conditions

Due to the current COVID-19 government directives for working from home and social distancing, on and off-street car parking conditions and any car parking occupancy surveys conducted during this time are not considered representative of typical conditions. As a result, reference is made to parking occupancy surveys previously commissioned by Ratio Consultants at the following times:

- 11:00am-8:00pm on Friday 9 December 2016; and,
- 11:00am-4:00pm on Saturday 10 December 2016.

The above times are considered to cover the peak times for residential and commercial visitors. The surveys encompass an area approximately 200 metres from the subject site. The parking inventory reveals the supply of parking in the precinct is predominantly subject to short-term parking restrictions (generally 1P and 2P), which is expected given the location of the site within an Activity Centre.

The extent of the survey area is shown in Figure 2.7 with detailed surveys results presented in Table A1 and A2 of Appendix A.

Figure 2.7 Parking Survey Area



In summary, the results of the surveys showed the following:

Friday 9 December 2016

- There was observed to be a minimum of 269 and a maximum of 323 parking spaces within the survey area (depending on the time of day).
- The demand for parking was generally high during the survey period, with parking occupancies ranging between 76% and 90%.
- The peak hour occurred at 12:00 noon, when a total of 290 publicly available car parking spaces were recorded occupied out of an available supply of 321 spaces, representing a parking occupancy of 90%. There were a minimum of 31 publicly available spaces at this time.

Graph 2.1 provides a graphical representation of the Friday parking demands.



Graph 2.1: Parking Demand Survey Results - Friday 9 December 2016

Saturday 10 December 2016

- There was observed to be a minimum of 321 and a maximum of 331 parking spaces within the survey area (depending on the time of day).
- The demand for parking was moderate to reasonably high during the survey period with parking occupancies ranging between 69% and 75%.
- The peak hour occurred at 1:00pm, when a total of 249 publicly available car parking spaces were recorded occupied out of an available supply of 331 spaces, representing a parking occupancy of 75%. There were a minimum of 82 publicly available spaces at this time.

Graph 2.2 provides a graphical representation of the Saturday parking demands.



Graph 2.2: Parking Demand Survey Results - Saturday 10 December 2016

The survey results indicate that the overall parking demand is moderate to high during weekday periods and Saturdays. The survey results also show that the majority of parking within the vicinity of the site is subject to parking controls (generally 1P and 2P), which will encourage a relatively high on-street car parking turnover. Overall, despite the reasonably strong demand during weekday business hours there is still spare parking capacity within the vicinity of the site to accommodate an increase in short-term car parking.

2.5 Traffic Conditions

Ratio Consultants previously commissioned turning movement surveys at the intersections of Rusden Street / ROW, Horne Street / ROW, Ross Street / ROW and ROW / ROW on Tuesday 30 July 2019 between 7:30am-9:30am and 4:30pm-6:30pm.

The peak hour turning movements are shown in Figure 2.8.



Figure 2.8: Tuesday 30 July 2019-Peak Hour Survey Results



The survey results showed that the overall AM peak hour period occurred between 8:00am and 9:00am, whilst the overall PM peak hour period occurred between 5:30pm and 6:30pm.

The survey results indicate low usage of the ROW system during the peak hours, with the east-west portion of the ROW at Horne Street, carrying up to three vehicles in the AM peak hour and nine vehicles in the PM peak hour.

The survey results also indicate that the north-south portion of the ROW at Rusden Street carried six vehicle movements per hour during the AM peak and five vehicles per hour in the PM peak.

The surveys demonstrate that the ROW network currently carries low levels of traffic and has ample spare vehicle capacity.

2.6 Sustainable Transport

Public Transport

The site has ideal access to a range of public transport facilities, with the following services provided within close proximity to the site:

Table 2.1: Public Transport Services - Train

Railway Station	Location	Train Lines
Elsternwick Railway Station	150 metres north-east of the site	Sandringham Line

Table 2.2: Public Transport Services - Tram

Route Number	Route Description	Nearest Stop	Walking Distance
67	Melbourne University	Elsternwick Railway	140 metres north-
	to Carnegie	Station	east of the site

Table 2.3: Public Transport Services - Bus

Route Number	Route Description	Nearest Stop	Walking Distance
216	Caroline Springs to Brighton Beach	Horne Street (fronting the subject site)	<25 metres
219	Sunshine South to Gardenvale		
246	Elsternwick to Clifton Hill via St Kilda		
606	Elsternwick Station to Fishermans Bend		
978 (Night Bus)	Elsternwick to Dandenong via Ormond, Huntingdale and Mulgrave		
979 (Nigh Bus)	Elsternwick to Dandenong via Bentleigh, Clarinda and Keysborough		
625	Elsternwick to Chadstone via Ormond, Oakleigh	Intersection of Glen Huntly Road and Riddell Parade	350 metres

The public transport facilities within close proximity to the site are outlined below in Figure 2.9.

Figure 2.9: Glen Eira Public Transport Map



Source: <u>https://www.ptv.vic.gov.au</u>

The subject site is also located within the Principal Public Transport Network (PPTN) area, as shown in the PPTN Maps of the State Government of Victoria (August 2018). The location of the subject site relative to the PPTN area is shown in Figure 2.10.



Figure 2.10: Location of subject site relative to PPTN



Bicycle Network

The site also has good access to bicycle facilities, including:

- Off-road shared path adjacent to Elster Creek;
- On-road bicycle lanes along Glen Huntly Road (west of Nepean Highway), Orrong Road, Rusden Street, St Kilda Street, Glen Eira Road, Brighton Road (north of Glen Huntly Road) and Kooyong Road; and
- Access to the nearby bicycle infrastructure is available via the surrounding road network.

Sustainable transport facilities, including the surrounding bicycle network, are shown in Figure 2.11.



Figure 2.11: Surrounding Public Transport Facilities and Bicycle Network



https://www.gleneira.vic.gov.au

Car Share

Car share schemes offer a viable alternative to using a private motor vehicle for users of the development, with members able to book vehicles on an as needs basis either online or by phone.

The subject site is in close proximity to a number of pods operated by GoGet and Flexicar. A summary of the car share pods in the vicinity of the site is provided in Table 2.4 and illustrated in Figure 2.12.

Table 2.4: Car Share Pod Locations

Operator	Location	Number of Cars	Approximate Walking Distance
	Glen Huntly Road near Horne Street	1 car	50m
GoGet	Gordan Street near Glen Huntly Road	1 car	150m
	GoGet Sub-total	2 cars	
	Glen Huntly Road near Horne Street	1 car	55m
Flexicar	Glen Huntly Road near Orrong Road	1 car	550m
	Flexicar Sub-total	2 cars	
Total		4 cars	Within 550m

Figure 2.12: Car Share Pod Location



In addition to the abovementioned commercially operated car share vehicles, 'Car Next Door' is a private car sharing service where individuals can make their private car available for hire. A review of the Car Next Door website indicates that there are several Car Next Door vehicles within convenient walking proximity of the subject site that could be used by users of the development, as required.

Taxi and Uber

Taxis and Uber both provide another alternative to the private vehicle. Taxis can be booked online or by phone. Taxis can also be found at taxi ranks or flagged down on the street if required.

Ubers can be booked through the Uber app. Short term parking is available along the Horne Street frontage to cater for pick up and drop off.

2.7 Crash Analysis

A review has been conducted of VicRoads 'Crashstats' database for the latest five year period of available data for any reported casualty within the following search area:

- Horne Street, between Glen Huntly Road and Rusden Street; and
- The full length of the ROW, located at the rear of the site;
- The respective intersections.

No crashes were recorded within the search area within the latest five year period of available data. Accordingly, it is considered the road network in the immediate vicinity of the site to be operating in a relatively safe manner.

3 The Proposal:

It is proposed to demolish the existing buildings on-site and construct a mixed-use development on the site located at 7-15 Horne Street, Elsternwick. More specifically, the development comprises the following:

- 43 residential apartments, including:
 - 10 x Special Disabled Accommodation (SDA) apartments. Three of the SDA apartments comprise one-bedroom and seven of the SDA apartments comprise two-bedrooms.
 - 2 x standard one-bedroom apartments;
 - 26 x standard two-bedroom apartments; and
 - 5 x standard three-bedroom apartments.
- Two retail tenancies with a combined floor area comprising 280 sqm on ground floor.
- A total of 63 car parking spaces are proposed to be provided for the development, located on ground floor and within a multi-level basement car park.
- Vehicle access to the basement carpark will be provided via the ROW at the rear of the site. Vehicle access to the ground floor car parking spaces will be provided directly from the ROW.
- A total of 53 bicycle parking spaces are proposed to be provided for users of the development.

Car parking requirements for a range of developments are set out under Clause 52.06 of the Glen Eira Planning Scheme. The purpose of the Clause, among other things, is:

- To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local 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 affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

The number of car parking spaces required for the specified uses is listed under Table 1 of Clause 52.06-5. The car parking requirement specified for a use listed in table 1 does not apply if:

- A car parking requirement for the use is specified under another provision of the Planning Scheme: or
- A schedule to the Parking Overlay specifies the number of car parking spaces required for the use.

As stated in Section 2, the site is subject to Parking Overlay – Precinct 2-3 Schedule (PO2-3). PO2-3 specifies rates for student housing developments and therefore is not relevant to the subject proposal. Accordingly, the number of car parking spaces required for the land uses is listed under Table 1 of Clause 52.06-5.

Two separate rates are specified under Table 1 of Clause 52.06-5, as follows:

- Column A, which applies in all cases when Column B is not applicable, and
- Column B, which applies if:
 - Any part of the land is identified as being within the Principal Public Transport Network Area as shown in the Principal Public Transport Maps; or
 - A schedule to the Parking Overlay or other provision of the Planning Scheme specifies that Column B applies.

The subject site is located within the Principal Public Transport Network Area (PPTN), and accordingly the number of car parking spaces for the specified uses is calculated by applying the Column B rate.

The statutory car parking requirement for the proposal is outlined in Table 4.1.

Table 4.1: Statutory Car Parking Requirement

Use	Size/Number	Rate	Car Parking Requirement
	2 x one-bedroom apartments	1 car space to each dwelling	2 spaces
Dwelling	26 x two-bedroom apartments	1 car space to each dwelling	26 spaces
	5 x three-bedroom apartments	2 car spaces to each dwelling	10 spaces
SDA Apartments SDA Apartments Apartments Apartments SDA Apartments Apartments		No rate listed under Table 1 to Clause 52.06	N/A
Retail (shop use)	280sqm of leasable floor area	3.5 spaces to each 100sqm of leasable floor area	9 spaces
Total Statuto	47 spaces		

Car parking requirements for 'SDA apartments' are not specified in Table 1 to Clause 52.06-5 of the Planning Scheme. In such instances, Clause 52.06-5A states the following:

"Where a use of land is not specified in Table 1 or where a car parking requirement is not specified for the use in another provision of the Planning Scheme or in a schedule to the Parking Overlay, before a new use commences or the floor area or site area of an existing use is increased, car parking spaces must be provided to the satisfaction of the responsible authority."

Accordingly, the proposed development has a statutory car parking requirement of 47 car spaces for the specified uses, with car parking associated with the SDA apartments additionally required, to the satisfaction of the Responsible Authority.

A total of 63 car parking spaces are proposed be provided for the development allocated as shown in Table 4.2.

Table 4.2: Car Parking Allocation

Use	Parking Allocation	Requirement	Statutory reduction
One- bedroom standard apartments	2 spaces	2 spaces	-
Two- bedroom standard apartments	43 spaces	26 spaces	17 space surplus
Three- bedroom standard apartments	10 spaces	10 spaces	-
SDA Apartments	4 spaces	No rate listed under Table 1 to Clause 52.06	N/a
Retail	4 spaces	9 spaces	5 spaces
Total	63 spaces	47 spaces	5 space reduction

On the basis of the above, the proposed development seeks a reduction of five spaces against the statutory requirements of Clause 52.06-5 of the Glen Eira Planning Scheme (associated with the retail use), with car parking associated with the SDA apartments additionally required, to the satisfaction of the Responsible Authority.

To assess the appropriateness of the car parking provision for the development a Car Parking Demand Assessment has been undertaken as per Clause 52.06-7 of the Glen Eira Planning Scheme.

4.2 Car Parking Demand Assessment

Clause 52.06-7 sets out the factors to be considered when preparing a Car Parking Demand Assessment. These factors are listed below:

- 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.
- The short-stay and long-stay car parking demand likely to be generated by the proposed use over time.
- The availability of public transport in the locality of the land.
- The convenience of pedestrian and cyclist access to the land.
- An empirical assessment or case study.

Those factors relevant to this assessment are discussed in detail below:

The Likelihood of Multipurpose Trips within the Locality

As discussed in Practice Note 22 – Using the Car Parking Provisions, in some situations a trip will serve more than one function and this will tend to reduce the need for car parking. Given the location of the subject site, conveniently located within the Elsternwick Activity Centre, it is expected that some customers of the retail tenancies, will be local workers/residents who have already travelled to the area for work / live within the nearby vicinity (including residents of the proposed development).

These factors are anticipated to reduce the car parking demand for the retail tenancies.

The Availability of Public Transport in the Locality of the Land

As discussed in Section 2.5, the site has ideal access to a range of public transport services with train, tram and bus services all operating within convenient proximity to the subject site. The site has ideal access to the Elsternwick Railway Station, which is located approximately 150 metres north-east of the site. In addition, a range of bus services operate along the site's frontage to Horne Street, with the closest stop located directly outside the subject site. These public transport services provide a connection to Melbourne's wider public transport network making the site highly accessible to greater Melbourne.

Given the excellent access to sustainable transport options, residents, staff and customers of the development are able to travel to and from the site without relying on the use of a private motor vehicle.

The Convenience of Pedestrian and Cyclist Access to the Land

Pedestrian footpaths are provided on both sides of roads in the vicinity of the site which are generally in excellent condition. The proposed main pedestrian access to the site will provide a clear, safe and direct link to and from the surrounding pedestrian network, nearby public transport services and local shops and services within the Elsternwick Activity Centre.

Additionally, the site has good access to nearby bicycle facilities, including:

- Off-road shared path adjacent to the Elster Creek;
- On-road bicycle lanes along Glen Huntly Road (west of Nepean Highway), Orrong Road, Rusden Street, St Kilda Street, Glen Eira Road, Brighton Road (north of Glen Huntly Road) and Kooyong Road; and
- Access to the nearby bicycle infrastructure is available via the surrounding road network.

These facilities are expected to provide a viable means of alternative active transport that will reduce future reliance on private motor vehicles.

The Provision of Bicycle Parking and End of Trip Facilities for Cyclists

The proposal includes a generous provision of 53 bicycle parking spaces. These facilities will help to encourage residents, staff and customers to ride to and from the site and will reduce the dependence on the private motor vehicle.

Access to Car Share Facilities

As discussed in Section 2.5, there are four car share pods located within very close proximity to the subject site (within 550 metres). These vehicles can be used by staff and residents of the development, as required.

Residential Car Parking Demand

Car parking for the standard apartments is provided in accordance with Table 1 to Clause 52.06 of the Glen Eira Planning Scheme and is therefore considered to be acceptable.

Residential Visitor Parking Demand

It is noted that there is no statutory requirement to provide visitor parking (given the sites location within the PPTN), however still acknowledged that in practice the development will generate a visitor car parking demand.

Car parking surveys were undertaken by Cardno at 127 and 147 Beach Street, Beacon Cove to determine the visitor car parking demands generated by apartment developments. These surveys, conducted over a 36 hour period from 6:00am Friday 19 November 2010 to Midnight Saturday 20 November 2010 indicate that visitor parking demand varies throughout the day with peak parking demands occurring during the evening and on weekends.

The recorded peak weekday visitor parking demand was 0.07 spaces per apartment after 6:30pm while the peak visitor parking demand during normal business office hours was 0.06 spaces per apartment at 11:30am. The overall peak visitor parking demand occurred at 6:30pm on Saturday with a demand of 0.09 spaces per apartment.

Given that the subject site has better access to alternate modes of transport than the case study site, it is considered that a rate of **0.06** spaces per apartment provides an appropriate estimate of the peak visitor parking demand likely to be generated by the development during weekday daytime periods. Application of this rate to the 33 standard apartments proposed results in an anticipated peak visitor parking demand for the development of **2 visitor spaces** during the day on weekdays.

This could be expected to increase to **3 visitor spaces** (0.09 spaces per dwelling) during weekday evenings and weekends when visitor demand is at its peak.

No visitor parking is proposed to be provided and accordingly this demand will need to be accommodated by the surrounding on-street parking supply.

Retail Parking Demand

Numerous empirical studies across Melbourne confirm that average car parking generation rates across a group of retail tenancies generally fall within the range of 3.0 - 4.5 spaces per 100sqm of floor area, with staff parking demands typically generated at a rate of 1 space per 100 sqm of floor area.

Lower demands for customer and staff parking generally occur in inner areas of Melbourne, resulting from higher population densities, excellent access by sustainable transport modes and in many instances, constrained access to convenient parking. Based on the empirical evidence, and in consideration of the site's location, access to alternative transport and other factors, it is considered that the application of a rate of 3.5 spaces per 100sqm of floor area (consistent with the Column B rate that applies), inclusive of 1.0 space per 100 sqm generated by staff, provides a conservative estimate of the retail parking generation for the proposal.

Application of the above rates to the 280 sqm of retail floor area results in a forecast staff parking demand of 3 spaces. A total of four car parking spaces are provided on-site to cater for the staff car parking demand, including an accessible parking space.

Customer parking may potentially generate demands of up to seven spaces, although much of this demand can be expected to be absorbed by multi-purpose trips, as discussed previously. Retail customers that do drive are most likely to utilise convenient on-street spaces in the immediate vicinity of the subject site.

Special Disabled Accommodation (SDA) Car Parking Demand

SDA's cater for the top 6% of disabled persons in terms of their extent of disabilities and therefore none of the eligible residents would own and drive their own vehicle, although a small proportion of residents may own their own vehicle and park it on-site for family members/carers to drive them to shops, medical appointments, etc. These residents also generally need 24/7 care, with some carers required to stay overnight. It is not proposed that a particular staff member will reside at the site on a permanent basis.

To determine the car parking demand generated by the Special Disabled Accommodation (SDA) apartments, Ratio Consultants has sourced information from three existing developments that comprise SDA apartments. These developments are operated by Guardian Living Australia and are listed below:

- Diamond Apartments in Grimshaw Street, Greensborough;
- Supply Co in David Street, Richmond; and
- Barker Maude in Barker Street, Cheltenham.

Key findings from these developments are as follows:

- Each of the sites had six SDA apartments plus a carer's room;
- Typically, only 30% of SDA residents would own a vehicle and that would typically be driven by a family member or a carer; and
- Carer numbers vary significantly from the level of care required. The upper limit of carer numbers can be up to two carers per resident and the lower limit is typically one carer per five residents.
- Staff typically arrive from 7:00am and have change over times at around 3:00pm and then staff will tend to depart from 7:00pm after dinner.

As discussed, some carers may seek to reside on-site overnight on an asneeded basis. It is proposed to allocate four car parking spaces for residents and carers of the 10 SDA apartments, representing a provision of 0.4 spaces per SDA apartment. This provision is consistent with the empirical data sourced from existing facilities and is therefore anticipated to meet the resident/carer parking demands of these apartment types. These users will be provided with the DDA car parking spaces within the basement. Any overflow parking or transport demands required by carers not provided with an on-site car parking space would need to utilise surrounding on-street parking or alternate modes of transport (public and active transport modes). This is considered to be an appropriate arrangement noting the site's excellent access to public transport services.

4.3 Allowing Fewer Spaces to be Provided

Clause 52.06-7 sets out the factors to be considered when determining the appropriateness of allowing fewer car parking spaces to be provided. Some of the relevant factors for this case are listed below:

- 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:
 - Public car parks intended to serve the land
 - On-street parking in non-residential zones
- The future growth and development of an activity centre; and
- Any other relevant consideration.

Those factors relevant to this assessment are discussed in more detail below:

Relevant Local Planning Policy

The local and state planning policies relevant to the proposal are discussed in detail in Section 2.3, including Clause 21.12 of the Glen Eira Planning Scheme. Overall, these policies encourage the use of sustainable transport services as the primary mode of transport and to minimise the adverse impacts of vehicular traffic.

Given that the site's proximity to alternate modes of transport, it is considered that the proposed reduction of car parking associated with customers of the retail tenancies is in-line with the applicable planning policies.

Availability of Car Parking

Parking surveys outlined in Section 2.3, and other observations, confirm that on-street parking within the survey areas, typically experiences reasonably strong demands.

During the weekday daytime period (11:00am to 5:00pm), there were a minimum of 31 publicly available car parking spaces in the survey area. The estimated off-site car parking demand of up to nine spaces generated by customers of the retail tenancies and residential visitors during this period could be readily accommodated within the surrounding car parking supply.

During weekday evenings, there were a minimum of 29 publicly available car parking spaces in the survey area. The anticipated off-site car parking demand of up to three spaces generated by residential visitors during this period could be readily accommodated within the surrounding car parking supply. During Saturdays, the parking surveys reported a minimum of 82 publicly available car parking spaces in the survey area. The anticipated off-site car parking demand of up to 10 spaces generated by customers of the retail tenancies and residential visitors during this period could again be readily accommodated within the surrounding car parking supply.

The car off-site car parking demand and availability of off-site car parking generated by patrons of the restaurant is summarised in the Table 4.3.

Table 4.3: Off-Site Car Parking Demand and Off-Site Car Parking Availability

	Time Period			
User Group	Weekday Business Hours (9:00am to 5:00pm)	Weekday Evenings	Saturdays	
Off-Site Car Parking Demand	9 spaces (7 spaces associated with retail customers and 2 spaces associated with residential visitors)	3 spaces (associated with residential visitors)	10 spaces (7 spaces associated with retail customers and 3 spaces associated with residential visitors)	
Minimum On-Street Car Parking Spaces Available	31 spaces	29 spaces	82 spaces	

On this basis, the estimated off-site car parking demand can be accommodated in suitable off-site parking locations within convenient proximity of the site at all times.

Any Car Parking Deficiency Associated with the Existing Use of the Land

As discussed in Section 2.1, the subject site is currently occupied by three separate lots which previously all operated as commercial tenancies. These uses provided limited parking on-site for staff, with all customer parking demands being accommodated by the surrounding on-street parking.

On this basis, it is considered appropriate to rely on the on-street car parking for customers of the retail tenancies as this is consistent with the existing use of the site.

4.4 Adequacy of Parking Supply

A total of 63 car parking spaces will be provided on-site allocated as shown in Table 4.2.

In summary, it is considered that the proposed provision of car parking is adequate for the following reasons.

- The proposed supply of car parking for the standard apartments meets the requirements of Table 1 to Clause 52.06 and is considered acceptable.
- There is no statutory requirement to provide residential visitor parking and none has been provided. Notwithstanding, the parking surveys demonstrate that there is sufficient on-street parking surrounding the site to accommodate the estimated demand generated by residential visitors.

- Sufficient car parking is provided to meet the anticipated staff parking demands of the retail tenancies.
- Multi-purpose trips will reduce the demand for car parking associated with customers of the retail tenancies. Notwithstanding, the parking surveys demonstrate that there is sufficient on-street parking surrounding the site to accommodate the demand of any customers that do choose to drive.
- Sufficient car parking has been provided on-site to accommodate the anticipated car parking demands of residents/carers of the SDA apartments. Any carers without access to an on-site car parking space will need to park off site or utilise the site's excellent access to alternate transport modes.
- The site has excellent access to the metropolitan public transport network and the surrounding bicycle network, which will reduce the dependence on private motor vehicle use in gaining access to and from the site.
- The generous provision of bicycle parking will encourage cycling to the site as a mode of transport and will reduce the reliance on private vehicle use.
- The existing use of the site relies on the on-street parking supply to accommodate the parking demand of customers, in a similar arrangement to the proposal.

Based on the above factors, it is considered the proposed provision of car parking to be appropriate and satisfactory.

5.1 Clause 52.06 Design Standard Assessment

The proposed vehicular access arrangements and car parking layout have been designed in accordance with the objectives and design requirements of Clause 52.06-9 of the Glen Eira Planning Scheme, and/or the relevant sections of AS/NZS 2890.1:2004.

Design Standard 1 – Accessways

The basement car park is accessed via a ramp at the south-east corner of the subject site, which connects to/from the rear ROW.

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 5.1.

Table 5.1: Design Standard 1 Assessment - Accessways

Requirement	Comments
Must be at least 3m wide.	Satisfied – All accessways have been provided with a minimum width of 5.8 metres exceeding the minimum requirement of Design Standard 1 and complying with the requirement of AS/NZS2890.1 to enable opposing vehicles to pass.
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre.	N/A - The proposed car park is not considered a public car park.
Provide at least 2.1m headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8m.	Satisfied – A minimum headroom clearance of at least 2.2 metres is provided within the car park.
If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction.	 Considered satisfactory – All cars are able to enter and exit the basement car park in a forward direction. Vehicles accessing the four car parking spaces on ground floor (accessed directly via the ROW) will enter in a forward direction and depart via a reverse manoeuvre (or vice versa). This is considered to be an acceptable arrangement noting the following: the small number of spaces accessed from the ROW (four spaces); These spaces are allocated to staff who will be familiar with the access arrangements; The relatively low level of traffic within the ROW reducing the potential for conflict between a vehicles reversing to/from these car spaces and local traffic within the ROW; and The proposed arrangement is the same as the parking associated with the existing use of the site.
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 Road Zone	N/A – Although the car park serves 10 car parking spaces, it does not connect to a Road Zone nor is it more than 50 metre long where passing cannot occur



	Notwithstanding this, the basement ramp has been designed with a width of 7.4 metres (inclusive of 300mm wide kerbs on either side), which enables passing between opposing vehicles to occur. The development also comprises a typical set-back of 2.4 metres along most of the abuttal from the edge of the ROW which enables opposing vehicles to pass within the ROW.
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, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	 N/A - Given that the ROW is not a 'frontage' and it does not have any footpaths, there is technically no requirement to provide sight line triangles and these have not been provided. Notwithstanding this, the access arrangements are considered to provide adequate sightlines between vehicles departing the site and any pedestrians within the ROW based on the following: The basement ramp has been set-back approximately 2.4 metres from the edge of the ROW which will enable adequate sightlines into the ROW; The structural wall along the eastern boundary of the site has been set-back 2.4 metres, which enables sightlines along the ROW; A convex dome mirror is proposed at the top of the basement ramp which will further enable sightlines between vehicles departing the site and any pedestrians / vehicles within the ROW; and The three at-grade car parking spaces on ground floor have been set-back approximately 2.4 metres from the edge of the ROW to enable sightlines between any vehicles / pedestrians within the ROW; and The proposed access arrangements are shown in Figure 5.1.



Figure 5.1: Vehicle Access Arrangements



Design Standard 2 - Car Parking Spaces

It is proposed to provide car parking as follows:

- 4 x 90-degree angled car parking spaces on ground floor accessed via the ROW. These car spaces will be allocated to staff; and
- 59 x 90-degree angled car parking spaces within the basement. These car spaces will be allocated to residents.

Design Standard 2 of Clause 52.06-9 relates to the design of car parking spaces. An assessment of the requirements of Design Standard 2 are assessed against the recommended design proposal in Table 5.2.

Table 5.2: Design Standard 2 Assessment – Car Parking Layout

Requirement	Comments
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 of Design Standard 2.	Satisfied – All car parking spaces have been designed with dimensions in accordance with Table 2 of Clause 52.06-9 of the Glen Eira Planning Scheme.
 A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1 of Design Standard 2, other than: A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1. A structure, which may project into the space if it is at least 2.1m above the space. 	Satisfied – Car parking spaces located next to a wall or object that impacts on the car parking envelope has been provided with an additional 300mm clearance.
Car spaces in garages or carports must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space measured inside the garage or carport.	N/A – No garages are proposed.
Where parking spaces are provided in tandem (one space behind the other) an additional	N/A – No tandem car parking spaces are proposed.

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 provided for the apartments is provided within the basement.
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.	 Satisfied - An accessible space and adjacent shared zone have been provided on ground floor and designed in accordance with AS/NZS 2890.6:2009 with a minimum width of 2.4 metres (car space and shared zone) and a length of 5.4 metres Additionally, a minimum headroom clearance of 2.5 metres will be provided above the accessible car space and shared zone. Further, accessible spaces and adjacent shared zones have been provided within the basement for the SDA apartments and designed in accordance with AS/NZS 2890.6:2009 with a minimum width of 2.4 metres (car space and shared zone) and a length of 5.4 metres A minimum headroom clearance of 2.5 metres will be provided within the basement for the SDA apartments and designed in accordance with AS/NZS 2890.6:2009 with a minimum width of 2.4 metres (car space and shared zone) and a length of 5.4 metres A minimum headroom clearance of 2.5 metres will be provided above the accessible car spaces and shared zones within the basement.

Design Standard 3 - Gradients

The entrance ramp incorporates the following gradients:

- An initial gradient of 1:10.9 for 2.0 metres;
- A transitional gradient of 1:10 for 3.5 metres;
- A midblock gradient of 1:5 for 6.8 metres; and
- A final 1:10 gradient for 2.0 metres.

The basement also includes a series of internal ramps.

Design Standard 3 of Clause 52.06-9 relates to the design of gradients. The requirements of Design Standard 3 are assessed against the proposal in Table 5.3.

Table 5.3: Design Standard 3 Assessment - Gradients

Requirement	Comments
Accessway grades must not be steeper than 1:10 (10%) within 5m 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.	 N/A - Given that the ROW is not a 'frontage' and it does not have any footpaths, there is technically no requirement to provide a 1:10 for the first 5.0 metres from the ROW. Notwithstanding, the accessway to the basement car park has an average grade of approximately 1:10.5 for the first 5.0 metres from the property boundary. This average grade does not exceed 1:10 and given the level of pedestrian and vehicular traffic within the ROW is considered acceptable.

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 grades are in accordance with Table 3 of Design Standard 3, with grades no steeper than 1:5.
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.	Satisfied – Appropriate transition sections have been provided to prevent 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.	

Design Standard 6: Safety

A security gate is proposed to be located within the 1:5 section of the entrance ramp and will control access and provide security to the basement car park. Residents (and any carers that require access to the basement) will either have remote control units or swipe cards to use at the reader located towards the top of the ramp to access the basement car park.

5.2 Swept Path Assessment

An assessment (refer to Appendix B) of the accessibility to/from the site using the 'Autodesk Vehicle Tracking' software has been conducted. The B99 (99.8th percentile car) was used in the assessment and it was found that vehicles can access the site in a suitable manner. Further, all vehicles will be able to enter / exit the site in a forward direction.

An assessment of the accessibility to/from the parking bays was also undertaken using the B85 (85th percentile car) and it was found that each parking space could be accessed (ingress and egress) in a satisfactory manner.

Some corrective manoeuvres may be required, which is in accordance with AS/NZS2890.1:2004 (Table 1.1), which specifies that the three-point turn movements to enter and exit 90-degree parking spaces are permitted for regular users.

Reverse-in entry manoeuvres are shown for some spaces, which is in accordance with Clause B4.3 of AS/NZS 2890.1:2004, which states that reverse manoeuvres are acceptable in instances where the site geometry requires, as is the case with some of the parking spaces proposed.

The assessment indicates that the access arrangements and car parking layout have been designed appropriately and in accordance with the requirements of the Glen Eira Planning Scheme and/or AS/NZS 2890.1:2004.

6.1 Clause 52.34 Assessment – Bicycle Parking

The number of bicycle parking spaces required for the specified uses is listed under Clause 52.34-3 of the Glen Eira Planning Scheme.

The application of the relevant rates is detailed in Table 6.1 below.

Fable 6.1 - Statuto	rv Bicvcle F	Parking R	eauirement

Use	Туре	Size	Statutory Parking Rate	Statutory Requirement
Dwolling	Resident	43	1 space to each 5 dwellings	9 spaces
Dwelling	Visitor	dwellings ¹	1 space to each 10 dwellings	4 spaces
Retail (shop use as	Employee	200 0000	1 space to each 600sqm of leasable floor area if the leasable floor area exceeds 1,000sqm	0 spaces
listed under 280 sqm Table 1 to Clause 52.34) visitor	1 space to each 500sqm of leasable floor area if the leasable floor area exceeds 1,000sqm	0 spaces		
Total			13 spaces	

On the basis of the above, the development has a statutory requirement to provide 13 bicycle parking spaces.

A generous provision of 53 bicycle parking spaces are proposed for the development, arranged as follows:

- 3 x double-sided bicycle hoops (6 spaces) along the Horne Street footpath fronting the subject site (installation subject to the approval of Council);
- 35 x vertically hung bicycle rails within a secure bicycle room on ground floor;
- 4 x double-sided bicycle hoops (8 spaces) within a secure bicycle room on ground floor; and
- 4 x vertically hung bicycle rails within a separate secure bicycle room on ground floor.

Accordingly, the proposed bicycle parking is in excess of the requirements of the Glen Eira Planning Scheme and is expected to cater for the demands generated by the proposed development.

AS 2890.3:2015 requires that 20% of bicycle parking be provided via ground level (horizontal) rails. The proposed bicycle parking provides approximately 38% of the bicycle parking provision within ground level (horizontal) rails, which exceeds the requirements outlined in the Australian Standard.

The bicycle parking specifications are provided within Appendix C.

¹ There is no statutory requirement to provide bicycle parking for SDA apartments under Table 1 to Clause 52.34. Accordingly, the SDA apartments have been added to the standard apartments for the purposes of this assessment. This is considered to be a conservative approach noting the target demographic of SDA apartments.

7.1 Loading Arrangements

Clause 65.01 'Decision Guidelines' of the Glen Eira 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."

Loading and unloading activities associated with the proposed development will be primarily be related to the delivery of goods for the retail tenancies.

It is considered that all loading and unloading associated with the proposed development can appropriately be accommodated on-street along Horne Street, based on the following:

- The presence of a Loading Zone located kerbside along Horne Street in close proximity to the subject site (approximately 20 metres to the south of the site). The parking occupancy surveys undertaken demonstrate that there is spare capacity within the Loading Bay that could be utilised by service and delivery vehicles for the proposed development; and
- Given the nature of the proposed development, it is anticipated that loading will be undertaken by smaller to medium sized trucks / vans that can suitably use the loading bay.

Accordingly, it is considered appropriate for loading associated with the proposed development to be undertaken within the Loading Zone along Horne Street.

7.2 Waste Collection

A Waste Management Plan has been prepared for the development by Ratio Consultants.

Separate refuse and recyclables room are proposed to be provided on ground floor for both residential and commercial waste. Waste collection is proposed to be undertaken along the rear ROW by the 6.4 metre mini rear-lift collection vehicle. A swept path assessment has been undertaken to demonstrate the ability for the nominated waste collection vehicle to enter and exit the site in a suitable manner and is shown in Appendix D.

This is considered to be an acceptable arrangement from a traffic engineering perspective.

8.1 Traffic Generation and Distribution

Residential Traffic Generation

In consideration of the locality of the site and excellent level of accessibility to public transport, the standard apartments are estimated to generate traffic at a daily rate of four vehicle movements per dwelling. Application of these rates to the proposed dwellings results in a daily traffic volume of 132 vehicle movements per day, including approximately 13 vehicle movements (10%) per hour during periods of peak activity.

The majority of the traffic generated by the residential development during the AM peak period will be residents departing the site (80 percent out and 20 percent in) and the majority of the traffic during the PM peak period will be residents returning to the site (40 percent out and 60 percent in).

Accordingly, the expected residential trip generation for a typical weekday AM and PM peak hours, is estimated as shown in Table 8.1.

Table 8.1: Residential Traffic	Generation

Direction	AM Peak	PM Peak
Arriving Trips	3 vph	5 vph
Departing Trips	10 vph	8 vph
Total Trips	13 vph	13 vph

SDA Apartment Traffic Generation

SDA traffic generation to/from the site will be due to the turnover of those spaces allocated to residents and carers.

It is conservatively estimated that the SDA spaces will generate peak hourly traffic at 0.4 vehicle movements per car space (consistent with the residential traffic above). An even split has been assumed between arriving and departing vehicles in both the AM and PM peak hour periods.

Accordingly, the expected trip generation for a typical weekday AM and PM peak hours is estimated as shown in Table 8.2.

Table 8.2: SDA Traffic Generation

	AM Peak	PM Peak
Arriving Trips	1 vph	1 vph
Departing Trips	1 vph	1 vph
Total Trips	2 vph	2 vph

Retail Tenancy

Retail traffic generation to/from the site will be limited to the turnover of those spaces allocated to staff.

On the basis that each car space allocated to retail staff will generate one vehicle movement during AM and PM peak hour periods, the development would generate up to four staff movement in the AM and PM peak hours.

Accordingly, the expected trip generation for a typical weekday AM and PM peak hours is estimated as shown in Table 8.3.

Table 8.3: Retail Traffic Generation

	AM Peak	PM Peak
Arriving Trips	4 vph	0 vph
Departing Trips	0 vph	4 vph
Total Trips	4 vph	4 vph

Overall

A summary of the peak hour traffic generation for the proposed development is presented in Table 8.4 below:

Table 8.4: Overall Traffic Generation

Use	AM Peak	PM Peak
Arriving trips	8 vph	6 vph
Departing trips	11 vph	13 vph
Total trips:	19 vph	19 vph

8.2 Traffic Distribution and Impact

The resident and staff traffic generated by the proposed development will flow on the ROW at the rear of the site and then the surrounding road network. Customer traffic associated with the retail tenancies will primarily seek to access Horne Street to find an on-street park.

As discussed in Section 5, the development is setback from the ROW by approximately 2.4 metres which will enable opposing vehicles to pass in the event of a conflict.

Given the relatively low level of existing traffic carried by the ROW (as determined by the traffic surveys) and the widening of the ROW (which typically allows for opposing vehicles to pass), the level of traffic generated by the proposed development is not expected to create any significant adverse impacts on traffic operations on the ROW or surrounding road network.



It is proposed to demolish the existing buildings on-site and construct a mixed-use development on the site located at 7-15 Horne Street, Elsternwick. More specifically, the development will comprise 33 standard residential apartments, 10 SDA apartments and 280sqm of retail use. A total of 63 car parking spaces are proposed to be located on site to cater for the parking demand generated by the proposal.

Based on the above assessment, it is considered that:

Parking Provision

- The proposed car parking provision is adequate based on the following:
 - The proposed supply of car parking for the standard apartments meets the requirements of Table 1 to Clause 52.06 and is considered acceptable.
 - There is no statutory requirement to provide residential visitor parking and none has been provided. Notwithstanding, the parking surveys demonstrate that there is sufficient on-street parking surrounding the site to accommodate the estimated demand generated by residential visitors.
 - Sufficient car parking is provided to meet the anticipated staff parking demands of the retail tenancies.
 - Multi-purpose trips will reduce the demand for car parking associated with customers of the retail tenancies. Notwithstanding, the parking surveys demonstrate that there is sufficient on-street parking surrounding the site to accommodate the demand of any customers that do choose to drive.
 - Sufficient car parking has been provided on-site to accommodate the anticipated car parking demands of residents/carers of the SDA apartments. Any carers without access to an on-site car parking space will need to park off site or utilise the site's excellent access to alternate transport modes.
 - The site has excellent access to the metropolitan public transport network and the surrounding bicycle network, which will reduce the dependence on private motor vehicle use in gaining access to and from the site.
 - The generous provision of bicycle parking will encourage cycling to the site as a mode of transport and will reduce the reliance on private vehicle use.
 - The existing use of the site relies on the on-street parking supply to accommodate the parking demand of customers, in a similar arrangement to the proposal.

Vehicular Access Arrangements and Car Parking Layout

- The proposed vehicular access arrangements have been designed in accordance with the dimensional requirements of the Glen Eira Planning Scheme and/or AS/NZS 2890.1:2004. Swept path assessments demonstrate that access to/from the site is satisfactory.
- The proposed ground floor and basement car parking areas have been designed in accordance with the dimensional requirements of the Glen Eira Planning Scheme and/or AS/NZS 2890.1:2004. Swept path assessments demonstrate that access to/from all parking spaces is satisfactory.

Bicycle Parking

- The proposed bicycle parking provision is satisfactory and exceeds the Glen Eira Planning Scheme requirement.

Waste Collection and Loading Arrangement

- Waste is proposed to be collected on-site via the ROW at the rear of the site. A swept path assessment demonstrates that the collection vehicle can enter and exit the site in a suitable manner via the ROW.
- Loading associated with the proposed land uses will be undertaken within the on-street Loading Bay located along Horne Street. The parking surveys undertaken demonstrate there is spare capacity within the Loading Bay to enable loading associated with the proposal.

Traffic Generation

 The volume of peak hour traffic generated by the development is predicted to be up to 19 vehicle movements per hour for the commuter peak hour periods, and this level of traffic can be accommodated by the ROW and surrounding road network.

Overall, the proposed development is not expected to create adverse traffic or parking impacts in the precinct.

Appendix A Parking Survey Results





Parking Occupancy Survey

Farking U	raiking Occupancy Survey											
Date:	Friday, 9 December 2016											
Location:	25-27 Horne Street, Elsternwick											
Weather:	Fine											
Customer:	Ratio											

						Parking Occupancy										
Map Ref	Street	Section	Side	Restriction	Clear Way	Capacity	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
А	Glenhuntly Rd	Nepean Hwy to McCombe St	Ν	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		4	4	4	4	4	2	3	3	4	4	4
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
В	Glenhuntly Rd	Horne St to Nepean Hwy	S	P Disabled		1	1	1	1	1	1	1	1	1	1	1
				2P 8am-6pm Mon-Fri 8am-12noon Sat		7	7	7	7	6	6	5	5	7	7	7
				Loading Zone		1	0	0	0	0	0	1	0	0	1	1
				2P 8am-6pm Mon-Fri 8am-12noon Sat		2	2	2	2	1	1	1	1	2	2	2
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
С	Glenhuntly Rd	McCombe St to Ripon Gr	N	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat		19	18	19	19	19	15	13	14	16	17	17
				No Stopping Authorised Flexicar car share		1	1	1	1	1	1	1	1	1	1	1
				Loading Zone 8am-6pm Mon-Sat		1	1	1	1	1	1	1	1	1	1	1
D	Glenhuntly Rd	Ripon Gr to Gordon St	N	No Stopping		0	0	0	0	0	0	0	0	0	0	0
E	Glenhuntly Rd	Gordon St to Horne St	S	No Parking		0	0	0	0	0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				No Parking		0	0	0	0	0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
F	McCombe St	Glephuntly Rd to Davis St	10/	No Stopping		0	0	0	0	0	0	0	0	0	0	0
			~~~	2D Som Com Mon Sot		2	0	2	2	2	2	0	0	0		
				ZF oarn-oprin Mon-Sat		3	3	3	3	3	3	2	2	2	3	3
				No Stopping		0	0	0 5	0	0	0	0	0	0	0	0
				1P 8am-6pm Permit Zone 6pm-Midnight		6	5	5	5	5	4	4	4	2	2	2
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				1P 8am-6pm Permit Zone 6pm-Midnight		4	3	3	4	4	2	2	2	3	3	3
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
G	McCombe St	Davis St to Glenhuntly Rd	E	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				1P 8am-6pm		11	8	10	10	7	7	5	5	8	8	8
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat		11	11	11	11	10	10	10	11	11	11	11
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
н	Ripon Gr	Davis St to Glenhuntly Rd	SE	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				P Angle		51	49	51	50	50	47	41	41	43	46	46
				P45 minute 60o Angle 8am-6pm Mon-Sat		7	6	6	6	7	7	4	4	5	6	6
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
I	Ripon Gr	Glenhuntly Rd to Davis St	NW	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat		6	6	6	4	4	5	4	3	4	4	4
				No Parking		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat Permit Zone 6pm-Midnight		5	4	4	4	4	3	3	3	2	2	2
				Permit Zone 6am-12noon 12noon-Midnight		5	3	3	3	3	2	2	2	2	2	2
				2P 8am-6pm Mon-Sat Permit Zone 6pm-Midnight		4	0	0	0	0	0	0	0	0	0	0
J	Gordon St	Glenhuntly Rd to Sinclair St	NW	1/4P 8am-6pm Mon-Fri		1	1	1	1	1	1	0	0	1	1	1
				No Stopping Authorised Goget car share vehicles		1	1	1	1	1	1	1	1	1	1	1
				2P 8am-6pm Mon-Fri 8am-1pm Sat		11	11	11	10	11	11	10	11	11	11	11
				4P 8am-6pm Mon-Fri 8am-1pm Sat		12	12	12	12	12	12	12	12	12	12	12
				P Angle		29	29	29	29	28	28	28	29	29	29	29
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				Unrestricted		3	2	2	2	3	1	1	1	3	3	3
				No Stopping		0	-	-	-	0				0		
Ľ	Gordon St	Sinclair St to Clonbuntly Pd	<u>و</u> ر	No Stopping		0	0	0	0	0	0	0	0	0		0
				1D Rom Ann Dormit Zone Anns 44		10			0	0	0	0	0	0		0
				TF oan-4pm Fermit Zone 4pm-11pm		10	C	o C	3	2	2	2	2	4	0	0
						-	0	0	0	0	0	0	0	-	0	0
				vvork ∠one /am-5pm Mon-Sat		5	1	1	1	1	1	1	0	0	4	4
				2P 8am-6pm Mon-Sat P5minute 6pm-Midnight		2	2	2	2	2	2	2	2	2	2	2
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
			1	4P Disable		1	0	0	0	0	0	0	0	1	1	1

				Loading Zone 8am-12noon 12noon-Midnight		1	0	0	0	0	0	0	0	0	0	0
L	Selwyn St	Glenhuntly Rd to Sinclair St	W	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		1	1	1	1	1	1	1	1	1	1	1
				Loading Zone 8am-5pm Mon-Fri 2P 8am-12noon			2	·	'	·				- '		
				Sat		2	2	2	2	2	2	<u> </u>		2	2	2
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				P Disabled		1	0	0	0	0	0	0	0	1	1	1
				1/4P 8am-6pm Mon-Sat		1	0	0	0	0	0	0	0	1	1	1
				2P 8am-6pm Mon-Sat		1	1	1	1	1	1	1	1	1	1	1
				2P 8am-6pm Sat	No Parking 10 minute 9.30am-3pm Mon-Fri	5	0	0	0	0	0	3	3	5	5	5
				2P 8am-6pm Mon-Sat		3	3	3	3	3	2	2	2	2	3	3
				No Stopping		0	0	0	0	0	_	_		-		
						0	0	0	0	0	0			0		0
M	Selwyn St	Sinclair St to Glenhuntly Rd	E	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				4P 8am-6pm Mon-Sat		8	8	8	8	6	6	6	8	8	7	7
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				4P 8am-6pm Mon-Sat		5	5	5	5	5	5	5	5	4	4	4
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat		3	3	3	3	3	3	3	3	3	3	3
				No Stopping		0	0	0	0	0				0		
						0	0	0	0	0	0	0	0	0	0	0
N	Glenhuntly Rd	Selwyn St to Gorden St	S	1/4P 8am-6pm Mon-Sat		2	2	2	2	2	2	0	0	0	2	2
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
0	Glenhuntly Rd	Gordon St to Selwyn St		No Stopping		0	0	0	0	0	0	0	0	0	0	0
Р	Horne St	Rusden St to Glenhuntly Rd	NW	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				Unrestricted	Bus Zone 6am-Midnight Midnight-1am	2	0	0	0	0	0	0	0	0	0	0
				Loading Zone 8am-6pm Mon-Fri 8am-12noon		2	0	0	0	0	1	1	0	0	0	0
				Sat		2	0	0	0	0				0		0
						0	U	0	0	0	0	0		0		0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		5	5	5	5	5	5	5	5	5	5	5
				2P 8am-6pm Mon-Fri 8am-12noon Sat		2	2	2	2	2	2	2	2	2	2	2
				No Stopping Authorised Goget car share vehicles excepted		1	1	1	1	1	1	1	1	1	1	1
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
Q	Horne St	Glenhuntly Rd to Sherbrooke Av	SE	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0	0	0	0	0
				No Stepping		0	0	0	0	0	0			0		0
						0	0	0	0	0	0			0		0
				Bus Zone		0	0	0	0	0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2D Som Com Mon Fri Som 12noon Sot				2	2	4				2		
				2P 8am-6pm Mon-Fri 8am-12noon Sat		2	2	2	2					2	2	2
				Permit Zone 6am-Midnight		9	9	9	9	9	8	8	8	6	5	5
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
				Unrestricted		16	16	16	14	15	15	13	13	13	13	13
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
R	Horne St	Sherbrooke Av to Rusden St	W	Unrestricted		5	3	3	3	3	3	3	3	3	3	3
				2P 8am-6pm Mon-Fri		5	3	3	3	4	4	4	4	4	4	4
				No Stanning		0	0	0	0							
	1											-		0		0
				2P 8am-6pm Mon-Fri Permit Zone 6pm-Midnight		13	11	11	10	10	9	9	10	7	5	5
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
		Sherbrooke Av to Rusden St Service Lane	W	P15minute		3	1	1	1	2	2	1	1	0	0	0
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
S	Rusden St	Horne St to Nepean Hwy	SW	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat Permit		9	8	8	8	8	7	7	7	7	7	7
				Zone 6pm-Midnight		0	0	0	0	0	0	0	0	0	0	0
						0		0	0	0						0
I	Rusden St	Ross St to Horne St	NE	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		5	5	5	5	5	5	5	5	5	4	4
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
U	Rusden St	Nepean Hwy to Ross St	NE	No Stopping		0	0	0	0	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		5	5	5	5	4	4	5	5	4	4	4
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
1/	Rose St	End to Rusden St	<u>و</u> _	No Stopping		0	0	0	0	0	0	0	0	0		0
V				2P 8am-6pm Mon-Fri 8am-12noon Sat Permit												
				Zone 6pm-Midnight		16	11	12	15	15	14	14	13	13	13	13
				No Stopping		0	0	0	0	0	0	0	0	0	0	0
W	Ross St	Rusden St to End	NW	No Stopping		0	0	0	0	0	0	0	0	0	0	0
PUBLIC CA	PACITY						321	321	321	321	326	316	323	269	269	269
PUBLIC OC	CUPANCIES						284	290	285	279	261	241	247	229	240	240
PUBLIC VA	CANCIES						37	31	36	42	65	75	76	40	29	29
													1			

PUBLIC % (	DCCUPANCIES				88%	90%	89%	87%	80%	76%	76%	85%	89%	89%
		-		-		-	-	-			-	-		

not available for public parking





# Parking Occupancy Survey

Date:	Saturday, 10 December 2016
Location:	25-27 Horne Street, Elsternwick
Weather:	Fine
Customer:	Ratio

								Parl	king C	ccup	ancy	у	
Map Ref	Street	Section	Side	Restriction	Clear Way	Capacity	11:00	12:00	13:00	14:00	15:00	16:00	
А	Glenhuntly Rd	Nepean Hwy to McCombe St	N	No Stopping		0	0	0	0	0	0	0	
				2P 8am-6pm Mon-Fri 8am-12noon Sat		4	4	4	4	4	2	4	
				No Stopping		0	0	0	0	0	0	0	
В	Glenhuntly Rd	Horne St to Nepean Hwy	S	P Disabled		1	0	0	0	0	0	0	
				2P 8am-6pm Mon-Fri 8am-12noon Sat		7	5	5	7	6	6	4	
				Loading Zone		1	0	0	0	0	0	0	
				2P 8am-6pm Mon-Fri 8am-12noon Sat		2	1	2	2	2	1	2	
				No Stopping		0	0	0	0	0	0	0	
С	Glenhuntly Rd	McCombe St to Ripon Gr	Ν	No Stopping		0	0	0	0	0	0	0	
				2P 8am-6pm Mon-Sat		19	14	16	19	18	15	13	
				No Stopping Authorised Flexicar car share vehicle excepted		1	1	1	1	1	1	1	
				Loading Zone 8am-6pm Mon-Sat		1	1	1	0	0	1	0	
D	Glenhuntly Rd	Ripon Gr to Gordon St	Ν	No Stopping		0	0	0	0	0	0	0	
E	Glenhuntly Rd	Gordon St to Horne St	S	No Parking		0	0	0	0	0	0	0	
				No Stopping		0	0	0	0	0	0	0	
				No Parking		0	0	0	0	0	0	0	
				No Stopping		0	0	0	0	0	0	0	
F	McCombe St	Glenhuntly Rd to Davis St	W	No Stopping		0	0	0	0	0	0	0	
				2P 8am-6pm Mon-Sat		3	3	3	3	3	3	3	
				No Stopping		0	0	0	0	0	0	0	
				1P 8am-6pm Permit Zone 6pm-Midnight		6	4	4	6	5	5	4	
				No Stopping		0	0	0	0	0	0	0	
				1P 8am-6pm Permit Zone 6pm-Midnight		4	1	1	3	3	2	2	
				No Stopping		0	0	0	0	0	0	0	
G	McCombe St	Davis St to Glenhuntly Rd	Е	No Stopping		0	0	0	0	0	0	0	
				1P 8am-6pm		11	8	8	8	7	5	5	
				No Stopping		0	0	0	0	0	0	0	
				2P 8am-6pm Mon-Sat		11	11	11	11	9	9	10	
				No Stopping		0	0	0	0	0	0	0	
н	Ripon Gr	Davis St to Glenhuntly Rd	SE	No Stopping		0	0	0	0	0	0	0	
				P Angle		51	25	26	28	32	35	35	
				P45 minute 60o Angle 8am-6pm Mon-Sat		7	2	4	4	5	3	4	
				No Stopping		0	0	0	0	0	0	0	
I	Ripon Gr	Glenhuntly Rd to Davis St	NW	No Stopping		0	0	0	0	0	0	0	
				2P 8am-6pm Mon-Sat		6	4	3	5	5	4	3	
				No Parking		0	0	0	0	0	0	0	
				2P 8am-6pm Mon-Sat Permit Zone 6pm- Midnight		5	4	5	5	3	4	4	
				Permit Zone 6am-12noon 12noon-Midnight		5	3	3	3	2	2	2	
				2P 8am-6pm Mon-Sat Permit Zone 6pm- Midnight		4	0	0	0	1	1	1	
J	Gordon St	Glenhuntly Rd to Sinclair St	NW	1/4P 8am-6pm Mon-Fri		1	1	1	1	1	1	1	
				No Stopping Authorised Goget car share vehicles excepted		1	1	1	1	1	1	1	
				2P 8am-6pm Mon-Fri 8am-1pm Sat		11	7	9	9	10	10	8	
				4P 8am-6pm Mon-Fri 8am-1pm Sat		12	10	10	10	9	9	11	
				P Angle		29	29	28	28	27	27	28	
				No Stopping		0	0	0	0	0	0	0	

				Unrestricted		3	2	2	2	2	2	3
				No Stopping		0	0	0	0	0	0	0
к	Gordon St	Sinclair St to Glenhuntly Rd	SE	No Stopping		0	0	0	0	0	0	0
				1P 8am-4pm Permit Zone 4pm-11pm		10	3	3	4	4	6	5
				No Stopping		0	0	0	0	0	0	0
				Work Zone 7am-5pm Mon-Sat		5	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat P5minute 6pm-Midnight		2	2	2	2	2	2	2
				No Stopping		0	0	0	0	0	0	0
				4P Disabled		1	1	1	1	0	0	0
				Loading Zone 8am-12noon 12noon-Midnight Mon-Sat		1	0	0	0	0	0	0
L	Selwyn St	Glenhuntly Rd to Sinclair St	W	No Stopping		0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		1	1	1	1	1	1	1
				Loading Zone 8am-5pm Mon-Fri 2P 8am- 12noon Sat		2	2	2	2	2	2	2
				No Stopping		0	0	0	0	0	0	0
				P Disabled		1	0	0	0	0	0	0
				1/4P 8am-6pm Mon-Sat		1	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat		1	1	1	1	1	1	1
				2P 8am-6pm Sat	No Parking 10 minute 9.30am-3pm Mon-Fri	5	2	2	2	3	1	1
				2P 8am-6pm Mon-Sat		3	1	1	1	1	1	1
				No Stopping		0	0	0	0	0	0	0
М	Selwyn St	Sinclair St to Glenhuntly Rd	E	No Stopping		0	0	0	0	0	0	0
				4P 8am-6pm Mon-Sat		8	8	8	8	8	8	8
				No Stopping		0	0	0	0	0	0	0
				4P 8am-6pm Mon-Sat		5	4	4	5	5	5	3
				No Stopping		0	0	0	0	0	0	0
				2P 8am-6pm Mon-Sat		3	2	2	3	3	2	2
				No Stopping		0	0	0	0	0	0	0
N	Glenhuntly Rd	Selwyn St to Gorden St	S	1/4P 8am-6pm Mon-Sat		2	2	2	0	0	1	1
				No Stopping		0	0	0	0	0	0	0
0	Glenhuntly Rd	Gordon St to Selwyn St		No Stopping		0	0	0	0	0	0	0
Р	Horne St	Rusden St to Glenhuntly Rd	NW	No Stopping		0	0	0	0	0	0	0
				Unrestricted	Bus Zone 6am-Midnight Midnight-1am	2	0	0	0	0	0	0
				Loading Zone 8am-6pm Mon-Fri 8am-12noon Sat		2	0	0	1	1	1	0
				No Stopping		0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		5	5	5	5	5	5	5
				2P 8am-6pm Mon-Fri 8am-12noon Sat		2	2	2	2	2	2	2
				No Stopping Authorised Goget car share vehicles excepted		1	1	1	1	1	1	1
				No Stopping		0	0	0	0	0	0	0
Q	Horne St	Glenhuntly Rd to Sherbrooke Av	SE	No Stopping		0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0
				Bus Zone		0	0	0	0	0	0	0
				No Stopping		0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat		2	2	2	2	2	2	2
				Permit Zone 6am-Midnight		9	7	7	7	6	6	7
				No Stopping		0	0	0	0	0	0	0
				Unrestricted		16	11	10	10	10	10	12
				No Stopping		0	0	0	0	0	0	0
R	Horne St	Sherbrooke Av to Rusden St	W	Unrestricted		5	1	1	1	1	1	2
				2P 8am-6pm Mon-Fri		5	5	4	4	4	4	5
				No Stopping		0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri Permit Zone 6pm-		13	11	11	13	12	10	10

				No Stopping	0	0	0	0	0	0	0
		Sherbrooke Av to Rusden St Service Lane	W	P15minute	3	0	0	0	0	0	0
				No Stopping	0	0	0	0	0	0	0
S	Rusden St	Horne St to Nepean Hwy	SW	No Stopping	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat Permit Zone 6pm-Midnight	9	4	4	4	6	5	5
				Bus Zone	0	0	0	0	0	0	0
Т	Rusden St	Ross St to Horne St	NE	No Stopping	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat	5	3	2	2	3	4	4
				No Stopping	0	0	0	0	0	0	0
U	Rusden St	Nepean Hwy to Ross St	NE	No Stopping	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat	5	4	4	5	3	4	4
				No Stopping	0	0	0	0	0	0	0
V	Ross St	End to Rusden St	SE	No Stopping	0	0	0	0	0	0	0
				2P 8am-6pm Mon-Fri 8am-12noon Sat Permit Zone 6pm-Midnight	16	15	15	14	14	13	13
				No Stopping	0	0	0	0	0	0	0
W	Ross St	Rusden St to End	NW	No Stopping	0	0	0	0	0	0	0
PUBLIC	CAPACITY					327	331	331	331	331	321
PUBLIC	OCCUPANCIES					226	232	249	246	236	232
PUBLIC	VACANCIES					101	99	82	85	95	89
PUBLIC	% OCCUPANCI	ES				69%	70%	75%	74%	71%	72%

not available for public parking

Appendix B Swept Path Assessment











PATHS\2020.12.21\14988T ELSTERNWICK\DESIGN\SWEPT HORNE 15 Y: \14501 M

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Appendix C Bicycle Parking Specifications





# Arc de Triomphe





Galvernised 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** 

- 316 Marine grade stainless steel

**Recommended fasteners** 

1000mm [w] x 850mm [h]

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

Material options

- Galvanised

Dimensions

- In situ

Fixing options - Welded flange





# Locking points



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Design. Supply. Install.

# Fixing options

#### In situ (Concrete footing)



#### Welded flange (Bolt on)



#### Welded flange (Security heads)



# Layout guidelines

# Option 1: Footing Width 1700mm WALL Angle 0° Option 2: Footing Width 1200mm Angle 45° WALL 350m 1000mi 1700mm 350mm 1500m 700mm 1000mr Typical Bicycle Length 670r 1200mr 265 1500mm 1700mm

Design. Supply. Install.

Bicycle NetworkABN 41 026 835 903p. 1300 727 563e. parking@bicyclenetwork.com.aubikeparking.com.auVIC Level 4, 246 Bourke St, Melbourne 3000NSW 234 Crown St, Darlinghust 2010TAS 210 Collins St, Hobart 7000

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# Ned Kelly[™]



# **Features**



- Each rail provides storage for a single bike
- Suits bikes with full length mud guards
- Available in Zinc finish or Black powder coat over mild steel
- Provides the ability to lock the main frame and one wheel
- Support prongs with protective coating prevent damage to rim
- Can be used with custom framing no wall needed

#### **Dimensions**



# FRONT

# **Specifications**

#### Material options

- Zinc finish
- Black powder coat over mild steel
- Stainless steel Pre-order only

#### **Fixing options**

- Bolt on to wall
- Fixed to support framing

#### Recommended fasteners - wall

- Dynabolts (M8 x 40mm)
- Shear Nut security fasteners

#### Recommended fasteners - framing

- Bolt and nut (M10 x 60mm)
- Tek screws

#### Dimensions

125mm [w] x 700mm [h] x 600mm [d]

# **Locking Points**



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# **Fixing options**

#### Fix to a wall using 4x fasteners or Shear Nuts



Shown with M8 x 40mm fastener



Shown with M8 x 40mm Shear Nuts

#### Fix to a frame using 4x bolts or Tek Screws



Shown with M10 x 60mm Bolt, Washer & Nut



Shown with Tek Screw



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DESIGN. SUPPLY. INSTALL. Bicycle Network ABN 41 026 835 903 p. 1300 727 563 e. parking@bicyclenetwork.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 Appendix D Waste Collection Arrangement



