

Traffic Impact Assessment

39 - 41 Chertsey Avenue, Bankstown NSW 2200

August 2015





Type of Assessment: Traffic Impact Assessment Site Location: 39 - 41 Chertsey Avenue, Bankstown NSW 2200 Prepared for: Ghazi Al Ali Architects Prepared by: APEX Engineers ABN 52 487 919 980 www.apexengineers.com.au

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1. Introduction

APEX Engineers were engaged by Ghazi Al Ali Architects to provide a traffic impact assessment as part of the planning application for the proposed multi-unit residential development (affordable housing) located at 39 - 41 Chertsey Avenue in Bankstown NSW.

The report has been structured into the following sections:

- Section 2 Describes the existing transport conditions in the locality;
- **Section 3** Assesses the car parking provision on the site;
- **Section 4** Reviews the proposed car park design in accordance with AS2890.1 2004 and the Bankstown Council DCP;
- Section 5 Assesses the traffic impact of the proposed development on the local road network; and
- **Section 6** Provides the summary and conclusions of the study.

2. Background and Existing Conditions

2.1 Site Description and Local Road Network

The subject site is located at 39 - 41 Chertsey Avenue in Bankstown – within a primarily residential area within close proximity to Bankstown's schools and local shops. The site currently includes a single residential dwelling – with approx. 20m road frontage and a total of 945 square metres of land. At the site frontage, Chertsey Avenue includes one traffic lane in each direction, with on-street parking provided on either side of the carriageway. The site area is classified as zone R4 (high density residential).

2.2 Proposal Details

The proposal involves demolition of the existing residential dwelling and other associated structures and subsequent construction of two 4 storey residential buildings with a basement level car park. The overall development will include 38 units (8 x 1 bedroom units + 28 x 2 bedroom units + 2 x 3 bedroom units).



Figure 1 Highlights the site location from an aerial perspective.

Figure 2 Shows the site frontage as seen from Chertsey Avenue.



Figure 1: Location of Subject Site



Figure 2: Site Frontage



2.3 Public Transport Services

The surrounding region was reviewed to determine the likelihood of prospective boarding house residents utilising the surrounding public transport features. It was noted that within a short walk from the subject site (5 minutes or less), a few bus routes operate along Chertsey Avenue (at the site frontage) and along Chapel Road South. In addition, the Bankstown train station is located 10 minutes (1.2km walk) from the subject site.

These services offer convenient and frequent access to the Bankstown area and Sydney City, which are considered to be primary destinations. **Figures 3** and **4** highlight their location. In light of this information, it was predicted that public transport will be a common mode of travel for residents of the proposed boarding house, significantly reducing the propensity for driving trips and subsequent on-site parking requirements.



Figure 3: Public Transport Services Proximate to the Proposed Site





Figure 4: Bus and Train Service Map for the Site Vicinity

2.4 Active Transport Infrastructure

The locality was assessed for features within the walking catchment of the subject site, which may eliminate the necessity to leave the area via private transport means. It was noted that a number of parks, schools, retail shops, restaurants and various other businesses exist within a comfortable walk from the subject site (Bankstown City centre is located approximately 1km from the subject site). As such, it was concluded that some general activities could be accomplished within the immediate area without the need for a car. As such, this will help reduce overall traffic volumes and impacts.



3. Car Parking Provision Assessment

The car parking provision requirements for the proposed development were determined in accordance with the NSW State Environmental Planning Policy (affordable rental housing) 2009.

This policy document stipulates the following car parking rates;

- 0.5 car spaces per 1 bedroom dwelling;
- 1 car spaces per 2 bedroom dwelling; and
- 1.5 car space per 3 or more bedroom dwelling.

The following table summarises the required parking provisions for the subject development in light of the above stipulated parking rates.

Unit Type	Number	Parking Rate	Required Car Spaces
1 Bedroom	8	0.5 car spaces per unit	4
2 Bedroom	28	1 car spaces per unit	28
3 Bedroom	2	1.5 car space per unit	3
Total Spaces Requir	35		

Table 1: Car Parking Requirements

A total of 36 car spaces have been provided within the basement level car park in the proposed development, thus comfortably satisfying the required parking provision of 35 car spaces.



4. Car Park Design Review

The following section will carry out the necessary checks to certify whether the car parking area (provided within two basement levels) has been designed to satisfy the minimum requirements outlined by the Australian Standards. Reference is made to Bankstown Council DCP (Part B5, 2015) for compliance. This section shall be read in conjunction with the complete site layout plans submitted as a part of the Development Application lodgement.

Car Space Dimensions

The minimum car bay and aisle requirements stipulated in the Bankstown Council DCP are highlighted in **Table 2** below, against the proposed design provisions.

Component	Standard Dimension (m)	Dimension Provided (m)	Compliance/Comments
Space Width*	2.5	2.5	Compliant
Space Length	5.4	5.4	Compliant
Aisle Width	6.2	> or = 6.2m	Compliant

 Table 2: Compliance of 90 degree angle car spaces with standard dimensions

* Where spaces are adjacent to a wall, an additional 300mm clearance has been provided.

As per the information presented in the table above, all the car space dimensions and aisle widths have been designed to comply with the design requirements stipulated in the Bankstown Council DCP.

Blind Aisle Clearance

The car spaces located adjacent to a blind aisle has been provided with a minimum clearance of 1m (as required by AS 2890.1-2004).

<u>Headroom</u>

It should be ensured that, as required by the Bankstown Council DCP, a minimum headroom of 2400mm exists throughout the car parking area – along the path of travel of the vehicles.



Ramps: Grade and Width of Straight Sections

AS 2890.1:2004 states the grade requirements for straight ramps at private or residential car parks as follows:

(i) Longer than 20 m—1 in 5 (20%) maximum.

(ii) Up to 20 m long—1 in 4 (25%) maximum. The allowable 20 m maximum length shall include any parts of grade change transitions at each end that exceed 1 in 5 (20%).

(iii) Grade changes may not exceed 12.5% and should be transitioned over 2m.

The ramp provided from the property frontage to the basement car park does not exceed 25%, nor do grade changes exceed 12.5%, therefore complying with the relevant gradient design requirements.

Concerning ramp widths, for one-way ramps AS 2890.1:2004 indicates a requirement of 3m width plus 300mm on either side where a high obstruction (>150mm) exists – thus the one-way ramp width shall be a total of 3.6m. The proposed one-way ramp is 4.1m wide thus satisfying the above requirement.

Column Positioning

The column positioning requirements of AS 2890.1:2004 have been outlined in the extracted figure below. Given the car parking spaces are proposed at 90 degree angles, the proposed columns shall include Xmin dimension of 750mm and Ymin dimension of 3650mm.





Figure 5: Column Positioning Requirements (AS2890.1)

The proposed columns supporting the building, at the basement level car parking area, include Xmin at or above 750mm and Ymin at 3750mm, thus comfortably satisfying the above requirements.

Disability Accessible Parking Spaces

The proposed basement level car park includes two disability accessible car parking spaces. Bankstown Council DCP stipulates a requirement of 6m length and a 3.5m width for disability accessible car parking spaces located within the basement level. The proposed disability accessible parking spaces satisfy the above minimum dimensional requirements.



5. Traffic Impact Assessment

A traffic impact assessment was undertaken to determine in potential impacts caused by the development upon the local road network.

According to the *Guide to Traffic Generating Developments (TDT 2013/04)*, a high density residential building will generate approximately;

- 0.19 trips per unit in the AM peak;
- 0.15 trips per unit in the PM peak; and
- 1.52 trips per unit daily.

Notwithstanding the traffic generating potential of the existing residential dwelling, applying the above rates to the proposed 38 unit residential development leads to the following trip generation levels:

- 8 AM peak hour trips;
- 6 PM peak hour trips; and
- 58 daily trips.

As can be seen above, the anticipated trip figures are insignificant, and would not be expected to generate any noticeable impacts of the existing local road network. As such, no ramifications to the existing traffic and pedestrian conditions are anticipated to result from any traffic generated by the proposed development.



6. Conclusions

APEX Engineers were engaged by Ghazi Al Ali Architects to provide a traffic impact assessment as part of the development application for the residential building (affordable housing) at 39 - 41 Chertsey Avenue, Bankstown NSW 2200. The local vicinity of the proposed site is primarily of residential use.

The proposed site is well connected to Bankstown and the city via public transport. Furthermore, the presence of many local features indicates that some activities will be carried out in the immediate area without the need to drive.

A parking provision assessment was undertaken in accordance with the NSW SEPP (affordable rental housing) 2009, leading to a total requirement of 35 on-site car parking spaces. The overall development provides a total of 36 car spaces, thus comfortably satisfying the on-site car parking provision requirement. The proposed car park design was also assessed with reference to the Bankstown DCP (2015). It was found that the overall design, including dimensions and layout, were in compliance with the relevant DCP requirements.

The daily and peak hour trip generations for the proposed development were determined from the trip rates stipulated in the *Guide to Traffic Generating Developments (RMS NSW TDT 2013/04)*. Using the rates offered within this guide, an AM peak hour rate of 8 trips, a PM peak hour rate of 6 trips and a daily trip rate of 58 was established. Given that these volumes are not significant, it was concluded that any traffic impacts to the local road network will be negligible.

In light of the above, the proposed development is expected to accommodate its own parking demand with minimal impacts on the existing on-street public parking in the area and will impose generally negligible traffic impacts to the local road network. Consequently, the proposal has been endorsed in a traffic and parking context.