TRAFFWISE CONSULTANTS

Kamira Court Precinct – Stage 1 (Building B) High-Density Residential Development

2021–1 (15) Traffic Impact Assessment

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Project Details	
Title	Traffic Impact Assessment – Ver 07
Project Type	High-Density Residential Development
Project Location	Kamira Avenue, Villawood NSW 2163
Client	Traders In Purple
Project Reference	2021 – 1 (15)
Relevant Council	Fairfield City Council
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1. Introduction

1.1 Overview

Traders in Purple (TIP) has commissioned Traffwise Consultants Pty Ltd (Traffwise) to undertake a Traffic Impact Assessment (TIA) study for the proposed Stage 1 ***(Building B),*** high-density residential development, as part of Kamira Court Precinct development plan in accordance with the Urban Framework Plan for Villawood Town Centre.

Figure 1 Villawood Town Centre
Source: Villawood Town Centre Development Control Plan 2020

1.2 Background

The Western City District Plan sets targets for infrastructure and community services, including transport, schools, health and community facilities, and recreation, to achieve the 40-year vision for Greater Sydney. The Council adopted the Villawood Town Centre Development Control Plan 2020 (DCP) to assist in achieving the District Plan's targets for Fairfield City Council and the desired economic growth.

Fairfield City Council (Council) commissioned an urban design study for the Villawood Town Centre in 2017. Based on the principles set out in the NSW Government's South West District Plan, the study identified key urban design, built form and place-making actions to improve the vitality and vibrancy of the Villawood Town Centre.

The Urban Design Study established an Urban Framework Plan to guide future development in the Town Centre. The desired redevelopment for Villawood describes providing new community facilities,

medium to high density, social, affordable and private housing, active safe streets and improved connections throughout the Town Centre.

As described in the DCP and shown in **Figure 2**, the Town Centre comprises the following two precincts:

- Business Precinct
- Residential Precinct

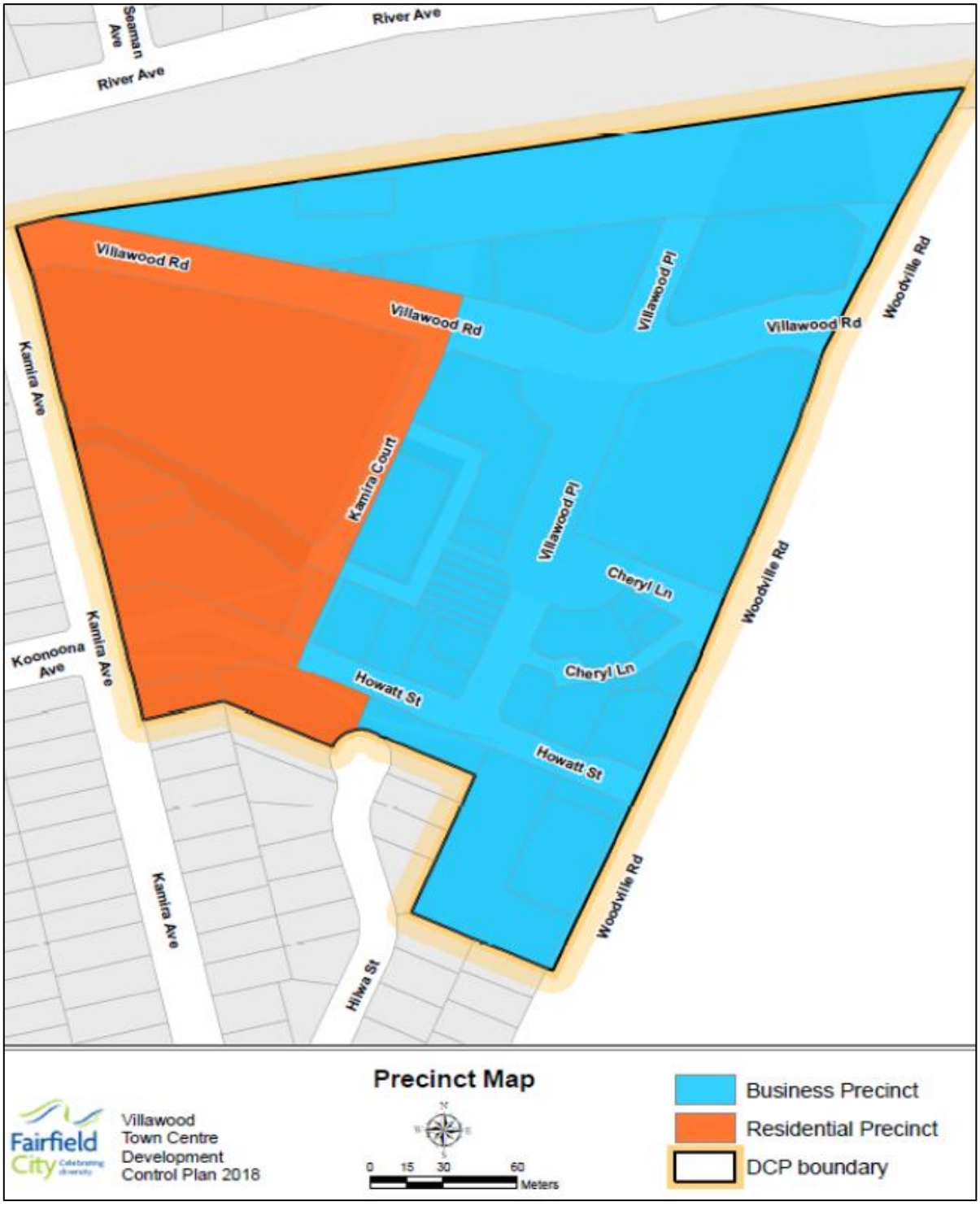


Figure 2 Villawood Town Centre – Precinct Plan
Source: Villawood Town Centre Development Control Plan 2020

The proposed Stage 1 ***(Building B)*** is part of the residential precinct development with an expected yield of 112 residential units, a small library for the residents/area visitors and an ancillary café. The details of the proposed development are provided in **Section 3**.

1.3 Broader Site Context

As described earlier that the proposed development site is part of the Villawood Town Centre which is located to the east of the Fairfield Local Government Area. The town centre is approximately two (2) km east of Fairfield and 10 km from both Parramatta ***(to the north)*** and Bankstown ***(to the east)***.

Figure 3 illustrates the district context plan of the Villawood Town Centre.

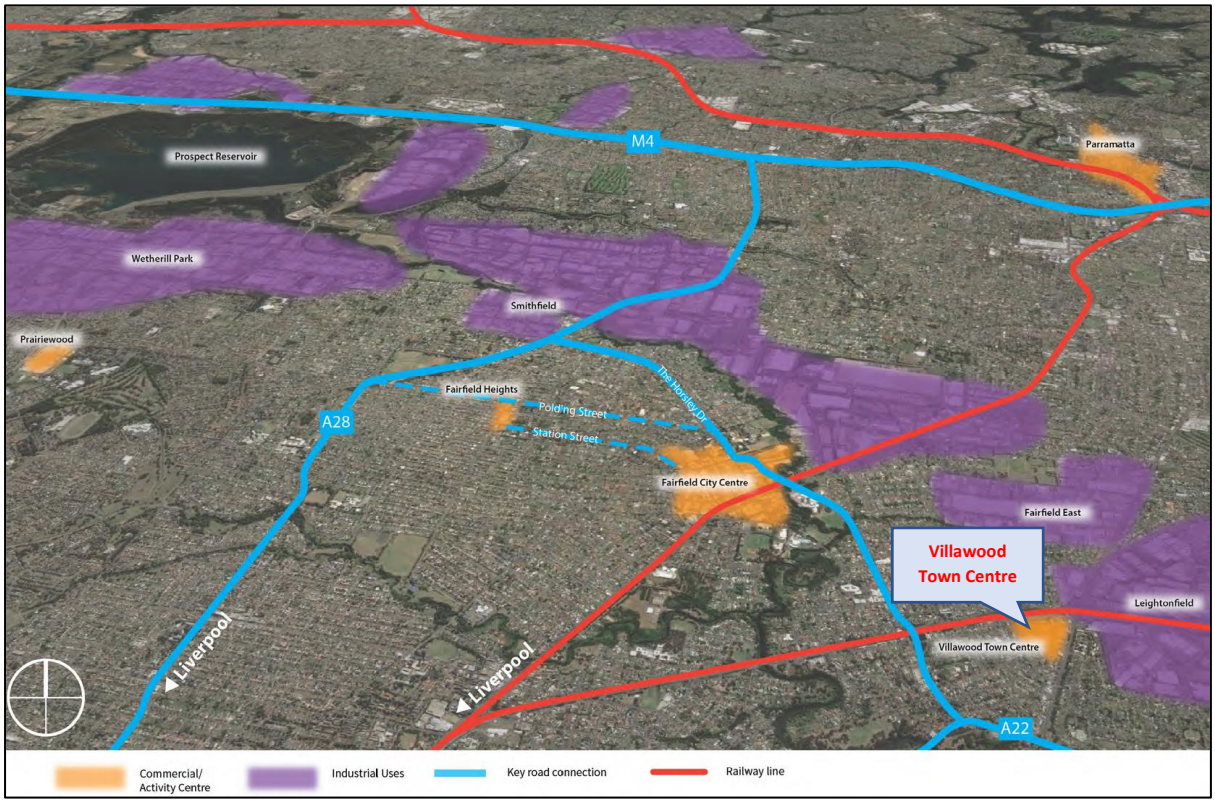


Figure 3 Villawood Town Centre – District Context
Source: Villawood Town Centre Urban Design Study – Fairfield City Council Website (Link, accessed on the 1st of May 2021)

1.4 Reference Documents/Websites

- Villawood Town Centre Urban Design Study
- Google Map and Google Traffic Map
- Google Earth Pro
- Fairfield Citywide Development Control Plan (DCP)
- Villawood Town Centre Development Control Plan 2020
- Information and Development Plans provided by the Architect/Client
- RMS Guide to Traffic Generating Developments (2002)
- RMS Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04a)
- NSW Department of Planning and Environment's Apartment Design Guide July 2015
- Land and Housing Corporation Website
- RMS Traffic Modelling Guidelines (2013)
- Australian Standards - AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009

1.5 Report Structure

- Section 1: **Introduction**
- Section 2: **Existing Conditions**
- Section 3: **Proposed Development**
- Section 4: **Traffic Assessment**
- Section 5: **Parking Assessment**
- Section 6: **Findings**

2. Existing Conditions

2.1 Project Site Locality

The project site is located at the northeast corner of the Koonoona Avenue and Kamira Avenue intersection. This parcel of the land is of the Kamira Court Residential Precinct, owned by Land and Housing Corporation ***(LAHC)***.

Figure 4 illustrates the locality of the project site and the surrounding road network.

Figure 4 Project Site – Location and Surrounding Road Network
Source: Google Earth Pro ***(Accessed on the 1st of May 2021)***

2.2 Existing Condition

It is evident from **Figure 5** that the project site is vacant land with no existing development. **Figure 5** also shows that the project site is bounded by:

- Kamira Avenue and existing residential developments to the west
- Vacant land to the north for future development of Building A and Building C of Kamira Court Residential Precinct
- Hilwa Park and existing residential developments to the south
- Residential and commercial development ***(47 Villawood Place)*** to the east.

Figure 5 Project Site – Existing Condition and Surrounding Land-Use
*Source: Land and Housing Corporation Website (Link, **Accessed on the 1st of May 2021**)*

2.3 Existing Access Provisions

At present, the project site is only accessible from Kamira Court, running one-way from the west ***(Kamira Ave)*** to the east. As shown in **Figure 6** that the project site has been fenced with an informal access point on Kamira Court.

Figure 6 Project Site – Existing Access Point
*Source: Google Street View October 2020 Image **(Accessed online on the 1st of May 2021)***

It is noted from the provided plans that the section of the Kamira Court running along northern boundary of the site will be demolished, and the primary vehicular access will be provided along the southern periphery. (See **Section 4.5**)

2.4 Public Transport Accessibility

The broader area of the Villawood Town Centre ***(including the project site)*** is well serviced by train and bus services providing access to Fairfield City Centre and other larger service and employment centres such as Liverpool, Parramatta CBD and the Sydney CBD.

2.4.1 Project Site – Existing Train Services

Figure 7 illustrates that the Villawood Station is in close proximity, i.e. within 500 metres of walking distance from the project site. The average walking time to the station would be only five minutes promoting active travel and less reliance on private vehicles.

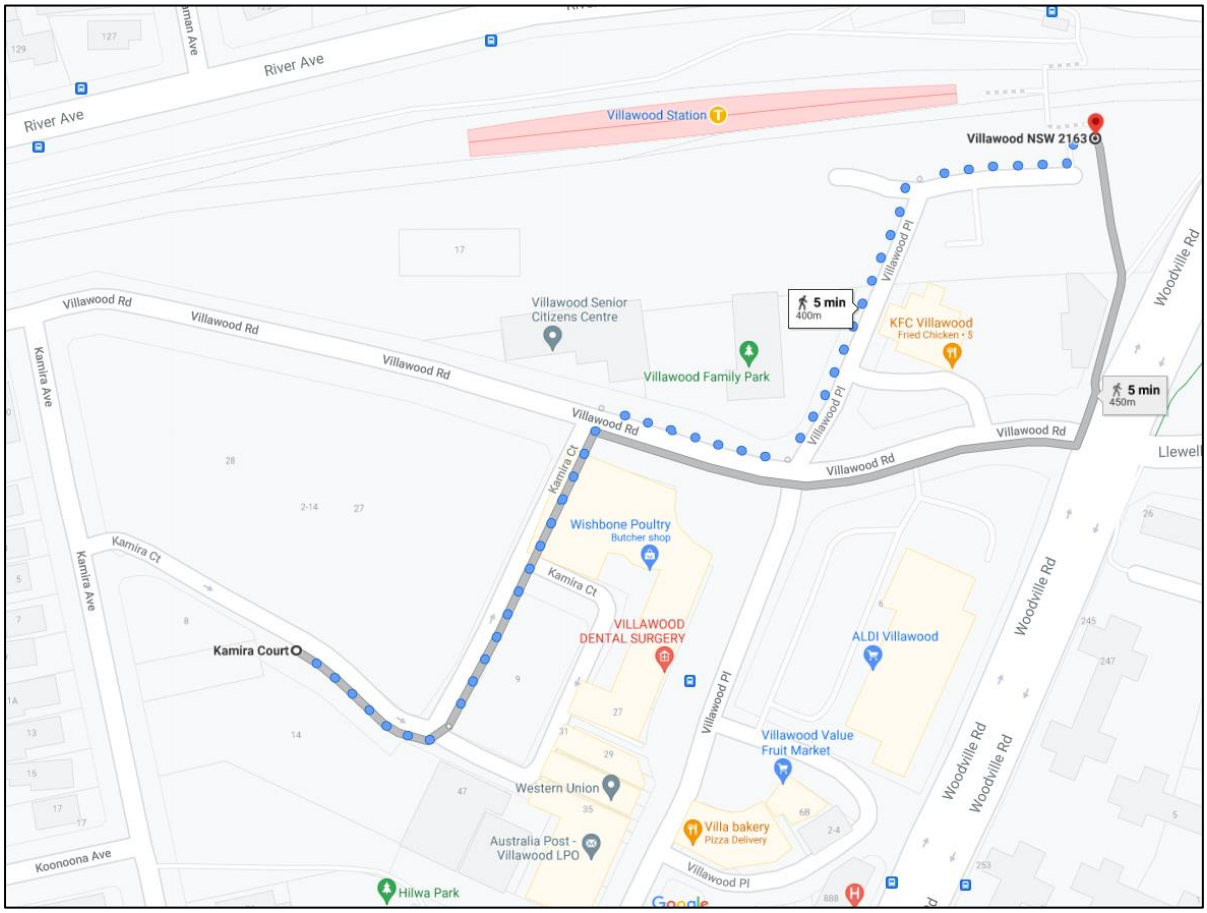


Figure 7 Project Site – Nearest Train Station
Source: Google Maps ***(Accessed online on the 1st of May 2021)***

Villawood Station is serviced by the following three lines:

- Parramatta or Leppington to City **(T2)**
- City to Liverpool or Lidcombe via Bankstown **(T3)**
- Liverpool or Lidcombe to City via Bankstown **(T3)**

2.4.2 Project Site – Existing Bus Services

The project is well serviced by the existing bus routes with bus stops concentrated on River Avenue to the north of the Railway, Woodville Road and Villawood Place.

As evident from **Figure 8** that the nearest bus stop ***(Name:*** *Villawood Place Shops****, No:****2163165****)*** is located at a distance of only 300 metres from the project site with an average waking time of four minutes.

Table 1 summarises the key routes operating in the vicinity of the project site.

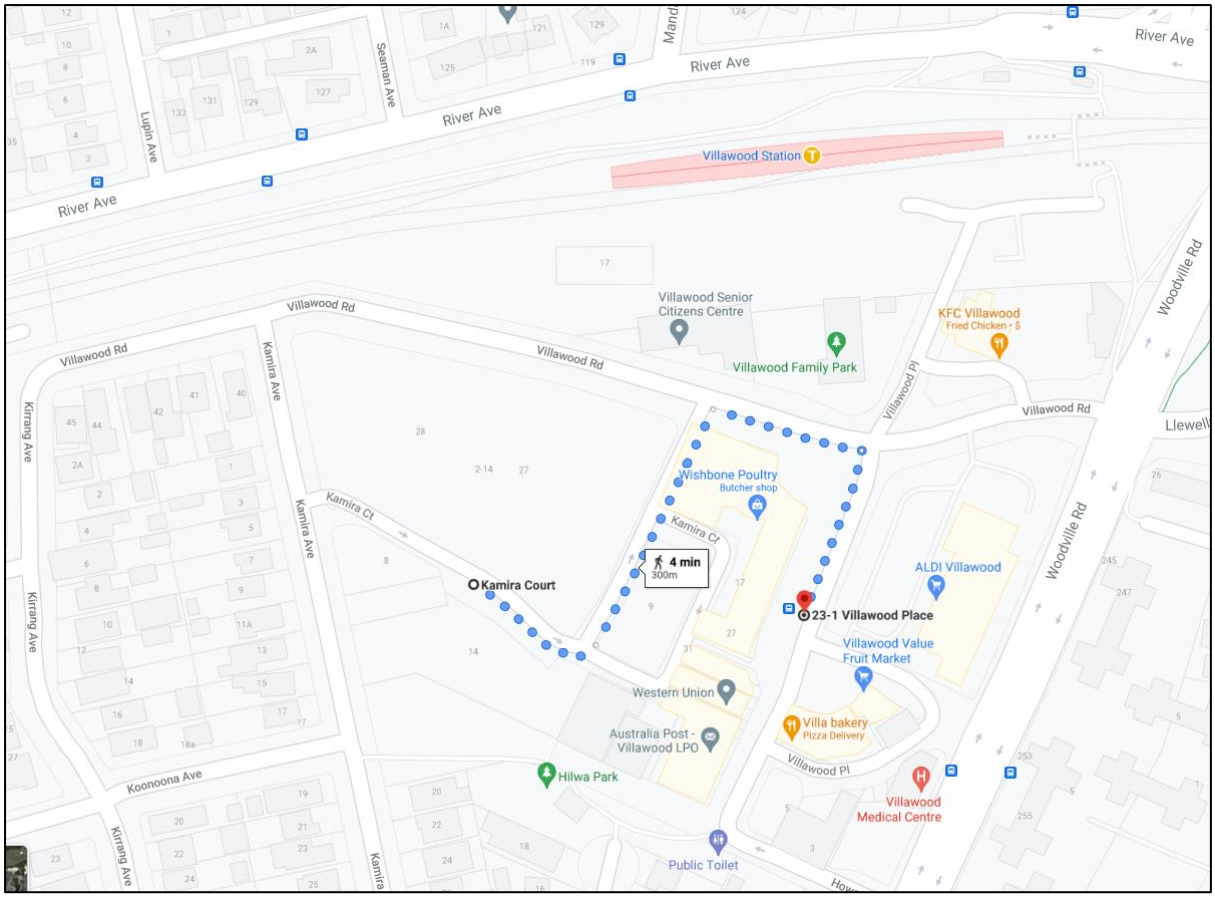


Figure 8 Project Site – Bus Stops and Walking Distance to the Nearest Stop
Source: Google Maps ***(Accessed online on the 1st of May 2021)***

Table 1 Bus Route Summary

Road Name	Bus Routes Number	Route Description
Villawood Place	905 and S4	**905:** Bankstown to Fairfield **S4:** Chester Hill to Fairfield **907:** Bankstown to Parramatta **N50:** Liverpool to City Town Hall (Night Service) **4T3:** Liverpool to Bankstown (Train Replacement Bus Services)
Woodville Road	907, 905 and S4	
River Avenue	4T3, N50, S4	

2.5 Existing Traffic Conditions

2.5.1 Based on Typical Traffic Trends

Traffwise has referred to the Google Typical Traffic Map to assess the existing traffic flow condition in the project site's vicinity. The typical traffic map considers historical traffic condition on a road network at a particular time of a specific day to reflect an average traffic condition at that time of the day.

Figure 9 illustrates the typical traffic condition in the vicinity of the project site at 03:48 PM, Weekday PM Peak Hour on Thursdays. This peak hour timing reflects the worst peak hour identified in the video-based classified intersection counts, carried out on Thursday the 11th of February 2021.

It is evident from the typical traffic map that the traffic flow condition on the existing road network is satisfactory. However, the map indicates congestion at the intersection of Woodville Road, Villawood Road and Llewellyn Avenue.

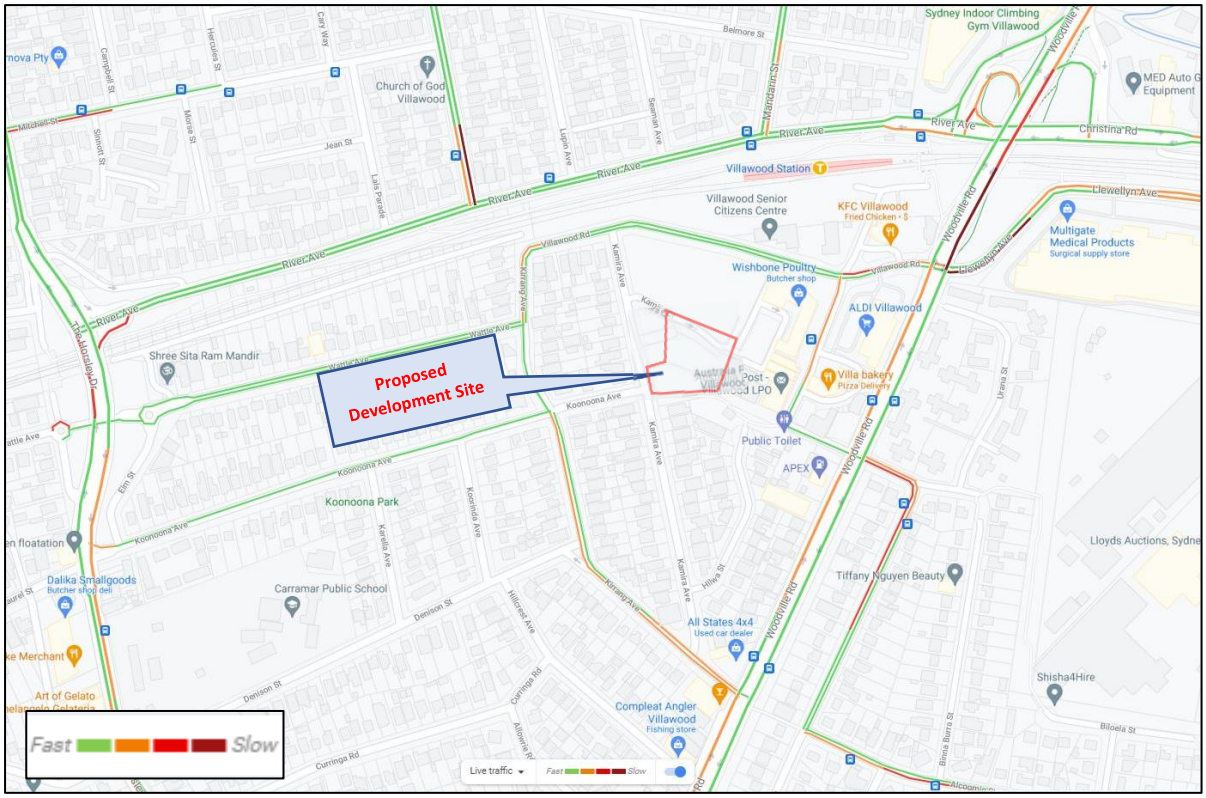


Figure 9 Existing Typical Traffic Flow Condition – PM Peak
Source: Google Live Traffic Maps (Accessed on Thursday the 29th April @ 3:48 PM)

2.5.2 Based on Intersection Counts and SIDRA Modelling

Survey Locations

Considering the locality of Kamira Court Precinct and potential trip routes, classified intersection counts were commissioned at the five key intersections shown in **Figure 10**.

Traffwise engaged an experienced traffic survey company to undertake the video-based intersection counts on:

- Thursday the 11th of February 2021
- Saturday the 13th of February 2021.

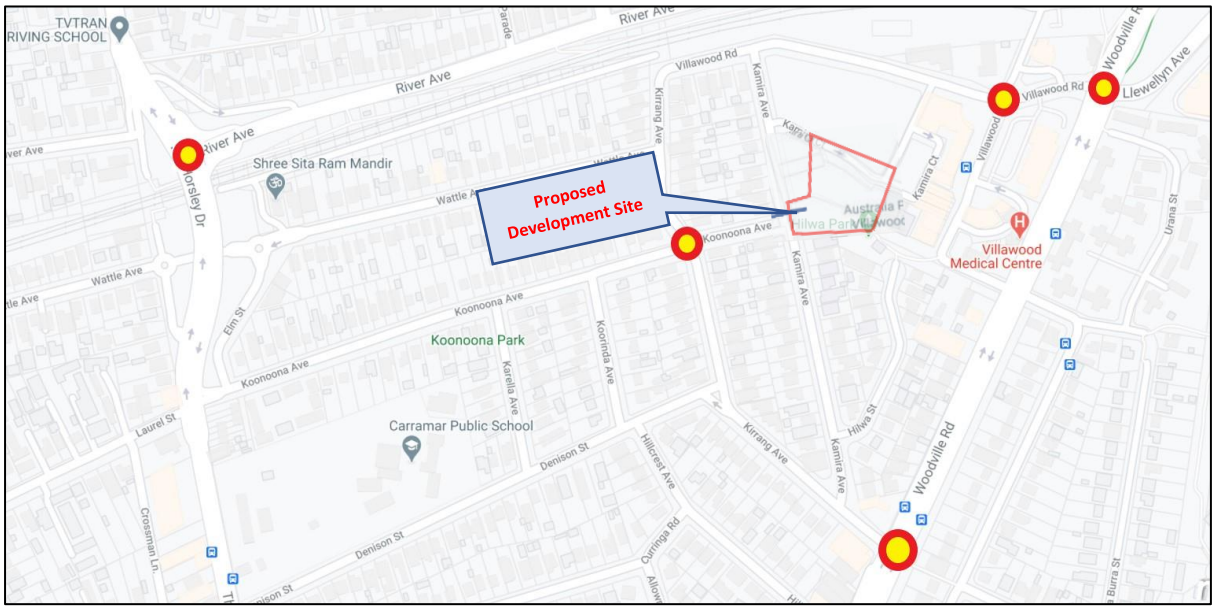


Figure 10 Key Intersections – Intersection Surveys

Survey Results

Figure 11 illustrates the traffic demand at key intersection in AM and PM peak hours on a typical Thursday, and on Saturday Afternoon Peak.

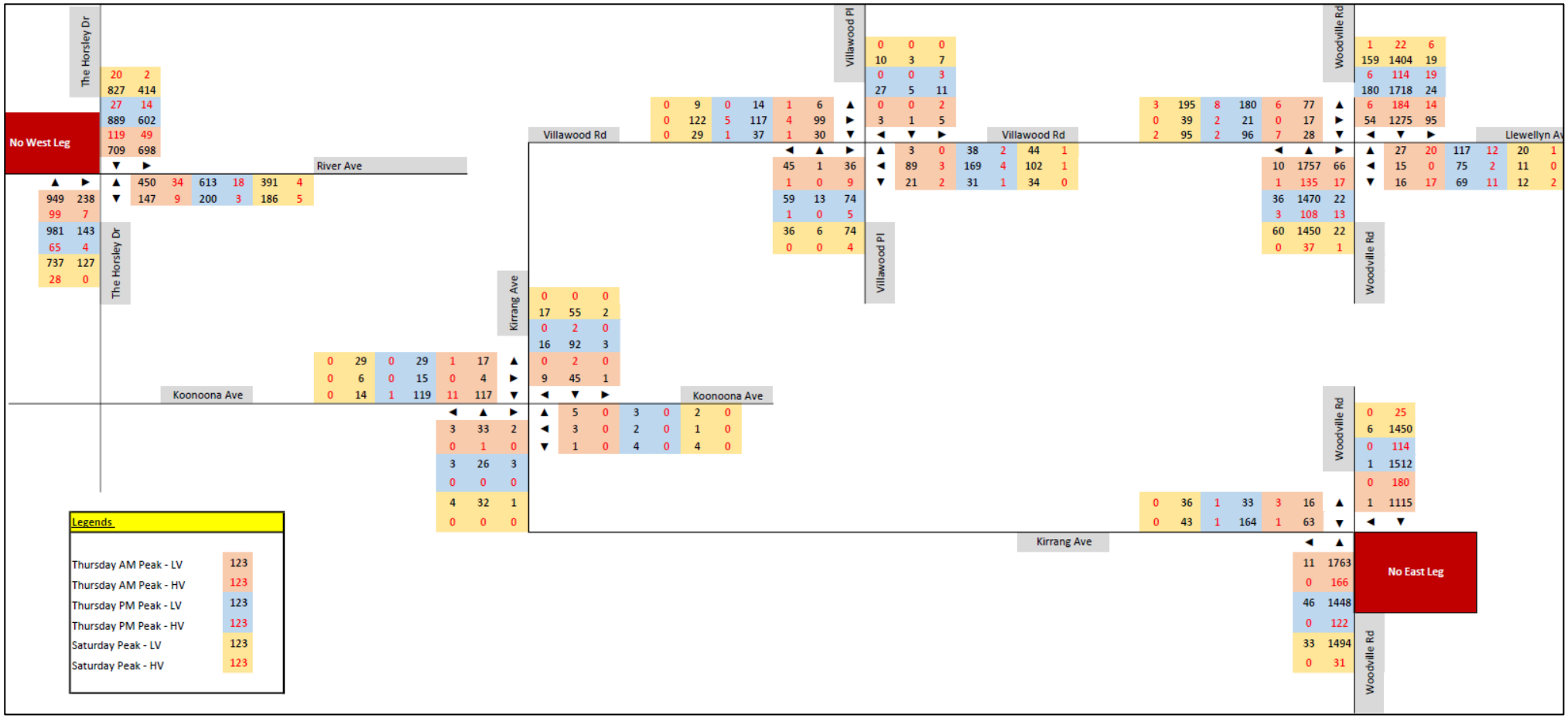


Figure 11 Traffic Demand - Peak Hours
Source: Video-Based Classified Intersection Count Results

3. Proposed Development

Traders in Purple are planning to submit a development application (DA) for the proposed high-density residential development of Stage 1 ***(Building B)*** within the Kamira Court Residential Precinct area.

Figure 12 illustrates the perspective of the proposed development. The layout plans for each floor are provided in **Appendix A**.

Figure 12 Proposed Development – Perspective
Source: DKO Architecture (NSW) Pty Ltd

Based on the information provided, **Table 2** and **Table 3** summarise the proposed development's yield for residential and non-residential component, respectively. As evident, the proposed development will comprise 112 residential units, a small library for the residents/area visitors and an ancillary café.

Table 2 Proposed Development Yield – Residential Component

Unit Type	Housing Type	Number of Units
1 Bed Unit	Social Housing	4
	Non-affordable	21
	Sub-Total	***25***
2 Bed Unit	Social Housing	28
	Non-affordable	36
	Sub-Total	***64***
3 Bed Unit	Social Housing	0
	Non-affordable	23
	Sub-Total	***23***
Total Number of Units		**112**

Table 3 Proposed Development Yield – Non-Residential Component

Lan-Use	Area	Comments
Small Library	328 m^2	Expected to be used by Kamira Court Precinct residents and Villawood Town Centre visitors
Ancillary café	57 m^2	

4. Traffic Assessment

4.1 Trip Generation Rates

Residential Component

As advised by Fairfield City Council, the trip generation rate of **0.3 trips per hour per unit** was adopted for both the AM and PM peak period.

Library

The RMS Guide to Traffic Generating Developments (2002) and Updated Traffic Surveys (TDT 2013/04a) do not provide trip rates for Library. Therefore, for the purposes of this assessment trip rates for commercial use has been adopted for the library. **Table 4** summarises the adopted trip rates to assess the trip generation from the proposed small library.

Table 4 Trip Generation Rates – Library

AM Peak (1 Hour) per 100 m^2	--
PM Peak (1 Hour) per 100 m^2	2
Daily Trips per 100 m^2	10

Source: RMS Guide to Traffic Generating Developments (2002)

Ancillary Café

Considering the small size ***(57 m^2)*** and the locality within the Villawood Town Centre area, it is envisaged that the ancillary café would be primarily used by the residents and visitors in the area. Therefore, it is assumed that the development of an ancillary café would not generate any additional vehicular trips.

4.2 Proposed Development – Trip Generation

Table 5 summarise the detailed trip generation for each proposed land use based on the adopted trip rates described in **Section 4.1**. The total trip generation from the proposed Stage 1 ***(Building B)*** development is summarised in **Table 6**.

Table 5 Trip Generation – Different Land-Uses

Trip Generation - Building B | Stage 1					
Residential Component - High Density					
Unit Type	*Quantity*	*Number of Bedrooms*	*Trip Generation*		
1-Bed Unit	25	25	*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
2-Bed Unit	64	128			
3-Bed Unit	23	69			
Total Number of Units		112			
		TOTAL TRIPS	34	34	280.0
		IN	7	27	140
		OUT	27	7	140
Library					
Type	*GFA m2*	*GLFA m2*	*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
Library	328	246			
		TOTAL TRIPS	1	7	33
		IN	1	3	16
		OUT	0	3	16
Ancillary Café					
Type	*GFA m2*	*GLFA m2*	*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
Ancillary Café	57	43			
		TOTAL TRIPS	It is assumed that the ancillary café would be mostly used by the residents and visitors in the area. Therefore, no additional vehicular		
		IN			
		OUT			

Table 6 Total Trip Generation Summary

Total Peak Hour Trips			
Peak Period	**IN**	**Out**	**Total**
Weekday AM Peak	8	27	35
Weekday PM Peak	30	10	40

It is important to note that trip rates described in **Section 4.1** include both In and Out trips. The following typical IN and OUT trip ratios were adopted for this assessment:

For Residential Development: 20% IN and 80% OUT in AM Peak and opposite IN and OUT ratios in the PM Peak.

For Commercial Development: 50% IN and 50% OUT in both AM and PM peaks

4.3 Potential Traffic Impacts

As described in **Section 0** and summarised in **Table 6**, the proposed Stage 1 ***(Building B)*** development is expected to generate maximum of **27** and **30** trips in the AM and PM peak hour, respectively.

Figure 13 illustrates the trip distribution for the proposed Stage 1 ***(Building B)*** development based on the following assumption:

- Howatt Street will be extended up to Kamira Court and further west to connect Kamira Avenue
- Kamira Court will be connected with an extended section of the Howatt Street
- Only one-way movement (east to west) would be permitted on Howatt Street from Woodville Road to Kamira Court
- The turning proportions are based on the recorded PM peak hour turning counts at the intersections of Villawood Road/Villawood Place and Woodville Road/Villawood Road. The video-based classified intersection counts were carried out on Thursday, the 11th of February 2021.

Figure 13 Stage 1 (Building B) – Trip Distribution

Considering the IN & OUT trip proportion and the trip distribution on the surrounding road network (see **Figure 13**), there will be minimal increase in traffic on the surrounding road network.

Therefore, it is envisaged that the proposed **Stage 1 (Building B)** development is not expected to have any significant impact on the surrounding transport network. Also, the key intersections are expected to keep operating at the same level of service with no material impact on intersection delays and degree of saturation.

4.4 Public Transport Provisions

As described in **Section 2.4**, the proposed development site and the broader Villawood Town Centre is well serviced by the existing train and bus services providing access to Fairfield City Centre and other larger service and employment centres such as Liverpool, Parramatta CBD and the Sydney CBD.

The Villawood train station and the nearest bus stop on Villawood Place are located within 500 metres of walking distance with an average walking time of five minutes.

Please see **Section 2.4** for details regarding existing train services and bus routes.

4.5 Proposed Access Arrangements

As per the provided plans, a vehicular access point has been proposed along the southern boundary on Howatt street. **Figure 14** shows the location of the proposed access point on the future Howatt Street section.

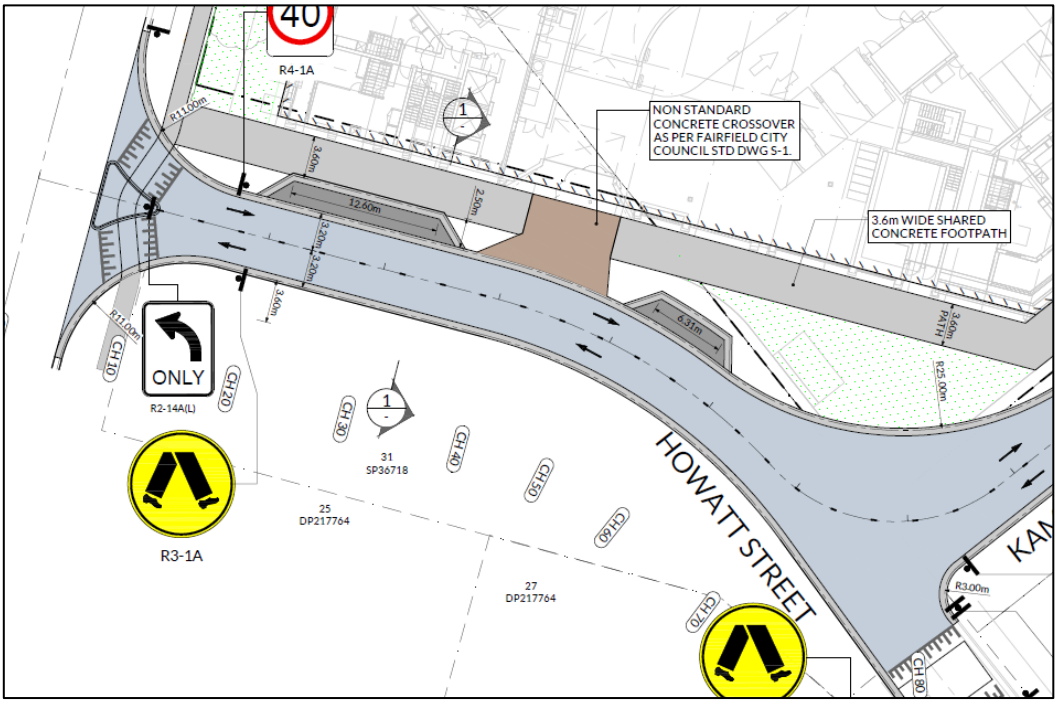


Figure 14 Proposed Access Point – Howatt Street
Source: MRC Consulting Engineers

The proposed access to the library and ancillary café is from the Active Recreational Zone/Area along the northern boundary of the development ***(Building B)***.

Howatt Street extension and proposed west to east movement from Kamira Avenue to Kamira Court is in line with the DCP. It will discourage rat running from Woodville Road to Kamira Avenue.

4.6 Accessibility of Service Vehicle

The service vehicle will access the development from the same entrance point on Howatt Street shown in **Figure 14**. As per the provided information, the Council has confirmed that the waste service vehicle will be an HRV – 10.5 long, 2.5m wide and 3.9 metres operational height.

Accordingly, swept path assessment was carried out using 11m long and 2.5m wide large truck template shown in **Figure 15**. The 300mm body envelope was also used to ensure clearance and safe manoeuvres.

Figure 16 shows the swept path of an 11-metre long service truck entering the project site in a forward direction. It is evident from the swept path that the service vehicle can enter and exit in the forward direction.

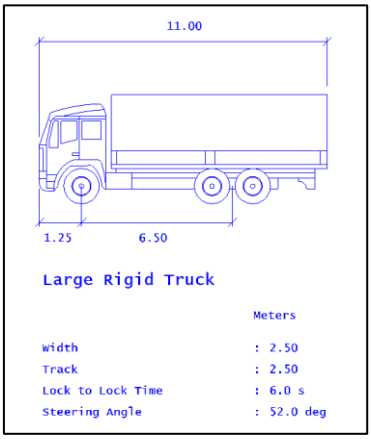


Figure 15 Swept Path – Turning Vehicle Template
Source: Transoft Solutions AUTOTURN Online Tool

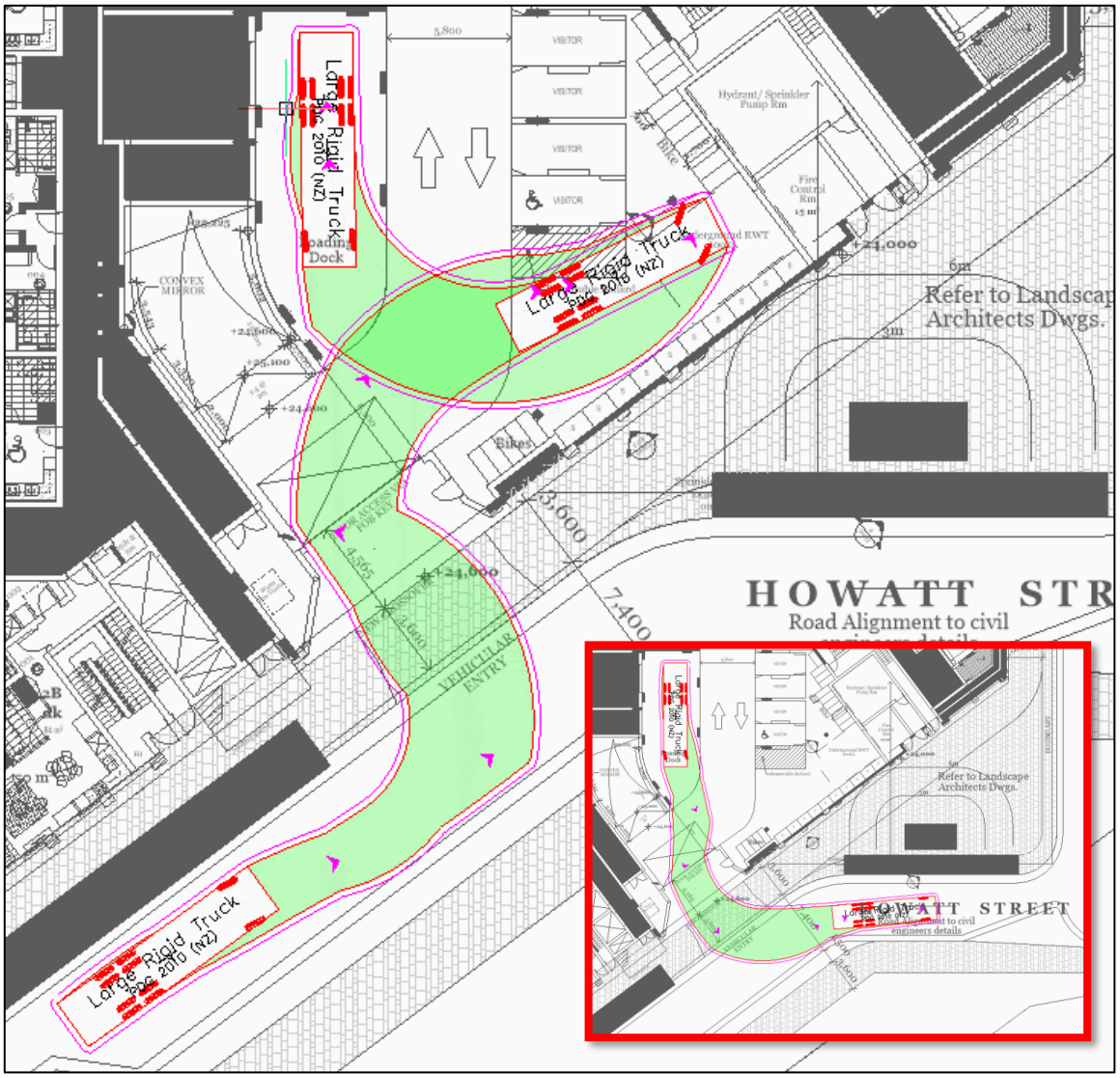


Figure 16 Swept Path – Service Vehicle
Source: Base Map by DKO and Swept Path Assessment Using Transoft Solutions AUTOTURN Online Tool

5. Parking Assessment

5.1 Statutory Parking Requirements

5.1.1 Proposed Development – Accessible Area

As per the State Environmental Planning Policy (Affordable Rental Housing) 2009 ***(SEPP 2009)***, accessible area means land that is within 800 metres walking distance of a public entrance to a railway station or a wharf from which a Sydney Ferries ferry service operates.

As described in **Section 2.4.1** and illustrated in **Figure 7**, the proposed development site is located within less than 800 metres walking distance of a public entrance to the Villawood Train Station. Therefore, the proposed development site falls under the definition of an accessible area.

5.1.2 Car Parking Requirements – Social (LAHC) Units

As per the provided information, **Section 14(2)(a)(i)** of SEPP 2009 would apply to the ***social*** units. The section states that in the case of a development application made by a social housing provider for development on land in an accessible area:

- At least 0.4 parking spaces are provided for each dwelling containing 1 bedroom,
- At least 0.5 parking spaces are provided for each dwelling containing 2 bedrooms, and
- At least 1 parking space is provided for each dwelling containing 3 or more bedrooms.

Accordingly, **Table 7** summarises that a total of **16 parking bays** are required for the ***social*** units.

Table 7 Parking Requirements - Social and Affordable Units

Unit Type	Number of Units	Required Parking
1 Bedroom	4	0.4*4 = 1.6
2 Bedroom	28	0.5*28 = 14
3 Bedroom	0	1*0 = 0
Total Number of Parking Bay Required		**15.6 ≈ 16**

The SEPP 2009 does not specify parking requirements for the visitors; therefore, visitor parking is not considered for the ***social*** units.

5.1.3 Car Parking Requirements – Private Units

As per the NSW Department of Planning and Environment's Apartment Design Guide July 2015,

- If the development is within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area, the minimum residents and visitors car parking rates specified in either RMS Guide to Traffic Generating Developments or the car parking requirement prescribed by the relevant Council can be used, whichever is less.

Noting that the proposed development site is located within 500 metres of the Villawood Train Station, the lessor residents and visitors parking rates specified in **Section 5.4.3** of the RMS Guide to Traffic Generating Developments (2002) were applicable. The RMS Guide's minimum parking rates for High-density residential flat buildings are:

- 0.4 spaces per 1-bedroom unit.
- 0.7 spaces per 2-bedroom unit.

- 1.2 spaces per 3-bedroom unit.
- 1 space per 7 units (visitor parking).

Accordingly, **Table 8** summarises that **61 and 11 parking bays** are required for residents and visitors, respectively, i.e., a total of **72 parking bays** for private residential component.

Table 8 Parking Requirements

Unit Type	Number of Units	Required Parking
1 Bedroom	21	0.4*21 = 8.4
2 Bedroom	36	0.7*36 = 25.2
3 Bedroom	23	1.2*23 = 27.6
Total Number of Parking Bay Required for Residents		**61.2 ≈ 61**
Total Number of Parking Bay Required for Visitors ***(1 per 7 private units)***		**80/7**
		11

5.1.4 Car Parking Requirements – Non-Residential Component

The RMS Guide to Traffic Generating Developments (2002) and Fairfield Citywide Development Control Plan (DCP) do not provide parking rates for a library. Therefore, for the purposes of this assessment, the parking rate specified in the DCP for commercial use has been adopted for the library. The DCP parking rate for commercial premises is:

- 1 space per 40m² gross leasable area

Fairfield Citywide Development Control Plan (DCP) specifies the following parking rate for restaurants and café:

- 1 space per 7 m² gross leasable area

The RMS Guide to Traffic Generating Developments (2002) states that as a general guide, 100 m^2 gross floor area equals 75 m^2 gross leasable floor area.

Accordingly, **Table 9** summarises that a total of **12 car parking bays** are required for the proposed small library and ancillary café.

Table 9 Car Parking Requirements – Non-Residential Component

Land-Use	Library	Ancillary Café
Gross Floor Area (m^2)	328	57
Gross Leasable Floor Area (m^2)	246	43
Required Number of Car Parking	**246/40 ≈ 6**	**43/7 ≈ 6**

The assessment indicates that the proposed **Stage 1 (Building B)** development should have a total of **100 car parking bays**. However, it is important to consider that Library and Ancillary Café is expected to be used only by the residents of Kamira Court precinct and the visitors of Villawood Town Centre as a secondary destination. Therefore, most of the trips to these non-residential facilities would be walking trips. Also, on-street parking provisions on Howatt Street and Kamira Court would cater for any vehicular parking.

Considering the above, no off-street parking has been proposed for the library and ancillary café. The Council may consider time-restricted parking on Howatt Street and Kamira Court.

5.1.5 Car Parking Requirements – Bicycle and Motorcycles

The RMS Guide to Traffic Generating Developments (2002) and Fairfield Citywide Development Control Plan (DCP) do not provide bicycle and motorcycle parking rates for high-density residential development, Library and Café.

However, for the purposes of this assessment, the following parking rates have been adopted for the residential units:

- 1 bicycle parking space for every 3 units
- 1 motorcycle parking space for every 15 units

5.2 Parking Adequacy Review

Table 10 summarises the proposed parking provisions for the Stage 1 ***(Building B)*** development.

Table 10 Proposed Car Parking Provisions

Floor	Parking Type					
	Residents	Residents (Accessible)	Visitors	Visitor (Accessible)	Bicycle	Motorcycle
Ground Floor	9	4	6	1	16	-
Level 1	52	4			6	5
Level 2	36	7			12	3
Total	**97**	**15**	**6**	**1**	**34**	**8**

It is evident that the:

- A total of 112 parking bays ***(including 15 accessible bays)*** have been proposed for the residents. This means 35 more than the required 77 parking bays are proposed for the residents.
- A total of seven parking bays are proposed for visitors ***(including one accessible bay).*** There is a gap of four visitor parking bays. However, considering the abundant car parking for residents, it is envisaged that the proposed on-street parking provisions on Howatt Street would cater for the visitor parking demand.
- The provided plans indicate provision of 34 bicycle parking bays. A shortfall of three bicycle bays has been noted which is due to the site constraints.
- Eight (8) motorcycle parking spaces are proposed as per the adopted parking rate of 1 motorcycle parking space for every 15 units.

Considering the above points and details provided in **Table 10**, the proposed parking provisions are adequate and in general, comply with the statutory requirements described in **Section 5.1**.

5.3 Parking Layout Review

As per **Section 1.4** and **Table 1.1** of the Australian Standard ***(AS/NZS 2890.1:2004)***, the proposed development's off-street parking facility can be classified as User Class "1A". The following are the minimum parking area requirements for User Class "1A" parking facility:

- All 90° angle parking with minimum dimension of 5.4 m × 2.4 m
- Minimum 6m wide access driveway
- Minimum 5.8m wide parking aisle

The following points have been noted from the parking area plans designed by the architect and provided information:

- All 90° angle parking spaces have minimum dimension of 5.4 m × 2.4 m, complying with Section 2.4.1 of the AS/NZS 2890.1:2004.
- The parking aisle has a minimum width of 5.8m, complying with Section 2.4.1 of the AS/NZS 2890.1:2004.
- Two – way straight section of the ramps on Ground Floor and Level 1 has a minimum width of 5.5 m, complying with Section 2.5.2 of the AS/NZS 2890.1:2004.
- As per the provided info by the Client, gradients on all ramps will be reviewed as part of the detailed design and ground clearance checks will be carried out as well.
- Disabled parking spaces have minimum dimension of 5.4 m × 2.4 m and an adjoining shared space of the same dimension complying with Section 2.2.1 of the AS/NZS 2890.6:2009.
- All bicycle parking spaces in the basement have dimensions of 1.7 m × 0.7 m.
- The general ceiling height throughout the car parking area including the parking spaces, complies with Section 2.4 of the AS/NZS 2890.6:2009.
- Traffic safety convex mirrors are proposed at different locations to ensure safe movements within the parking area, including ramps.
- Line marking and stop signs are proposed on Level 1 and Level 2 to ensure safe movement at the turning points on parking aisles.
- A small, curved section of the ramp is noted on the Ground floor. The swept path assessment indicates that the two vehicles would be able to pass at the same time.

6. Findings

Traffwise Consultants Pty Ltd has been engaged by Traders in Purple to undertake a Traffic Impact Assessment study for the proposed Stage 1 ***(Building B)***, a high-density residential development. The proposed development is part of the Kamira Court Precinct and in line with the Urban Framework Plan for Villawood Town Centre.

Based on the assessment and discussions presented within this report, the following key points are noted:

- The project site is located at the northeast corner of the Koonoona Avenue and Kamira Avenue intersection within the parcel of land owned by Land and Housing Corporation.

- The broader area of the Villawood Town Centre ***(including the project site)*** is well serviced by train and bus services providing access to Fairfield City Centre and other larger service and employment centres such as Liverpool, Parramatta CBD and the Sydney CBD.

- The project site is located within 500 metres walking distance to the Villawood Station and the nearest bus stop on Villawood Place.

- The proposed Stage 1 ***(Building B)*** development includes 112 high-density residential units, small library for the residents/area visitors and an ancillary café.

- The proposed development is expected to generate maximum of **27** and **30** trips in the AM and PM peak hour, respectively.

- Considering low trip generation, IN & OUT trip proportion, and further distribution of traffic on the surrounding transport network, the proposed development is not expected to impact the surrounding transport network significantly. Also, the key intersections are expected to keep operating at the same level of service with no material impact on intersection delays and degree of saturation.

- A total of 119 car parking bays (including 16 accessible bays) are proposed, including 112 for residents and seven (7) for visitors. It is noted that 35 more than the minimum required 77 parking bays are proposed for the residents.

- 34 bicycle and eight (8) motorcycle parking bays are proposed to promote active travel opportunities.

- The main access point for vehicles, including service vehicle, is proposed along the southern boundary on Howatt Street. However, the pedestrian would be able to access the development from all sides.

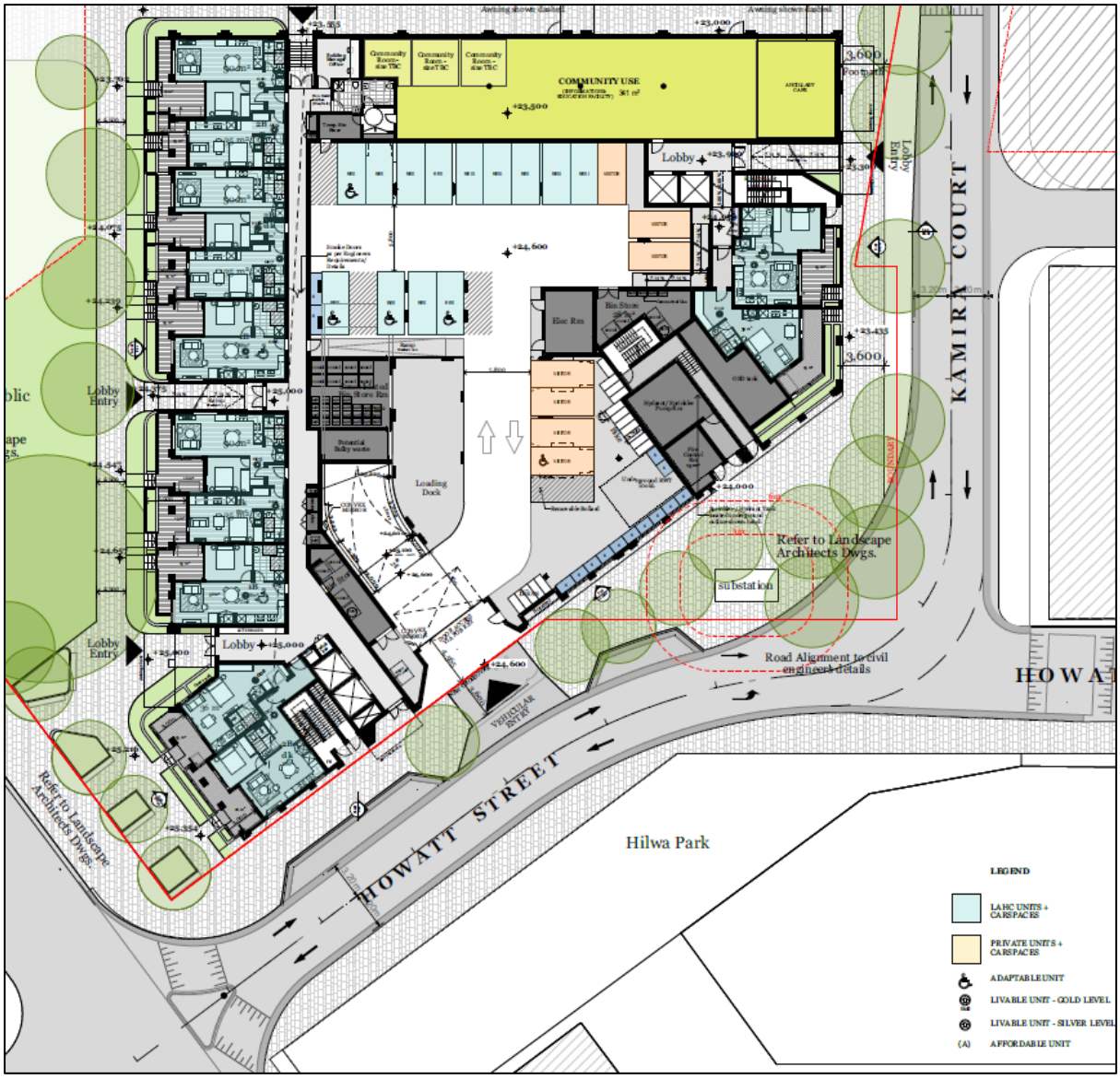
- Access to the library and ancillary café is proposed along the northern boundary from the Active Recreational Zone/Area.

- It is envisaged that the Library and Ancillary Café is expected to be used only by the residents of Kamira Court precinct and the visitors of Villawood Town Centre as a secondary destination. Therefore, most of the trips to these non-residential facilities would be walking trips.

- Dimension of parking bays and aisle width generally complies with Australian Standards, See **Section 5.3**.

Appendix A

DEVELOPMENT PLANS



Ground Floor Parking Plan – Designed by Project Architect

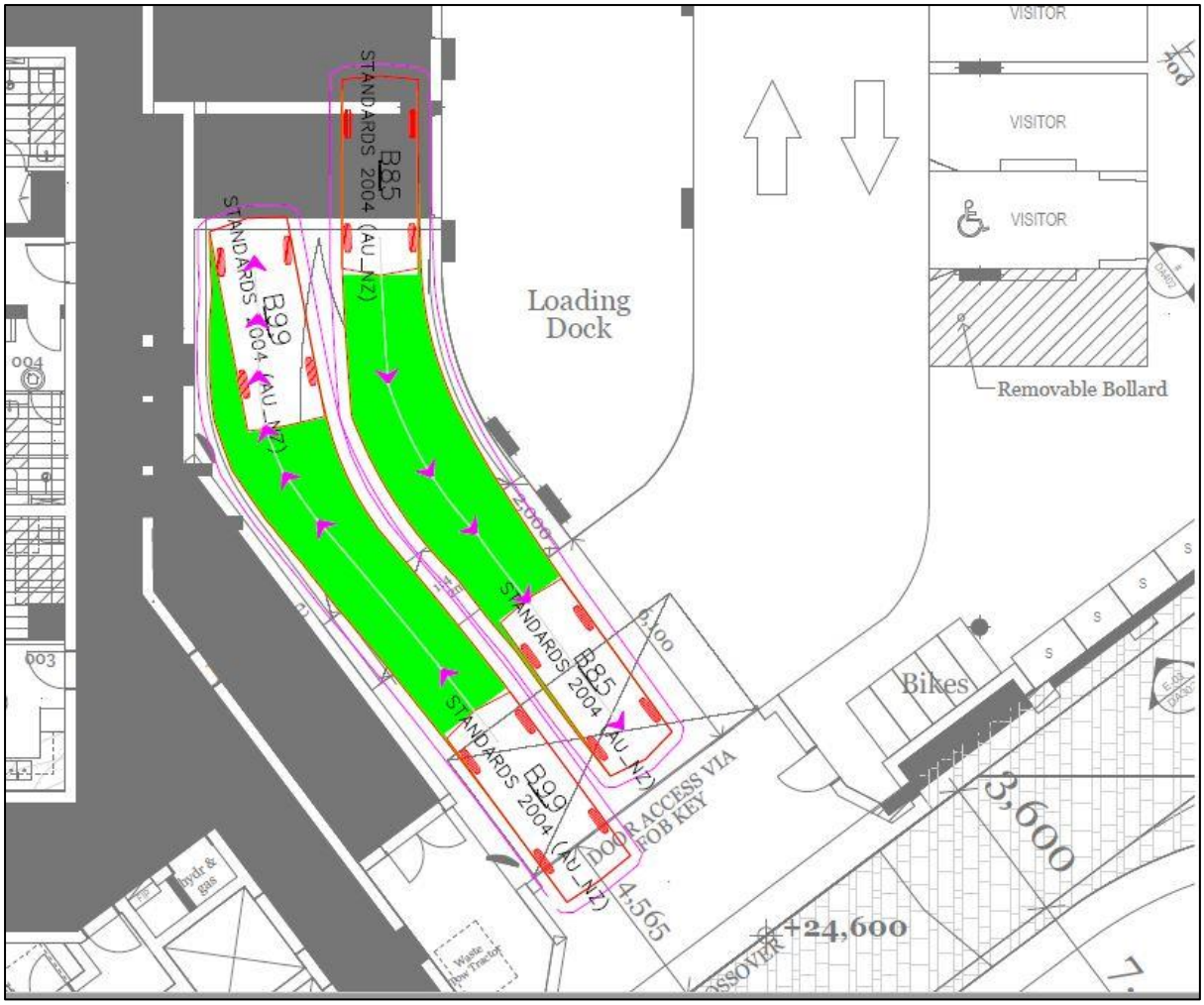
Level 1 Parking Plan – Designed by Project Architect

Level 2 Parking Plan – Designed by Project Architect

Appendix B

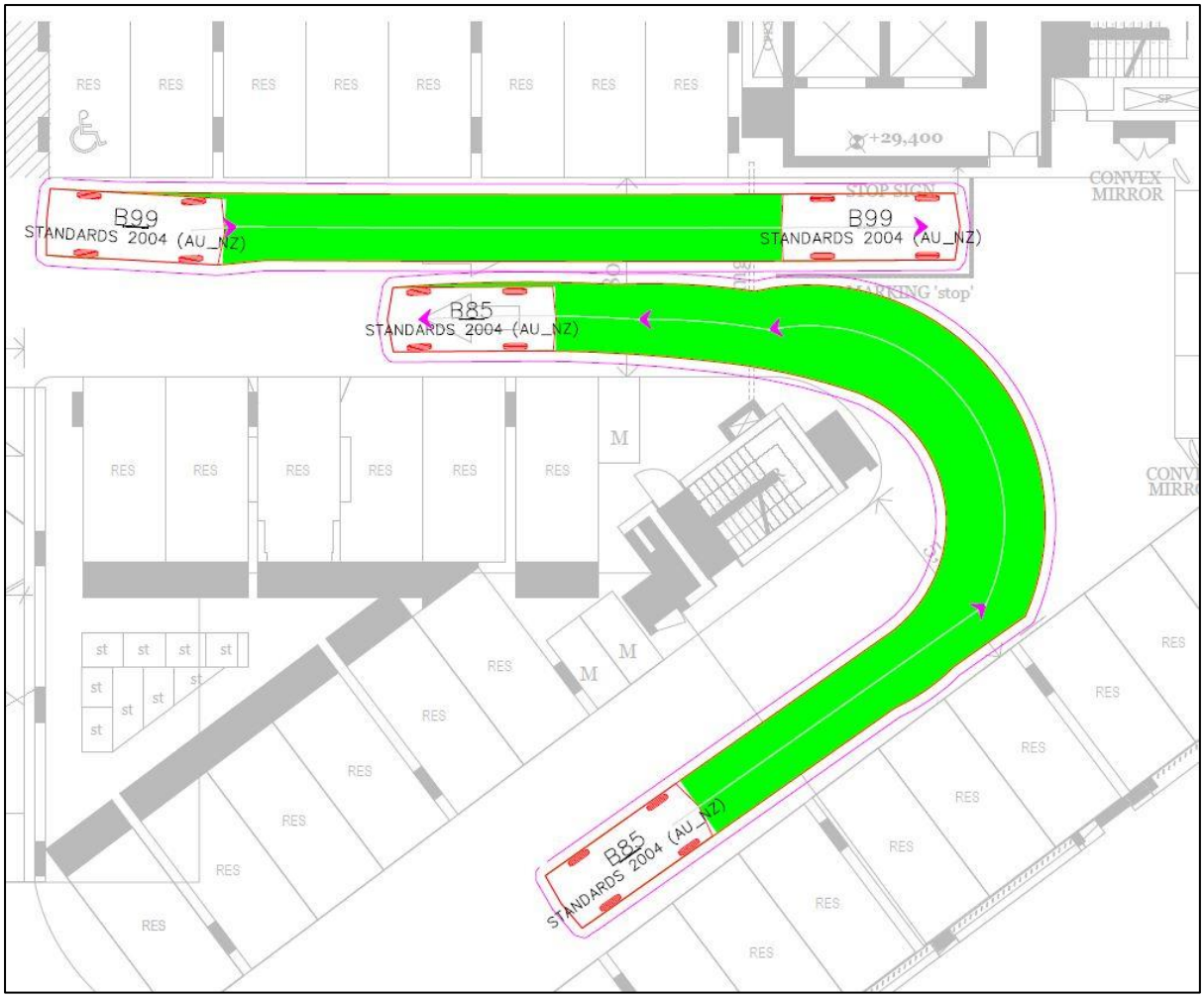
SWEPT PATH ASSESSMENT

(Not for Construction)



Ground Floor Ramp to Level 1 – B99 and B85 Passing Swept Paths

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted.



Level 1 – B99 and B85 Passing Swept Paths

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- As per the provided information, Level 1 and Level 2 parking area has similar layout at this point.

Level 1 Ramp – B99 and B85 Passing Swept Paths

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted.

Level 1 Parking Bays with Surrounding Constraints – B85 Swept Paths

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted.

A Traffic Engineering and Road Safety Consultancy

Contact Us
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