



# **101 North Steyne, Manly**

## **Transport Impact Assessment**

Prepared for: **Time & Place**

20 December 2024



## PROJECT INFORMATION

<b>Project Name:</b>	101 North Steyne, Manly
<b>Client:</b>	Time & Place
<b>Project Number:</b>	2459
<b>Prepared By:</b>	JMT Consulting

## DOCUMENT HISTORY

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101 North Steyne TIA	Draft	06.12.24	JM
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# 1 Introduction

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## 1.1 Background

JMT Consulting was engaged by Manly Land 101 Pty Ltd to prepare a transport assessment to support a Development Application (DA) for the site at 101 North Steyne, Manly. The intention is for the development to provide 7 premium residential apartments with associated basement car parking facilities.

## 1.2 Report purpose

The purpose of this report is to summarise the transport implications of the proposed development of the site. The report considers the following items:

- Existing transport conditions in and around the site, including site access arrangements, car parking and the adjacent public transport network
- Future transport access arrangements including:
  - Vehicle access arrangements
  - Car parking arrangements for residents and visitors
  - Bicycle parking provision for residents and visitors
  - Potential impacts on the adjacent road network as a result of the proposal

The analysis contained in this document is based on the architectural drawing set for the project issued by Smart Design Studio.

## 2 Existing Conditions

### 2.1 Site location and vehicle access

The site at 101 North Steyne ('the site') is located in the suburb of Manly and located within the North Beaches Local Government Area (LGA). The site currently comprises of a small number of residential apartments with frontages to both North Steyne and Pine Lane as illustrated in Figure 1 below. Vehicle access is provided via one of two driveways on North Steyne.



Figure 1 Site location and vehicle access

### 2.2 Car parking

There is currently on-site car parking for three cars within the site, accessed via the driveways fronting North Steyne. The car parking arrangement requires vehicles to either enter or exit via North Steyne and therefore conflict with high volumes of vehicles and pedestrians using this roadway.

## 2.3 Surrounding road network

To manage the extensive network of roads for which councils are responsible under the Roads Act 1993, Transport for NSW (TfNSW) in partnership with local government established an administrative framework of *State*, *Regional*, and *Local Road* categories. State Roads are managed and financed by TfNSW and Regional and Local Roads are managed and financed by councils.

Key State and Regional roads which provide access to the site are illustrated in Figure 2 below, with Pittwater Road / Belgrave Street being the key State roads in the vicinity of the site. North Steyne to the east of the site is classified by TfNSW as a Regional Road which performs the function of a collector route through the local area. Pine Street and Pine Lane are neither classified as a State or Regional road and therefore no restrictions in terms of vehicle access are necessary.

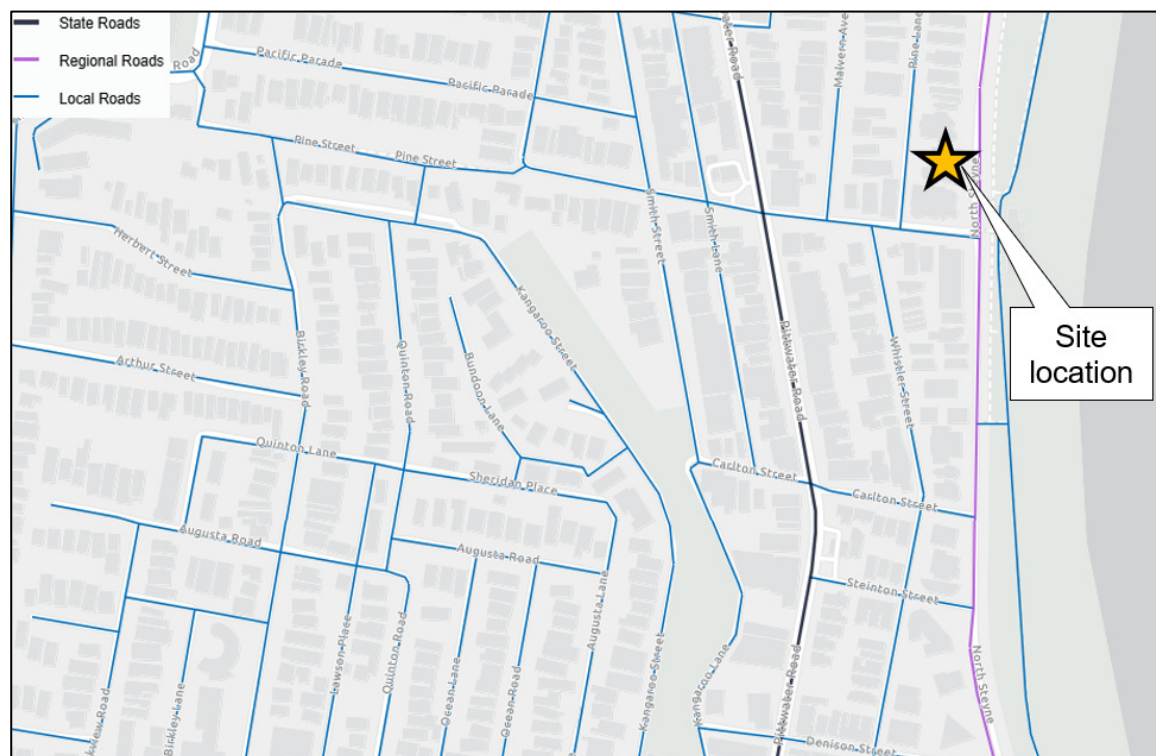


Figure 2 Existing road network



## 2.4 Public transport

The site is well located to take advantage of local bus services and is a fifteen minute walk of the Manly Ferry Wharf. Bus stops on Pittwater Road and North Steyne, all within a two to five minute walk from the site, provide access to three bus routes that travel to key destinations in the Northern Beaches area such as Warringah Mall and Dee Why.

The public transport network serving the site is shown in Figure 3.



Figure 3      Nearby public transport services and stops



## 2.5 Crash data

A review of crash data published by Transport for NSW for the most recent five year period has been review and is shown in Figure 4. This indicates no recorded crash history at the proposed site access driveway on Pine Lane nor at the existing driveway on North Steyne.

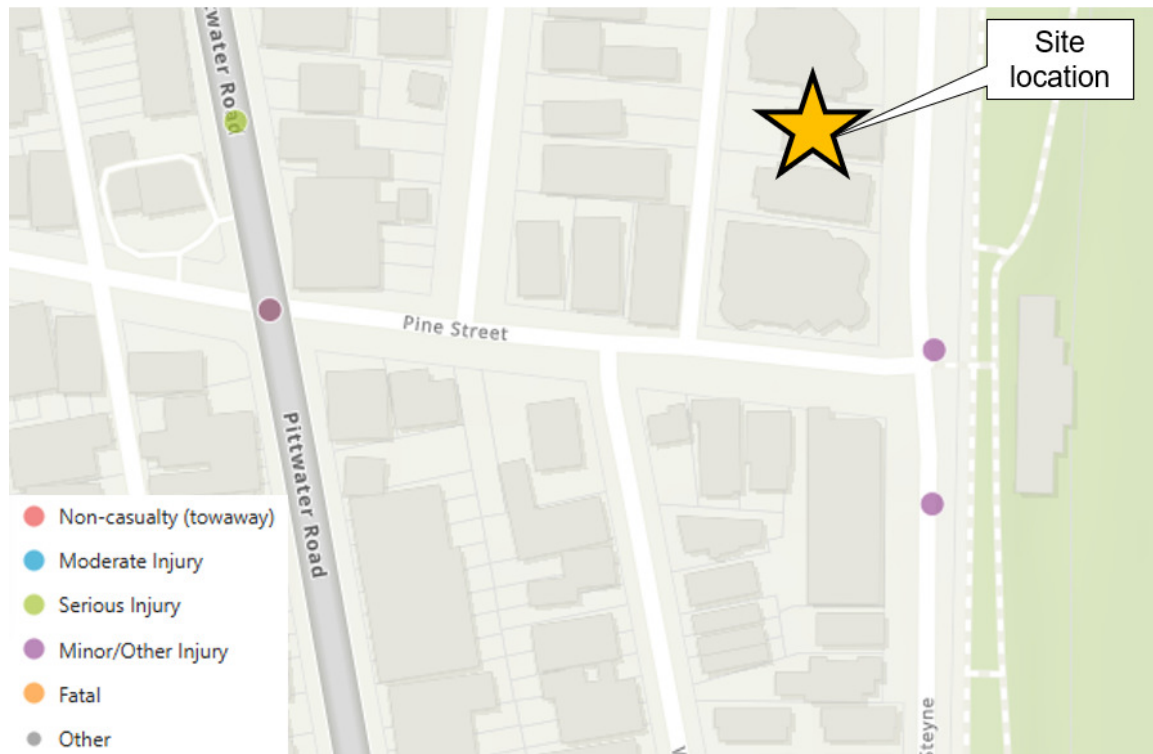


Figure 4 Crash data

Source: NSW Centre for Road Safety

### 3 Transport Assessment

#### 3.1 Proposed vehicle site access

The proposed vehicle site access strategy is illustrated in Figure 5 below. Given North Steyne's classification as a regional road all vehicle access in future would be provided via Pine Lane at the rear of the site. Access to the basement car parking area will be via a single lane ramp with a traffic light system provided to manage movements.

The proposed access arrangements provides a significant improvement when compared to current conditions in that it redirects all traffic movements to the rear lane, removing conflicts with general traffic and pedestrians on North Steyne.

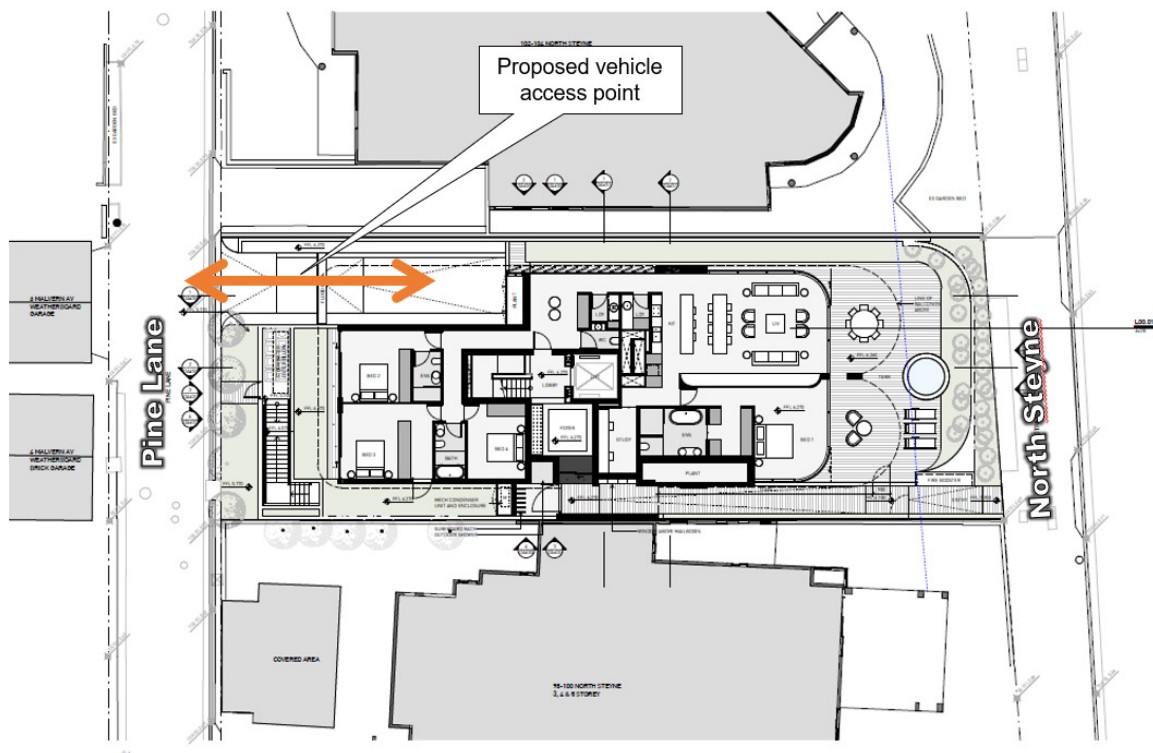


Figure 5 Proposed vehicle site access strategy

Vehicle swept path analysis has been undertaken to confirm the suitability of the proposed access arrangements from Pine Lane and is shown in Figure 6 on the following page. This swept path indicates there is sufficient space for a vehicle to enter and exit the site.

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101 North Steyne, Manly

**Client**  
Time & Place

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**Drawing Title**  
Turning Paths

**Drawing No**  
2459\_01

**Date**  
16.12.24

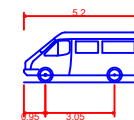
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Wheel Envelope

**Job No**  
2459

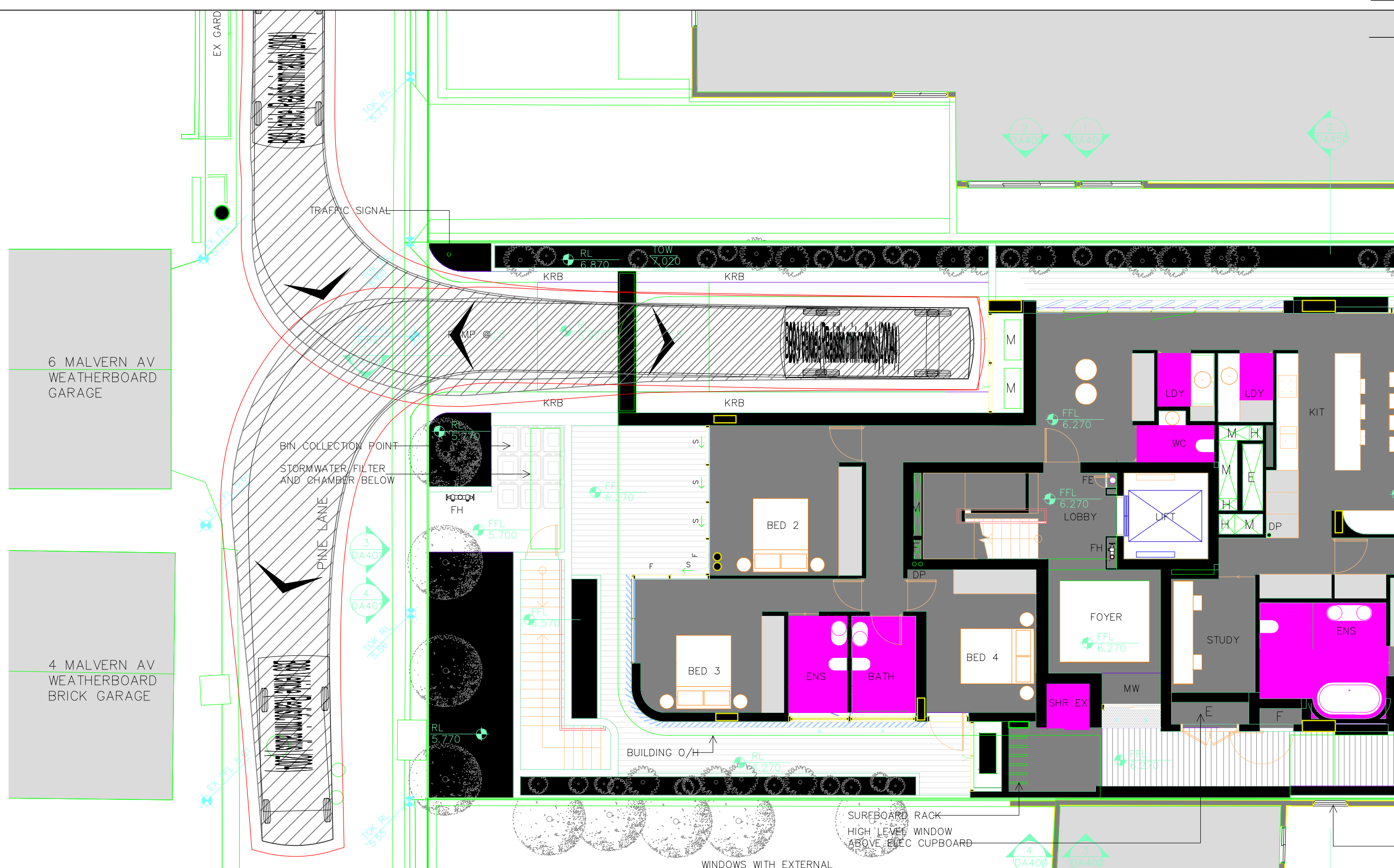
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**Vehicle type(s)**



B99 Vehicle (8m min radius) (2004)  
Overall Length  
Overall Width  
Overall Body Height  
Min Body Ground Clearance  
Track Width  
Lock to Lock Time  
Curb to Curb Turning Radius

5.200m  
1.940m  
2.200m  
0.312m  
1.840m  
4.00 sec  
8.000m



### 3.2 Driveway design

The driveway ramp is 3.0m wide (kerb to kerb) which is compliant with the minimum requirements outlined in AS2890.1-2004.

AS2890.1 -2004 at Clause 3.2.2 notes that driveway ramps can be designed with reduced widths that do not permit unobstructed two-way traffic movements in situations where there are expected to be less than 30 vehicle movements (two way) per hour. For the subject site traffic movements are anticipated to be between three and four vehicles per hour (worst case) which is well below this threshold noted in AS2890.1. The driveway width is therefore considered suitable given the site context.

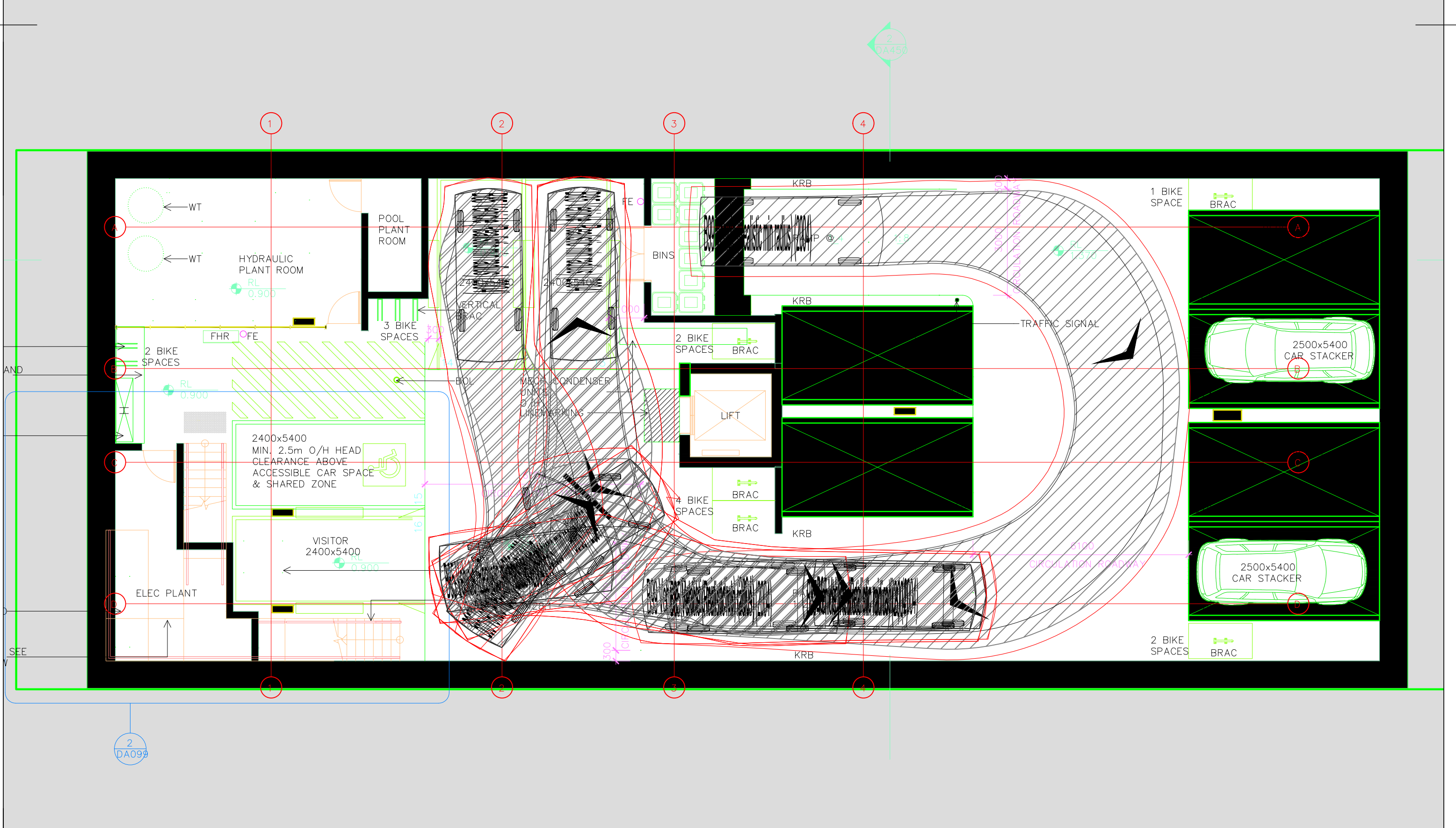
### 3.3 Car park design

The car park has been designed in accordance with AS2890.1 with respect to ramp gradients, circulation aisle widths and car space dimensions. A review of the plans has found that the car park layout complies with the requirements of AS2890.1-2004 for Class 1 parking areas (aisles minimum 5.8 metres wide with parking spaces 2.4 metres wide by 5.4 metres long and 2.4 metre wide shared zones for accessible. A 1m extension at the end of the dead end aisle is provided to facilitate vehicle movements into and out of the car space and ensure compliance with Australian Standards. An accessible parking space (including adjacent shared areas) are provided in the basement which has been designed in accordance with AS2890.6.

Car stacker bays are provided which will be allocated to individual residents. These car stacker bays are wider at 2800mm to ensure there is adequate space for vehicles to enter and exit the bays.

Vehicle swept path analysis for the basement parking area, adopting the 'B99 passenger vehicle', is provided in Figure 7 on the following page.





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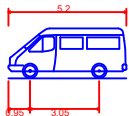
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- 300mm Envelope
- Wheel Envelope

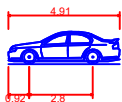
**Job No**  
2459

**Scale at A3**  
1:100

**Vehicle type(s)**



B99 Vehicle (8m min radius) (2004)  
Overall Length 5.200m  
Overall Width 1.940m  
Overall Body Height 2.200m  
Min Body Ground Clearance 0.312m  
Track Width 1.840m  
Lock to Lock Time 4.00 sec  
Curb to Curb Turning Radius 8.000m



B85 Vehicle (AS2890.1)  
Overall Length 4.910m  
Overall Width 1.870m  
Overall Body Height 1.421m  
Min Body Ground Clearance 0.120m  
Track Width 1.770m  
Lock to Lock Time 4.00 sec  
Curb to Curb Turning Radius 5.750m

### 3.4 Forecast traffic generation

The forecast traffic generation for the proposal has been determined based on the Sydney wide average traffic generation rates for residential uses as published by TfNSW.

The forecast traffic generation is summarised in Table 1 below and demonstrates that the proposal would, on average, increase traffic on the road network by two to three vehicles per hour during peak periods. Taking into consideration the likely activity generated by the existing site uses the net traffic generation would be less than 2 vehicles per hour. This level of traffic generation is considered negligible in the context of the surrounding road network and would not impact it's operation.

Table 1 Forecast traffic generation

Scenario	Site area / dwellings / GFA	Peak hour traffic generation rate		Forecast Traffic Generation	
		AM peak hour	PM peak hour	AM peak hour	PM peak hour
Future site	7units	0.50 / unit	0.50 / unit	3.5	3.5

### 3.5 Vehicle access ramp operations

As previously noted a one-way ramp with complementary traffic light system is proposed within the site due to it's constrained footprint.

The traffic lights provided at the vehicle access would be configured in a 'passive green' state such that vehicles entering the site would always be given a green signal on arrival. This will ensure that entering drivers would (generally) not experience any delays, minimising the potential for any on-street queuing to occur. The only exception to this would be if a driver were to enter the site while a driver was exiting from the basement car park, which is a very low probability event.

To consider the suitability of the waiting space at ground level and confirm that no queueing will occur on Pine Lane modelling has been undertaken using steady state queueing theory as outlined in The Austroads publication "Guide to Traffic Management Part 2: Traffic Theory (2015)".



The utilisation factor  $\rho$  or ratio of average arrival rate  $r$  and service rates  $s$  is given by the formula below. In this instance,  $r = 3.5$  vehicles per hour and  $s = 266.6$  vehicles per hour<sup>1</sup>.

Utilisation Factor  $\rho = r / s = 3.5 / 266.6 = 0.0131$

The probability that the one or less vehicles will be using the ramp is given the following formula:

$$P_0 = 1 - \rho = 1 - 0.0131 = 0.9869 \text{ or } 98.69\%$$

Therefore the probability that the ramp will be utilised by one or less vehicles at any one time during the busiest hour of the day is 98.69%.

Where traffic flow at the site entrance is restricted by a mechanical system (e.g. car lift, traffic signals etc), Clause 3.5 of AS2890.1 - 2004 requires the 98<sup>th</sup> percentile queue to be accommodated on-site. As there is a probability of 98.69% that the vehicle access ramp will be in use by less than two cars during the busiest time of the day, the proposed access arrangements complies with the requirements of Australian Standards.

## 3.6 Car parking provision

### 3.6.1 Resident parking

The off-street parking provisions permitted on the site as part of the development proposal are specified in Council's Development Control Plan (DCP). The DCP requires 1.2 car parking spaces for every two bedroom dwelling and 1.5 car parking spaces for every three bedroom (or more) dwelling - requiring a minimum of 9 resident car parking spaces for the proposal based on the dwelling mix. The proposal exceeds this requirement by providing for 13 car parking spaces across which includes one accessible parking space. This parking allocation allows for six of the seven apartments to be allocated two parking spaces.

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<sup>1</sup> Based on a typical travel distance to basement level of 30m and a vehicle travel speed of 8km/h

### 3.6.2 Visitor parking

Given that a car stackers will for the most part be used for resident parking, the use of the basement car park will be largely be for residents only and one visitor parking will be permitted. Although strictly under the DCP two visitor car parking spaces would be required for the seven dwellings, the arrangement whereby one visitor car parking is provided is considered suitable for the following reasons:

- The removal of the existing driveway crossovers on North Steyne will create the potential for two additional on-street parking spaces to be created by the proposal – resulting in a net benefit with respect to car parking.
- Alternate short term parking is available immediately outside the site on Pine Street and North Steyne, with multiple commercial parking stations available in the Manly CBD
- There is no visitor car parking is available on the existing site servicing the residential dwellings currently occupying the site
- The provision of a single car parking space to allow most residential apartments to be allocated two parking spaces each is consistent with Council's recent determination of a similar residential building at 61 North Steyne (DA2022/1910).

### 3.7 Bicycle parking

The proposal provides for 14 bicycle parking spaces in the basement of the building which will be available for residents and visitors. This bicycle parking provision is equivalent to 2 spaces per dwelling and considered suitable to accommodate demands from future residents and compliant with the Manly DCP requirements. The design of the bicycle parking stands comply with the requirements outlined in AS2890.3<sup>2</sup>

### 3.8 Site servicing

Consistent with current conditions and commensurate for a residential building containing just five dwellings, all site servicing (including waste collection) will take place via either North Steyne or Pine Lane.

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<sup>2</sup> Australian Standards, Parking Facilities – Part 3: Bicycle Parking

## 4 Summary

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This transport assessment has been prepared by JMT Consulting to accompany a Development Application to Northern Beaches Council for the development of a residential building located at 101 North Steyne, Manly. The intention is for the development to provide 7 premium residential apartments with associated basement car parking facilities. Key findings of the assessment are as follows:

- The site has good access to nearby public transport, with bus stops located on Pittwater Road and North Steyne in close proximity to the site servicing key destinations including the Warringah Mall and the Frenchs Forest. Manly Ferry Wharf is located within a 15 minute walk of the site.
- Access to the site is proposed to be via a single lane driveway at the rear of the site on Pine Lane with a traffic light system provided to manage movements – removing the existing points of conflict on North Steyne and creating opportunities for additional on-street car parking.
- The proposal includes 13 car parking spaces within the basement of the building for residents and one visitor parking space.
- The basement car park has been designed in accordance with relevant Australian Standards AS2890.1 and AS2890.6 and provided in accordance with Council's DCP.
- The proposal is forecast to generate a negligible increase in peak hour traffic movements of approximately three to four vehicles per hour when compared to existing conditions.
- Bicycle parking is to be provided for residents and visitors.

In the above context, the traffic and transport impacts arising from the proposal are considered acceptable.