STANBURY
TRAFFIC PLANNING
TRAFFIC, PARKING & TRANSPORT CONSULTANTS

TRANSPORT IMPACT ASSESSMENT

PROPOSED MIXED-USE DEVELOPMENT
2 DAY STREET, 3 MCINTOSH STREET 38-42 ANDERSON STREET
CHATSWOOD - SSD-74670720

PREPARED FOR AEON RESIDENCE CHATSWOOD PTY. LTD.
OUR REF: 24-113-REP-4

4 APRIL 2025

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1. INTRODUCTION

1.1 Scope of Assessment

Stanbury Traffic Planning has been commissioned by Aeon Residence Chatswood Pty. Ltd. to prepare a Transport Impact Assessment to accompany State Significant Development (**SSD**) (SSD 74670720) to be lodged with the Department of Planning, Housing and Infrastructure (**DPHI**). The SSD seeks consent for the consolidation of 2 Day Street, 3 Mcintosh Street & 38-42 Anderson Street in Chatswood (hereafter referred to as 'the subject site' or 'the site'), demolition of existing structures and construction of a shop-top housing development.

The aim of this assessment is to investigate and report upon the potential parking and traffic consequences of the proposed development on the subject site and to recommend appropriate ameliorative measures where required. This report provides the following scope of assessment:

- Section 1 provides a summary of the background to the project and the future plans for the Chatswood Town Centre;
- Section 2 describes the site location, details, existing and surrounding land-uses;
- Section 3 describes the proposed development;
- Section 4 assesses the existing traffic, parking and transport conditions surrounding and servicing the subject development site including a description of the surrounding road network, traffic demands, and available public transport infrastructure;
- Section 5 estimates the projected traffic generating ability of the proposed development and assesses the ability or otherwise of the surrounding road network to be capable of accommodating the altered demand in a safe and efficient manner; and
- Section 6 assesses the adequacy of the proposed site access arrangements, internal circulation and servicing arrangements with reference to relevant Council, Transport for New South Wales (TfNSW) and Australian Standard specifications. Also assesses the adequacy of the proposed bicycle, motorcycle and loading parking on-site.

1.2 Reference Documents

Reference is made to the following documents throughout this report:

- TfNSW's Guide to Transport Impact Assessment (GITA);
- TfNSW's Guide to Traffic Generating Developments (GTTGD);

- Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 13/4a);
- Willoughby Development Control Plan Part F: Transport and Parking Management – 2023 (*WDCP 2023*);
- Australian Standard for Parking Facilities Part 1: Off-Street Car Parking (AS2890.1:2004);
- Australian Standard for Parking Facilities Part 2: Of-street commercial vehicle facilities (AS2890.2:2018);
- Australian Standard for Parking Facilities Part 3: Bicycle Parking (AS2890.3:2015);
- Australian Standard for Parking Facilities Part 6: Off-Street Parking for People with Disabilities (AS2890.6:2022);
- Willoughby City Local Strategic Planning Statement, February 2020 (LSPS);
- Chatswood CBD Planning and Urban Design Strategy 2036 September 2020 (CUDS 2036);
- 3-5 Help Street, Chatswood Planning Proposal Transport Impact Assessment, GTA Consultants, Issue: D, 17/10/18 (GTA Report);
- Traffic Impact Assessment 3-5 Help Street, Chatswood, PDC, 15/6/2023 (PDC Report);
- Traffic Impact Assessment, 58 Anderson Street, Chatswood Mixed Use Development, 2/11/2020 (Cardno Report);
- Freight Trip Generation to High Density Residential Developments in Sydney, TfNSW, May 2021 (*Freight Report*);
- Willoughby Integrated Transport Strategy 2036 August 2020 (*Willoughby ITS*);
- Trip Generation and Parking Demand Surveys of Gymnasiums, Data and Analysis Report, prepared by PeopleTrans dated 27/11/2014 (PeopleTrans Report);
- Northern Sydney Regional Organisation of Councils Waste Management Technical Guide for Multi Dwelling Housing (MDH) Residential Flat Building (RFB) Mixed Use Developments, October 2018 (*NSROC Waste Management Guide*);
- Future Conditions Report Chatswood CBD Strategic Study Issue 2, September 2020, Arup (Future Conditions Report); and

- NSW Speed Zoning Standard, TS 03631:1.0, Technical Direction – TD 00030:2023, Issue date: 17 November 2023 (*NSW Speed Zoning Standard*).

Further to the above, architectural plans prepared by Carter Williamson Architects for the proposed development have been relied upon, a reduced selection of which are included as **Appendix 1** for reference.

1.3 Future Chatswood Town Centre

CUDS 2036 states *"Chatswood is identified as a Strategic Centre within the Sydney metropolitan area with an economic role and jobs target in the North District Plan. The CBD includes a vibrant mix of offices, major retail facilities and high density residential accommodation. At its centre is a modern rail and bus interchange that provides direct connections to the Sydney CBD, other Strategic centres and residential areas, across Sydney. Connectivity has been heightened by the opening of the Metro Northwest in 2019 with a new platform at Chatswood Station and will be further improved by the opening of the Metro City and Southwest in 2024."*

In the future the vision of the Chatswood CBD is that it "*will be confident, fine grain and green. It will be a diverse, vibrant, active and accessible place, with attractive places for residents, workers and visitors to enjoy."*

To achieve this vision, the CUDS 2036 has adopted the following seven principles as shown in **Figure 1**.

FIGURE 1
PRINCIPLES TO ACHIEVE THE VISION SET OUT IN THE CUDS 2036

Principles
To achieve this Vision, the Strategy has adopted the following seven principles:

1. **Promoting office growth in the core** – The commercial core of Chatswood CBD will be reinforced as a vital component of the Chatswood economy. Office expansion along Albert Avenue will be promoted in the longer term.
2. **Residential growth on the periphery of the CBD** – Chatswood is an accessible urban centre. As such residential growth will be supported in the CBD but outside of the Commercial Core.
3. **Diverse mix of uses** – Retail, medical, education, arts and culture, community and recreation activities will continue to be supported in Chatswood in addition to commercial and residential, to maintain a rich and diverse mix of uses.
4. **Great public places** – New spaces and links will be created with improvements to existing areas to provide a variety of high quality, interesting public places for Chatswood into the future.
5. **Sustainable and active transport** – A balanced approach will be adopted with travel demand management at its core to address future transport needs in line with growth while ensuring sustainable outcomes for Chatswood.
6. **Urban design quality** – A high quality of urban design and cohesive environment delivering an attractive centre for all.
7. **Greening the centre** – Chatswood is the focal centre of the leafy North Shore and this will be reflected through greening of the streetscape as well as green areas on and around new buildings.

The Willoughby City Local Strategic Planning Statement (**LSPS**) released in February 2020 sets out the vision for the Willoughby LGA in respect of liveability in 2036 as follows:

"Willoughby's local centres are vibrant and lively and provide for people's everyday needs. Their distinctive local character has been preserved and enhanced even as new housing development has occurred. All residents can access the Chatswood CBD, local centres, parks, schools and community facilities within 20 minutes by public transport or high quality walking and cycling paths.

This provides transport choices and facilitates sustainable transport and promotes health and wellbeing. Congestion around Chatswood has been managed to improve accessibility for all modes of travel."

1.4 NSW Affordable Housing Reforms

The NSW Government's Affordable Housing Reforms aim to streamline the delivery of affordable housing across NSW by providing clearer planning pathways and development incentives. As part of these reforms, new provisions have been introduced to encourage the construction of affordable housing by reducing regulatory barriers, facilitating increased housing supply, and ensuring developments align with strategic planning objectives.

The reforms to support the delivery of infill affordable housing projects is aimed at supporting the creation of diverse and accessible housing options.

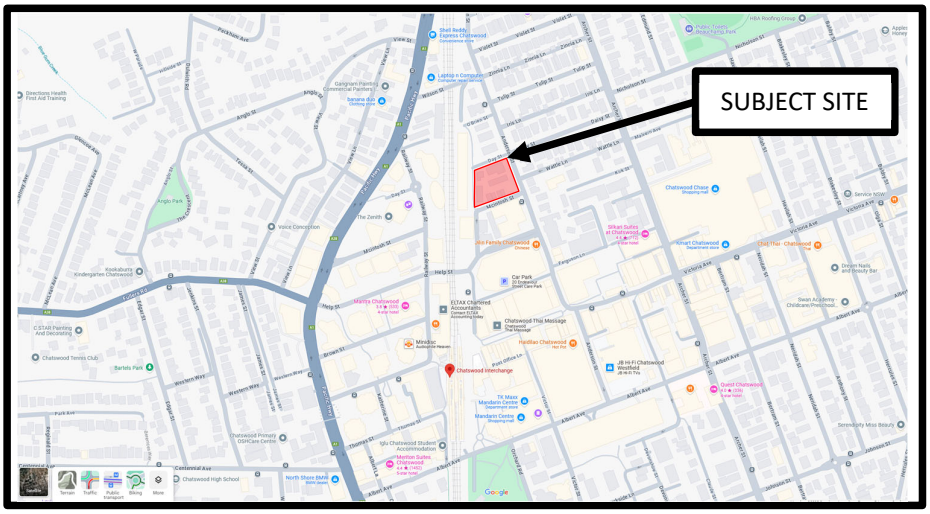
A key component of the reforms is the introduction of non-discretionary development standards, which provide certainty for developers by setting clear and consistent planning controls. Non-discretionary parking standards ensure that affordable housing developments benefit clear car parking obligations in well-serviced locations.

2. EXISTING SITE CONDITIONS

2.1 Site Location

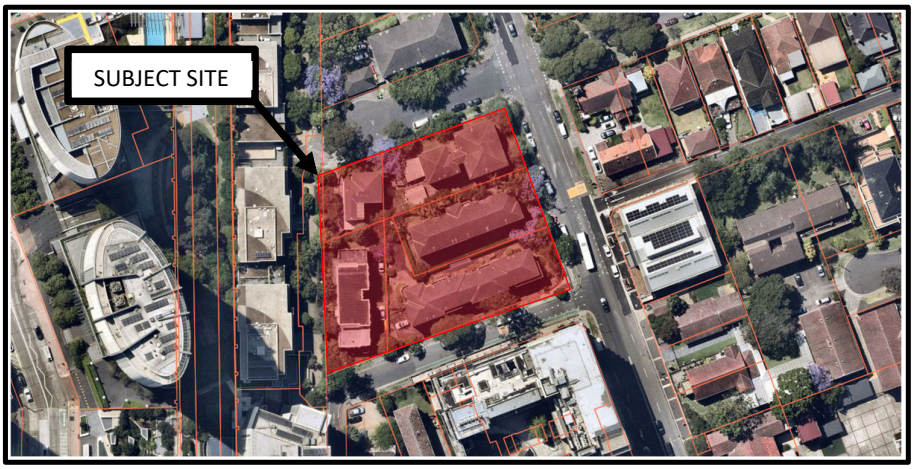
The subject site is situated between Day Street, Anderson Street and McIntosh Street in Chatswood. The site location is illustrated within a local context by **Figure 2** and **Figure 3** within an aerial context by **Figure 3**.

FIGURE 2
SITE LOCATION WITHIN A LOCAL CONTEXT



Source: Maps.google.com.au – accessed 17/3/25

FIGURE 3
SITE LOCATION WITHIN AN AERIAL CONTEXT



Source: Nearmap.com aerial taken Wed Oct 30 2024 2:18 PM

2.2 Site Description

The subject site provides a legal property description as follows:

- 2 Day Street, Chatswood – CP/-/SP76364;
- 3 McIntosh Street, Chatswood – CP/-/SP2650;
- 38 Anderson Street, Chatswood -1/-/DP603632
- 40 Anderson Street, Chatswood – CP/-/SP19181; and
- 42 Anderson Street, Chatswood – CP/-/SP1604.

The subject site forms an approximately rectangular-shaped parcel of land, providing an approximate frontage of 62m along its northern boundary with Day Street, 60m to Anderson Street and 80m with McIntosh Street. The site provides a total area in the order of approximately 4,445m².

2.3 Existing Site Use

The subject site is currently occupied by four apartment buildings containing the 43 dwellings as follows:

- 2 Day Street, Chatswood – 3 dwellings;
- 3 McIntosh Street, Chatswood – 10 dwellings;
- 38 Anderson Street, Chatswood – 12 Dwellings
- 40 Anderson Street, Chatswood – 9 dwellings; and
- 42 Anderson Street, Chatswood – 9 dwellings.

A total of 22 properties currently provide vehicular access via McIntosh Street with 10 at 3 McIntosh Street and 12 at 38 Anderson Street.

2.4 Surrounding Uses

The subject site is currently zoned MU1 Mixed Use and is within the boundary of the Chatswood Town Centre which caters for a wide range of uses. To the north and east of the site are residential properties with commercial and retail properties further to the south and west.

Notable nearby existing or approved (yet to be constructed) developments include:

- 1 Cambridge Lane – an existing 24-storey residential apartment building 129 apartments and vehicular access via Cambridge Lane;
- 3-5 Help Street – A planning proposal was approved on 13/05/2022 with a DA approved by the Sydney North Planning Panel on 17/09/2024 for Demolition of existing structures, construction of 27-storey mixed-use development with vehicular access via Help Street; and
- Westfield Chatswood – Approximately a 3-minute walk from the subject site, Westfield Chatswood caters for a range of fresh food, supermarkets and clothing and other stores.

3. DESCRIPTION OF PROPOSED USE

3.1 Development Description

The proposed development (SSD-74670720) is located on Gamaraygal Country in the Metropolitan LALC and seeks approval to construct a shop top housing development that includes in-fill affordable housing, comprising the following:

- Site preparation works including demolition of existing structures, vegetation clearing, and bulk earthworks.
- Anderson Street Building (Tower A) - Construction of a 33-storey shop-top housing development comprising:
    - 155 residential dwellings.
    - Private penthouse rooftop terraces.
    - Top of podium (level 2) communal open space and amenities.
- McIntosh Street Building (Tower M): Construction of a 23-storey shop-top housing development comprising:
    - 103 residential dwellings.
    - Private rooftop terraces.
    - Top of podium (level 2) communal open space and amenities.
    - Construction of a two-to three storey non-residential podium with substation, lift core, lobbies and building services.
- Construction of a seven-level basement with waste storage, services, and loading, and 494 carparking spaces comprising:
    - 386 residential spaces (including 19 accessible spaces).
    - 36 residential visitor spaces (including 1 accessible spaces).
    - 72 commercial and retail spaces (including 2 accessible spaces).
    - 28 motorcycle spaces; and
    - 73 bicycle spaces.
- Associated landscaping and public domain works, and
- Services and infrastructure improvements, as required.

The development is described in more detail in the following sections of this report.

3.2 Proposed Uses

The State Significant Development Application (**SSDA**) seeks consent for the construction of a shop top housing development comprising a total of 258 dwellings. The proposed residential dwellings are in summarised in **Table 1**.

TABLE 1
PROPOSED RESIDENTIAL DEVELOPMENT DWELLING SCHEDULE

Building	1-Bedroom Dwellings	2-Bedroom Dwellings	3-Bedroom Dwellings	4-Bedroom Dwellings	Total
Total	**24**	**106**	**120**	**8**	**258**

The proposed development includes a non-residential podium which will provide for the following uses:

- Gymnasium – 3,200m^2 GFA;
- Food and Beverage Tenancies – 956.4m^2 GFA;
- Non-Residential Lobbies / Shared Zones – 360.9m^2 GFA; and
- Total of 4,517.3m^2 GFA.

3.3 Car Parking and Vehicle Access

Each building is proposed to be serviced by a shared basement car park with vehicular access proposed via McIntosh Street. A breakdown of the proposed car parking which has been based on the non-discretionary rates requirement set out in the Housing SEPP is shown in **Table 2**.

TABLE 2 PROPOSED PARKING BREAKDOWN	
Type of Parking Space	**Total**
Non-Residential Motorcycle	3
Non-Residential Visitor Motorcycle	2
Residential Visitor Motorcycle	3
Residential Motorcycle	20
Total Motorcycle Parking Spaces	**28**
Non-Residential Car Parking Spaces	70
Non-Residential Accessible Car Parking Spaces	2
Residential Visitor Car Parking Spaces	35
Resident Visitor Accessible Car Parking Spaces	1
Residential Car Parking Spaces	367
Adaptable / Accessible Resident Car Parking Spaces	19
Total Car Parking Spaces	**494**

The design of the parking and vehicular access are assessed in **Section 6** of this report. The adequacy of the parking quantum to cater for the proposed development has been assessed within the Environmental Impact Statement for the SSDA.

3.4 Pedestrian Access

Pedestrian access between the buildings and to the surrounding transport network is proposed via building access points on all sides of the buildings.

The proposed pedestrian facilities are assessed in **Section 6** of this report.

3.5 Bicycle Parking

Bicycle parking is provided within the proposed development as follows:

- 15 x non-residential bicycle parking spaces for staff on the lower ground floor in a secure area;
- 30 x visitor bicycle parking spaces for residential and non-residential visitors within Basement 02; and
- 28 x residential bicycle parking spaces in Basement 02.

The proposed bicycle facilities are assessed in **Section 6.4** of this report.

3.6 Loading

A loading dock is proposed in Basement 01 with space provided to cater for a 12.5m long Heavy Rigid Vehicle (HRV) and an 8.8m long Medium Rigid Vehicle (MRV). A total of five small vehicle loading bays are provided within the basement car park to provide additional loading capacity for smaller vehicles delivering to the proposed development.

The adequacy of the proposed loading facilities is assessed in **Section 6.6** of this report.

4. EXISTING TRANSPORT CONDITIONS

4.1 Pedestrian Facilities

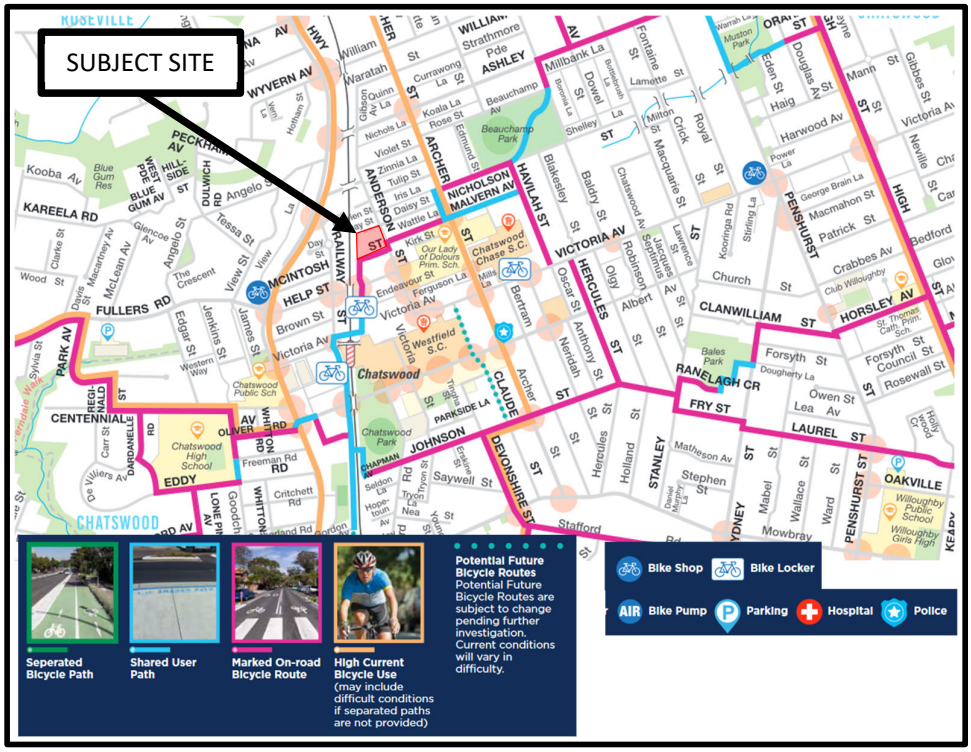
Footpaths are currently provided on both sides of Day Street, McIntosh Street and Anderson Street in the vicinity of the subject site. The nearest pedestrian crossing across Anderson Street is at the signalised junction of Anderson Street / Help Street.

A pedestrian through-site link is provided immediately to the west of the subject site connecting Day Street and McIntosh Street. This links with a shared zone on Cambridge Lane to provide direct access to Help Street and further south to Chatswood bus interchange and Chatswood Station.

4.2 Bicycle Facilities

The subject site is currently served by a number of existing on-road formal and informal bicycle facilities. The Willoughby Council bicycle network map in the vicinity of the subject site is shown in **Figure 4**.

FIGURE 4
WILLOUGHBY COUNCIL BICYCLE NETWORK SURROUNDING THE SUBJECT SITE



Source: Willoughby Bike Map – Accessed 17/3/25

Figure 4 indicates that the subject site is adjacent to the formal bicycle facilities on McIntosh Street which provides access to the shared user path along the railway line.

4.3 Public Transport

The approximate distance and locations that can be reached from the subject site within approximately 30 minutes via public transport, including walking time include:

- North Sydney;
- Macquarie University, Sydney CBD
- Hornsby;
- Epping; and
- Sydenham.

Additional locations may be accessible depending on the time of day and the public transport connections required.

4.3.1 Trains

The nearest train station to the subject site is Chatswood which is walking distance of approximately 380m (a 5-minute walk).

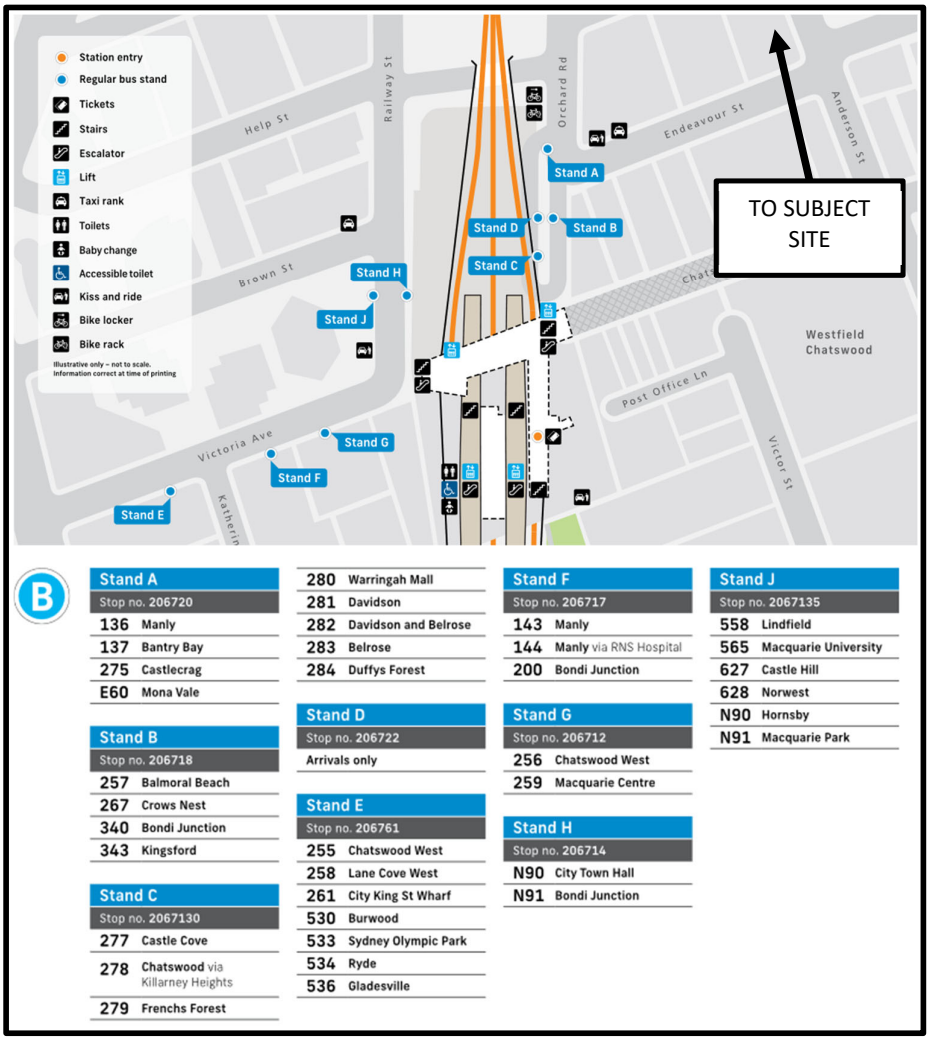
Chatswood Station is on the T1, T9, Central Coast and Newcastle Lines and the Metro Line. Access to nearby major destinations is approximately as follows:

- North Sydney Station – 12 minutes by train;
- Victoria Cross – 6 minutes by Metro;
- Hornsby Station – 20 minutes by train;
- Central Station – 27 minutes by train, 15 minutes by Metro;
- Tallawong – 37 Minutes by Metro
- Barangaroo – 9 minutes by Metro;
- Gadigal – 13 minutes by Metro; and
- Sydenham – 22 minutes by Metro.

4.3.2 Buses

The subject site is approximately 380m walking distance (a 5-minute walk) from Chatswood Station which has a large bus interchange which services the surrounding suburbs. The Chatswood Station bus interchange stands and the routes served are shown in **Figure 5**.

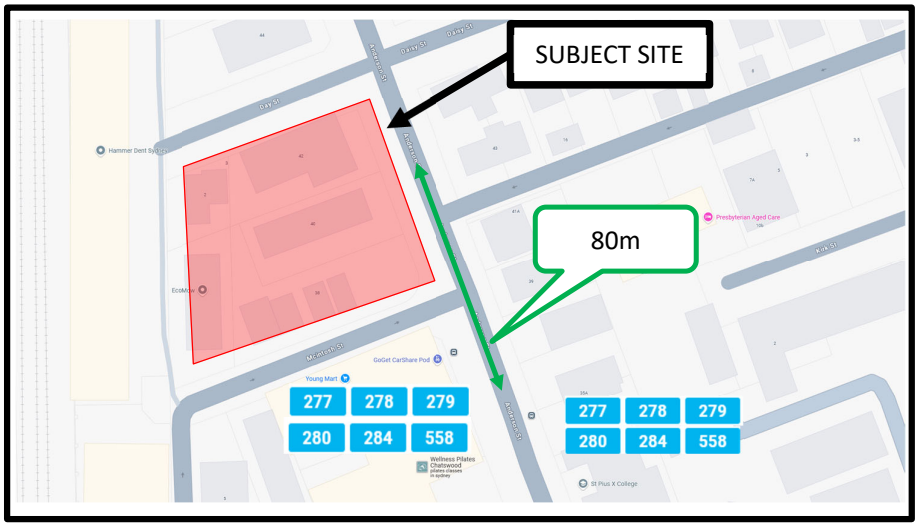
FIGURE 5
EXISTNG BUS NETWORK IN THE VICINITY OF THE SUBJECT SITE



Source: https://transportnsw.info/sites/default/files/document/2018/02/chatswood_station_map_0.pdf – Accessed 17/3/25

The nearest bus stops are shown overleaf in **Figure 6**.

FIGURE 6
NEAREST BUS STOPS TO THE SUBJECT SITE



Base map source: maps.google.com.au – Accessed 17/3/25

Figure 6 indicates that the nearest bus stops to the north are located on Anderson Street near the junction with Tulip Street, approximately 80m walking distance (1-minute walk) from the subject site.

The nearest bus routes are as follows:

- Route 277 – Castle Cove to Chatswood. This route runs limited services from Chatswood to Castle Cove and operates primarily from Castle Cove to Chatswood. Typical peak headways are 15 to 30 minutes during peak times and typically up to 120 minutes off-peak. The service does not operate on Sundays or public holidays;

- Route 278 – Chatswood to Killarney Heights (Loop Service). This route operates limited services from Chatswood to Killarney Heights and runs primarily from Killarney Heights to Chatswood. Typical peak headways are 15 to 20 minutes during peak times and typically up to 60 minutes off peak;

- Route 279 – Frenchs Forest to Chatswood. This route runs four services from Frenchs Forest to Chatswood on weekday mornings. The first services arrive at Chatswood Station at 6:14am, 6:54am, 7:26am and 7:59am;

- Route 280 – Warringah Mall to Chatswood. Typical peak headways are 15 minutes during peak times and typically up to 30 minutes off peak;

- Route 284 – Duffys Forest to Terrey Hills & Chatswood. Typical peak headways are 10 to 20 minutes during peak times and typically up to 120 minutes off peak; and

- Route 558 – Chatswood to Lindfield. Typical peak headways are 60 minutes during peak times and typically up to 120 minutes off peak. The service does not operate on Sundays or public holidays.

4.4 Surrounding Road Network

Details of the main roads in close proximity to the site are provided in **Table 3**.

TABLE 3
SUMMARY OF MAIN ROADS IN THE SURROUNDING ROAD NETWORK

Road	Classification / Care and Control by	Alignment	Configuration in the Vicinity of the Subject Site	Approx. Road Reserve / Carriageway Width	Speed Limit
Anderson Street	Willoughby City Council	North-South	1 general traffic travel lane and one bicycle lane in each direction with parking permitted on both sides of the carriageway	20m / 12.5m	40km/h
Day Street		East-West		20m / 12.5m	50km/h Default
McIntosh Street		East-West	1 travel lane eastbound with a contra-flow bicycle lane westbound. Kerbside parking is permitted on the northern side of the carriageway.	12m / 7.5m	40km/h
Cambridge Lane		North-South	1 travel lane northbound with a contra-flow bicycle lane southbound. Kerbside parking is permitted on the western side of the carriageway.	9m / 6.5m	10km/h Shared Zone
Help Street		East-West	1 to 2 travel lanes in each direction depending on the location. Kerbside parking is permitted in select locations.	20m / 12.5m	40km/h
Pacific Highway	State Road 10	North-South	3 lanes in each direction with a tidal flow arrangement to the south of the subject site. Peak direction clearways and parking on each side of the carriageway	25m / 18m	60km/h (40km/h school zones apply)

4.5 Existing Traffic Volumes

Stanbury Traffic commissioned Matrix Traffic and Transport Data to undertake traffic surveys to understand the existing traffic patterns in the vicinity of the subject site. The surveys were undertaken between 7:00am and 9:00am and between 2:30pm and 6:00pm on Thursday 19 November 2022. The weather was fine and sunny on the survey day and the peak hour traffic survey results are shown in **Figure 7**.

Surveys were also undertaken on Tuesday 28 November 2023 to determine the traffic turning into and out of Cambridge Lane and McIntosh Street to supplement previously collected data from 2017.

Surveys in 2017 as reported in the GTA Report identified a total of 67 vehicles using Cambridge Lane in the weekday AM peak hour and 49 in the weekday PM peak hour. Surveys in 2023 identified determined that the volumes within Cambridge Lane and McIntosh Street were similar to the 2017 surveys during the weekday AM peak hour and higher during the weekday PM peak hour. Based on this, the 2023 turning movements into and out of Cambridge Lane / McIntosh Street have been used in this assessment.

FIGURE 7
2022/3 PEAK HOUR TURNING VOLUMES

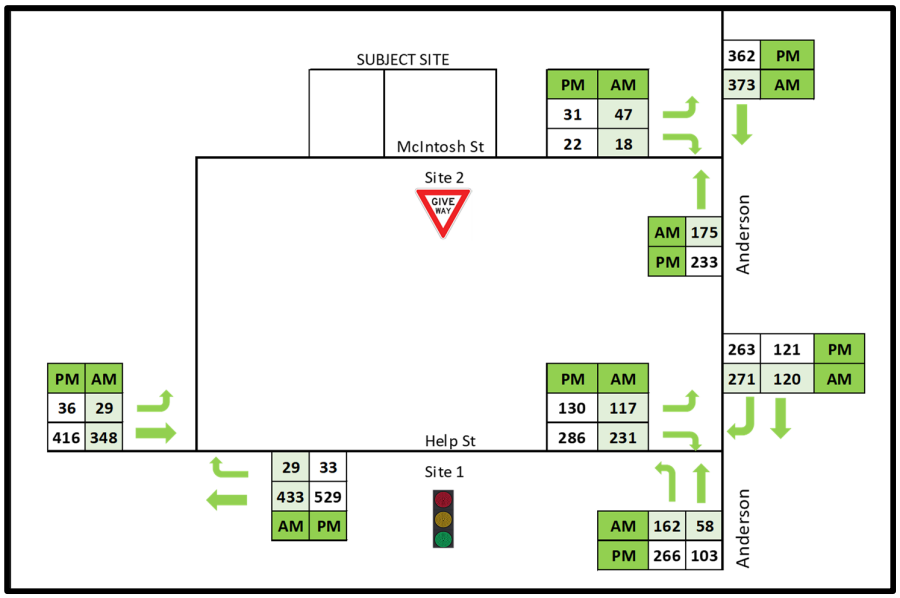
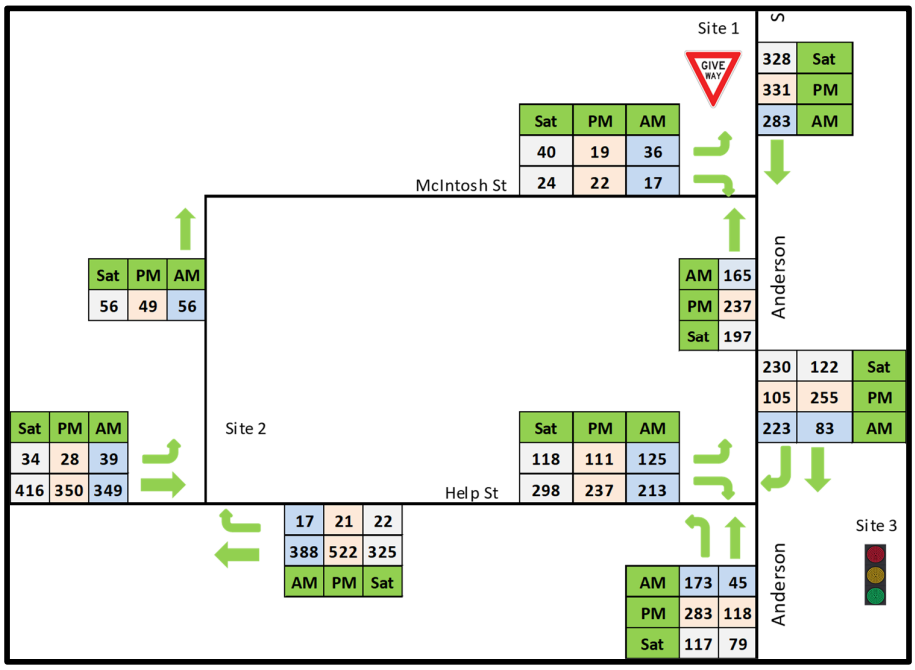


Figure 7 indicates that directional traffic demands at each intersection are similar in each peak hour with no significant 'tidal' difference between the weekday AM and PM traffic flows.

Additional traffic surveys were undertaken on Thursday 19 September 2024 and Saturday 19 October 2024 to provide a comparison to the previous survey data. A summary of the 2024 peak hour turning volumes is provided in **Figure 8** overleaf.

FIGURE 8
2024 PEAK HOUR TURNING VOLUMES



The 2024 road network peak hour traffic surveys indicate that traffic volumes along Anderson Street are approximately the same in the southbound direction and between the AM and PM road network peak hours northbound.

On Help Street, traffic is higher in the eastbound direction and lower in the westbound direction when compared to the weekday PM peak hour.

A comparison between 2022/23 and 2024 traffic volumes indicates the following:

- A reduction in the road network peak hour traffic volume in Cambridge Lane by 2 vehicles in the AM peak hour and 20 vehicles in the PM peak hour; and

- Typically reduced traffic on Anderson Street and Help Street at their intersections with Cambridge Lane / McIntosh Street.

4.5.1 Existing Intersection Operation

The study intersections have been analysed utilising the SIDRA computer intersection analysis program in order to objectively assess the operation of the nearby public road intersection. SIDRA is a computerised traffic arrangement program which, when volume and geometrical configurations of an intersection are inputted, provides an objective assessment of the operation efficiency under varying types of control (i.e. signs, signal and roundabouts). A key indicators of SIDRA includes level of service, where results are placed on a continuum from A to F, with A providing the greatest intersection efficiency and therefore being the most desirable by TfNSW.

SIDRA uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of the abovementioned key indicators of capacity and performance statistics. Other key indicators provided by SIDRA are average vehicle delay, the number of stops per hour and the degree of saturation. Degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. Degree of saturation is a useful and professionally accepted measure of intersection performance.

The NSW traffic modelling guidelines 2013 sets out the method which should be followed for SIDRA modelling. The relevant criteria are listed in **Table 4** and the calibration procedures undertaken by Stanbury Traffic Planning.

TABLE 4
TFNSW MODELLING GUIDELINES

detail	Adopted Modelling Parameters and Assumptions
Getting started	• SIDRA Intersection 9.1 (version 9.1.6.228) was used.
Input	• Data was input for a 60-minute period with a maximum peak flow period of 30 minutes.
Geometry	• All intersection geometry was default and was based on measurements taken on-site or measured through aerial photography from Nearmap.
Saturation flow	• The default saturation flow was adopted for all lanes.
Volumes	• Volumes were input as total vehicles with an estimation of 7% for all movements.
Movement data	• Approach and exit speed data were updated as per the posted speed limits. • Based on observed downstream blocking, a lane capacity reduction was applied on Site 1 to lane 2 on the northern leg (southbound) on Anderson Street during the weekday PM (5%) and the eastbound right turn from Help Street to Anderson Street during the weekday PM (5%).
Priorities	• Where they existed, priority was given to pedestrian crossings over vehicle movements.
Gap Acceptance	• The SIDRA default gap acceptance values were adopted
Pedestrians	• Were included where pedestrian crossings were provided
Phasing and timing	• Video from the surveys was reviewed and timings during the peak hour for each phase and cycle were recorded and used as the basis for the calibration.
Phasing	• Input as per the recorded timings from the day of the survey.
Model settings	• Default parameters used

SIDRA provides analysis of the operating conditions that can be compared to the performance criteria set out in **Table 5** (being the TfNSW NSW method of calculation of Level of Service).

TABLE 5 LEVEL OF SERVICE CRITERIA FOR SIGNALISED INTERSECTIONS, ROUNDABOUTS AND PRIORITY CONTROLLED JUNCTIONS			
Level of Service	**Average Delay per vehicle (secs/veh)**	**Traffic Signals, Roundabout**	**Give Way and Stop Signs**
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory
D	43 to 56	Operating near capacity	Near capacity
E	57 to 70	At capacity; at signals, incidents will cause excessive delays at roundabouts, another control mode required	At capacity and requires other control mode
F	> 70	Extra capacity required	Unsatisfactory and requires other control mode

In addition to the Level of Service criteria, SIDRA also provides the following main outputs:

- Degree of Saturation (DoS) – A measure of the measured vehicle throughput for a given movement or leg divided by the capacity of that movement or leg. For example, a demand volume of 80 and a capacity of 100 vehicles per hour would be a DoS of 0.8. A DoS over 1 indicates the demand volume is higher than the capacity; and

- 95th Percentile Queue – This is the length of the 95th percentile queue that could be expected during the model period or a queue length that could expect to be exceeded no more than 5% of the model period.

The existing conditions have been modelled utilising the peak hour traffic volumes presented within **Figure 8**.

Table 6 to **Table 8** provides a summary of the SIDRA output data whilst more detailed summaries are included as **Appendix 2**.

TABLE 6 SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE			
INTERSECTION OF ANDERSON STREET / McINTOSH STREET			
	AM	**PM**	**Sat**
Anderson St South Approach			
Delay (seconds / vehicle)	0 (W)	0 (W)	0 (W)
Degree of Saturation	0.093 (W)	0.134 (W)	0.111 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	0m	0m	0m
Anderson St North Approach			
Delay (seconds / vehicle)	0.1 (W)	0.1 (W)	0.1 (W)
Degree of Saturation	0.16 (W)	0.179 (W)	0.185 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	0m	0m	0m
McIntosh St West Approach			
Delay (seconds / vehicle)	6.1 (W)	6.8 (W)	6.6 (W)
Degree of Saturation	0.023 (W)	0.033 (W)	0.035 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	0.9m	0.8m	1m
Total Intersection			
Delay (seconds / vehicle)	6.1 (W)	6.8 (W)	6.6 (W)
Degree of Saturation	0.023 (W)	0.033 (W)	0.035 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	0.9m	0.8m	1m

Note: (W) – Worst movement

Table 6 indicates that the intersection of Anderson Street/ McIntosh Street currently operates well with minimal queues and delays on all approaches.

TABLE 7 SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE			
INTERSECTION OF HELP STREET / ANDERSON STREET			
	AM	**PM**	**Sat**
Anderson St South Approach			
Delay (seconds / vehicle)	27.1	25.5	26.4
Degree of Saturation	0.329	0.435	0.238
Level of Service	B	B	B
95th Percentile Queue	41m	64.1m	25.1m
Anderson St North Approach			
Delay (seconds / vehicle)	18.3	17.9	19.5
Degree of Saturation	0.382	0.288	0.431
Level of Service	B	B	B
95th Percentile Queue	49.6m	44.2m	53.6m
Help St West Approach			
Delay (seconds / vehicle)	23.3	21.0	24.4
Degree of Saturation	0.507	0.434	0.617
Level of Service	B	B	B
95th Percentile Queue	57.2m	57.6m	80.4m
Total Intersection			
Delay (seconds / vehicle)	22.5	21.6	23.0
Degree of Saturation	0.507	0.435	0.617
Level of Service	B	B	B
95th Percentile Queue	57.2m	64.1m	80.4m

Note: (W) – Worst movement

Table 7 indicates that the intersection of Help Street / Anderson Street currently operates satisfactorily with spare capacity.

Observations indicated that during the weekday PM peak hour, downstream queueing from the junction of Anderson Street / Victoria Avenue affected the junction operation on a few occasions. This was reflected in the model results.

TABLE 8 SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE			
JUNCTION OF HELP STREET / CAMBRIDGE LANE			
	AM	**PM**	**Sat**
Help St East Approach			
Delay (seconds / vehicle)	5.8 (W)	5.8 (W)	6.2 (W)
Degree of Saturation	0.12 (W)	0.16 (W)	0.106 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	1.3m	1.7m	1.8m
Help St West Approach			
Delay (seconds / vehicle)	2.3 (W)	2.3 (W)	2.3 (W)
Degree of Saturation	0.11 (W)	0.107 (W)	0.128 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	0m	0m	0m
Total Intersection			
Delay (seconds / vehicle)	5.8 (W)	5.8 (W)	6.2 (W)
Degree of Saturation	0.12 (W)	0.16 (W)	0.106 (W)
Level of Service	A (W)	A (W)	A (W)
95th Percentile Queue	1.3m	1.7m	1.8m

Table 8 indicates that the junction of Help Street / Cambridge Lane currently operates satisfactorily with minimal queues and delays on all approaches.

4.6 Existing Cambridge Lane Traffic Volumes

Detailed surveys of traffic volumes within Cambridge Lane are shown in **Figure 9** and **Figure 10**.

FIGURE 9
THURSDAY 19/9/2024 CAMBRIDGE LANE TRAFFIC VOLUMES

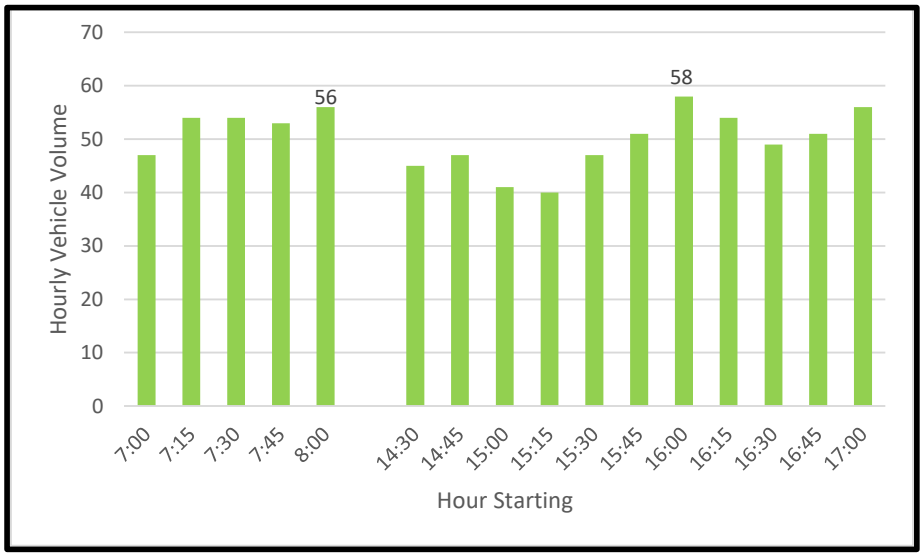


FIGURE 10
SATURDAY 19/10/2024 CAMBRIDGE LANE TRAFFIC VOLUMES

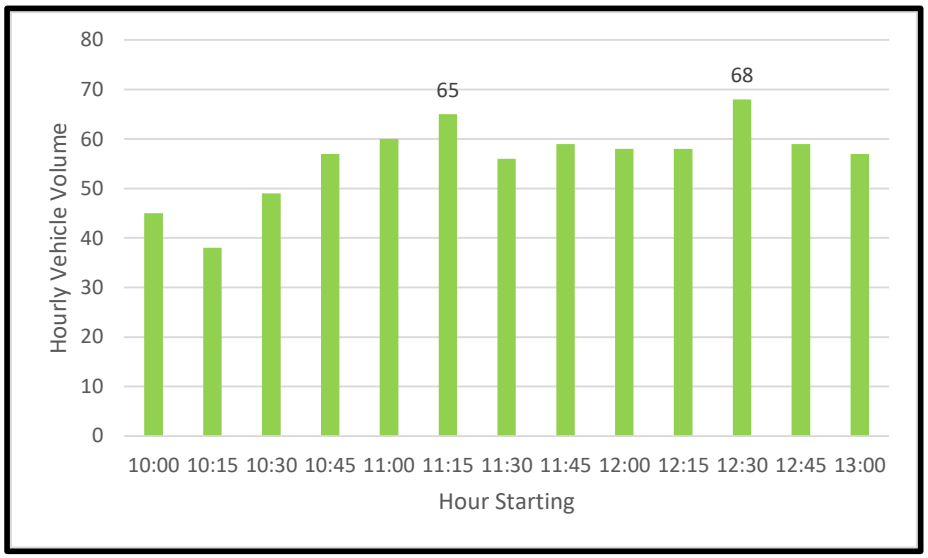


Figure 9 and **Figure 10** indicate that the highest surveyed traffic volume within Cambridge Lane was 58 vehicles on during the surveyed weekday AM or PM peak with 68 on the surveyed Saturday midday peak. The existing peak vehicle volume within Cambridge Lane is approximately one vehicle on average every minute.

4.7 On-Street Parking Provision and Demand

Unrestricted parallel parking is permitted along the frontage of the site on Anderson Street with time-restricted parking provided along the frontage of the site in Day Street and McIntosh Street. Parking in the vicinity of the subject site is generally time restricted with some streets providing unrestricted car parking on one side of the carriageway.

Observations from aerial photos on multiple days have indicated that parking demand within the vicinity of the site is relatively high with limited spare capacity to accommodate demand if so required.

5. PROJECTED TRANSPORT IMPACT

5.1 Public Transport Impacts

The subject site is located within close proximity to Chatswood Station (380m walking distance) and nearby bus services (80-250m walking distance). It is accordingly expected that a portion of the future subject site users / staff will utilise the surrounding public transport infrastructure to access the site and other destinations throughout the Sydney metropolitan area.

The recent Metro opening in Chatswood which currently extends from Tallawong to Sydenham and will extend to Bankstown in 2025/6 has significantly increased public transport capacity to and from Chatswood. Capacity of the existing public transport system is not envisaged to be measurably affected by any additional demand associated with the development, given its scale and the number and frequency of public transport services nearby.

5.2 Traffic Generation

5.2.1 Current Site Use

There are currently 43 dwellings on the subject site which have been built to previous standards. Based on an estimated traffic generation of 0.14, 0.12 and 0.21 movements per dwelling in the weekday AM, weekday PM and Saturday peak hours, the current total traffic generation is estimated to be 6, 5 and 9 vehicles per hour, respectively.

Based on an in/out split of 20%/80% in the AM peak hour, 60%/40% during the PM peak hour and 50%/50% split during the Saturday peak hour, this equates to:

- 1 trip in and 5 out during the weekday AM peak hour;
- 4 trips in and 2 out during the weekday PM peak hour; and
- 5 trips in and 4 trips out during the Saturday peak hour.

A total of 22 dwellings currently provide vehicular access via McIntosh Street. Application of the same traffic generation rates to these dwellings equates to:

- 1 trip in and 2 trips out during the weekday AM peak hour;
- 2 trips in and 1 trip out during the weekday PM peak hour; and
- 2 trips in and 3 trips out during the Saturday peak hour.

5.2.2 Proposed Site Uses

Traffic generation rates for various land-uses have been established through extensive surveys undertaken throughout NSW and published within TfNSW's Guide to Transport Impact Assessment. Additional analysis for Chatswood specific sites and sites in a similar location to the subject site were also undertaken in the GTA Report (2018), PDC Report (2023) and the Cardno Report (2020).

5.2.2.1 Residential Traffic Generation Rates

It is acknowledged that the TfNSW Guide to Transport Impact Assessment provides guidance on average trip generation rates for high density dwellings around Sydney. As documented in the Cardno Report, the traffic generation rates for high density residential developments are based on surveys of sites across Sydney and Sydney contains a wide-range of major centres with different public transport characteristics.

The site in Chatswood surveyed by TfNSW to inform the average traffic generation rates across Sydney was 1 Cambridge Lane, Chatswood which is adjacent to the subject site and is considered comparable to the proposed development.

The traffic generation rate selected for the Chatswood site (Site 2 in the High Density Residential Trip Generation Surveys Analysis Report prepared by GHD dated 28 September 2012), had 129 apartments and 206 car parking spaces, a ratio of 1.6 spaces per apartment.

The traffic generation rates for that site were surveyed as:

- 0.14 movements per apartment during the weekday AM peak hour;
- 0.12 movements per apartment during the weekday PM peak hour; and
- 0.21 movements per apartment during the Saturday midday peak hour.

5.2.2.2 Gymnasium Traffic Generation Rates

Advice has been sought from the site operator as to the nature of the proposed gymnasium. Information provided by the site operator indicates that the gymnasium is likely to be similar in traffic generation ability to a high-end Fitness First facility, which is common across Sydney.

Surveys were undertaken by TfNSW at a number of gymnasiums across Sydney in 2014 which resulted in average trip generation rates of 3.6 trips per $100m^2$ GFA on a weekday and 2.9 trips per $100m^2$ on a weekend.

As reported in *Trip Generation and Parking Demand Surveys of Gymnasiums, Data and Analysis Report*, prepared by PeopleTrans dated 27/11/2014 (PeopleTrans Report), the average rates were based on gymnasiums in Bondi Junction, Oatley, Kings Cross, Willoughby and Riverwood. Based on the likely use

of the gymnasium and its location in close proximity to Chatswood Metro station and considering where the majority of its customers are likely to come from (nearby office workers or residents within walking distance), the traffic generation assessment is most likely to be correlated to the amount of car parking provided on-site.

The PeopleTrans Report indicates average duration of stay which vary between 50 minutes at the Morris Iemma Indoor Sports Centre in Riverwood in the AM peak hour to 78 minutes at Bondi Gym during the weekday PM peak hour.

As an average, people were surveyed to stay for 67 minutes. Information provided by the Applicant indicates that their proposed class duration is similar to the other sites surveyed and as such, their duration of stay is likely to be similar.

Assuming a worst-case scenario where all car parking spaces allocated to the gymnasium were utilised by gymnasium customers, based on an average duration of stay of 67 minutes for each car parking space, would turnover 0.90 times per hour, generating an average of 1.8 vehicle (0.9 inbound and 0.9 outbound) movements.

In order to provide a conservative assessment, a traffic generation rate of 2 movements per space has therefore been adopted for the weekday AM, weekday PM and Saturday midday peak hour.

5.2.2.3 Food and Beverage Tenancies

There is limited up-to-date information on restaurant / café traffic generation. The latest surveys of restaurants as reported in the TfNSW Guide to Transport Impact Assessment and Guide to Traffic Generating Developments were surveyed in 1981.

Considering the site location, it is expected that the vast majority of the customers would be nearby residents or office workers. For those people that do drive to the subject site to visit the food and beverage tenancies, traffic generation is considered to be best correlated with the number of car parking spaces allocated to the food and beverage uses.

There are a number of different customers which may attend the food and beverage uses as follows:

- Local people living or working nearby that come regularly for coffee or a meal. These people would not drive;
- People that live or work locally that organise a meeting with friends or colleagues at the subject site. In this case, the friends or colleagues may drive and stay for approximately 1 hour or longer; and
- For people coming to have a meal with friends, such as brunch on a weekend or an evening meal after work, they are expected to stay for more than 1 hour.

Based on the above, a conservative duration of stay of 1 hour has been estimated for people that will drive to the proposed development. Based on this, a traffic generation rate of 2 movements per space has been adopted for the weekday AM, weekday PM and Saturday midday peak hours.

5.2.3 Summary of Site Traffic Generation

The estimated traffic generation for each of the proposed land uses are summarised **Table 9**.

TABLE 9
ESTIMATED PROPOSED DEVELOPMENT TRAFFIC GENERATION

Use	Size	Rate [source]	Weekday Peak Hour Generation (trips)
Gymnasium	3,200m2 GFA 53 car spaces	AM – 2 trips/space [1] PM – 2 trip / space [1] Sat – 2 trips/space [1]	AM – 106 PM – 106 Sat – 106
Food and Beverage	956.4m^2 19 spaces	AM – 0.44 trips / space [1] PM – 0.36 trips / space [1] Sat – 2 trips/space [1]	AM – 38 PM – 38 Sat – 38
Non-Residential Common Areas	360.9m^2 0 spaces	Trips already accounted for above	AM – 0 PM – 0 Sat – 0
Residential	258 Dwellings	AM – 0.14/Dwelling [2] PM – 0.12/Dwelling [2] Sat – 0.21/Dwelling[2]	AM – 36 PM – 31 Sat – 54
Total			**AM – 180** **PM – 175** **Sat – 198**

[1] First principles assessment, see Section 5.2.2 above
[2] Cardno Report

The estimated in and out splits of the trips are provided in **Table 10**.

TABLE 10
ESTIMATED PROPOSED DEVELOPMENT TRAFFIC DISTRIBUTION

Use	Size	Total	AM		PM		SAT	
			IN	OUT	IN	OUT	IN	OUT
Gymnasium	3,200m2 GFA 53 car spaces	AM – 106 PM – 106 Sat – 106	50% – 53	50% – 53	50% – 53	50% – 53	50% – 53	50% – 53
Food and Beverage	956.4m^2 19 spaces	AM – 38 PM – 38 Sat – 38	50% – 19	50% – 19	50% – 19	50% – 19	50% – 19	50% – 19
Residential	258 Dwellings	AM – 36 PM – 31 Sat – 54	26% – 9	74% – 27	66% – 20	34% – 11	41% – 22	59% – 32
Total			**81**	**99**	**92**	**83**	**94**	**104**
Existing Movements Associated with 3 McIntosh and 38 Anderson			**1**	**2**	**2**	**1**	**2**	**3**
Estimated Net Increase in Traffic Inbound			**80**	**97**	**90**	**82**	**92**	**101**

Residential in and out Split Source: Table 5, High Density Residential Trip Generation Surveys, Analysis Report, GHD, 28 September 2012

5.3 Future Chatswood Town Centre Traffic

To estimate the future traffic in 2034, this Practice has reviewed the *Future Conditions Report* which assessed the estimated growth in traffic volumes to and from the Chatswood Town Centre between 2016 and 2036.

The subject site sits within Travel Zone 1805, which between 2016 and 2036, based on the uplift scenario assessed, is expected to have an additional 1,907 people living and 290 people working in the Travel Zone.

The percentage of people driving to and from the Chatswood Town Centre is expected to decrease from 55% for inbound trips in 2016 to 44% in 2036 and for outbound trips, the percentage is expected to decrease from 48% in 2016 to 40% in 2036. As outlined in the Future Conditions Report, *"this mode share has been calculated as a percentage of private vehicle and public transport outputs from the TfNSW strategic models."*

Based on the data available within the Future Conditions Report, the number of peak 2-hour inbound trips by private vehicle is expected to increase from 11,100 in 2016 to 12,800 in 2036 under the uplift scenario and the number of outbound private vehicle trips is expected to increase from 1,800 to 3,100. Based on this, the total trips are expected to increase from 12,900 in 2016 to 15,900 in 2036 as shown in **Figure 11**.

FIGURE 11
ESTIMATED INCREASE IN INBOUND AND OUTBOUND PRIVATE TRIPS IN THE CHATSWOOD TOWN CENTRE

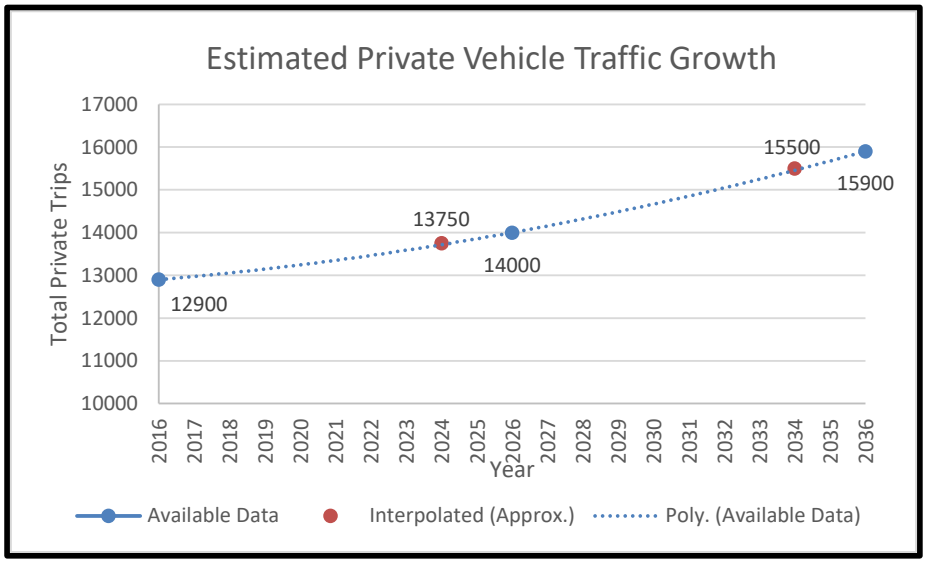
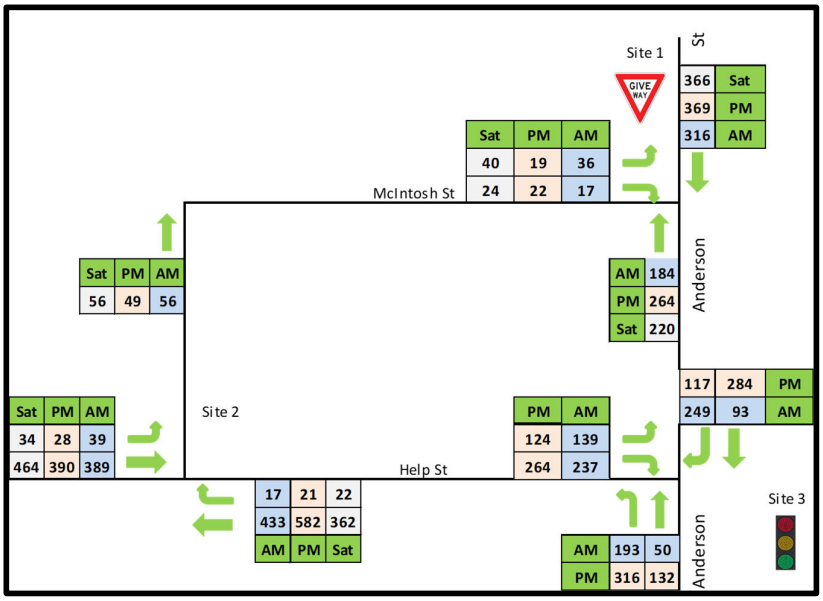


Figure 11 indicates that between 2024 and 2034, total two-way traffic volumes to and from the Chatswood Town Centre are estimated to increase from 13,750 to 15,500. This equates to an average annual growth rate of 1.127% per annum.

In order to provide a conservative assessment, a growth rate of 1.15% per annum has been adopted from 2024 to 2034 (10 years) for background growth at the study intersections. No change to Cambridge Lane has been applied as there is likely no change to the existing developments that front Cambridge Lane between now and 2033.

Based on this growth rate, the estimated 2034 future base traffic volumes, without the proposed development, are shown in **Figure 12**.

FIGURE 12
ESTIMATED 2034 FUTURE BASE TRAFFIC VOLUMES
WITHOUT THE PROPOSED DEVELOPMENT



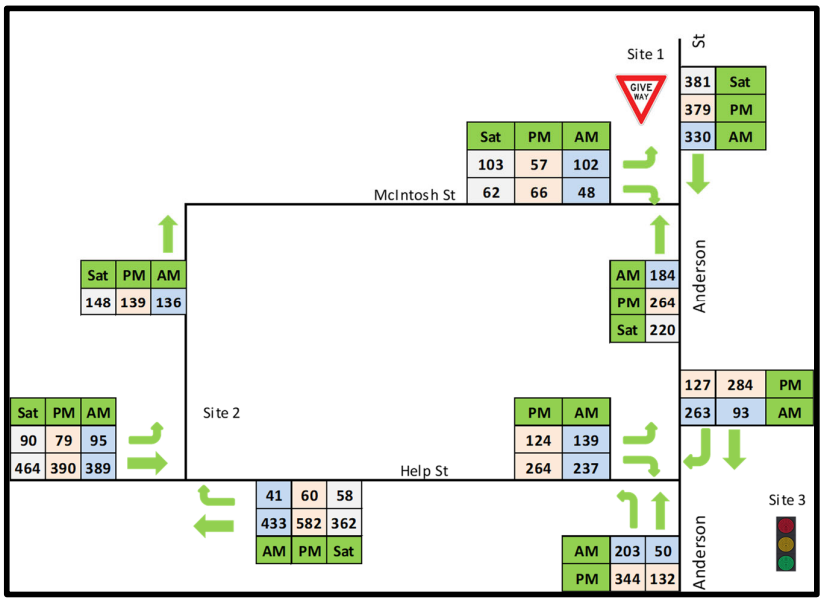
5.4 Estimated 2034 Post Development Traffic

The estimated development traffic in 2034 following construction of the proposed development, as shown in **Table 10,** has been added to the future base traffic volumes in **Figure 12**.

The development traffic volumes were added to the road network as per the current distribution of traffic at the intersection of McIntosh Street / Anderson Street and Help Street / Cambridge Lane.

The 2033 post development traffic volumes are shown in **Figure 13**.

FIGURE 13
2034 ESTIMATED POST DEVELOPMENT TRAFFIC VOLUMES



5.5 2034 Post Development Traffic Modelling

The surrounding public road intersections have been modelled in order to estimate that likely impact on traffic safety and efficiency utilising the projected traffic volumes incorporating the 2034 future base and proposed development traffic shown in **Figure 13**.

A summary of the most pertinent results are indicated within **Table 11** to **Table 13** whilst more detailed summaries are provided within **Appendix 3** for the 2034 Future Base and **Appendix 4** for the 2034 Post Development scenario.

TABLE 11 SIDRA OUTPUT – WEEKDAY PEAK HOUR PERFORMANCE									
INTERSECTION OF ANDERSON STREET / McINTOSH STREET									
	Existing			2034 Future Base			2034 Post Development		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Anderson St South Approach									
Delay (seconds / vehicle)	0 (W)	0 (W)	0 (W)	0 (W)	0 (W)	0 (W)	0 (W)	0 (W)	0 (W)
Degree of Saturation	0.093 (W)	0.134 (W)	0.111 (W)	0.104 (W)	0.149 (W)	0.124 (W)	0.104 (W)	0.149 (W)	0.124 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	0m	0m	0m	0m	0m	0m	0m	0m	0m
Anderson St North Approach									
Delay (seconds / vehicle)	0.1 (W)	0.1 (W)	0.1 (W)	0.1 (W)	0.1 (W)	0.1 (W)	0.1 (W)	0.1 (W)	0.1 (W)
Degree of Saturation	0.16 (W)	0.179 (W)	0.185 (W)	0.178 (W)	0.208 (W)	0.207 (W)	0.186 (W)	0.214 (W)	0.215 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	0m	0m	0m	0m	0m	0m	0m	0m	0m
McIntosh St West Approach									
Delay (seconds / vehicle)	6.1 (W)	6.8 (W)	6.6 (W)	6.4 (W)	7.4 (W)	7.1 (W)	6.7 (W)	7.7 (W)	7.4 (W)
Degree of Saturation	0.023 (W)	0.033 (W)	0.035 (W)	0.024 (W)	0.037 (W)	0.04 (W)	0.071 (W)	0.112 (W)	0.111 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	0.9m	0.8m	1m	0.9m	0.9m	1.1m	2.7m	2.7m	2.8m
Total Intersection									
Delay (seconds / vehicle)	6.1 (W)	6.8 (W)	6.6 (W)	6.4 (W)	7.4 (W)	7.1 (W)	6.7 (W)	7.7 (W)	7.4 (W)
Degree of Saturation	0.023 (W)	0.033 (W)	0.035 (W)	0.024 (W)	0.037 (W)	0.04 (W)	0.071 (W)	0.112 (W)	0.111 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	0.9m	0.8m	1m	0.9m	0.9m	1.1m	2.7m	2.7m	2.8m

Note: (W) – Worst movement

Table 11 indicates that the intersection of Anderson Street / McIntosh Street expected to continue to operate well with satisfactory queues and delays on all approaches in the 2034 future base and 2034 post development scenario.

TABLE 12 SIDRA OUTPUT – WEEKDAY PEAK HOUR PERFORMANCE									
INTERSECTION OF HELP STREET / ANDERSON STREET									
	Existing			2034 Future Base			2034 Post Development		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Anderson St South Appr									
Delay (seconds / vehicle)	27.1	25.5	26.4	27.4	25.9	26.6	28.2	26.1	27.1
Degree of Saturation	0.329	0.435	0.238	0.368	0.485	0.265	0.403	0.528	0.266
Level of Service	B	B	B	B	B	B	B	B	B
95th Percentile Queue	41m	64.1m	25.1m	46.4m	73.4m	28.1m	50.1m	81.6m	33.8m
Anderson St North Appr									
Delay (seconds / vehicle)	18.3	17.9	19.5	19.2	18.1	20.8	18.9	18.3	20.6
Degree of Saturation	0.382	0.288	0.431	0.430	0.320	0.510	0.439	0.331	0.521
Level of Service	B	B	B	B	B	B	B	B	B
95th Percentile Queue	49.6m	44.2m	53.6m	55.6m	50m	60.2m	57.7m	51.9m	62.8m
Help St West Appr									
Delay (seconds / vehicle)	23.3	21.0	24.4	23.7	21.3	25.3	24.3	21.3	26.6
Degree of Saturation	0.507	0.434	0.617	0.564	0.483	0.687	0.594	0.483	0.718
Level of Service	B	B	B	B	B	B	B	B	B
95th Percentile Queue	57.2m	57.6m	80.4m	64.8m	65.5m	93.3m	66m	65.5m	96.6m
Total Intersection									
Delay (seconds / vehicle)	22.5	21.6	23.0	23.0	21.9	23.9	23.4	22.1	24.5
Degree of Saturation	0.507	0.435	0.617	0.564	0.485	0.687	0.594	0.528	0.718
Level of Service	B	B	B	B	B	B	B	B	B
95th Percentile Queue	57.2m	64.1m	80.4m	64.8m	73.4m	93.3m	66m	81.6m	96.6m

Table 12 indicates that the intersection of Anderson Street / Help Street is expected to continue to operate well with satisfactory queues and delays on all approaches in the 2034 future base and 2034 post development scenario.

TABLE 13 SIDRA OUTPUT – WEEKDAY PEAK HOUR PERFORMANCE									
JUNCTION OF HELP STREET / CAMBRIDGE LANE									
	Existing			2034 Future Base			2034 Post Development		
	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Help St East Approach									
Delay (seconds / vehicle)	5.8 (W)	5.8 (W)	6.2 (W)	6.1 (W)	6.2 (W)	6.7 (W)	6.6 (W)	6.6 (W)	7.2 (W)
Degree of Saturation	0.12 (W)	0.16 (W)	0.106 (W)	0.133 (W)	0.177 (W)	0.117 (W)	0.149 (W)	0.203 (W)	0.144 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	1.3m	1.7m	1.8m	1.4m	1.8m	2m	3.5m	5.1m	4.6m
Help St West Approach									
Delay (seconds / vehicle)	2.3 (W)	2.3 (W)	2.3 (W)	2.3 (W)	2.3 (W)	2.3 (W)	2.3 (W)	2.3 (W)	2.3 (W)
Degree of Saturation	0.11 (W)	0.107 (W)	0.128 (W)	0.121 (W)	0.118 (W)	0.141 (W)	0.138 (W)	0.134 (W)	0.159 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	0m	0m	0m	0m	0m	0m	0m	0m	0m
Total Intersection									
Delay (seconds / vehicle)	5.8 (W)	5.8 (W)	6.2 (W)	6.1 (W)	6.2 (W)	6.7 (W)	6.6 (W)	6.6 (W)	7.2 (W)
Degree of Saturation	0.12 (W)	0.16 (W)	0.106 (W)	0.133 (W)	0.177 (W)	0.117 (W)	0.149 (W)	0.203 (W)	0.144 (W)
Level of Service	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)	A (W)
95th Percentile Queue	1.3m	1.7m	1.8m	1.4m	1.8m	2m	3.5m	5.1m	4.6m

Note: (W) – Worst movement

Table 13 indicates that the junction of Help Street / Cambridge Lane is expected to continue to operate satisfactorily with spare capacity on all approaches in the 2034 Base and 2034 post development scenario.

5.6 Impact on the Cambridge Lane Shared Zone

A summary of the development impact on the existing Cambridge Lane Shared Zone is provided in the following sections.

5.6.1 Criteria for a Shared Zone

Vehicular access to the development is proposed via McIntosh Street which is a one-way road with ingress via Cambridge Lane and egress via Anderson Street. All vehicles entering the site via McIntosh Street will accordingly do so via the shared zone within Cambridge Lane.

Guidance on shared zones and speed zoning in New South Wales is provided by the *NSW Speed Zoning Standard* TS 03631:1.0 released July 2023 and as updated in November 2023, TD 00030:2023.

Guidance on shared zones and a 10km/h speed limit from the *NSW Speed Zoning Standard* states the following:

"10 km/h speed limits should:

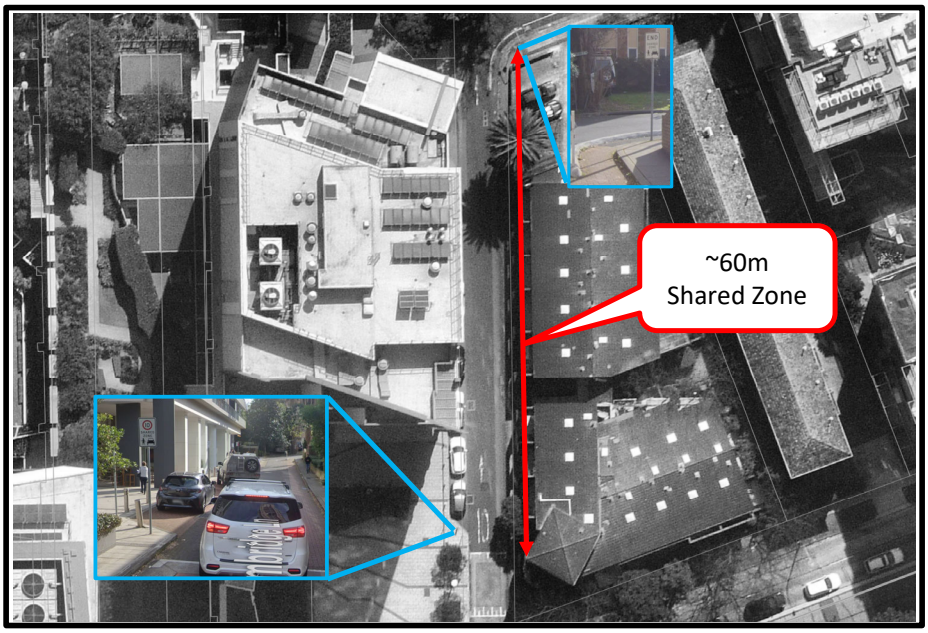
- *have limited private vehicle movements with no public transport services*
- *be self-explaining road environment using engineering treatments appropriate for a 10 km/h speed zone, to slow vehicles to that speed*
- *have a high place function for pedestrians and cyclists, low motor vehicle movement (service vehicles or private access only, no major public transport i.e., light rail)*
- *cover full extent of pedestrian desire lines coinciding with public transport facilities, meaning there are no minimum lengths for these zones"*

There is no traffic volume warrants or upper limit in this document in relation to a shared zone.

5.6.2 What traffic volume is considered satisfactory in Cambridge Lane?

The Cambridge Lane shared zone is approximately 59m long between the two shared zone signs as shown in **Figure 14**.

FIGURE 14
EXISTING CAMBRIDGE LANE SHARED ZONE LENGTH



This Practice has undertaken an assessment to determine the upper limit of traffic volumes per hour that could travel through the shared zone and maintain appropriate safety for pedestrians and people riding bicycles. In this regard, it is considered that to maintain appropriate safety and visibility between all road users, it is desirable that vehicle volumes within the shared zone be limited to a single vehicle within the zone at any one time.

The posted speed limit of the shared zone is 10km/h. Based on a distance of 60m for the shared zone, at a speed of 10km/h, a vehicle would take 21.6 seconds to travel the length of the shared zone. If only one vehicle were to occupy the shared zone at any one time on average, then a maximum of 166 vehicles per hour could travel through the shared zone in an hour whilst still maintaining an appropriate level of safety and vicinity between all road users.

While there is no formal upper limit in New South Wales, to provide a conservative maximum, for the purposes of this assessment, an upper limit of 166 vehicles per hour has been selected to ensure that on average, only one vehicle is travelling northbound within the zone at any given time to ensure that visibility between pedestrians and vehicles can be maximised.

5.6.3 Post Development Traffic Volume in Cambridge Lane

The existing and post development traffic volumes utilising the shared zone are summarised in **Table 14**.

TABLE 14 EXISTING AND POST DEVELOPMENT CAMBRIDGE LANE PEAK HOUR TRAFFIC VOLUMES			
Peak Hour	**Existing Peak Hour**	**Net Development Traffic**	**Post Development**
Weekday AM	56 (8am-9am)	80	136
Weekday PM	58 (4pm-5pm)	90	148
Saturday Midday	68 (12:30-1:30pm)	92	160

Table 14 indicates that post development, a maximum of 160 vehicles per hour could be expected in shared zone in any given single hourly period, occurring during the Saturday midday peak hour.

The peak hour assessment is considered conservative for the following reasons:

- No traffic reduction has been applied to any of the proposed uses where typically, we may expect a portion of the customers that visit the gymnasium to visit the food and beverage tenancies afterwards, which may increase the average duration of stay for people driving to the site;

- The high density traffic generation rate has been applied to the existing traffic in Cambridge Lane associated with 3 McIntosh Street and 38 Anderson Street when the design of the buildings would more closely be a medium density development and not a high density development;

- It is understood that traffic currently associated with 5 Help Street that utilises Cambridge Lane to access the existing development is going to be relocated as part of approval DA-2023/160. The PDC Report identifies 57 existing units which currently have access via Help Street and Cambridge Lane. A portion of this traffic would no longer travel along Cambridge Lane following construction of the proposed development;

- The highest peak hour within the survey has been used to estimate the potential worst case scenario when survey data indicates a peak hour at the junction of Help Street / McIntosh Street of 10:00am to 11:00am and a peak within Cambridge Lane of 12:30pm to 1:30pm. The traffic volume from 10:00am to 11:00am within Cambridge Lane during the junction peak hour was 45 vehicles.

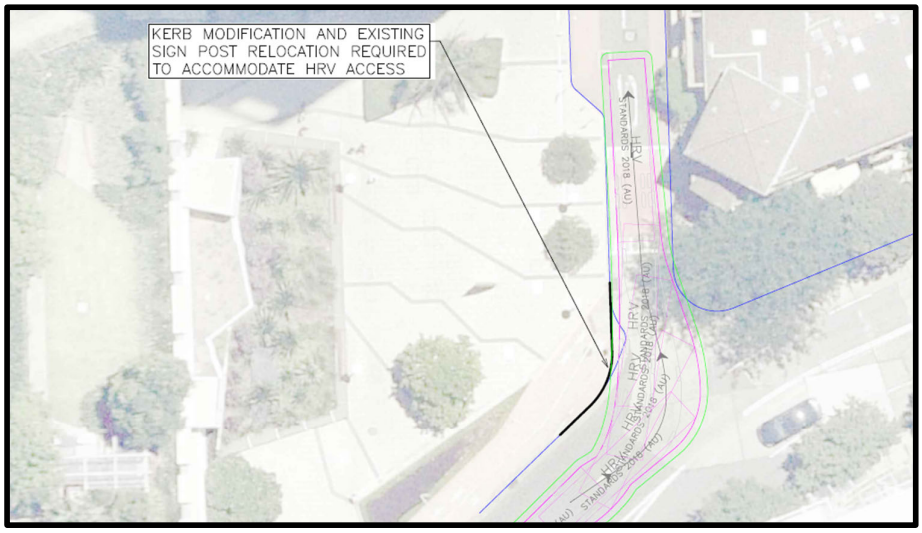
The proposed development will result in the post development traffic within Cambridge Lane increasing to a level that will, on average, be fewer than one vehicle within the shared zone at any one time. Accordingly, the additional traffic associated with the proposed development is not expected to compromise the safety or function of the existing shared zone and is considered satisfactory.

5.7 Changes to the Help Street / Cambridge Lane Intersection to Support HRV Access

As outlined in the *NSROC Waste Management Guide*, *"All developments must be able to be serviced by a heavy ridged vehicle regardless if Council currently uses this size of vehicle. This is to future proof all developments and allow for changes to collections and bins."*

Based on this, the development has been designed to cater for HRVs. This Practice has tested the ability of HRVs to access Cambridge Lane via Help Street and identified that a minor kerb adjustment and sign relocation would be required. Should Council require access via HRVs, the Applicant is prepared to make the necessary adjustments to the kerb and relocation the identified sign.

FIGURE 15
WORKS REQUIRED TO SUPPORT HRV ACCESS



5.8 3-5 Help Street Proposed Vehicular Access

Based on the latest submission, while the Planning Proposal and site specific DCP for the site was approved to provide residential vehicular access via Cambridge Lane and McIntosh Street, the nearby development at 3 to 5 Help Street is now proposing all vehicular access via Help Street (*PDC Report*).

6. SITE ACCESS, PARKING & INTERNAL CIRCULATION

6.1 Site Access

Site access for pedestrians and vehicles is described and assessed in the following sections of this report.

6.1.1 Pedestrian Access

Separate pedestrian access locations will be provided on each side of the proposed development as shown in **Figure 16** and **Figure 17**.

FIGURE 16
GROUND FLOOR (DAY STREET) PEDESTRIAN ACCESS POINTS

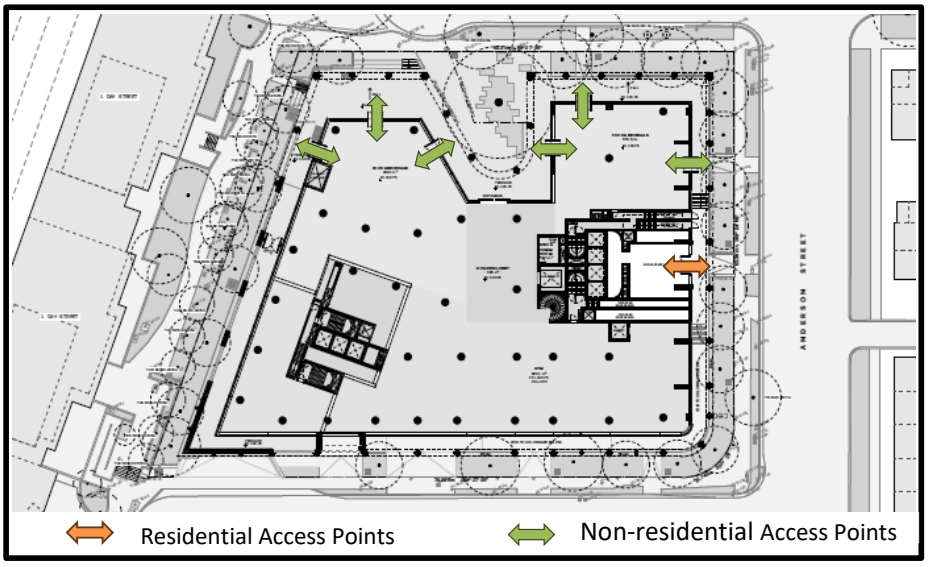
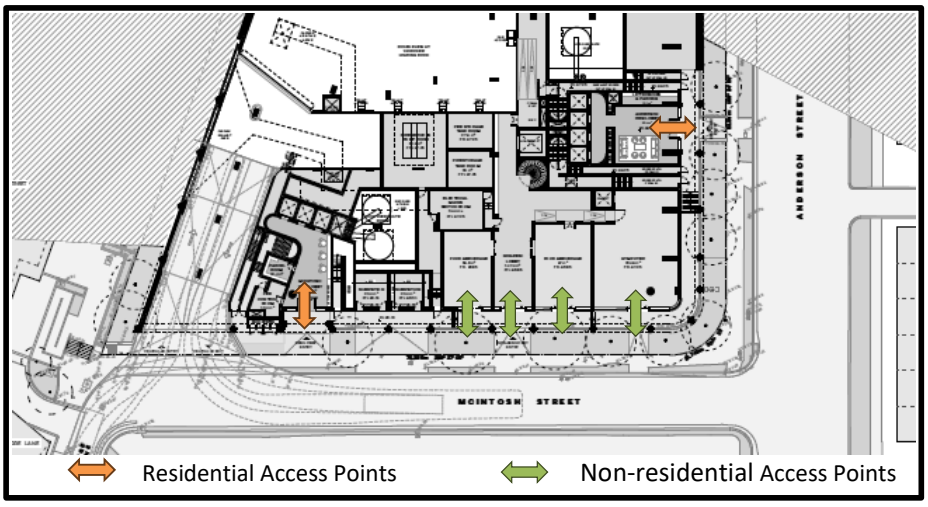


FIGURE 17
LOWER GROUND FLOOR (MCINTOSH STREET) PEDESTRIAN ACCESS POINTS



Access to the proposed development is from all sides and as such is considered satisfactory to cater for the needs of the proposed development.

6.1.2 Vehicular Access

Vehicular access between the development site and McIntosh Street terminating is proposed to be provided via a 13.5m wide combined ingress / egress driveway situated approximately in the south-western portion of the site. This driveway splays / widens to provide a 21.5m wide gutter crossing connecting with the northern McIntosh Street kerb alignment.

AS2890.1:2004 provides driveway design specifications based on the proposed primary land use, the functional order of the access road and the number of spaces the driveway is to serve. Tables 3.1 and 3.2 of AS2890.1:2004 specify that, at minimum, a Category 3 type driveway is required, providing a 6m entry width, a separation of 1-3 metres and an egress driveway width of between 4m and 6m, based on the non-arterial functional order of McIntosh Street, the proposed mixture of land-use and the passenger vehicle parking provision of between 301 and 600 spaces.

The proposed driveway therefore complies with the intent of the minimum AS2890.1:2004 specifications and accordingly, is considered to be satisfactory.

Table 3.1 of AS2890.2:2018 outlines minimum widths for circulation roadways between kerbs. Based on the longest vehicle to access the site being an HRV, a minimum width between kerbs of 6.5m is required. This is provided and accordingly, is considered to be satisfactory.

Swept path plans have been prepared in order to demonstrate the ability of passenger and heavy vehicles to enter and exit the site in a forward direction, copies of which are included as **Appendix 5**.

The safety and efficiency of access / egress movements are also proposed to be assisted by the following:

- The provision of a relatively level (1:20 or less) grade within the first 6m inside the property boundary within the driveway;

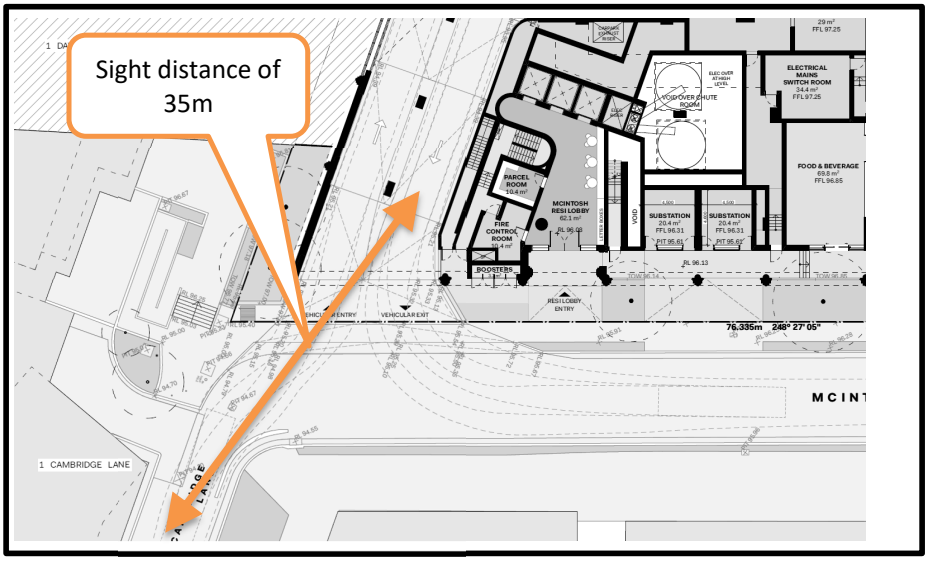
- The consistent horizontal and vertical alignment of McIntosh Street in the vicinity of the subject site which facilitates appropriate sight distance between the driveway and approaching public road traffic flow, despite the curve in the roadway to the west, where Cambridge Lane becomes McIntosh Street; and

- No obstructions to visibility adjacent to the eastern side of the driveway facilitating appropriate sight distance between exiting motorists and potential pedestrians travelling along the northern McIntosh Street footpath.

For a 40km/h road, AS2890.1:2004 nominates a minimum sight distance of 35m. Based on the curve in the road between Cambridge Lane and McIntosh Street

and the 10km/h speed limit applying to Cambridge Lane, it likely that vehicles would not be travelling any faster than 10 - 20km/h however the minimum sight distance of 35m as required by AS2890.1:2004 is met for a 40km/h speed limit. Based on this, the available sight distance afforded by the horizontal and vertical geometry of McIntosh Street is accordingly considered satisfactory.

FIGURE 18
SIGHT DISTANCE FOR EXITING VEHICLES



6.2 Impact on On-Street Car Parking

There are currently 6 on-street car parking spaces adjacent to the subject site on McIntosh Street, 6 on-street car parking spaces adjacent to the site on Anderson Street and 5 spaces adjacent to the subject site on Day Street.

Following construction of the proposed development and removal of existing site driveways that are no longer required, the on-street parking adjacent to the site will increase to from 16 to 18 spaces. This is an increase of 2 spaces.

6.3 Car Parking Provision

Table 15 provides a summary of the car parking to be provided for the proposed development.

TABLE 15
SUMMARY OF CAR PARKING PROPOSED

Use	Size	Car Parking Spaces Provided
Gymnasium	3,200m^2	53 (1 accessible)
Food and Beverage	956.4m^2	19 (1 accessible)
Non-Residential Shared Areas	360.9m^2	0
Residents	258 dwellings	386 (19 accessible)
Residential Visitors	258 Dwellings	36 (1 accessible)
Total		**494 (22 accessible)**

A total of 494 on-site car parking spaces are proposed for residents and visitors.The suitability of the proposed car parking quantum has been assessed within the Environmental Impact Statement for the SSDA.

6.4 Bicycle Parking Requirements

Bicycle parking is provided within the development for the various components, as follows:

- 15 x non-residential bicycle parking spaces for staff on the lower ground floor in a secure area;
- 28 x visitor bicycle parking spaces for residential visitors within Basement 02; and
- 30 x residential bicycle parking spaces in Basement 03.

Table 16 provides a summary of the bicycle parking requirements as identified in the *WDCP 2023* along with an assessment of the proposed bicycle parking adequacy.

TABLE 16
SUMMARY OF BICYCLE PARKING REQUIREMENTS

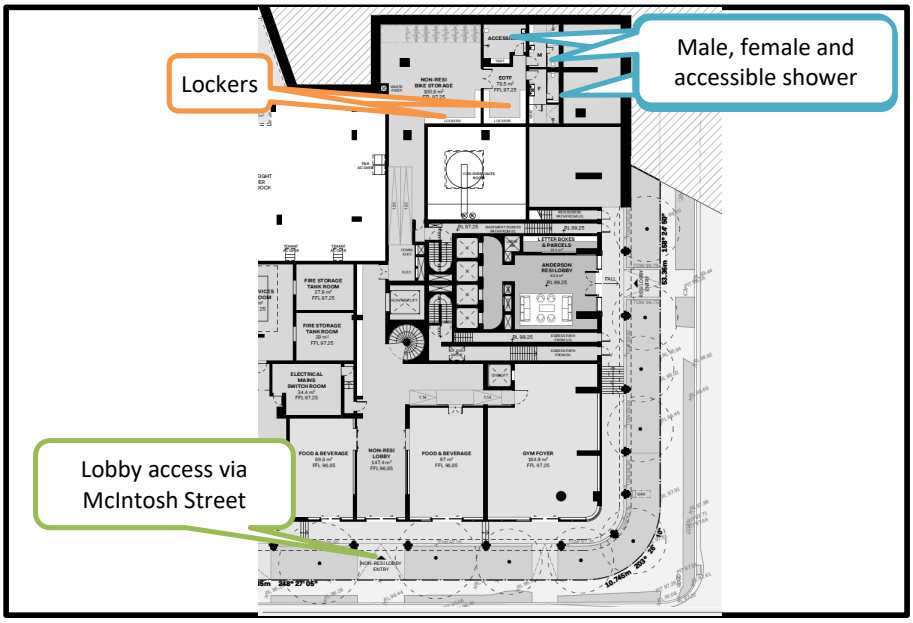
Use	Size	Rate	Source	Minimum Requirement	Provided
Gymnasium	3,200m^2	1 Class A or B bicycle space per 10 car parking spaces Minimum 1 Class C bicycle space or 1 space per 10 Class A or B bicycle spaces, whichever is the greater	[1]	6 Class A/B & 1 Class C	15 non-residential bicycle spaces within the Lower Ground Level.
Food and Beverage	956.4m^2		[1]	2 Class A/B & 1 Class C	
Non-residential Shared Area	360.9m^2		[1]	0	0
Residents	258 Dwellings	1 Class A or B parking spaces per 10 units 1 Class C (rails/racks) per 10 apartments for visitors	[1]	26 Class A/B	30 resident bicycle parking spaces in Basement 02 with lockable areas
Residential Visitors	258 Dwellings		[1]	26 Class C	28 visitor bicycle spaces within Basement 02
Total				**26 Class A/B & 22 Class C**	

[1] Willoughby Development Control Plan 2023 Part F: Transport and Parking Management Table 3

As indicated in **Table 16,** bicycle parking quantum exceeds the minimum Willoughby DCP minimum requirements.

The proposed end-of-trip facilities for non-residential bicycle parking are shown in **Figure 19**.

FIGURE 19
PROPOSED NON-RESIDENTIAL END OF TRIP FACILITIES



It is recommended that one shower per 5 bicycle parking spaces required (Class A or B) is provided for non-residential spaces (3 showers), 3 change rooms and 30 lockers be provided for non-residential use. This could reasonably be imposed as a consent condition by DPHI.

There will be sufficient room in the lower ground floor and in Basement 02 to provide the bicycle parking and end-of-trip facilities required in accordance with AS2890.3:2015. Incorporating their provision, the proposed design meets the requirements outlined in the *WDCP 2023* and accordingly is considered satisfactory.

Appropriate bicycle parking products will be selected as part of the Construction Certificate stage of the development.

6.5 Motorcycle Parking

6.5.1 Motorcycle Parking Requirements

Table 17 provides a summary of the motorcycle parking requirements as identified in the *WDCP 2023* along with an assessment of the proposed motorcycle parking adequacy.

TABLE 17 SUMMARY OF MOTORCYCLE PARKING REQUIREMENTS					
Use	**Size**	**Rate**	**Source**	**Minimum Resident / Employee Requirement**	**Minimum Visitor Requirement**
Gymnasium	3,200m^2	1 space per 20 car parking spaces and 1 visitor space per 10 motorcycle spaces	[1]	25 employee / resident motorcycle parking spaces	3 for visitors
Food and Beverage	956.9m^2		[1]		
Non-residential Shared Area	360.9m^2		[1]		
Residents	258 Dwellings		[1]		
Residential Visitors	258 Dwellings		[1]		
Total				**25 Spaces**	**3 spaces**

[1] Willoughby Development Control Plan 2023 Part F: Transport and Parking Management Table 2

Subject to the provision of a minimum of 28 motorcycle parking spaces as outlined in **Table 17,** the proposed design meets the requirements outlined in the *WDCP 2023* and accordingly is considered satisfactory.

6.6 Site Servicing

The uses on site will necessitate regular servicing with respect to the collection of refuse. Refuse is proposed to be contained within bin rooms accommodated within storage areas.

The bins are proposed to be brought to the loading dock for collection by Council for the residential component of the development and collection by a private contractor for all non-residential uses on-site.

Minor deliveries associated with the site uses are expected to be undertaken by vans and utility vehicles. Such servicing activities are proposed to be accommodated within the two loading dock spaces on-site or within 5 x small vehicle (passenger van) loading spaces provided within the car park.

The height above the loading dock will meet the requirements of AS2890.2:2018 which requires a minimum of 4.5m. The two service bays have dimensions of 12.5m x 3.5m and 8.8m x 3.5m. Both service bays have a 2.5m x 3.5m area at the back of the service bay to facilitate loading and unloading of vehicles wholly within the service bay. If access is required by a 12.5m HRV then this can be provided with minimal changes to the kerb at the intersection of Help Street / Cambridge Lane.

To determine the adequacy of the two proposed loading docks and five loading spaces for small vehicles, a preliminary estimate of the frequency of deliveries based on the Freight Report is as follows:

- Residential garbage and recycling collection weekly by Council's collection vehicle (2 vehicles / week);
- Non-residential garbage, recycling, cardboard (8 vehicles / week);

- Three residents moving in and moving out each week (6 vehicles / week);
- Deliveries to non-residential tenancies – total of 8 / day (48 vehicles / week); and
- Deliveries to residential properties – Estimated at a maximum of 0.26 per dwelling / day = 67 per day.

The proposed loading dock has been designed to cater for a Council refuse collection vehicle 12.5m long and an 8.8m long Medium Rigid Vehicle.

It is noted that not all deliveries would require the use of the loading dock and could instead be catered for within the 5 x small vehicle (van) spaces within the basement. This could be for things such as a deliveries to the food and beverage tenancies or gymnasium or for residents moving in and out via van.

Some deliveries may not require the use of the basement visitor spaces nor the loading dock, such as package deliveries from Australia Post or private courier companies that may park on-street and walk to multiple locations in a single trip.

Based on the anticipated delivery volumes of approximately 75 vehicles per day, the temporal profiles and average delivery times outlined in the Freight Report and the two loading docks operating 24 hours per day, the proposed design and provision of two loading bays in combination with the visitor spaces within the basement for vehicles lower than 2.2m in height are considered sufficient to cater for the proposed development.

Notwithstanding the above, if necessary, Council could impose a condition of consent requiring the preparation and implementation of a Loading Dock Management Plan, which includes, but is not limited to, specific timeframes for the servicing of different components of the development to ensure there is not undesirable conflict between development users.

6.7 Internal Circulation and Manoeuvrability

Upon entry to the site, vehicles will travel in a forward direction from the access driveway and into the basement car park.

The basement parking area and connecting access roadway / ramp has generally been designed to accord with the minimum requirements of AS2890.1:2004, AS2890.2:2018 and AS2890.6:2022, providing the following minimum dimensions:

- Resident vehicle parking space width = 2.4m;
- Residential visitor parking space width = 2.4m;
- Non-residential parking space width = 2.6m;
- Accessible vehicle parking space width = 2.4m (with adjoining 2.4m wide shared area);
- Vehicle parking space length = 5.4m;
- Parking aisle width = 5.8m to 6.6m (depending on the use of the adjacent spaces;
- Minimum clearance within circulation aisles and above standard car parking spaces = 2.2m;
- Clearance above accessible parking space = minimum 2.5m;
- Maximum ramp grade = 1:5 for retail / non-residential use and 1:4 for residential use;
- Maximum grade within 6m of the property boundary = 1:20;
- Minimum height above ramp and loading dock = 4.5m;
- Minimum 50mm ground clearance below HRV as per Clause 3.3.4.3 of AS2890.2:2018; and
- Maximum grade within loading dock service bays = 1:25.

Safe and efficient internal manoeuvring and parking space accessibility is anticipated to result following design development, in accordance with AS2890.1:2004, AS2890.2:2018 and AS2890.6:2022 specifications.

In order to demonstrate the internal passenger vehicle manoeuvrability within the vicinity of the he proposed loading dock, this Practice has prepared a number of swept path plans which are included as **Appendix 5**.

7. CONCLUSION

This report assesses the potential traffic and parking implications associated with a Development Application for a shop top development at 2 Day Street, 3 McIntosh Street and 38-42 Anderson Street in Chatswood. Based on this assessment, the following conclusions are now made:

- The surrounding local road network operates with a satisfactory level of service and provides safe and efficient connectivity to / from the surrounding road network;

- The proposed site use has been projected to generate up to 180 trips during the AM peak hour and 175 trips during the PM peak hour and 198 trips during the Saturday peak hour to or from the subject site on the nearby road network;

- The net additional traffic expected to be generated by the proposed development is anticipated to result in the nearby intersections continuing to operate satisfactorily in 2034 with the development constructed;

- The operating conditions on the wider road network have been considered by the Future Conditions Report for the Chatswood Town Centre and accordingly no additional road network improvements beyond those already envisaged are considered to be required;

- The current traffic volumes within Cambridge Lane are **56** during the weekday AM peak hour, **58** during the weekday PM peak hour and 68 during the Saturday midday peak hour. Within the existing shared zone, the proposed development is expected to generate an additional **80** inbound trips during the weekday AM peak hour, 90 inbound trips during the weekday PM peak hour and 92 trips during the Saturday midday peak hour. The outbound trips generated by the proposed development will not travel through the shared zone;

- The addition of the post development traffic to the existing traffic, results a total of **136** vehicles during the weekday AM peak hour **148** during the weekday PM peak hour and **160** during the Saturday midday peak hour;

- While there is no formal upper limit in New South Wales, to provide a conservative maximum, for the purposes of this assessment, an upper limit of 166 vehicles per hour has been selected to ensure that on average, only one vehicle is travelling northbound within the zone at any given time to ensure that visibility between pedestrians and vehicles can be maximised. Based on this, the proposed development traffic is not expected to compromise the safety or function of the existing shared zone and is considered satisfactory;

- Considering the proposed traffic generation and vehicle access design, the development is not expected to compromise the safety or function of the adjoining existing or future road network;

- Safe and efficient internal manoeuvring and parking space accessibility is anticipated to result following design development, in accordance with AS2890.1:2004, AS2890.2:2018 and AS2890.6:2022 specifications;

- There will be sufficient room within the site basement to provide bicycle parking in accordance with AS2890.3:2015. Appropriate bicycle parking products will be selected as part of the construction certificate stage of the development if the Development Application is approved;

- Based on the anticipated delivery volumes of approximately 67 vehicles per day for residential dwellings and 24 vehicles per week for non-residential tenancies, the temporal profiles and average delivery times outlined in the Freight Report and the two loading docks operating 24 hours per day, in combination with the 5 small vehicle loading spaces within the basement for vehicles lower than 2.2m in height is considered sufficient to cater for the proposed development;

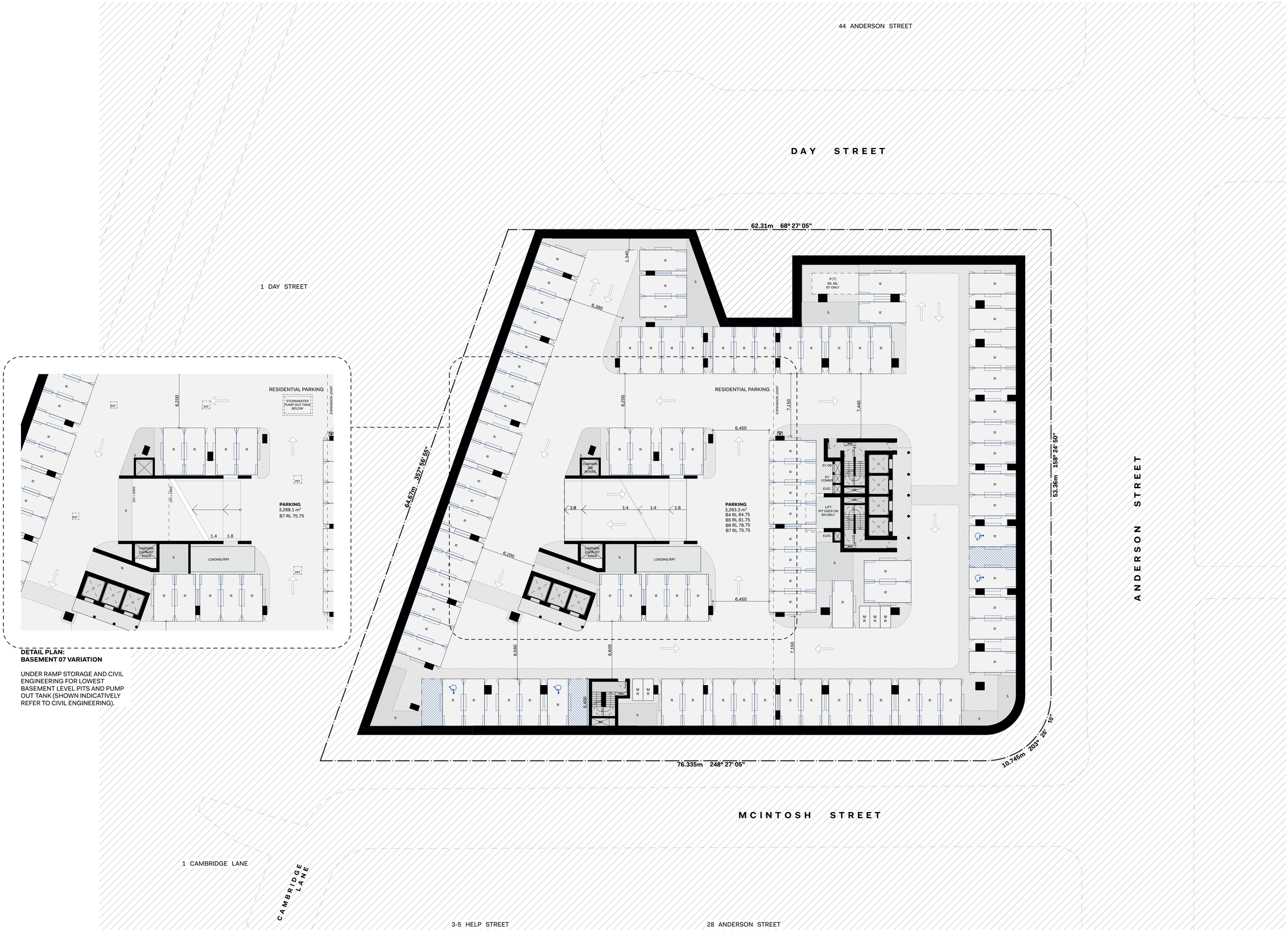
- The proposed off-street parking provision has the ability to meet the objectives of the *WDCP 2023* and by providing adequate bicycle, accessible and motorcycle parking spaces, the combined parking associated with the proposed DA is considered satisfactory to cater for the needs of future residents, employees and visitors of the proposed development;

- Due to the height difference between Day Street, Anderson Street and McIntosh Street, access via Day Street or Anderson Street is not considered feasible and access via McIntosh Street is considered the best outcome for the site; and

- The proposed vehicular access via McIntosh Street and heavy vehicle circulation arrangements are capable of providing for safe and efficient access and internal manoeuvring, with respect to the specific operational requirements of the proposed development with all light and heavy vehicles above to enter and exit the site in a forward direction.

Based on the contents of this report, there are no traffic or parking related issues that should prevent approval of the subject use on the site.

APPENDIX 1



DETAIL PLAN:
BASEMENT 07 VARIATION

UNDER RAMP STORAGE AND CIVIL ENGINEERING FOR LOWEST BASEMENT LEVEL PITS AND PUMP OUT TANK (SHOWN INDICATIVELY REFER TO CIVIL ENGINEERING).

PARKING SUMMARY

CAR SPACES	
NON-RESIDENTIAL	70
NON-RESIDENTIAL ACCESSIBLE	2
TOTAL NON-RESIDENTIAL CAR SPACES	72
VISITOR	35
VISITOR ACCESSIBLE	1
TOTAL VISITOR CAR SPACES	36
RESIDENTIAL	367
RESIDENTIAL ACCESSIBLE	19
TOTAL RESIDENTIAL CAR SPACES	386
TOTAL CAR SPACES	494

CAR SPACES PER LEVEL

BASEMENT 2	
NON-RESIDENTIAL	64
NON-RESIDENTIAL ACCESSIBLE	2
B2 TOTAL	66
BASEMENT 3	
NON-RESIDENTIAL	6
RESIDENTIAL	28
RESIDENTIAL ACCESSIBLE	3
VISITOR	35
VISITOR ACCESSIBLE	1
B3 TOTAL	73
BASEMENT 4	
RESIDENTIAL	84
RESIDENTIAL ACCESSIBLE	4
B4 TOTAL	88
BASEMENT 5	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B5 TOTAL	89
BASEMENT 6	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B6 TOTAL	89
BASEMENT 7	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B7 TOTAL	89
TOTAL CAR SPACES	494

MOTORCYCLE SPACES

BASEMENT 2	
NON-RESI MOTORBICYCLE	3
NON-RESI VISITOR MOTORBICYCLE	2
B2 TOTAL	5
BASEMENT 3	
VISITOR MOTORBICYCLE	3
B3 TOTAL	3
BASEMENT 4	
RESIDENTIAL MOTORBICYCLE	5
B4 TOTAL	5
BASEMENT 5	
RESIDENTIAL MOTORBICYCLE	5
B5 TOTAL	5
BASEMENT 6	
RESIDENTIAL MOTORBICYCLE	5
B6 TOTAL	5
BASEMENT 7	
RESIDENTIAL MOTORBICYCLE	5
B7 TOTAL	5
TOTAL MOTORBICYCLE SPACES	28

BICYCLE SPACES

LOWER GROUND - MCINTOSH ST	
NON-RESIDENTIAL BICYCLE	15
BASEMENT 2	
RESIDENTIAL BICYCLE	28
VISITOR BICYCLE	30
TOTAL BICYCLE SPACES	73

LEGEND

NR	NON-RESIDENTIAL
NRV	NON-RESIDENTIAL VISITOR
R	RESIDENTIAL
V	VISITOR
M	MOTORCYCLE
S	STORAGE

CARTER WILLIAMSON

Contact.
102 Smith Street
Summer Hill NSW 2130
02 9799 4472 | carterwilliamson.com
CW acknowledges Country
and the Traditional Custodians.

Design Development.
Client: Aeon Residence Chatswood Pty Ltd
Address: 2 Day St, 3 McIntosh St & 38-42 Anderson St, Chatswood NSW 2067
Reference: 24350
Scale: 1:200 @ A1

Legend.

DRAFT

TN

Revision Note.

Rev.	Date.	
Q	14/03/25	For Information
R	18/03/25	To Traffic - For Information
S	19/03/25	For Information
T	20/03/25	To Traffic - For Information
U	27/03/25	To Consultants - For Information

Floor Plan - Basement 07 to 04.

DD-10-01-U

PARKING SUMMARY

CAR SPACES	
NON-RESIDENTIAL	70
NON-RESIDENTIAL ACCESSIBLE	2
TOTAL NON-RESIDENTIAL CAR SPACES	72
VISITOR	35
VISITOR ACCESSIBLE	1
TOTAL VISITOR CAR SPACES	36
RESIDENTIAL	367
RESIDENTIAL ACCESSIBLE	19
TOTAL RESIDENTIAL CAR SPACES	386
TOTAL CAR SPACES	494

CAR SPACES PER LEVEL

BASEMENT 2	
NON-RESIDENTIAL	64
NON-RESIDENTIAL ACCESSIBLE	2
B2 TOTAL	66
BASEMENT 3	
NON-RESIDENTIAL	6
RESIDENTIAL	28
RESIDENTIAL ACCESSIBLE	3
VISITOR	35
VISITOR ACCESSIBLE	1
B3 TOTAL	73
BASEMENT 4	
RESIDENTIAL	84
RESIDENTIAL ACCESSIBLE	4
B4 TOTAL	88
BASEMENT 5	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B5 TOTAL	89
BASEMENT 6	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B6 TOTAL	89
BASEMENT 7	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B7 TOTAL	89
TOTAL CAR SPACES	494

MOTORCYCLE SPACES

BASEMENT 2	
NON-RESI MOTORBICYCLE	3
NON-RESI VISITOR MOTORBICYCLE	2
B2 TOTAL	5
BASEMENT 3	
VISITOR MOTORBICYCLE	3
B3 TOTAL	3
BASEMENT 4	
RESIDENTIAL MOTORBICYCLE	5
B4 TOTAL	5
BASEMENT 5	
RESIDENTIAL MOTORBICYCLE	5
B5 TOTAL	5
BASEMENT 6	
RESIDENTIAL MOTORBICYCLE	5
B6 TOTAL	5
BASEMENT 7	
RESIDENTIAL MOTORBICYCLE	5
B7 TOTAL	5
TOTAL MOTORBICYCLE SPACES	28

BICYCLE SPACES

LOWER GROUND - MCINTOSH ST	
NON-RESIDENTIAL BICYCLE	15
BASEMENT 2	
RESIDENTIAL BICYCLE	28
VISITOR BICYCLE	30
TOTAL BICYCLE SPACES	73

LEGEND

NR	NON-RESIDENTIAL
NRV	NON-RESIDENTIAL VISITOR
R	RESIDENTIAL
V	VISITOR
M	MOTORCYCLE
S	STORAGE

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Legend.

DRAFT

TN

Revision Note.

Rev.	Date.	
Q	14/03/25	For Information
R	18/03/25	To Traffic - For Information
S	19/03/25	For Information
T	20/03/25	To Traffic - For Information
U	27/03/25	To Consultants - For Information

Floor Plan - Basement 03.

DD-10-02-U

PARKING SUMMARY

CAR SPACES	
NON-RESIDENTIAL	70
NON-RESIDENTIAL ACCESSIBLE	2
TOTAL NON-RESIDENTIAL CAR SPACES	72
VISITOR	35
VISITOR ACCESSIBLE	1
TOTAL VISITOR CAR SPACES	36
RESIDENTIAL	367
RESIDENTIAL ACCESSIBLE	19
TOTAL RESIDENTIAL CAR SPACES	386
TOTAL CAR SPACES	494

CAR SPACES PER LEVEL

BASEMENT 2	
NON-RESIDENTIAL	64
NON-RESIDENTIAL ACCESSIBLE	2
B2 TOTAL	66
BASEMENT 3	
NON-RESIDENTIAL	6
RESIDENTIAL	28
RESIDENTIAL ACCESSIBLE	3
VISITOR	35
VISITOR ACCESSIBLE	1
B3 TOTAL	73
BASEMENT 4	
RESIDENTIAL	84
RESIDENTIAL ACCESSIBLE	4
B4 TOTAL	88
BASEMENT 5	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B5 TOTAL	89
BASEMENT 6	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B6 TOTAL	89
BASEMENT 7	
RESIDENTIAL	85
RESIDENTIAL ACCESSIBLE	4
B7 TOTAL	89
TOTAL CAR SPACES	494

MOTORCYCLE SPACES

BASEMENT 2	
NON-RESI MOTORBICYCLE	3
NON-RESI VISITOR MOTORBICYCLE	2
B2 TOTAL	5
BASEMENT 3	
VISITOR MOTORBICYCLE	3
B3 TOTAL	3
BASEMENT 4	
RESIDENTIAL MOTORBICYCLE	5
B4 TOTAL	5
BASEMENT 5	
RESIDENTIAL MOTORBICYCLE	5
B5 TOTAL	5
BASEMENT 6	
RESIDENTIAL MOTORBICYCLE	5
B6 TOTAL	5
BASEMENT 7	
RESIDENTIAL MOTORBICYCLE	5
B7 TOTAL	5
TOTAL MOTORBICYCLE SPACES	28

BICYCLE SPACES

LOWER GROUND - MCINTOSH ST	
NON-RESIDENTIAL BICYCLE	15
BASEMENT 2	
RESIDENTIAL BICYCLE	28
VISITOR BICYCLE	30
TOTAL BICYCLE SPACES	73

LEGEND

NR	NON-RESIDENTIAL
NRV	NON-RESIDENTIAL VISITOR
R	RESIDENTIAL
V	VISITOR
M	MOTORCYCLE
S	STORAGE

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CW acknowledges Country
and the Traditional Custodians.

Design Development.
Client: Aeon Residence Chatswood Pty Ltd
Address: 2 Day St, 3 McIntosh St & 38-42 Anderson St, Chatswood NSW 2067
Reference: 24350
Scale: 1:200 @ A1

Legend.

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Revision Note.

Rev.	Date.
For Information	
R	14/03/25
To Traffic - For Information	
S	18/03/25
For Information	
T	19/03/25
To Traffic - For Information	
U	20/03/25
To Consultants - For Information	
V	27/03/25

Floor Plan - Basement 02.

DD-10-03-V

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True North shown. All heights reduced to AHD unless otherwise noted. Do not scale drawings.
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NSW Nominated Architects: Shaun Carter 7860 | Ben Peake 11017.
Preliminary. Not For Construction.

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Client: Aeon Residence Chatswood Pty Ltd
Address: 2 Day St, 3 McIntosh St & 38-42 Anderson St, Chatswood NSW 2067
Reference: 24350
Scale: 1:200 @ A1

Legend.

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TN

Revision Note.	Rev.	Date.
To Traffic - For information	R	11/03/25
For Information	S	14/03/25
For Information	T	19/03/25
To Traffic - For Information	U	20/03/25
To Consultants - For Information	V	27/03/25

Floor Plan - Basement 01.

DD-10-04-V

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NSW Nominated Architects: Shaun Carter 7860 | Ben Peake 11017.
Preliminary. Not For Construction.

Design Development.
Client: Aeon Residence Chatswood Pty Ltd
Address: 2 Day St, 3 McIntosh St & 38-42 Anderson St, Chatswood NSW 2067
Reference: 24350
Scale: 1:200 @ A1

Legend.
- 1 Bed Apartment
- 2 Bed Apartment
- 3 Bed Apartment
- 4 Bed Apartment
- Residential Lobby
- Communal Space
- Waste Room
- Retail Store
- Gym
- Food & Beverage
- Non-Residential Lobby

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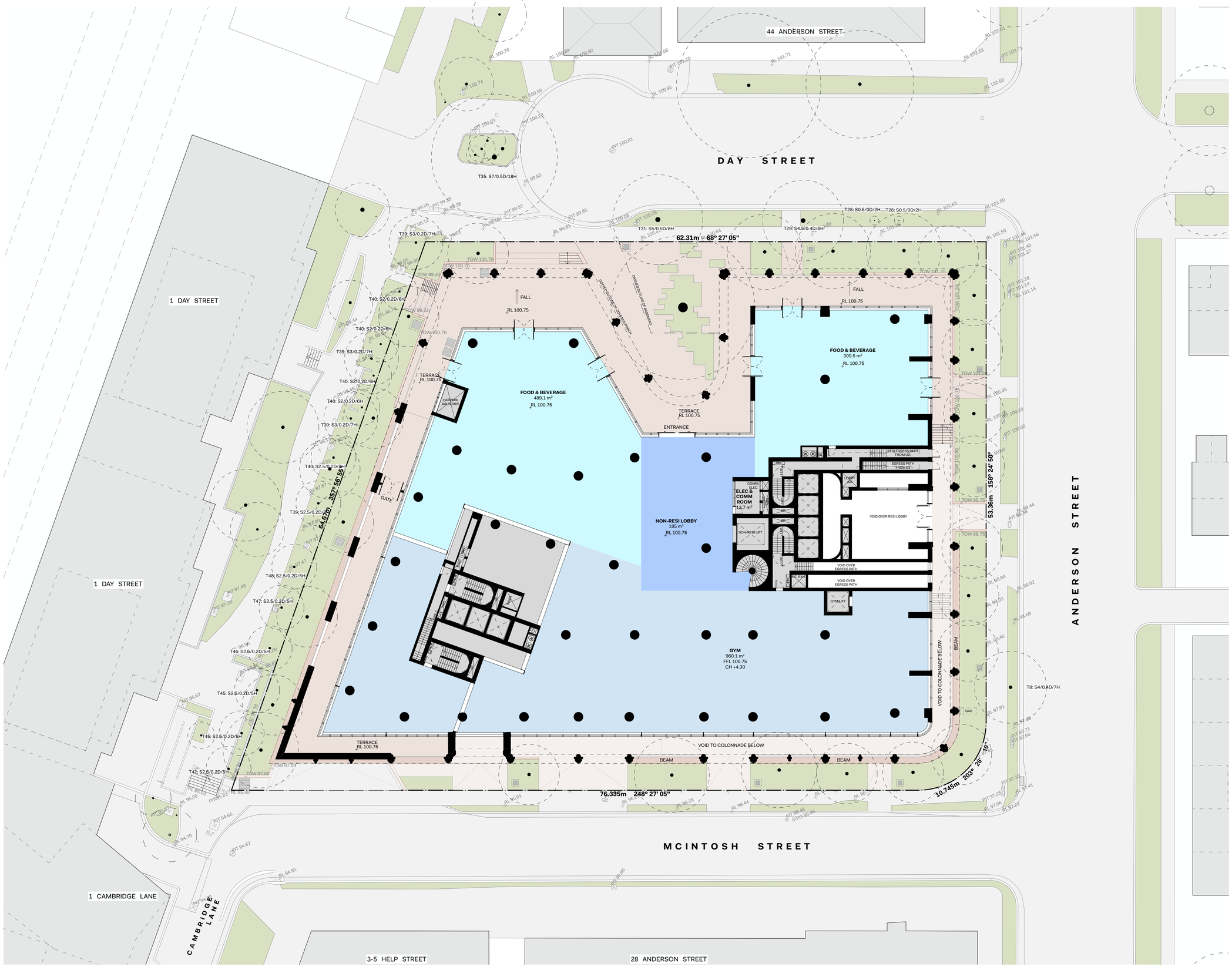
TN

Revision Note.

Rev.	Date.	Revision Note.
R	14/03/25	For Information
S	19/03/25	For Information
T	20/03/25	To Traffic - For Information
U	25/03/25	To Landscape - For Information
V	27/03/25	To Consultants - For Information

Floor Plan - Lower Ground (McIntosh St).

DD-10-05-V



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Reference: 24350
Scale: 1:200 @ A1

Legend.
- 1 Bed Apartment
- 2 Bed Apartment
- 3 Bed Apartment
- 4 Bed Apartment
- Residential Lobby
- Communal Space
- Waste Room
- Retail Store
- Gym
- Food & Beverage
- Non-Residential Lobby

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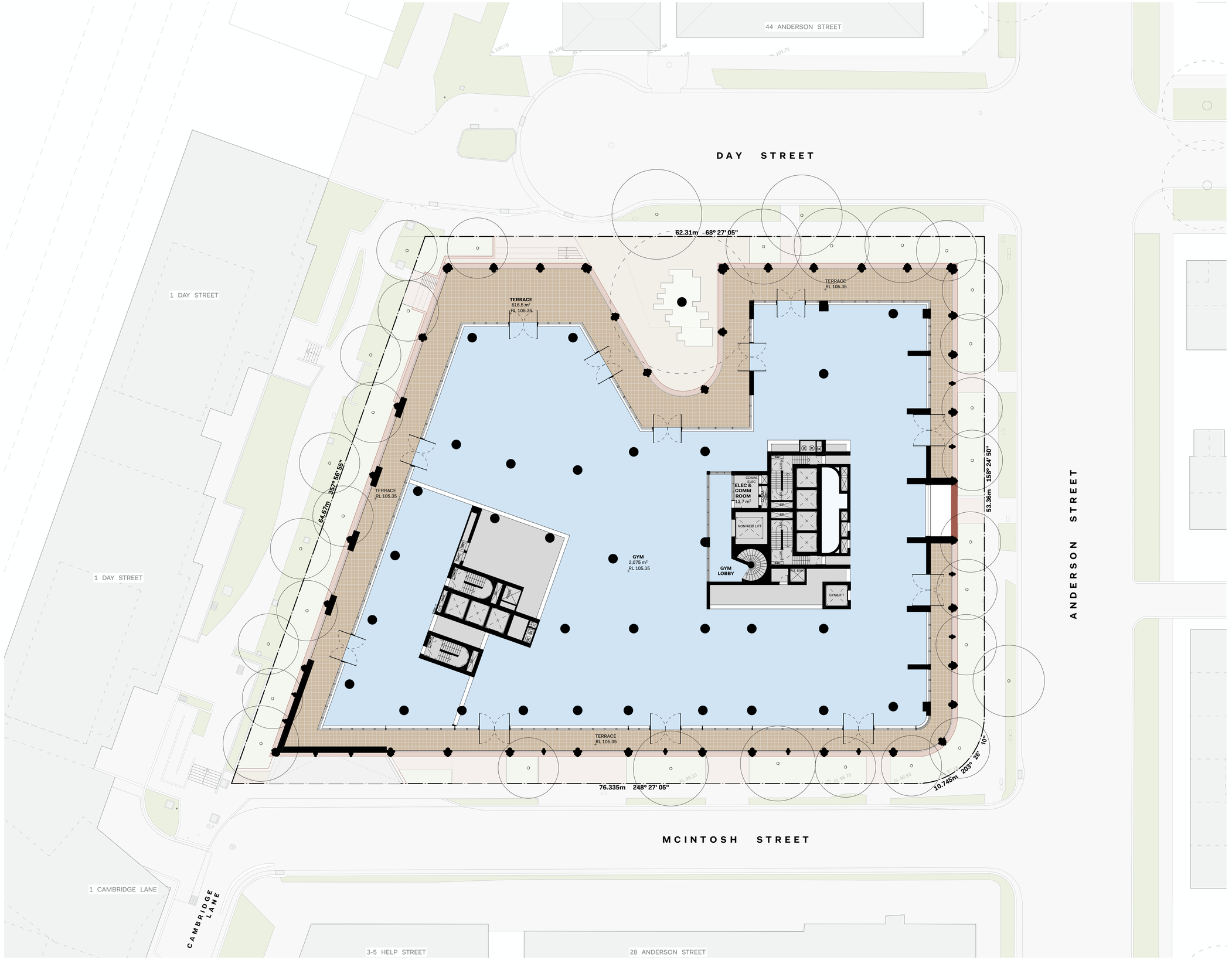
Revision Note.

Rev.	Date.	
N	03/03/25	To Consultants - For Information
O	14/03/25	For Information
P	19/03/25	For Information
Q	25/03/25	To Landscape - For Information
R	27/03/25	To Consultants - For Information

Floor Plan - Upper Ground (Day St).

DD-10-06-R



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Client: Aeon Residence Chatswood Pty Ltd
Address: 2 Day St, 3 McIntosh St & 38-42 Anderson St, Chatswood NSW 2067
Reference: 24350
Scale: 1:200 @ A1

Legend.
- 1 Bed Apartment
- 2 Bed Apartment
- 3 Bed Apartment
- 4 Bed Apartment
- Residential Lobby
- Communal Space
- Waste Room
- Retail Store
- Gym
- Food & Beverage
- Non-Residential Lobby

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7N

Revision Note.

Rev.	Date.	
L	07/03/25	To Landscape - For Information
M	14/03/25	For Information
N	19/03/25	For Information
O	25/03/25	To Landscape - For Information
P	27/03/25	To Consultants - For Information

Floor Plan - Level 01 (Commercial).

DD-10-07-P

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Address: 2 Day St, 3 McIntosh St & 38-42 Anderson St, Chatswood NSW 2067
Reference: 24350
Scale: 1:200 @ A1

Legend.
- 1 Bed Apartment
- 2 Bed Apartment
- 3 Bed Apartment
- 4 Bed Apartment
- Residential Lobby
- Communal Space
- Waste Room
- Retail Store
- Gym
- Food & Beverage
- Non-Residential Lobby

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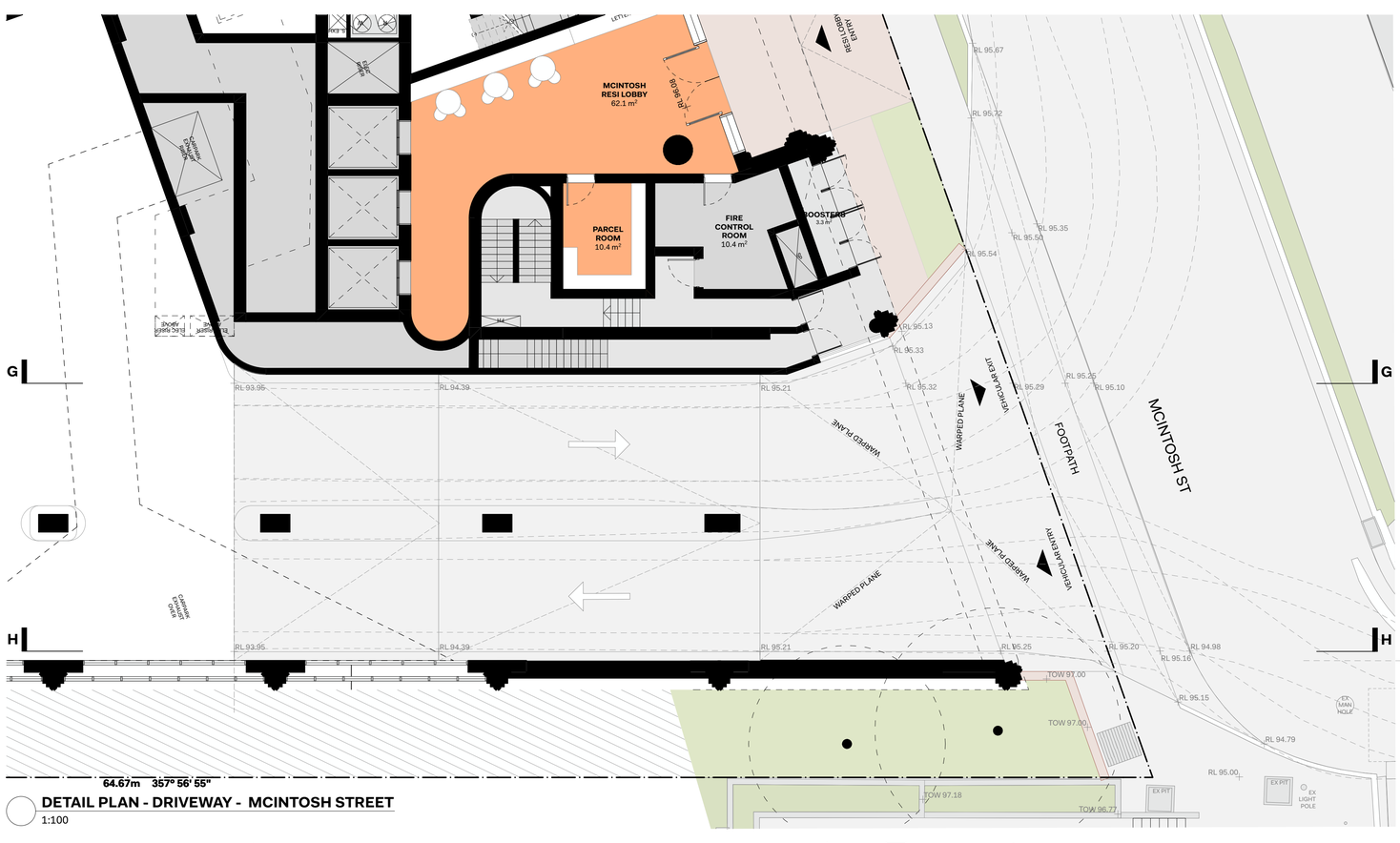
TN

Revision Note.

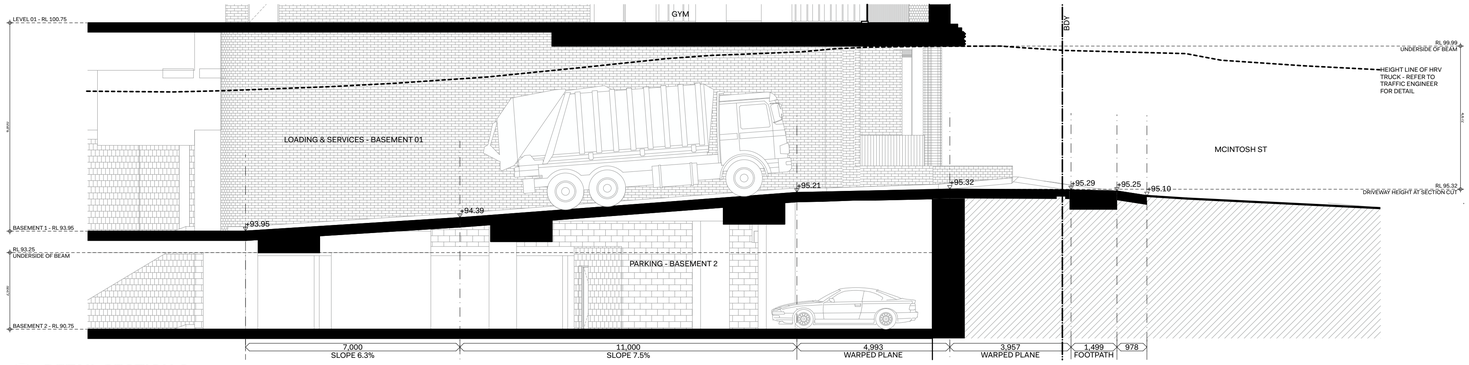
Rev.	Date.	
L	07/03/25	To Landscape - For Information
M	14/03/25	For Information
N	19/03/25	For Information
O	25/03/25	To Landscape - For Information
P	27/03/25	To Consultants - For Information

Floor Plan - Level 02 (Podium).

DD-10-08-P



DETAIL PLAN - DRIVEWAY - MCINTOSH STREET
1:100



DETAIL SECTION G
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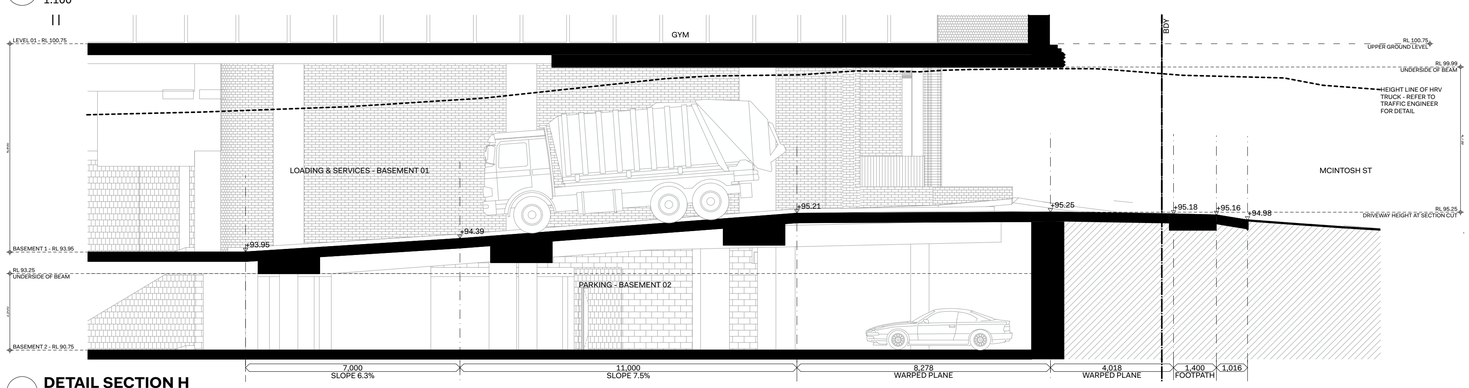

DETAIL SECTION H
1:100

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Reference: 24350
Scale: 1:100 @ A1

Legend.

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Revision Note.

Rev.	Date.
To Traffic - For information	B 11/03/25
For Information	C 14/03/25
To Consultants - For Information	D 19/03/25
To Traffic - For Information	E 20/03/25
To Traffic - For Information	F 27/03/25

Detail Section 4 - Driveway.

DD-40-04-F

APPENDIX 2

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St Ex AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [Ex AM (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	174	7.0	174	7.0	0.093	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			174	7.0	174	7.0	0.093	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	298	7.0	298	7.0	0.160	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			298	7.0	298	7.0	0.160	0.1	NA	0.0	0.0	0.00	0.00	0.00	40.0
West: McIntosh St															
10	L2	All MCs	38	7.0	38	7.0	0.028	4.0	LOS A	0.1	0.9	0.27	0.45	0.27	36.2
12	R2	All MCs	18	7.0	18	7.0	0.023	6.1	LOS A	0.1	0.5	0.42	0.62	0.42	23.0
Approach			56	7.0	56	7.0	0.028	4.7	LOS A	0.1	0.9	0.32	0.51	0.32	34.9
All Vehicles			527	7.0	527	7.0	0.160	0.5	NA	0.1	0.9	0.03	0.05	0.03	39.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St Ex AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [Ex AM (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St																
1	L2	All MCs	182	7.0	182	7.0		0.329	26.4	LOS B	5.5	41.0	0.81	0.75	0.81	8.2
2	T1	All MCs	47	7.0	47	7.0	*	0.135	29.8	LOS C	1.6	11.7	0.87	0.65	0.87	7.5
Approach			229	7.0	229	7.0		0.329	27.1	LOS B	5.5	41.0	0.82	0.73	0.82	8.1
North: Anderson St																
8	T1	All MCs	87	7.0	87	7.0		0.089	10.1	LOS A	1.7	12.5	0.52	0.42	0.52	22.0
9	R2	All MCs	235	7.0	235	7.0	*	0.382	21.3	LOS B	6.7	49.6	0.80	0.77	0.80	9.7
Approach			322	7.0	322	7.0		0.382	18.3	LOS B	6.7	49.6	0.72	0.67	0.72	12.5
West: Help St																
10	L2	All MCs	132	7.0	132	7.0		0.112	8.8	LOS A	1.8	13.7	0.39	0.60	0.39	21.9
12	R2	All MCs	224	7.0	224	7.0	*	0.507	31.9	LOS C	7.7	57.2	0.91	0.80	0.91	12.9
Approach			356	7.0	356	7.0		0.507	23.3	LOS B	7.7	57.2	0.72	0.72	0.72	14.6
All Vehicles			907	7.0	907	7.0		0.507	22.5	LOS B	7.7	57.2	0.74	0.71	0.74	12.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln Ex AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [Ex AM (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	408	7.0	408	7.0	0.120	0.2	LOS A	0.2	1.3	0.04	0.05	0.04	38.7
6	R2	All MCs	18	7.0	18	7.0	0.120	5.8	LOS A	0.2	1.3	0.09	0.11	0.09	38.5
Approach			426	7.0	426	7.0	0.120	0.4	NA	0.2	1.3	0.04	0.05	0.04	38.7
West: Help St															
10	L2	All MCs	41	7.0	41	7.0	0.110	2.3	LOS A	0.0	0.0	0.00	0.09	0.00	38.7
11	T1	All MCs	367	7.0	367	7.0	0.110	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	37.2
Approach			408	7.0	408	7.0	0.110	0.2	NA	0.0	0.0	0.00	0.04	0.00	38.2
All Vehicles			835	7.0	835	7.0	0.120	0.3	NA	0.2	1.3	0.02	0.05	0.02	38.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St Ex PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 2 [Ex PM (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	249	7.0	249	7.0	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			249	7.0	249	7.0	0.134	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	348	7.0	348	7.0	0.187	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			348	7.0	348	7.0	0.187	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	20	7.0	20	7.0	0.016	4.3	LOS A	0.1	0.5	0.33	0.46	0.33	36.0
12	R2	All MCs	23	7.0	23	7.0	0.034	6.9	LOS A	0.1	0.8	0.48	0.68	0.48	21.7
Approach			43	7.0	43	7.0	0.034	5.7	LOS A	0.1	0.8	0.41	0.58	0.41	32.8
All Vehicles			641	7.0	641	7.0	0.187	0.4	NA	0.1	0.8	0.03	0.04	0.03	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St Ex PM (Site Folder: General)]

Network: 2 [Ex PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St																
1	L2	All MCs	298	7.0	298	7.0		0.435	23.0	LOS B	8.6	64.1	0.78	0.77	0.78	9.1
2	T1	All MCs	124	7.0	124	7.0	*	0.355	31.4	LOS C	4.4	32.3	0.91	0.73	0.91	7.2
Approach			422	7.0	422	7.0		0.435	25.5	LOS B	8.6	64.1	0.82	0.76	0.82	8.5
North: Anderson St																
8	T1	All MCs	268	7.0	268	7.0		0.288	15.2	LOS B	6.0	44.2	0.68	0.58	0.68	17.5
9	R2	All MCs	111	7.0	111	7.0	*	0.288	24.3	LOS B	4.1	30.1	0.80	0.72	0.80	9.1
Approach			379	7.0	379	7.0		0.288	17.9	LOS B	6.0	44.2	0.72	0.62	0.72	15.0
West: Help St																
10	L2	All MCs	117	7.0	117	7.0		0.100	8.9	LOS A	1.6	12.0	0.38	0.59	0.38	21.9
12	R2	All MCs	249	7.0	249	7.0	*	0.434	26.6	LOS B	7.8	57.6	0.83	0.78	0.83	14.5
Approach			366	7.0	366	7.0		0.434	21.0	LOS B	7.8	57.6	0.69	0.72	0.69	15.7
All Vehicles			1167	7.0	1167	7.0		0.435	21.6	LOS B	8.6	64.1	0.75	0.70	0.75	12.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln Ex PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 2 [Ex PM (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	549	7.0	549	7.0	0.160	0.2	LOS A	0.2	1.7	0.04	0.05	0.04	38.8
6	R2	All MCs	22	7.0	22	7.0	0.160	5.8	LOS A	0.2	1.7	0.09	0.10	0.09	38.5
Approach			572	7.0	572	7.0	0.160	0.4	NA	0.2	1.7	0.04	0.05	0.04	38.8
West: Help St															
10	L2	All MCs	29	7.0	29	7.0	0.107	2.3	LOS A	0.0	0.0	0.00	0.07	0.00	38.8
11	T1	All MCs	368	7.0	368	7.0	0.107	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	37.8
Approach			398	7.0	398	7.0	0.107	0.2	NA	0.0	0.0	0.00	0.03	0.00	38.4
All Vehicles			969	7.0	969	7.0	0.160	0.3	NA	0.2	1.7	0.03	0.04	0.03	38.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St Ex Sat (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Ex Sat (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	207	7.0	207	7.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			207	7.0	207	7.0	0.111	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	345	7.0	345	7.0	0.185	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			345	7.0	345	7.0	0.185	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	42	7.0	42	7.0	0.032	4.2	LOS A	0.1	0.4	0.30	0.46	0.30	36.1
12	R2	All MCs	25	7.0	25	7.0	0.035	6.6	LOS A	0.0	0.3	0.46	0.67	0.46	22.1
Approach			67	7.0	67	7.0	0.035	5.1	LOS A	0.1	0.4	0.36	0.54	0.36	34.3
All Vehicles			620	7.0	620	7.0	0.185	0.6	NA	0.1	0.4	0.04	0.06	0.04	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St Ex Sat (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Ex Sat (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	123	7.0	123	7.0	0.199	23.6	LOS B	2.1	15.4	0.74	0.71	0.74	9.1
2	T1	All MCs	83	7.0	83	7.0	* 0.238	30.5	LOS C	1.7	12.9	0.89	0.69	0.89	7.4
Approach			206	7.0	206	7.0	0.238	26.4	LOS B	2.1	15.4	0.80	0.71	0.80	8.3
North: Anderson St															
8	T1	All MCs	128	7.0	128	7.0	0.141	12.1	LOS A	1.7	12.4	0.58	0.47	0.58	20.2
9	R2	All MCs	242	7.0	242	7.0	* 0.431	23.4	LOS B	4.4	32.8	0.83	0.78	0.83	9.0
Approach			371	7.0	371	7.0	0.431	19.5	LOS B	4.4	32.8	0.75	0.67	0.75	12.4
West: Help St															
10	L2	All MCs	124	7.0	124	7.0	0.106	8.8	LOS A	1.1	7.9	0.38	0.59	0.38	21.9
12	R2	All MCs	314	7.0	314	7.0	* 0.617	30.6	LOS C	6.6	49.3	0.92	0.82	0.92	13.3
Approach			438	7.0	438	7.0	0.617	24.4	LOS B	6.6	49.3	0.77	0.76	0.77	14.4
All Vehicles			1015	7.0	1015	7.0	0.617	23.0	LOS B	6.6	49.3	0.77	0.72	0.77	12.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln Ex Sat (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Ex Sat (Network Folder: General)]

24-113 Aeon Development, Chatswood
Site Category: Existing Conditions
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	342	7.0	342	7.0	0.106	0.3	LOS A	0.1	0.7	0.07	0.08	0.07	38.0
6	R2	All MCs	23	7.0	23	7.0	0.106	6.2	LOS A	0.1	0.7	0.16	0.18	0.16	38.0
Approach			365	7.0	365	7.0	0.106	0.7	NA	0.1	0.7	0.07	0.08	0.07	38.0
West: Help St															
10	L2	All MCs	36	7.0	36	7.0	0.128	2.3	LOS A	0.0	0.0	0.00	0.07	0.00	38.8
11	T1	All MCs	438	7.0	438	7.0	0.128	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	37.8
Approach			474	7.0	474	7.0	0.128	0.2	NA	0.0	0.0	0.00	0.03	0.00	38.4
All Vehicles			839	7.0	839	7.0	0.128	0.4	NA	0.1	0.7	0.03	0.05	0.03	38.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

APPENDIX 3

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St 2034 Base AM (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [2034 Base AM (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	194	7.0	194	7.0	0.104	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			194	7.0	194	7.0	0.104	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	333	7.0	333	7.0	0.178	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			333	7.0	333	7.0	0.178	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	38	7.0	38	7.0	0.028	4.1	LOS A	0.1	0.9	0.29	0.46	0.29	36.2
12	R2	All MCs	18	7.0	18	7.0	0.024	6.4	LOS A	0.1	0.6	0.45	0.65	0.45	22.4
Approach			56	7.0	56	7.0	0.028	4.8	LOS A	0.1	0.9	0.34	0.52	0.34	34.7
All Vehicles			582	7.0	582	7.0	0.178	0.5	NA	0.1	0.9	0.03	0.05	0.03	39.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St 2034 Base AM (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [2034 Base AM (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	203	7.0	203	7.0	0.368	26.8	LOS B	6.2	46.4	0.82	0.76	0.82	8.1
2	T1	All MCs	53	7.0	53	7.0	* 0.150	29.9	LOS C	1.8	13.0	0.87	0.66	0.87	7.5
Approach			256	7.0	256	7.0	0.368	27.4	LOS B	6.2	46.4	0.83	0.74	0.83	8.0
North: Anderson St															
8	T1	All MCs	98	7.0	98	7.0	0.100	10.1	LOS A	1.9	14.0	0.53	0.42	0.53	21.9
9	R2	All MCs	262	7.0	262	7.0	* 0.430	22.6	LOS B	7.5	55.6	0.81	0.82	0.81	9.3
Approach			360	7.0	360	7.0	0.430	19.2	LOS B	7.5	55.6	0.74	0.72	0.74	12.1
West: Help St															
10	L2	All MCs	146	7.0	146	7.0	0.125	8.8	LOS A	2.1	15.4	0.39	0.60	0.39	21.8
12	R2	All MCs	249	7.0	249	7.0	* 0.564	32.4	LOS C	8.7	64.8	0.93	0.81	0.93	12.8
Approach			396	7.0	396	7.0	0.564	23.7	LOS B	8.7	64.8	0.73	0.73	0.73	14.5
All Vehicles			1012	7.0	1012	7.0	0.564	23.0	LOS B	8.7	64.8	0.76	0.73	0.76	12.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln 2034 Base AM (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [2034 Base AM (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	456	7.0	456	7.0	0.133	0.2	LOS A	0.2	1.4	0.04	0.05	0.04	38.7
6	R2	All MCs	18	7.0	18	7.0	0.133	6.1	LOS A	0.2	1.4	0.09	0.11	0.09	38.5
Approach			474	7.0	474	7.0	0.133	0.4	NA	0.2	1.4	0.04	0.05	0.04	38.7
West: Help St															
10	L2	All MCs	41	7.0	41	7.0	0.121	2.3	LOS A	0.0	0.0	0.00	0.08	0.00	38.7
11	T1	All MCs	409	7.0	409	7.0	0.121	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	37.4
Approach			451	7.0	451	7.0	0.121	0.2	NA	0.0	0.0	0.00	0.04	0.00	38.2
All Vehicles			924	7.0	924	7.0	0.133	0.3	NA	0.2	1.4	0.02	0.05	0.02	38.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St 2034 Base PM (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 2 [2034 Base PM (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	278	7.0	278	7.0	0.149	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			278	7.0	278	7.0	0.149	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	388	7.0	388	7.0	0.208	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			388	7.0	388	7.0	0.208	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	20	7.0	20	7.0	0.016	4.4	LOS A	0.1	0.5	0.35	0.47	0.35	36.0
12	R2	All MCs	23	7.0	23	7.0	0.037	7.4	LOS A	0.1	0.9	0.50	0.71	0.50	21.0
Approach			43	7.0	43	7.0	0.037	6.0	LOS A	0.1	0.9	0.43	0.60	0.43	32.5
All Vehicles			709	7.0	709	7.0	0.208	0.4	NA	0.1	0.9	0.03	0.04	0.03	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St 2034 Base PM (Site Folder: 2034 Base)]

Network: 2 [2034 Base PM (Network Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	333	7.0	333	7.0	0.485	23.5	LOS B	9.9	73.4	0.80	0.78	0.80	9.0
2	T1	All MCs	139	7.0	139	7.0	* 0.397	31.7	LOS C	4.9	36.5	0.92	0.74	0.92	7.1
Approach			472	7.0	472	7.0	0.485	25.9	LOS B	9.9	73.4	0.84	0.77	0.84	8.3
North: Anderson St															
8	T1	All MCs	299	7.0	299	7.0	0.320	15.4	LOS B	6.7	50.0	0.70	0.60	0.70	17.3
9	R2	All MCs	123	7.0	123	7.0	* 0.320	24.8	LOS B	4.6	34.1	0.81	0.73	0.81	9.1
Approach			422	7.0	422	7.0	0.320	18.1	LOS B	6.7	50.0	0.73	0.63	0.73	14.8
West: Help St															
10	L2	All MCs	131	7.0	131	7.0	0.111	8.9	LOS A	1.8	13.6	0.39	0.60	0.39	21.9
12	R2	All MCs	278	7.0	278	7.0	* 0.483	27.1	LOS B	8.8	65.5	0.85	0.79	0.85	14.3
Approach			408	7.0	408	7.0	0.483	21.3	LOS B	8.8	65.5	0.70	0.73	0.70	15.6
All Vehicles			1302	7.0	1302	7.0	0.485	21.9	LOS B	9.9	73.4	0.76	0.71	0.76	12.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln 2034 Base PM (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 2 [2034 Base PM (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	613	7.0	613	7.0	0.177	0.2	LOS A	0.2	1.8	0.04	0.05	0.04	38.8
6	R2	All MCs	22	7.0	22	7.0	0.177	6.2	LOS A	0.2	1.8	0.09	0.10	0.09	38.5
Approach			635	7.0	635	7.0	0.177	0.4	NA	0.2	1.8	0.04	0.05	0.04	38.8
West: Help St															
10	L2	All MCs	29	7.0	29	7.0	0.118	2.3	LOS A	0.0	0.0	0.00	0.06	0.00	38.8
11	T1	All MCs	411	7.0	411	7.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	38.0
Approach			440	7.0	440	7.0	0.118	0.2	NA	0.0	0.0	0.00	0.03	0.00	38.4
All Vehicles			1075	7.0	1075	7.0	0.177	0.3	NA	0.2	1.8	0.03	0.04	0.03	38.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St 2034 Base Sat (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034 Base Sat (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	232	7.0	232	7.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			232	7.0	232	7.0	0.124	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	385	7.0	385	7.0	0.207	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			385	7.0	385	7.0	0.207	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	42	7.0	42	7.0	0.033	4.3	LOS A	0.1	0.4	0.32	0.47	0.32	36.1
12	R2	All MCs	25	7.0	25	7.0	0.040	7.1	LOS A	0.0	0.4	0.49	0.70	0.49	21.4
Approach			67	7.0	67	7.0	0.040	5.3	LOS A	0.1	0.4	0.38	0.56	0.38	34.1
All Vehicles			684	7.0	684	7.0	0.207	0.6	NA	0.1	0.4	0.04	0.05	0.04	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St 2034 Base Sat (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034 Base Sat (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	137	7.0	137	7.0	0.221	23.9	LOS B	2.3	17.2	0.74	0.72	0.74	9.1
2	T1	All MCs	93	7.0	93	7.0	* 0.265	30.7	LOS C	1.9	14.4	0.90	0.70	0.90	7.3
Approach			229	7.0	229	7.0	0.265	26.6	LOS B	2.3	17.2	0.80	0.71	0.80	8.3
North: Anderson St															
8	T1	All MCs	143	7.0	143	7.0	0.157	12.2	LOS A	1.9	14.0	0.59	0.48	0.59	20.1
9	R2	All MCs	269	7.0	269	7.0	* 0.510	25.4	LOS B	5.0	36.9	0.86	0.86	0.86	8.5
Approach			413	7.0	413	7.0	0.510	20.8	LOS B	5.0	36.9	0.77	0.73	0.77	11.8
West: Help St															
10	L2	All MCs	139	7.0	139	7.0	0.119	8.9	LOS A	1.2	8.9	0.39	0.60	0.39	21.8
12	R2	All MCs	349	7.0	349	7.0	* 0.687	31.9	LOS C	7.7	57.2	0.95	0.85	0.97	12.9
Approach			488	7.0	488	7.0	0.687	25.3	LOS B	7.7	57.2	0.79	0.78	0.81	14.1
All Vehicles			1131	7.0	1131	7.0	0.687	23.9	LOS B	7.7	57.2	0.78	0.75	0.79	12.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln 2034 Base Sat (Site Folder: 2034 Base)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034 Base Sat (Network Folder: 2034 Base)]

24-113 Aeon Development, Chatswood
Site Category: 2034 Base
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	381	7.0	381	7.0	0.117	0.3	LOS A	0.1	0.8	0.07	0.08	0.07	37.9
6	R2	All MCs	23	7.0	23	7.0	0.117	6.7	LOS A	0.1	0.8	0.16	0.18	0.16	38.0
Approach			404	7.0	404	7.0	0.117	0.7	NA	0.1	0.8	0.07	0.08	0.07	37.9
West: Help St															
10	L2	All MCs	36	7.0	36	7.0	0.141	2.3	LOS A	0.0	0.0	0.00	0.06	0.00	38.8
11	T1	All MCs	488	7.0	488	7.0	0.141	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	38.0
Approach			524	7.0	524	7.0	0.141	0.2	NA	0.0	0.0	0.00	0.03	0.00	38.4
All Vehicles			928	7.0	928	7.0	0.141	0.4	NA	0.1	0.8	0.03	0.05	0.03	38.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

APPENDIX 4

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St 2034 PD AM (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [2034 PD AM (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	194	7.0	194	7.0	0.104	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			194	7.0	194	7.0	0.104	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	347	7.0	347	7.0	0.186	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			347	7.0	347	7.0	0.186	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	107	7.0	107	7.0	0.081	4.2	LOS A	0.4	2.7	0.30	0.48	0.30	36.1
12	R2	All MCs	51	7.0	51	7.0	0.071	6.7	LOS A	0.2	1.7	0.47	0.70	0.47	22.0
Approach			158	7.0	158	7.0	0.081	5.0	LOS A	0.4	2.7	0.35	0.55	0.35	34.6
All Vehicles			699	7.0	699	7.0	0.186	1.2	NA	0.4	2.7	0.08	0.12	0.08	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St 2034 PD AM (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [2034 PD AM (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	214	7.0	214	7.0	0.403	27.8	LOS B	6.8	50.1	0.84	0.77	0.84	7.9
2	T1	All MCs	53	7.0	53	7.0	* 0.150	29.9	LOS C	1.8	13.0	0.87	0.66	0.87	7.5
Approach			266	7.0	266	7.0	0.403	28.2	LOS B	6.8	50.1	0.85	0.75	0.85	7.8
North: Anderson St															
8	T1	All MCs	98	7.0	98	7.0	0.098	9.6	LOS A	1.8	13.7	0.51	0.41	0.51	22.5
9	R2	All MCs	277	7.0	277	7.0	* 0.439	22.2	LOS B	7.8	57.7	0.81	0.84	0.81	9.4
Approach			375	7.0	375	7.0	0.439	18.9	LOS B	7.8	57.7	0.73	0.73	0.73	12.1
West: Help St															
10	L2	All MCs	146	7.0	146	7.0	0.125	8.8	LOS A	2.1	15.4	0.39	0.60	0.39	21.8
12	R2	All MCs	249	7.0	249	7.0	* 0.594	33.4	LOS C	8.9	66.0	0.94	0.81	0.94	12.5
Approach			396	7.0	396	7.0	0.594	24.3	LOS B	8.9	66.0	0.74	0.73	0.74	14.2
All Vehicles			1037	7.0	1037	7.0	0.594	23.4	LOS B	8.9	66.0	0.76	0.74	0.76	11.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln 2034 PD AM (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 1 [2034 PD AM (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	456	7.0	456	7.0	0.149	0.5	LOS A	0.5	3.5	0.09	0.10	0.09	37.2
6	R2	All MCs	43	7.0	43	7.0	0.149	6.6	LOS A	0.5	3.5	0.24	0.27	0.24	37.5
Approach			499	7.0	499	7.0	0.149	1.0	NA	0.5	3.5	0.10	0.12	0.10	37.3
West: Help St															
10	L2	All MCs	100	7.0	100	7.0	0.138	2.3	LOS A	0.0	0.0	0.00	0.18	0.00	38.3
11	T1	All MCs	409	7.0	409	7.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	35.7
Approach			509	7.0	509	7.0	0.138	0.5	NA	0.0	0.0	0.00	0.09	0.00	37.8
All Vehicles			1008	7.0	1008	7.0	0.149	0.7	NA	0.5	3.5	0.05	0.10	0.05	37.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St 2034 PD PM (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 2 [2034 PD PM (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	278	7.0	278	7.0	0.149	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			278	7.0	278	7.0	0.149	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	399	7.0	399	7.0	0.214	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			399	7.0	399	7.0	0.214	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	60	7.0	60	7.0	0.049	4.5	LOS A	0.2	1.6	0.36	0.49	0.36	36.0
12	R2	All MCs	69	7.0	69	7.0	0.112	7.7	LOS A	0.4	2.7	0.53	0.77	0.53	20.5
Approach			129	7.0	129	7.0	0.112	6.2	LOS A	0.4	2.7	0.45	0.64	0.45	32.3
All Vehicles			806	7.0	806	7.0	0.214	1.0	NA	0.4	2.7	0.07	0.10	0.07	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St 2034 PD PM (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: 2 [2034 PD PM (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	362	7.0	362	7.0	0.528	24.0	LOS B	11.0	81.6	0.82	0.79	0.82	8.9
2	T1	All MCs	139	7.0	139	7.0	* 0.397	31.7	LOS C	4.9	36.5	0.92	0.74	0.92	7.1
Approach			501	7.0	501	7.0	0.528	26.1	LOS B	11.0	81.6	0.85	0.78	0.85	8.3
North: Anderson St															
8	T1	All MCs	299	7.0	299	7.0	0.331	15.4	LOS B	7.0	51.9	0.70	0.60	0.70	17.4
9	R2	All MCs	134	7.0	134	7.0	* 0.331	24.7	LOS B	4.7	34.9	0.82	0.74	0.82	8.9
Approach			433	7.0	433	7.0	0.331	18.3	LOS B	7.0	51.9	0.73	0.64	0.73	14.7
West: Help St															
10	L2	All MCs	131	7.0	131	7.0	0.111	8.9	LOS A	1.8	13.6	0.39	0.60	0.39	21.9
12	R2	All MCs	278	7.0	278	7.0	* 0.483	27.1	LOS B	8.8	65.5	0.85	0.79	0.85	14.3
Approach			408	7.0	408	7.0	0.483	21.3	LOS B	8.8	65.5	0.70	0.73	0.70	15.6
All Vehicles			1342	7.0	1342	7.0	0.528	22.1	LOS B	11.0	81.6	0.77	0.72	0.77	12.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln 2034 PD PM (Site Folder: 2034 PD)]

Network: 2 [2034 PD PM (Network Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	613	7.0	613	7.0	0.203	0.5	LOS A	0.7	5.1	0.10	0.11	0.10	37.1
6	R2	All MCs	63	7.0	63	7.0	0.203	6.6	LOS A	0.7	5.1	0.25	0.29	0.25	37.4
Approach			676	7.0	676	7.0	0.203	1.1	NA	0.7	5.1	0.11	0.13	0.11	37.2
West: Help St															
10	L2	All MCs	83	7.0	83	7.0	0.134	2.3	LOS A	0.0	0.0	0.00	0.15	0.00	38.4
11	T1	All MCs	411	7.0	411	7.0	0.134	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	36.0
Approach			494	7.0	494	7.0	0.134	0.4	NA	0.0	0.0	0.00	0.07	0.00	37.9
All Vehicles			1169	7.0	1169	7.0	0.203	0.8	NA	0.7	5.1	0.06	0.11	0.06	37.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [McIntosh St / Anderson St 2034 PD Sat (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034 PD Sat (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
2	T1	All MCs	232	7.0	232	7.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
Approach			232	7.0	232	7.0	0.124	0.0	NA	0.0	0.0	0.00	0.00	0.00	40.0
North: Anderson St															
8	T1	All MCs	401	7.0	401	7.0	0.215	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach			401	7.0	401	7.0	0.215	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.9
West: McIntosh St															
10	L2	All MCs	108	7.0	108	7.0	0.084	4.3	LOS A	0.2	1.1	0.33	0.49	0.33	36.0
12	R2	All MCs	65	7.0	65	7.0	0.111	7.4	LOS A	0.1	1.0	0.51	0.76	0.51	20.9
Approach			174	7.0	174	7.0	0.111	5.5	LOS A	0.2	1.1	0.40	0.59	0.40	34.0
All Vehicles			806	7.0	806	7.0	0.215	1.2	NA	0.2	1.1	0.09	0.13	0.09	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [Anderson St / Help St 2034 PD Sat (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034 PD Sat (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Anderson St															
1	L2	All MCs	159	7.0	159	7.0	0.266	25.0	LOS B	2.8	20.7	0.77	0.74	0.77	8.7
2	T1	All MCs	93	7.0	93	7.0	* 0.265	30.7	LOS C	1.9	14.4	0.90	0.70	0.90	7.3
Approach			252	7.0	252	7.0	0.266	27.1	LOS B	2.8	20.7	0.82	0.72	0.82	8.2
North: Anderson St															
8	T1	All MCs	143	7.0	143	7.0	0.154	11.6	LOS A	1.8	13.7	0.57	0.47	0.57	20.6
9	R2	All MCs	285	7.0	285	7.0	* 0.521	25.1	LOS B	5.2	38.5	0.86	0.88	0.86	8.5
Approach			428	7.0	428	7.0	0.521	20.6	LOS B	5.2	38.5	0.76	0.74	0.76	11.8
West: Help St															
10	L2	All MCs	139	7.0	139	7.0	0.119	8.9	LOS A	1.2	8.9	0.39	0.60	0.39	21.8
12	R2	All MCs	349	7.0	349	7.0	* 0.718	33.6	LOS C	8.0	59.2	0.96	0.87	1.02	12.5
Approach			488	7.0	488	7.0	0.718	26.6	LOS B	8.0	59.2	0.80	0.79	0.84	13.7
All Vehicles			1168	7.0	1168	7.0	0.718	24.5	LOS B	8.0	59.2	0.79	0.76	0.81	12.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Anderson St											
P1	Full	81	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
North: Anderson St											
P3	Full	74	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
West: Help St											
P4	Full	80	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06
All Pedestrians		235	34.3	LOS D	0.2	0.2	0.93	0.93	188.2	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Help St / Cambridge Ln 2034 PD Sat (Site Folder: 2034 PD)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034 PD Sat (Network Folder: 2034 PD)]

24-113 Aeon Development, Chatswood
Site Category: 2034 PD
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Help St															
5	T1	All MCs	381	7.0	381	7.0	0.144	0.7	LOS A	0.2	1.9	0.12	0.14	0.12	36.2
6	R2	All MCs	61	7.0	61	7.0	0.144	7.2	LOS A	0.2	1.9	0.41	0.46	0.41	36.4
Approach			442	7.0	442	7.0	0.144	1.6	NA	0.2	1.9	0.16	0.18	0.16	36.3
West: Help St															
10	L2	All MCs	95	7.0	95	7.0	0.159	2.3	LOS A	0.0	0.0	0.00	0.14	0.00	38.5
11	T1	All MCs	488	7.0	488	7.0	0.159	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	36.1
Approach			583	7.0	583	7.0	0.159	0.4	NA	0.0	0.0	0.00	0.07	0.00	37.9
All Vehicles			1025	7.0	1025	7.0	0.159	0.9	NA	0.2	1.9	0.07	0.12	0.07	36.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

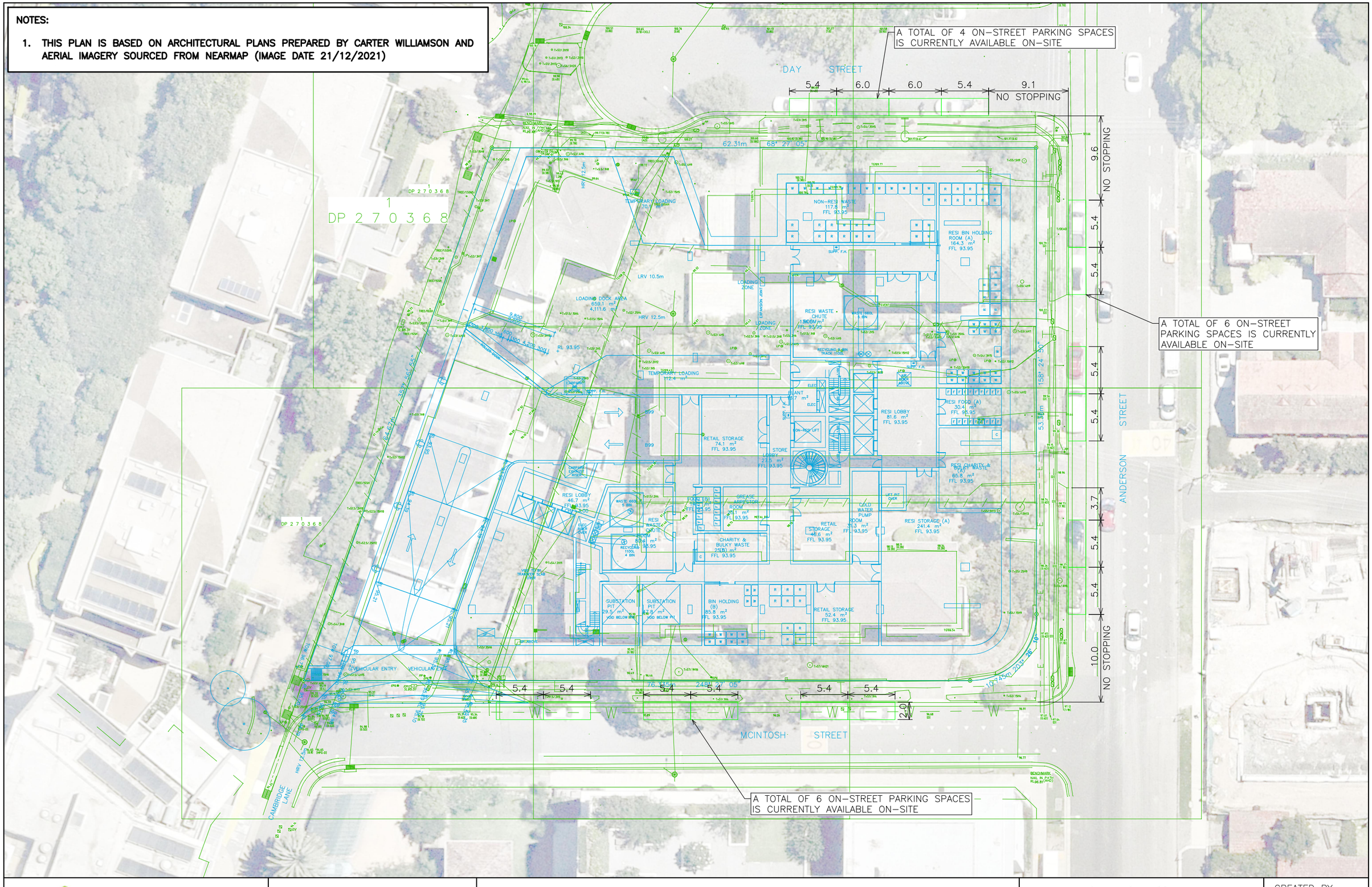
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

APPENDIX 5

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)



STANBURY TRAFFIC PLANNING
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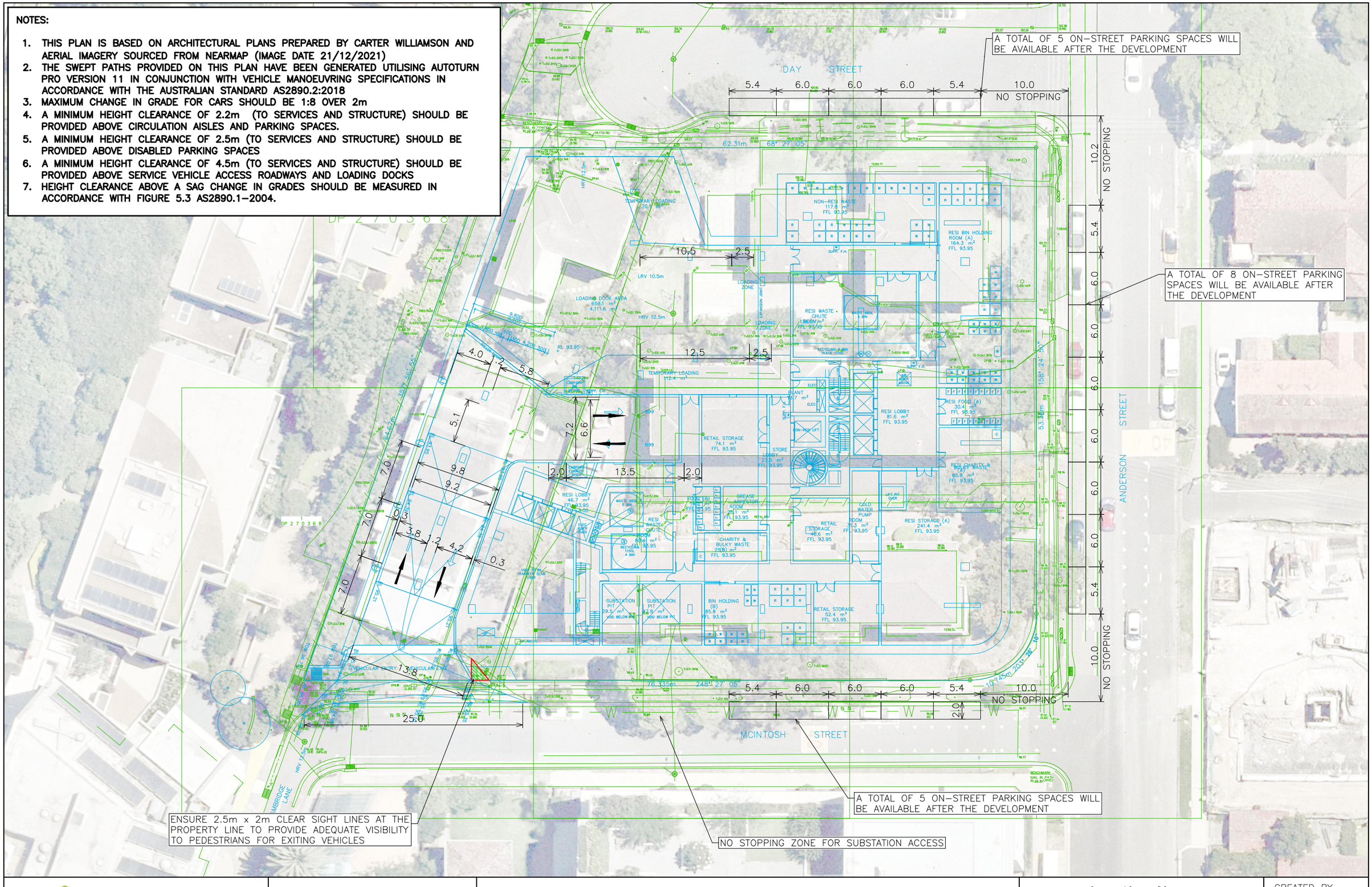
STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
EXISTING ON-STREET PARKING
OVERVIEW PLAN

SCALE 0 4.0 8.0 1:400@A3		CREATED BY Y.H
DRAWING NO. 24-113-05-V7		APPROVED BY M.S
DATE 28 March 2025		SHEET 01 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.2:2018
3. MAXIMUM CHANGE IN GRADE FOR CARS SHOULD BE 1:8 OVER 2m
4. A MINIMUM HEIGHT CLEARANCE OF 2.2m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE CIRCULATION AISLES AND PARKING SPACES.
5. A MINIMUM HEIGHT CLEARANCE OF 2.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE DISABLED PARKING SPACES
6. A MINIMUM HEIGHT CLEARANCE OF 4.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE SERVICE VEHICLE ACCESS ROADWAYS AND LOADING DOCKS
7. HEIGHT CLEARANCE ABOVE A SAG CHANGE IN GRADES SHOULD BE MEASURED IN ACCORDANCE WITH FIGURE 5.3 AS2890.1–2004.



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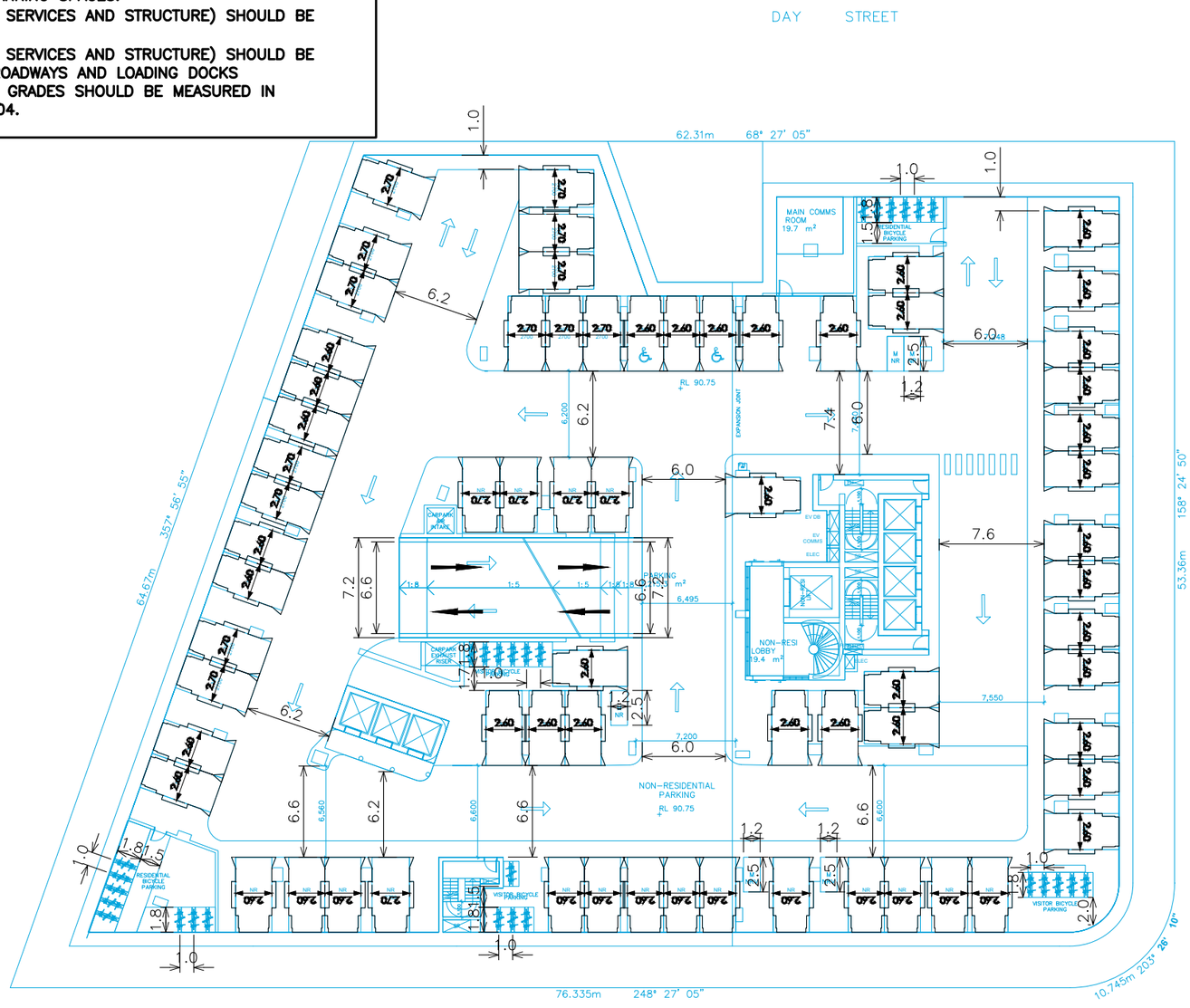
STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
CONCEPT LAYOUT
BASEMENT 01

SCALE 0 4.0 8.0	1:400@A3	CREATED BY Y.H
DRAWING NO.	24–113–05–V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 02 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.2:2018
3. MAXIMUM CHANGE IN GRADE FOR CARS SHOULD BE 1:8 OVER 2m
4. A MINIMUM HEIGHT CLEARANCE OF 2.2m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE CIRCULATION AISLES AND PARKING SPACES.
5. A MINIMUM HEIGHT CLEARANCE OF 2.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE DISABLED PARKING SPACES
6. A MINIMUM HEIGHT CLEARANCE OF 4.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE SERVICE VEHICLE ACCESS ROADWAYS AND LOADING DOCKS
7. HEIGHT CLEARANCE ABOVE A SAG CHANGE IN GRADES SHOULD BE MEASURED IN ACCORDANCE WITH FIGURE 5.3 AS2890.1–2004.



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 2 DAY STREET, CHATSWOOD CAR PARK COMPLIANCE REVIEW CONCEPT LAYOUT BASEMENT 02	SCALE 0 4.0 8.0 1:400@A3 DRAWING NO. 24–113–05–V7 DATE 28 March 2025	CREATED BY Y.H APPROVED BY M.S SHEET 03 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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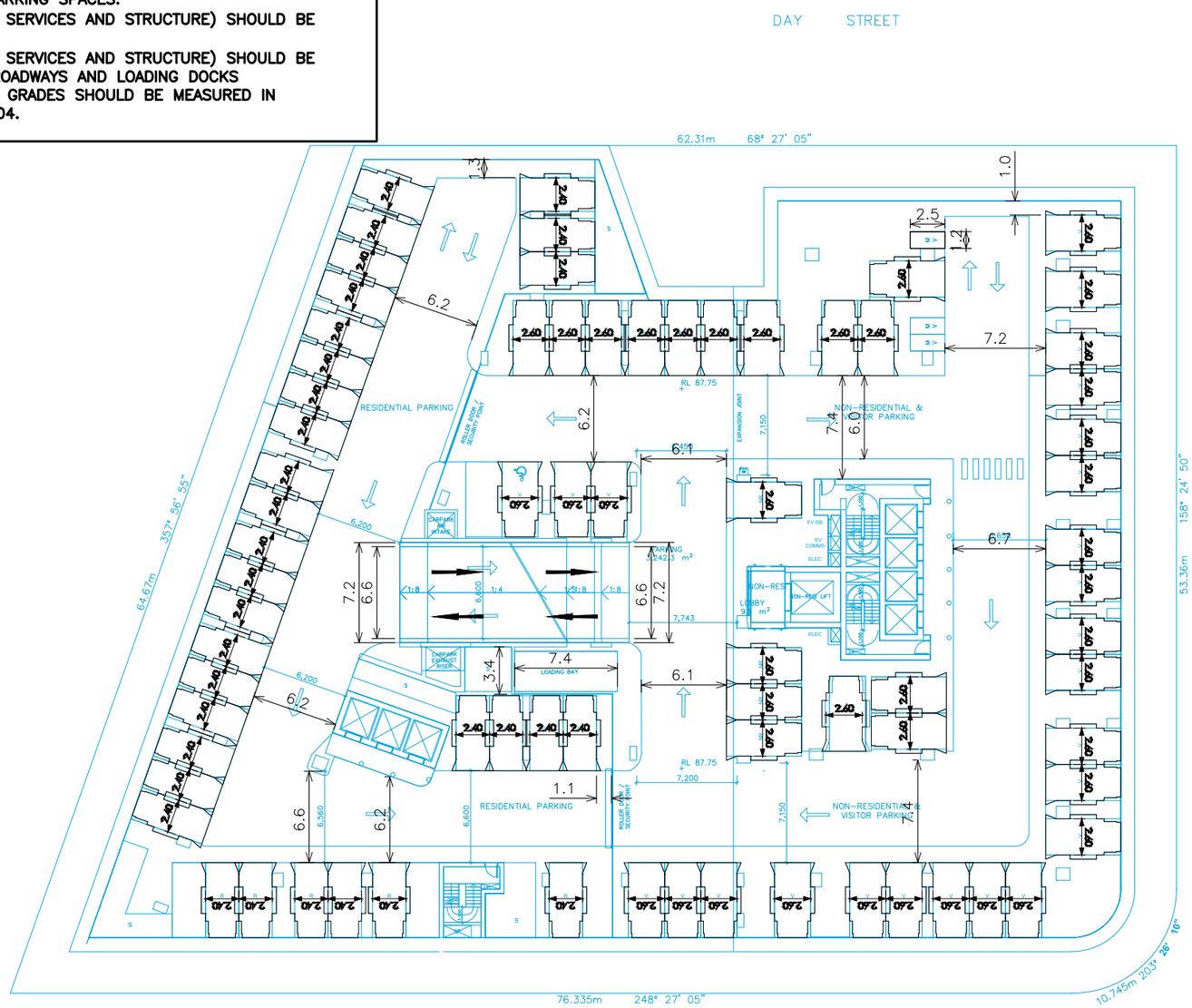
5. A MINIMUM HEIGHT CLEARANCE OF 2.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE DISABLED PARKING SPACES
6. A MINIMUM HEIGHT CLEARANCE OF 4.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE SERVICE VEHICLE ACCESS ROADWAYS AND LOADING DOCKS
7. HEIGHT CLEARANCE ABOVE A SAG CHANGE IN GRADES SHOULD BE MEASURED IN ACCORDANCE WITH FIGURE 5.3 AS2890.1–2004.



STANBURY TRAFFIC PLANNING TRAFFIC, PARKING & TRANSPORT CONSULTANTS	ADDRESS: 401/380 HARRIS ST, PYRMONT PH: (02) 8971 8314 EMAIL: info@stanburytraffic.com.au WEBSITE: www.stanburytraffic.com.au	STANBURY TRAFFIC PLANNING 2 DAY STREET, CHATSWOOD CAR PARK COMPLIANCE REVIEW CONCEPT LAYOUT BASEMENT 03	SCALE 0 4.0 8.0 1:400@A3 DRAWING NO. 24–113–05–V7 DATE 28 March 2025	CREATED BY Y.H APPROVED BY M.S SHEET 04 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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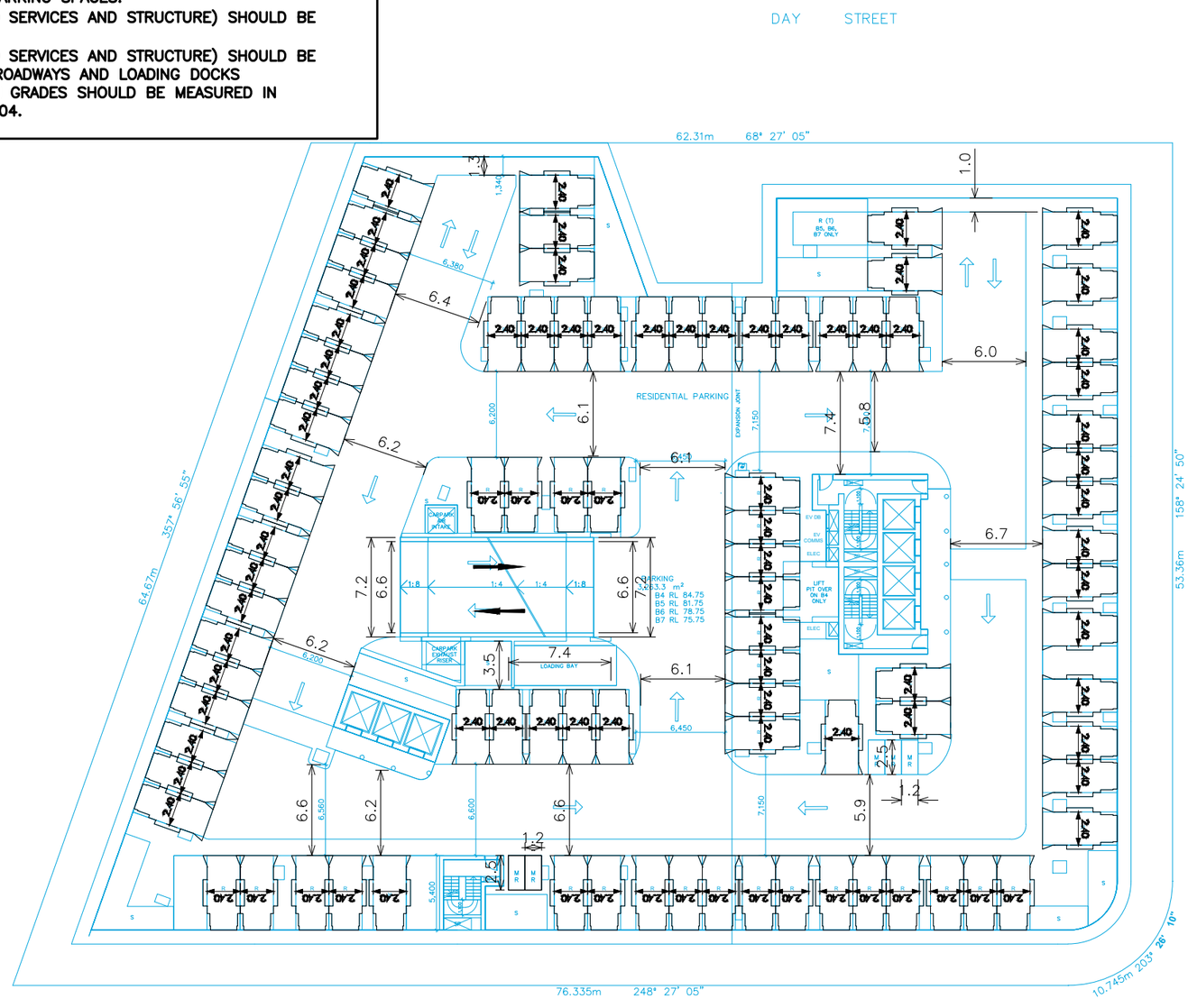
6. A MINIMUM HEIGHT CLEARANCE OF 4.5m (TO SERVICES AND STRUCTURE) SHOULD BE PROVIDED ABOVE SERVICE VEHICLE ACCESS ROADWAYS AND LOADING DOCKS
7. HEIGHT CLEARANCE ABOVE A SAG CHANGE IN GRADES SHOULD BE MEASURED IN ACCORDANCE WITH FIGURE 5.3 AS2890.1–2004.



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NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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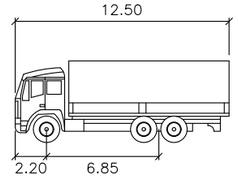
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 600mm CLEARANCE FROM VEHICLE BODY



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
SWEPT PATH ASSESSMENT
BASEMENT 1

SCALE	0 5.0 10.0 1:500@A3	CREATED BY Y.H
DRAWING NO.	24-113-05-V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 06 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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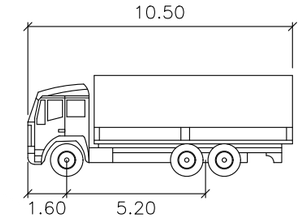
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 600mm CLEARANCE FROM VEHICLE BODY



10.5m LRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

DAY STREET

MCINTOSH STREET

CAMBRIDGE LANE

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NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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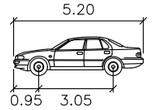
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B99

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

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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
SWEPT PATH ASSESSMENT
BASEMENT 1

SCALE	0 4.0 8.0 1:400@A3	CREATED BY Y.H
DRAWING NO.	24-113-05-V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 08 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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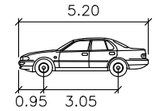
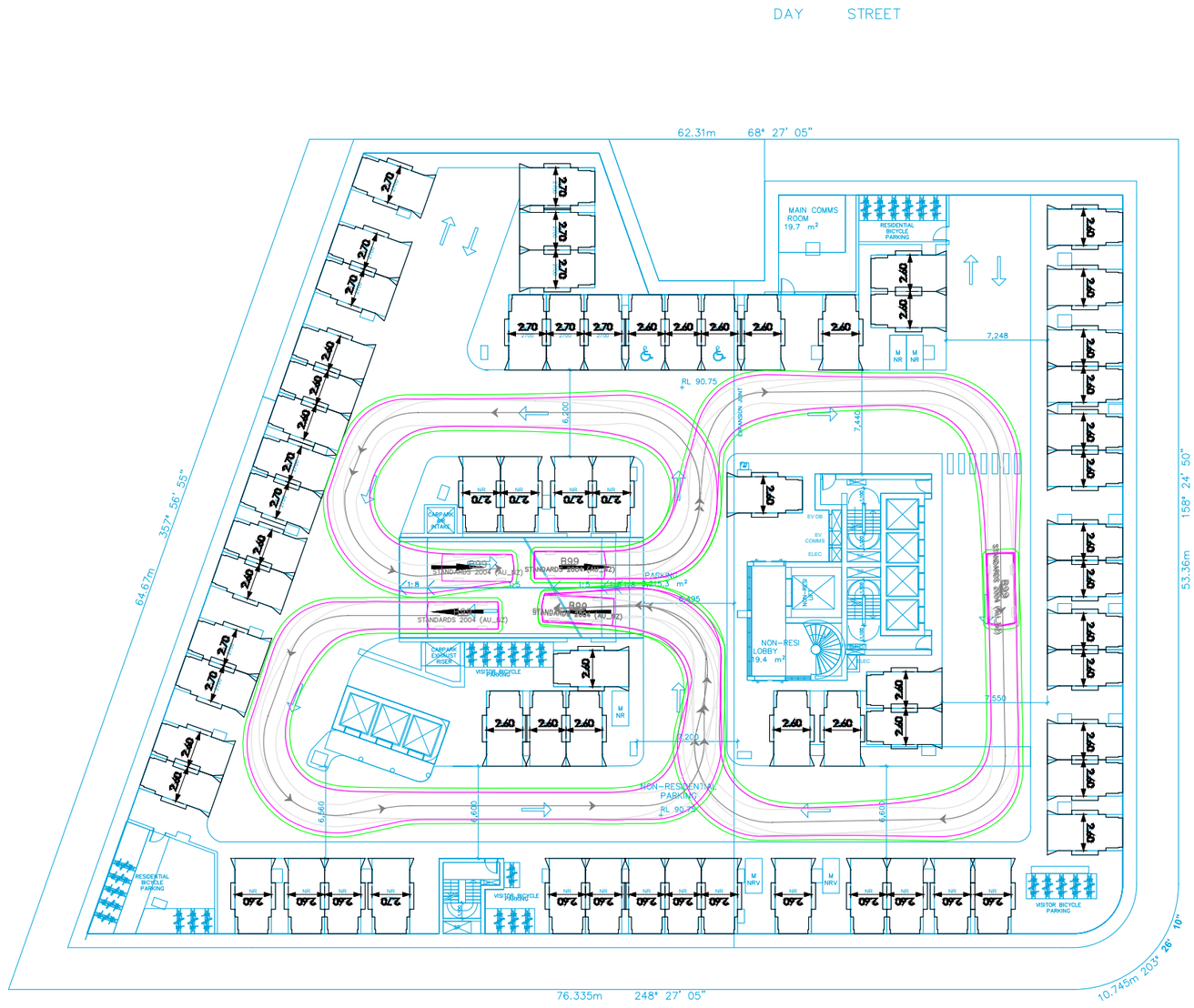
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B99

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



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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
SWEPT PATH ASSESSMENT
BASEMENT 02

SCALE 0 4.0 8.0	1:400@A3	CREATED BY Y.H
DRAWING NO.	24-113-05-V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 09 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
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SWEPT PATH KEY:

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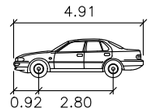
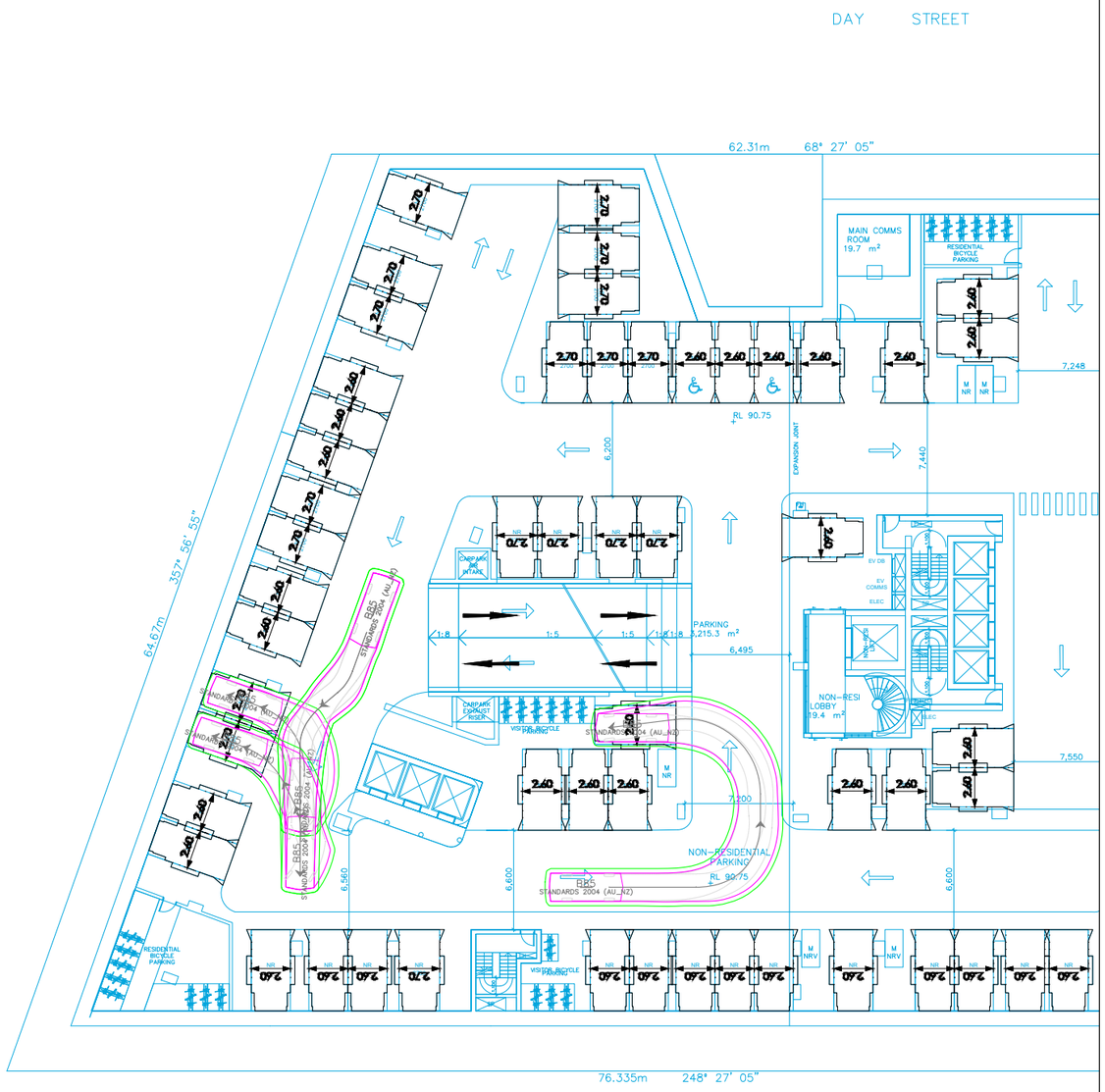
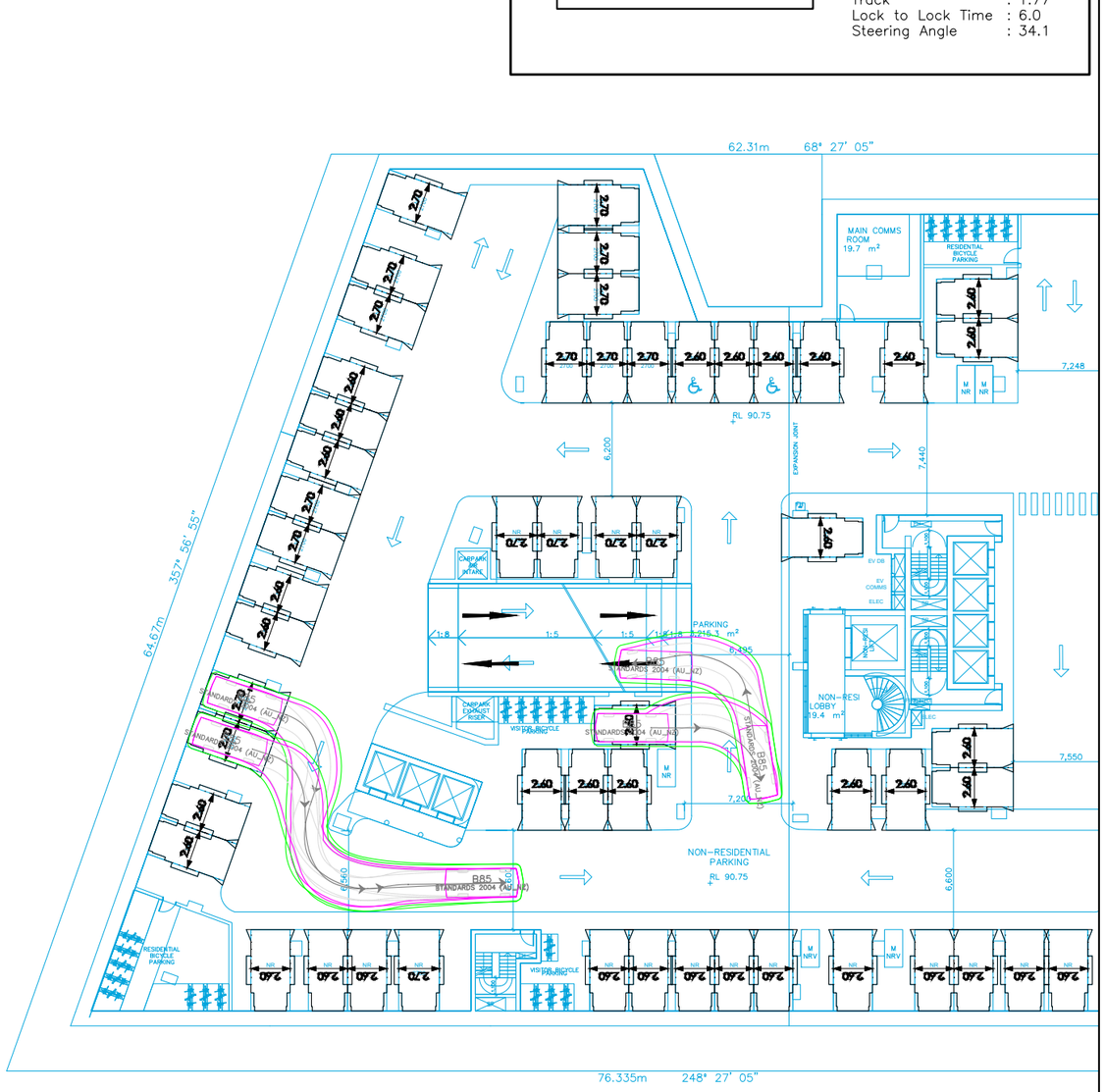
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B85

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





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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
SWEPT PATH ASSESSMENT
BASEMENT 02

SCALE 0 4.0 8.0	1:400@A3	CREATED BY Y.H
DRAWING NO.	24-113-05-V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 10 / 17

NOTES:

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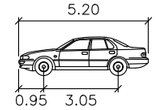
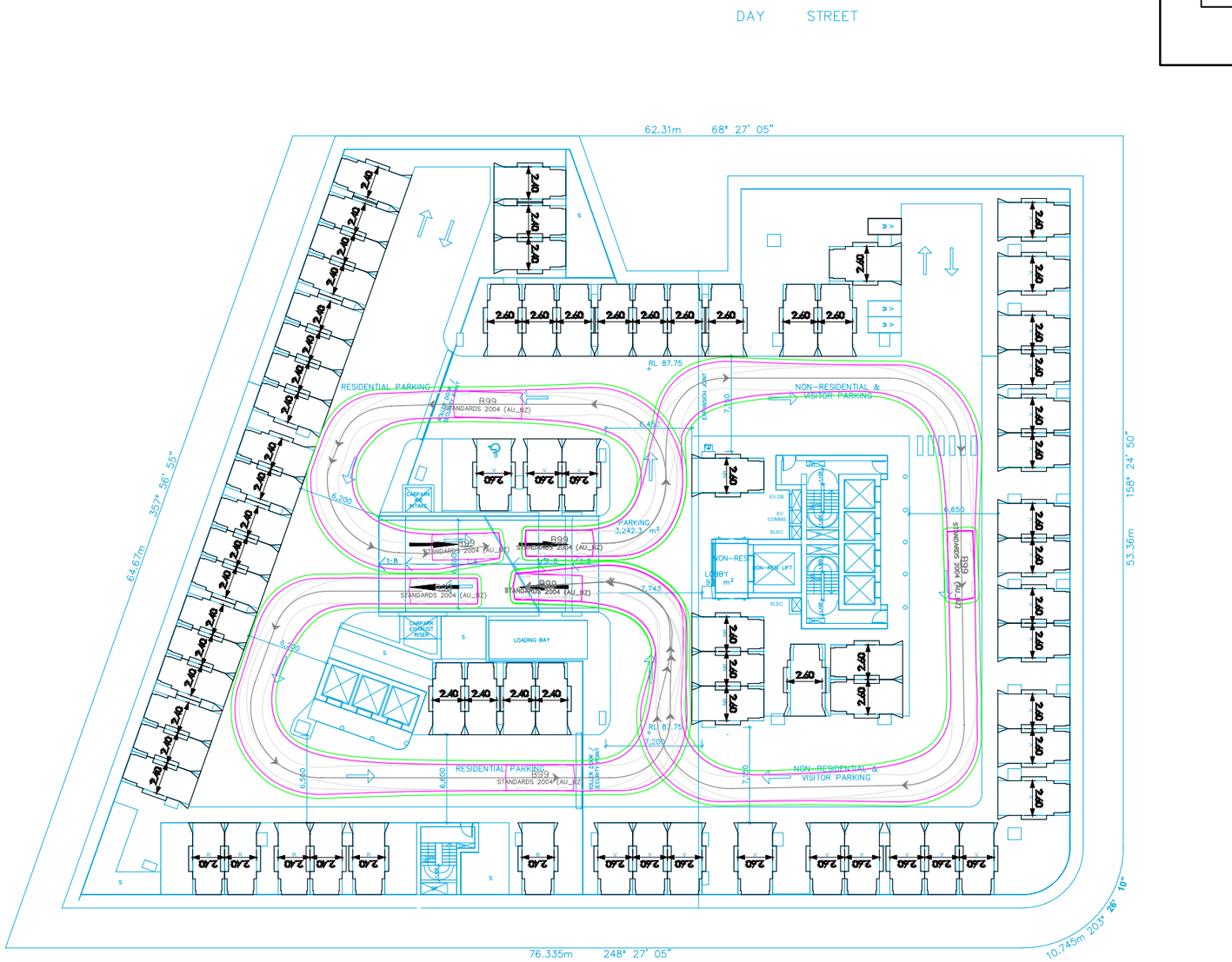
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B99

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



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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
SWEPT PATH ASSESSMENT
BASEMENT 03

SCALE 0 4.0 8.0	1:400@A3	CREATED BY Y.H
DRAWING NO.	24-113-05-V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 11 / 17

NOTES:

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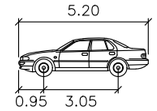
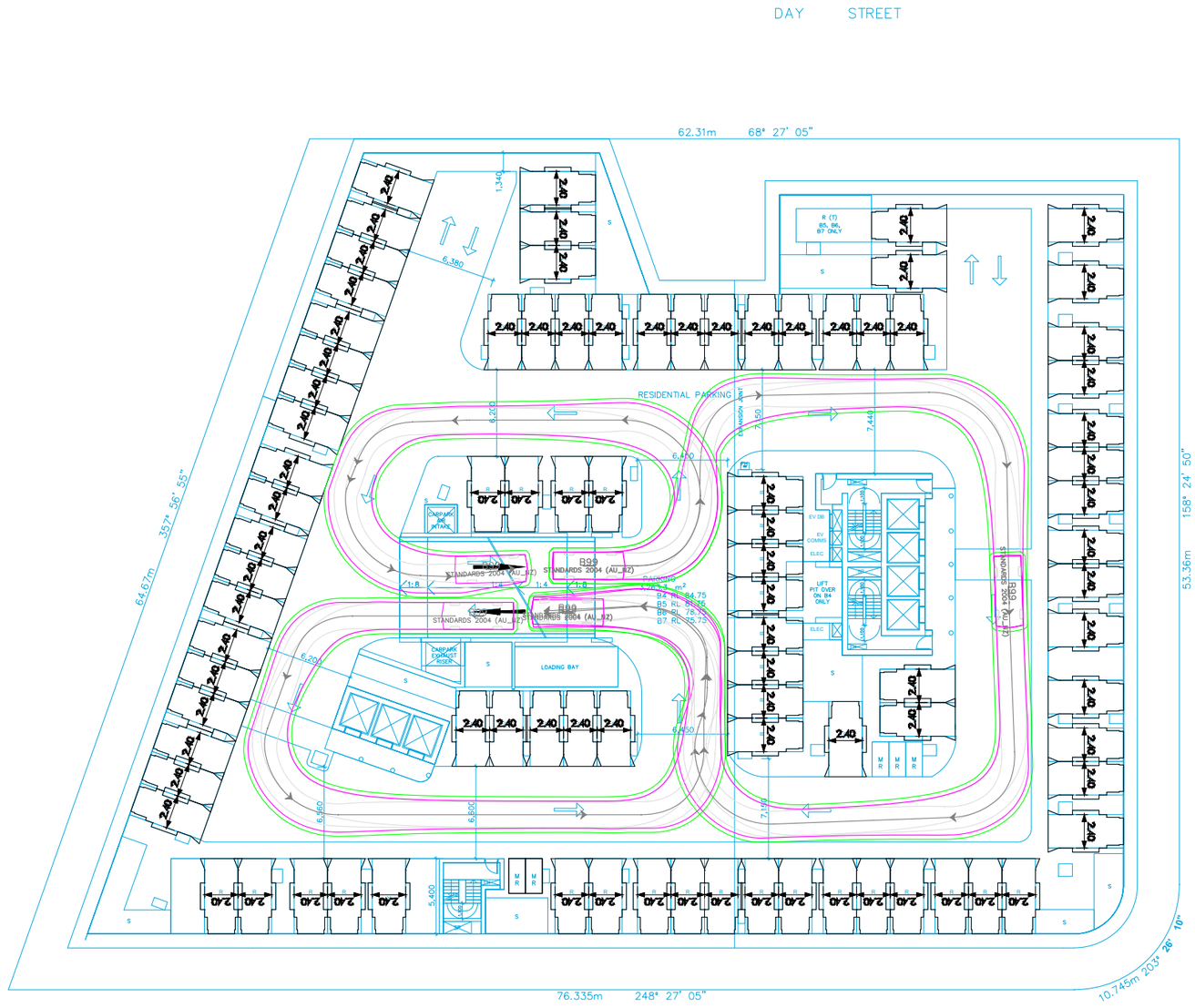
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B99

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



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NOTES:

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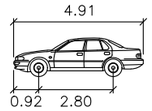
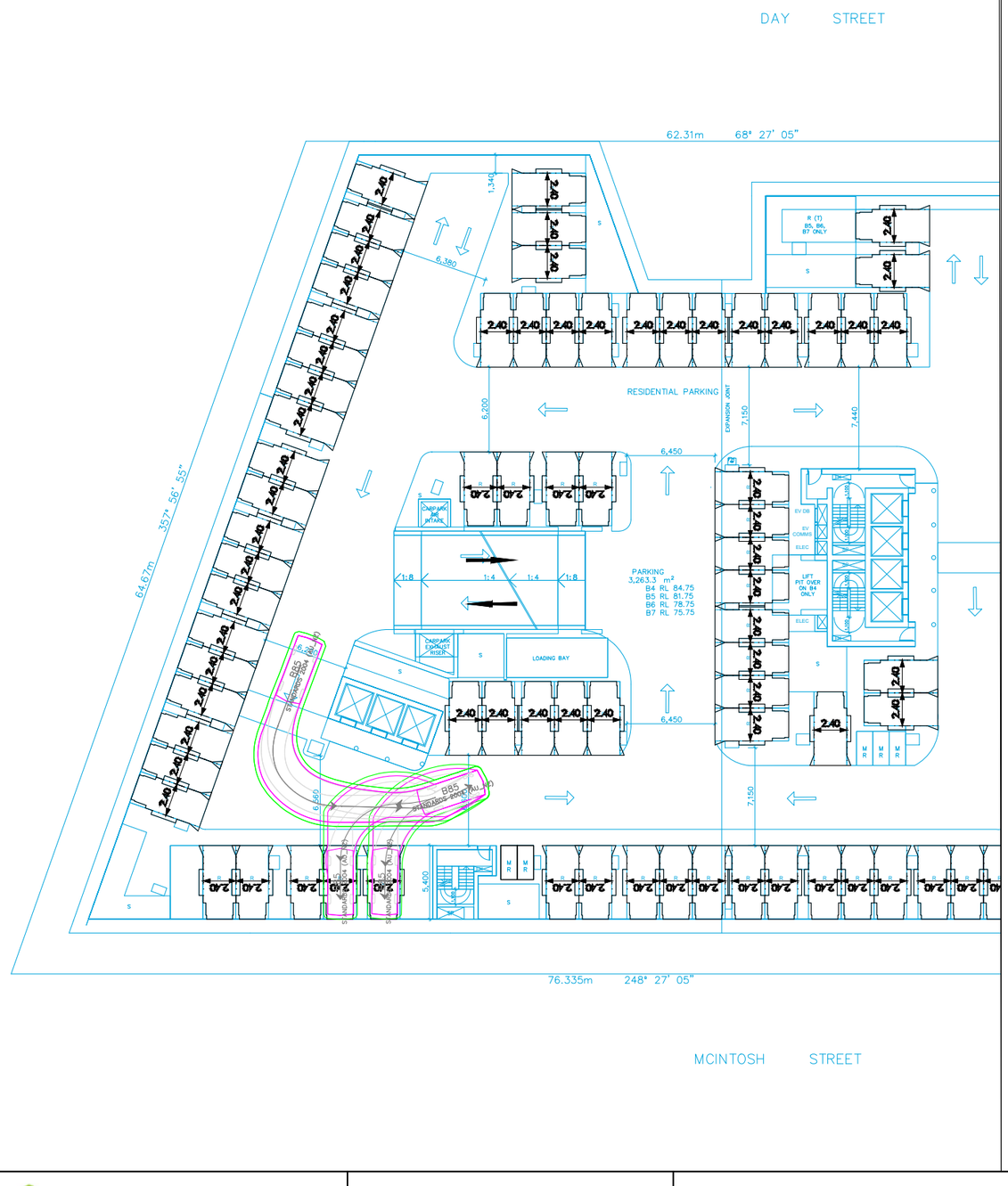
SWEPT PATH KEY:

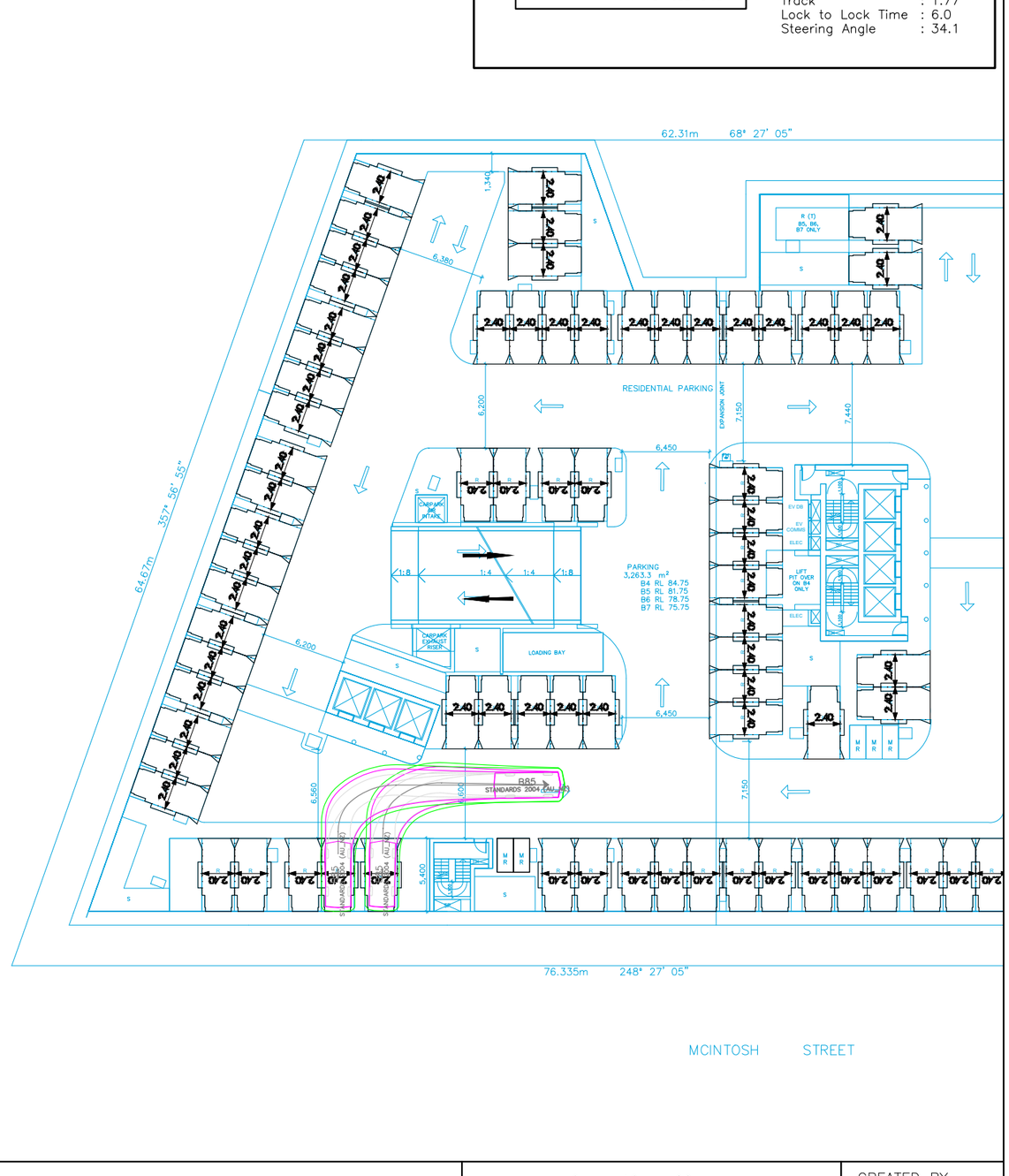
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B85

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





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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
SWEPT PATH ASSESSMENT
BASEMENT 04 TO 07

SCALE 0 4.0 8.0	1:400@A3	CREATED BY Y.H
DRAWING NO.	24-113-05-V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 13 / 17

NOTES:

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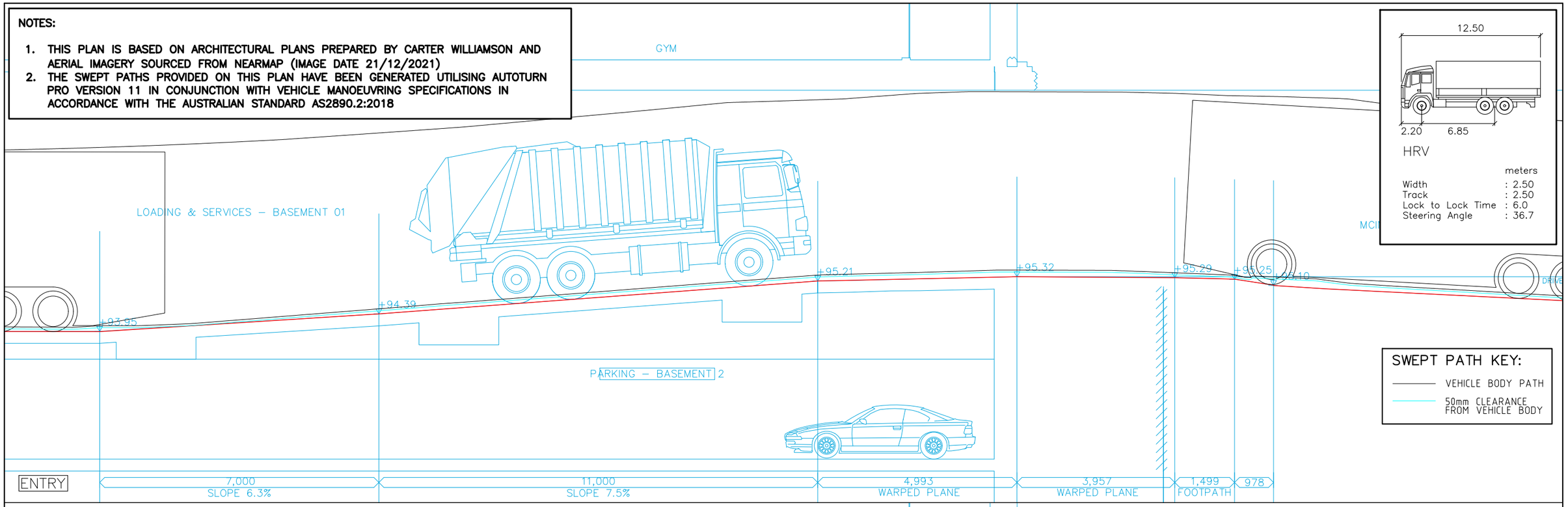

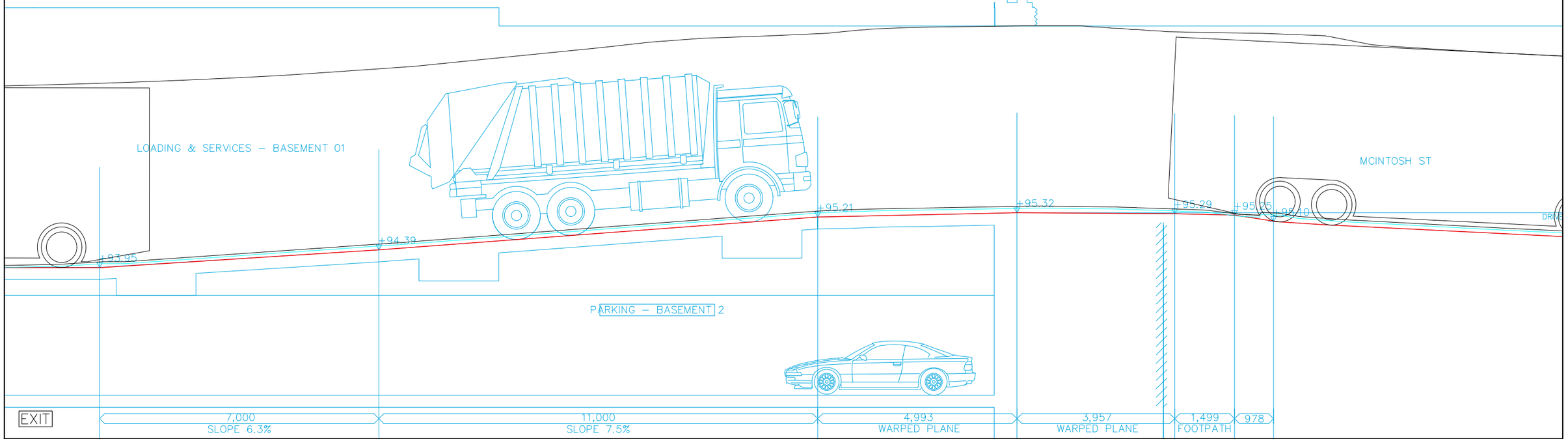

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STANBURY TRAFFIC PLANNING

2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
VERTICAL CLEARANCE ASSESSMENT
DRIVEWAY–SECTION DETAIL G

SCALE 0 1.0 2.0	1:100@A3	CREATED BY Y.H
DRAWING NO.	24–113–05–V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 15 / 17

NOTES:

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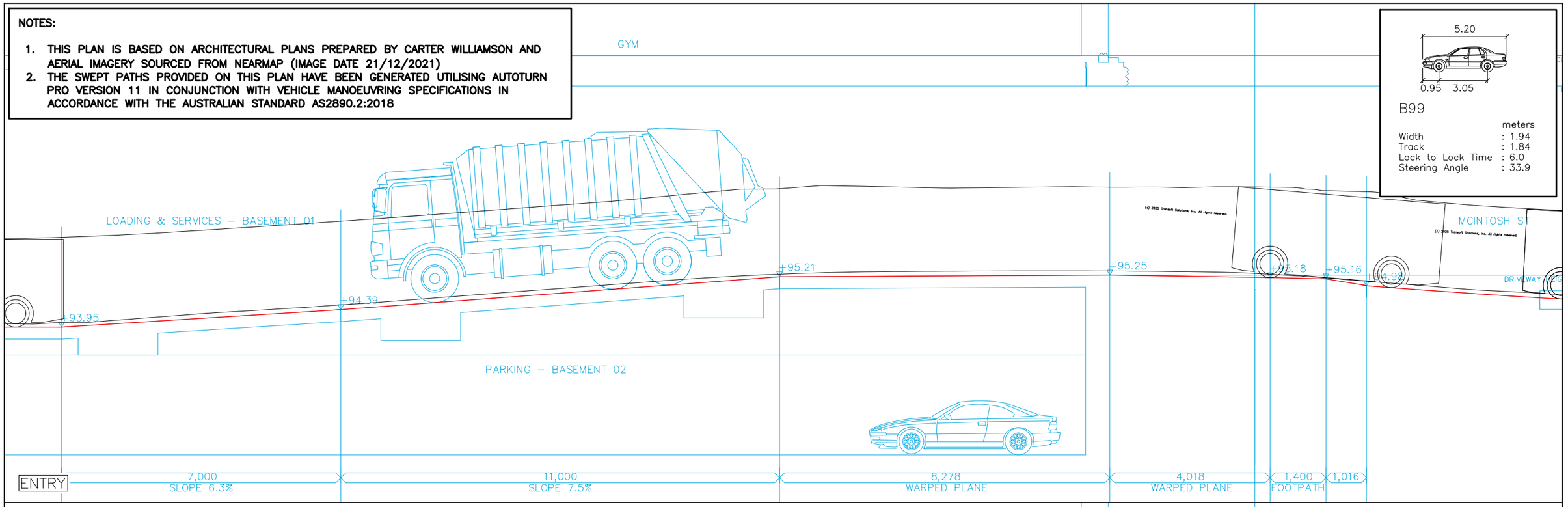
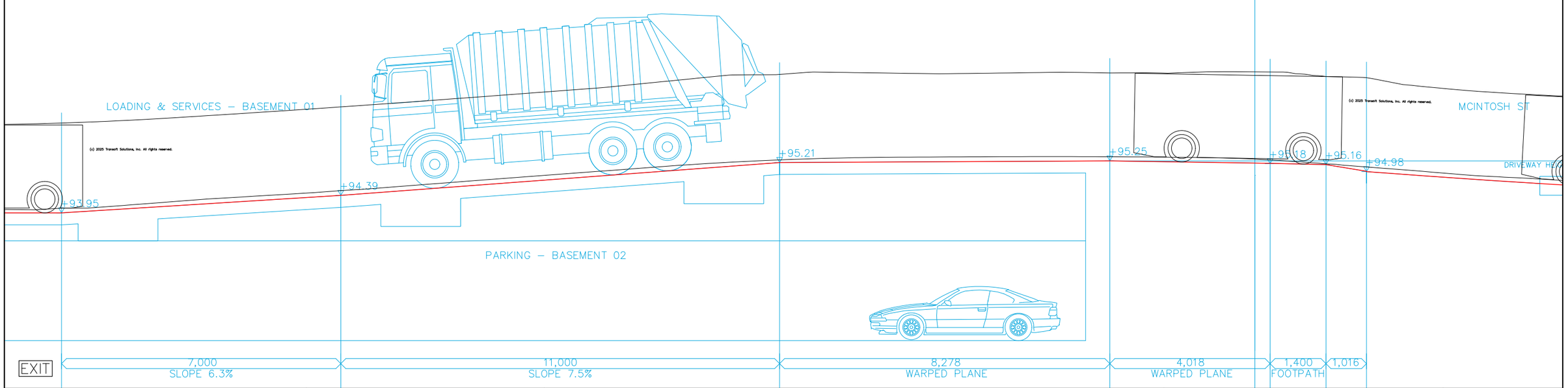
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.2:2018





STANBURY TRAFFIC PLANNING
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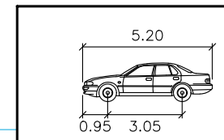
2 DAY STREET, CHATSWOOD
CAR PARK COMPLIANCE REVIEW
VERTICAL CLEARANCE ASSESSMENT
DRIVEWAY–SECTION DETAIL H

SCALE 0 1.0 2.0	1:100@A3	CREATED BY Y.H
DRAWING NO.	24–113–05–V7	APPROVED BY M.S
DATE	28 March 2025	SHEET 16 / 17

NOTES:

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY CARTER WILLIAMSON AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 21/12/2021)
2. THE SWEPT PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.2:2018



B99

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

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