CARPARK, RAMP AND DRIVEWAY CERTIFICATION OF PROPOSED RESIDENTIAL DEVELOPMENT

16-24 Hope Street in Penrith

Prepared for: Prestige Developments Group (NSW) Pty Ltd

N1815834A (Version 1e)

August 2018

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1. INTRODUCTION

Motion Traffic Engineers was commissioned by Prestige Developments Group (NSW) Pty Ltd to prepare a car parking certification report of the proposed residential development at 16-24 Hope Street in Penrith.

The car parking areas are on two basement levels with vehicle access and egress via Hope Street.

A separate loading bay is provided for waste collection at the ground level. A turntable is used for trucks to enter and leave in a forward manner.

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

2. DRIVEWAY/RAMP

The details of the driveway/ramp from Hope Street into the upper basement level car park are as follows from the perspective of the inbound movement for description purposes:

- The driveway at the property line is 6.14 metres wide and narrows to 5.5 metres
  - A wall to ramp kerb with a width of 300mm is provided on both sides of the ramp
- Gradients are as follows along the centreline of the driveway/ramp:
  - 5 percent for 6 metres
  - Flat for 6 metres
  - 12.5 percent for 2 metres
  - 25 percent for 8.2 metres
  - 12.5 percent for 2 metres

A convex mirror is provided at the bottom of the ramp.

The details of the two split ramps and the connecting platform from the upper basement level car park into the lower basement level car park are as follows from the perspective of the inbound movement for description purposes:

- Both split ramps are 5.5 metres wide throughout
  - A wall to ramp kerb with a width of 300mm is provided on both sides of the split ramps
  - The two split ramps are connected by a platform of 5.8 metres in width and length
  - The platform has a gradient of less than 5 percent and a wall to ramp kerb of 300mm on two of the sides
- Gradients are as follows along the centreline of the upper split ramp:
  - 12.5 percent for 2 metres
  - 25 percent for 1.5 metres

    - 12.5 percent for 2 metres
- Gradients are as follows along the centreline of the lower split ramp:
    - 12.5 percent for 2 metres
    - 25 percent for 6.506 metres
    - 12.5 percent for 2 metres

Convex mirrors are provided at both the connecting platform as well as the bottom of the lower split ramp.

3. CAR SPACES

The details of the upper basement level car parking area are as follows:

- The car parking aisle is 5.8 metres wide at minimum
- The car wash bays are 2.5 metres wide with a length of 5.4 metres
- The general 90-degree car spaces are 2.5 metres wide minimum with a length of 5.4 metres
    - Car spaces adjacent to walls have a further 300 mm minimum clearance
- The disabled car spaces are 2.5 metres wide and 5.4 metres in length
    - Shared zones of the same dimensions are provided
    - Bollards are provided
- Blind aisle extension of 1 metre minimum is provided and complies with the standards
- Column setback of 750 mm and length complies with AS2890.1
- Wheel stops are provided
- The circulating lane is 6.36 metres wide

The details of the lower basement level car parking area are as follows:

- The car parking aisle is 5.8 metres wide at minimum
- The general 90-degree car spaces are 2.5 metres wide minimum with a length of 5.4 metres
    - Car spaces adjacent to walls have a further 300 mm minimum clearance
- The disabled car space is 2.5 metres wide and 5.4 metres in length
    - Shared zones of the same dimensions are provided
    - Bollards are provided
- Blind aisle extension is provided
- Column setback of 750 mm and length complies with AS2890.1
- Bicycle racks are provided
- Wheel stops are provided
- The circulating lane is 6.1 metres wide

4. SWEPT PATHS

A swept turning path analysis is performed using a B85 car and a 10.5 metres garbage truck (Penrith Council) to confirm that vehicle movements are adequate.

The following Swept Paths have been performed:

- B85 forward inbound and reverse outbound into:
  - The upper basement car space 1 and 3
  - The lower basement car space 4
- B85 reverse inbound and forward outbound into the upper basement car space 2
- Council length waste truck (10.5 metres) inbound and outbound into and out of the ground level truck turntable

Swept path analysis shows a 10.5 metres truck is unable to manoeuvre into the site without the removal of one on street parking space.

All other movements show adequate manoeuvrability.

The swept paths are presented in Appendix A.

5. 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. Hope Street has a speed limit of 50km/hr.

The minimum sight distance required for cars and trucks are 45 metres and 69 metres respectively. Site measurements showed that the minimum sight distances looking left or right are met without permanent obstructions.

The pedestrian sight triangle (as set out in Figure 3.3) is met as well.

6. CONCLUSIONS AND RECOMMENDATIONS

The car parking area and driveway is generally compliant with Australian Standards and Council's DCP.

APPENDIX A

SWEPT PATHS