

# **CARPARK, RAMP AND DRIVEWAY CERTIFICATION OF A PROPOSED BOARDING HOUSE DEVELOPMENT**

***16 Wyatt Avenue in Belrose***

Prepared for: NORTHERN BEACHES ESSENTIAL  
ACCOMMODATION

N216473A (Version 2d)

June 2022

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## 1. INTRODUCTION

Motion Traffic Engineers was commissioned by NORTHERN BEACHES ESSENTIAL ACCOMMODATION to prepare a car parking certification report of the proposed boarding house development at 16 Wyatt Avenue in Belrose.

The parking is in two basement levels. Access and egress to the basement in the lower building is via the driveway of 14 Wyatt Avenue only. Access and egress to the basement in the upper building is via the driveway of 16 Wyatt Avenue. Traffic lights will be provided to control vehicle movement on the driveway of 14 Wyatt Avenue to avoid any conflicts.

Reference is made to AS2890.1(2004), AS2890.2(2002), AS2890.6 (2009), and Council's Development Control Plan for compliance.

## 2. DRIVEWAY

The details of the driveway from 16 Wyatt Avenue into the basement level of the upper building is as follows from the perspective of the inbound movement for descriptive purposes only:

- The width of the driveway is 5.5 metres at the property line and reduces to 4 metres
  - A waiting area is provided for an inbound driver to give way to an outbound driver

The gradients are as follows from the kerb:

- 5 percent for 7 metres
- 8.24 percent for 14 metres
- 12.5 percent for 13 metres
- 14.7 percent for 33.24 metres
- 8.7 percent for 7 metres
- 2.5 percent for 7 metres
- 2 percent for 12 metres

A passing bay is located before the curved section.

The details of the driveway from Wyatt Avenue into the basement level of the lower building with access/egress from 14 Wyatt Avenue driveway is as follows from the perspective of the inbound movement for descriptive purposes only:

- The width of the driveway is 4.5 metres

The gradients are as follows from the boundary:

- 6.8 percent for 7 metres
- 13 percent for 7 metres

- 15.4 percent for 15.6 metres
- 12.5 percent for 7 metres
- 6.25 percent for 24.6 metres
- 8.75 percent for 12.88 metres
- 6.25 percent for 7 metres
- Flat for the T-junction
- 6.25 percent for 7 metres (centreline)
- 11.1 percent for 6.3 metres (centreline)
- 6.25 percent for 7 metres (centreline)

The maximum roadway and ramp grades, and rates of change of grades for a heavy rigid vehicle are stated in Table 3.2 of AS2890.2. The rate of change of grade along the main ramp complies with the maximum permissible rate of change of grade.

### **3. CAR SPACES**

The details of the car parking areas are as follows:

#### *Southern Parking Area (closest to the road)*

- The car parking aisle is 5.8 metres wide
- The 90-degree car spaces are 2.5 metres wide and 5.5 metres long
  - Columns with appropriate setbacks are provided
- The disabled car space is 2.5 metres wide and 5.5 metres long
  - A shared zone of same dimensions has been provided.
  - Bollard with appropriate setback should be provided in the shared zone
- The motorcycle spaces are 1.2 metres wide and 2.5 metres long
- Bicycle spaces are provided
- Blind aisle extensions are provided
- A turn bay is provided

#### *Northern Parking Area (rear of the property with 20 car spaces)*

- The car parking aisle is 5.8 metres wide minimum
- The 90-degree car spaces are 2.5 metres wide minimum and 5.5 metres long
- The motorcycle spaces are 1.2 metres wide and 2.5 metres long
- Bicycle spaces are provided
- Blind aisle extensions are provided
- A turn bay is provided

### **4. CAR SIGHT DISTANCE**

The car driver's sight distance requirement to enter the external road is stated in Figure 3.2 of AS2890.1.

The sight distance varies according to the speed of the external road. Wyatt Avenue has a speed limit of 50km/hr.

The minimum sight distance required is 45 metres. The minimum vehicle sight distance is met.

The pedestrian sight distance triangle as set out in Figure 3.3 of AS2890.1 and is met as well.

## **5. TRUCK SIGHT DISTANCE**

The truck driver's sight distance requirement to enter the external road is stated in Figure 3.3 of AS2890.2.

The sight distance varies according to the speed of the external road. Wyatt Avenue has a default speed limit of 50km/hr.

The minimum sight distance required is 69 metres. Site measurements showed that the minimum sight distance looking left or right is met without permanent obstructions.

The pedestrian sight triangle as set out in Figure 3.4 of AS2890.2 and is met as well.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

The car parking area is overall compliant with Australian Standards.

The rate of change of grade for the driveway/ramp is compliant with Australian Standards for a Heavy Rigid Vehicle.