

5857

17th November 2015

Trebel 88 P/L
C/o Australian Consulting Architects
12 Union Street
Parramatta, NSW, 2150

Dear Stella

Re: Harold Street North Parramatta

Introduction

MRCagney has been commissioned by Trebel 88 P/L C/o Australian Consulting Architects to prepare a Traffic and Parking Assessment for a proposed residential development located at 53 Sorrell Street and 23, 25 and 27 Harold Street, North Parramatta.

It is understood that there is a heritage listed house located at 53 Sorrell Street which will be retained and accordingly the proposed residential development will be constructed on the proportion of the subject site located on Harold Street.

The scope of this commission is to review the traffic and parking implications for the proposed development. The report will also provide advice on access arrangements and the development's internal car park layout.

It is noted that Harold Street North Parramatta Urban Design Strategy & Design Options report prepared by Architectus provided a review of the subject site and its surrounding context and identified a number of design options which considered a variety of floor space ratios and corresponding apartment yields. Using the yields outlined in the Architectus report, an assessment of the traffic impacts associated with each of the potential land use options was undertaken.

The issues relevant to the traffic and parking assessment are:

- The impact of development traffic on the adjoining road network;
- Review the access arrangements for the development; and
- Assess any other transport implications associated with the development.

The objective of this report is to document the traffic impacts of the proposed development and provide advice on any infrastructure work required as part of the development.

Planning Context

The Parramatta Local Environmental Plan (LEP) 2007 zones the properties on Harold Street as "R4 – High Density Residential", thus the proposed development's land uses are consistent with this zoning. Additionally

a permissible floor space ratio of 0.8:1 currently applies to the component of the subject site with frontage to Harold Street.

As displayed in Figure 1, the subject site is located adjacent to the designated Parramatta City Centre, as designated in the Parramatta DCP (Section 2 – City Centre).

Figure 1 – Parramatta City Centre

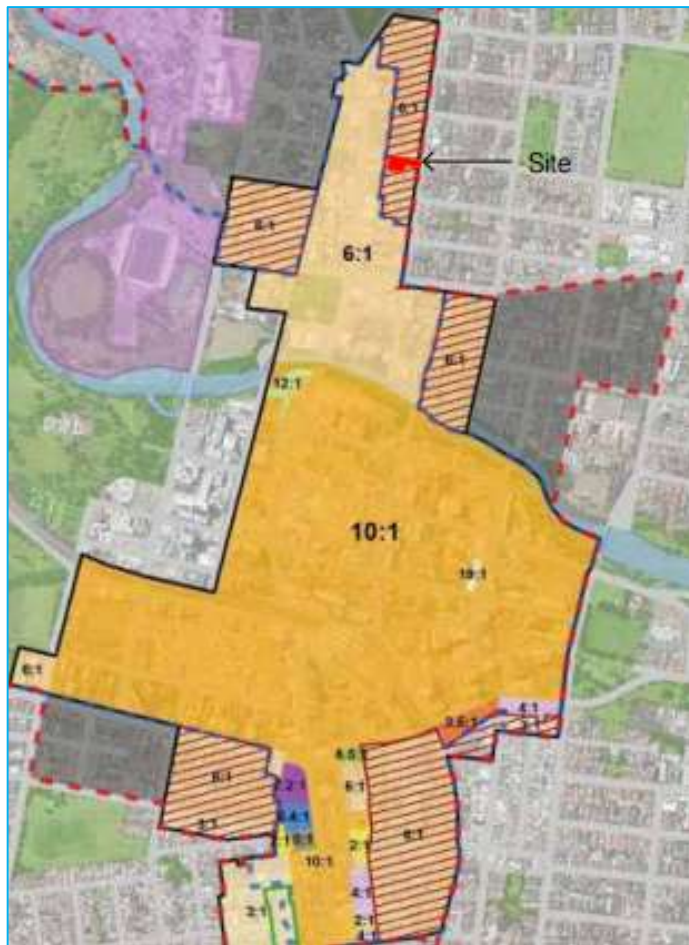


It is understood that Parramatta City Council recently commissioned Architectus to prepare the Parramatta CBD Planning Framework Study, in order to develop a planning framework for the Parramatta City Centre (and adjacent areas), to ensure its ongoing vitality and economic viability.

The study's recommendations included the extension of the city center boundary (which would then include the proposed development) and to increase the permissible densities within the designated study area. This included recommendations to increase the FSR applicable to the subject site to 6:1 as well as increasing the FSR to key areas of the Parramatta City Centre to 10:1.

The key recommendations of the Parramatta CBD Planning Framework Study are displayed below in Figure 2 overleaf.

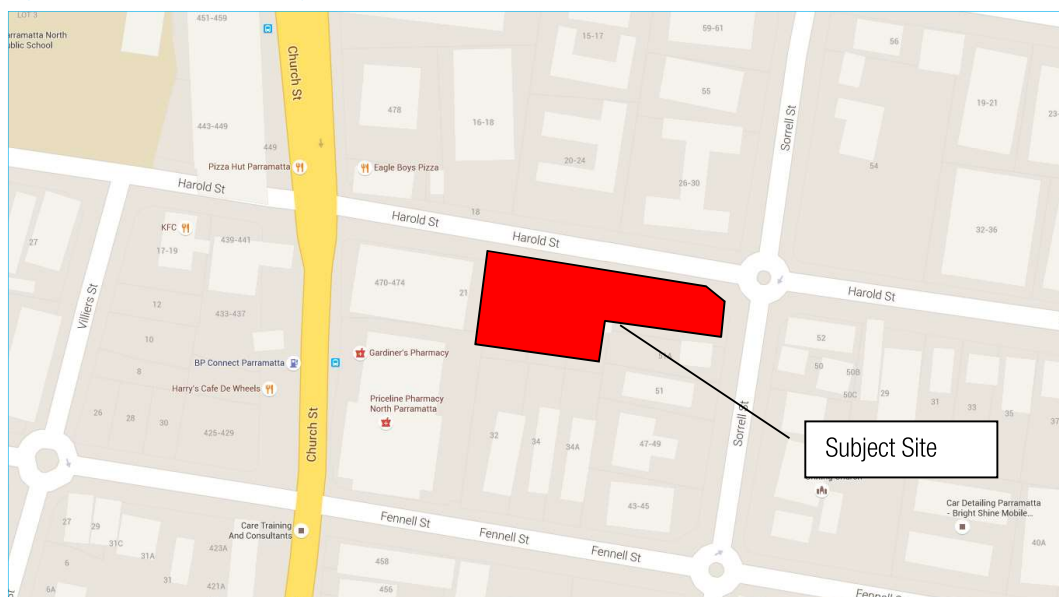
Figure 2 – Parramatta CBD Planning Framework Study Recommendations



Subject Site

The subject site is located at 53 Sorrell Street and 23, 25, and 27 Harold Street, Parramatta as shown below in Figure 3. The site is located approximately 1.3km kilometres north of the Parramatta City Centre.

Figure 3 – Development Subject Site



The subject site is currently occupied by a small number of low density residential dwellings.

Harold Street is a local road with a 50km/h speed limit with a single travel lane and kerbside parking in each direction. Footpaths, kerbs and gutters and street lighting are provided on both verges within the road reserve. The overall alignment of the road is relatively straight, offering good visibility. To the west of the subject site Harold Street intersects Church Street at a left in/left out priority controlled intersection, while to the east of the subject site it intersects Sorrell Street at a single lane roundabout.

Sorrell Street is a local road with a 50km/h speed limit with a single travel lane and kerbside parking in each direction. Footpaths, kerbs and gutters and street lighting are provided on both verges within the road reserve. The overall alignment of the road is relatively straight, offering good visibility.

Public Transport

The subject site is currently very well served by public transport with bus and train services (connected by bus) within the vicinity of the site.

A significant number of bus services operate on Church Street, approximately 120m to the west of the subject site, these include:

- 600 service - Castle Hill to Parramatta via Baulkham Hills. Limited peak hour service to Cherrybrook –Typically operates in early morning and late evening periods with 30 minute frequencies;
- 601service - Parramatta to Rouse Hill Town Centre via Windsor Road, Baulkham Hills & Kellyville –Typically operates with 15-20 minute frequencies during peak periods and 60 minute frequencies during off-peak periods;
- 603 service - Rouse Hill Town Centre to Parramatta via Kellyville, Glenhaven, Knightsbridge, Castle Hill, East Baulkham Hills and Windsor Road - Typically operates with 15-20 minute frequencies during peak periods and 60 minute frequencies during off-peak periods;
- 604 service – Parramatta to Castle Hill via Northmead, Model Farms & Hills Centre –Typically operates with 30 minute frequencies during peak periods and 60 minute frequencies during off-peak periods;
- 606 service – Parramatta to Winston Hills via Northmead & Old Windsor Road -Typically operates with 30 minute frequencies during peak periods and 60 minute frequencies during off-peak periods;
- 609 service - North Parramatta to Parramatta via Lake Parramatta & Church Street -Typically operates with 30 minute frequencies during peak periods and 60 minute frequencies during off-peak periods;
- 706 service – Parramatta to Blacktown via Winston Hills & Kings Langley - Typically operates with (approximately) 45 minute frequencies during peak periods and 60 minute frequencies during off-peak periods; and
- M60 service - Hornsby to Parramatta via Normanhurst, Thornleigh, Pennant Hills, Cherrybrook, Castle Hill and Baulkham Hills – typically operates with 10-15 minute frequencies.

Other bus services that operate in proximity to the subject site on Brickfield Road, approximately 250m to the east of the subject site, these include:

- 546 service – Parramatta to Epping via Oatlands, North Rocks and Carlingford -Typically operates with 30 minute frequencies during peak periods and 60 minute frequencies during off-peak periods; and
- 552 service - Parramatta to Oatlands – An off peak service that typically operates with hourly frequencies.

Other bus services that operate in proximity to the subject site on Victoria Road, approximately 430m to the south of the subject site, these include:

- 520 service – Parramatta to City - Circular Quay via University of Western Sydney, Rydalmere, Ermington, West Ryde, Ryde, Gladesville, Drummoyne and Rozelle.-Typically operates in off peak periods with 30 minute frequencies;
- 521service - Parramatta to Eastwood via University of Western Sydney, Rydalmere and Dundas – Typically operates with a 60 minute frequencies;
- 523 service - Parramatta to West Ryde via University of Western Sydney, Rydalmere, Ermington and Fremont Avenue – Typically operates with a 60 minute frequencies;
- 524 service- Parramatta to West Ryde via University of Western Sydney, Rydalmere, Ermington and Melrose Park - Typically operates with a 60 minute frequencies;
- 525 service – Parramatta to Burwood via University of Western Sydney, Rydalmere, Ermington, Silverwater, Newington, Sydney Olympic Park and Strathfield – Typically operates with (approximately) 20 minute frequencies during peak periods and 30 minute frequencies during off-peak periods; and
- 545 service - Parramatta to Chatswood via Telopea, Dundas Valley, Eastwood, Macquarie University, Macquarie Centre and Chatswood West – Typically operates with 10 minute frequencies during peak periods and 15 minute frequencies during off-peak periods.

It is noted that bus lanes operate on Church Street and Victoria Road to provide more efficient bus operations through these corridors.

The subject is located approximately 1,400m walking distance from Parramatta Station, which is serviced by the following train lines, which provide direct access to a large number of population and commercial centres in Greater Sydney, including Liverpool, Cabramatta, Blacktown, Strathfield and the Sydney CBD:

- T1 –North Shore Line;
- T1 – Western Line;
- T5 Cumberland Line; and
- Blue Mountains Line

It is noted that 1,400m exceeds the ideal walking catchment parameters, however the bus services on Church Street provide a direct service to and from the station and it is expected that Parramatta Station will offer a high level of utility to the residents of the proposed residential development.

In addition to the existing public transport services, a number of additional public transport facilities are being planned/proposed in proximity to the subject site. Parramatta City Council recently completed Part 2 of the Western Sydney Light Rail Network (WSLR) Feasibility Study. The preferred first stage of the project includes the Castle Hill Line which would connect Castle Hill to the Parramatta CBD via Baulkham Hills and

provide an interchange to the North West Rail Link. The Castle Hill Line includes Church Street as part of its route.

Further, Sydney's Bus Future Simple, faster, better bus services document issued by the NSW Government in 2013, recommended that rapid bus routes be established on Church Street and Victoria Road in Parramatta.

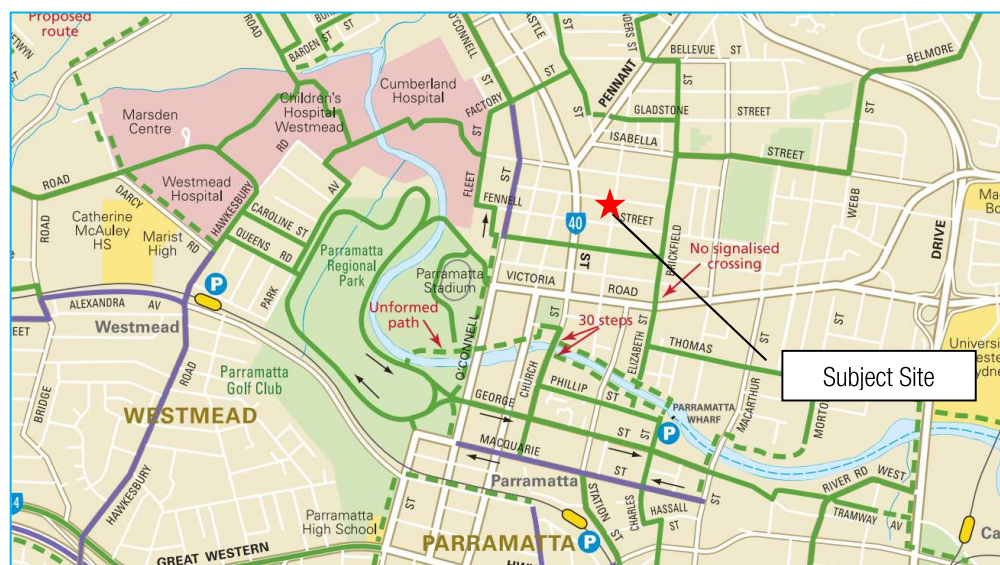
Therefore, the public transport options in proximity to the subject site are expected to improve as these networks are potentially developed in future years.

Active Transport

Footpaths in proximity to the subject site to facilitate the movement of pedestrians within the local area and also connect the proposed development to Parramatta Station. Signalised pedestrian crossings are provided on Church Street at its intersection with Albert Street (approximately 100m north of Harold Street) and Grose Street (approximately 200m south of Harold Street).

As can be seen in Figure 4 (sourced from the Bicycle Route Map Westmead and Parramatta), a number of on-road and off-road bicycle facilities are located in proximity to the subject site. The on-road paths are typically characterised by the provision of painted bicycle logos and provide local and regional connectivity.

Figure 4 – Parramatta Bicycle Map



Proposed Development and Impact Assessment

A review of the Harold Street North Parramatta Urban Design Strategy and Design Options report identified a number of development options considered for the subject site, based on the application of a number of different floor space ratios (FSR) and the corresponding apartment yield, as follows:

- Option 1: 3 storeys and 23 apartments – based upon the existing site restriction of 0.8:1 FSR;
- Option 2: 22 storeys and 116 apartments – based on a 4.0:1 FSR;
- Option 3a and 3b: 31 storeys and 174 apartments - based on a 6.0:1 FSR (as recommended by the Parramatta CBD Planning Framework Study); and
- Option 4: 44 storeys and 231 apartments – based on an 8.0:1 FSR.

It is noted the difference between Options 3a and 3b, is that Option 3a provides a continuous building base while Option 3b has a non-continuous base with the provision of side setbacks. While it is noted that from traffic impact perspective 3a and 3b are identical (in accordance with the identical apartment yield), Architectus identify option 3b as being preferable as the setbacks provide an opportunity for the provision of landscaping.

Option 3 is designated as the preferred option as it provides a FSR in accordance with the Parramatta CBD Planning Framework Study.

Traffic generation for the proposed development has been determined in accordance with the RMS Technical Direction (TDT 2013/04a) Guide to Traffic Generating Developments Updated traffic surveys.

The Technical Direction indicates that, based upon surveys conducted in 2012, the average trip rate for high density residential developments in Sydney is 0.19 trips per unit in AM peak periods and 0.15 trips in PM peak periods. The preliminary traffic generation analysis for the proposed residential development is provided below in Table 1.

Table 1 – Preliminary Trip Generation Analysis

Option	Apartments	AM Peak Trips	PM Peak Trips
1	23	4	3
2	116	22	17
3	174	33	26
4	231	44	35

The analysis indicates that for the worst case scenario (Option 4) the development would generate up to approximately 35 - 44 peak hour vehicle trips, while for the preferred option (Option 3) the development would generate 26 – 33 peak hour vehicle trips.

In accordance with the residential nature of the proposed development it is expected that the majority of trips will be outbound in AM peak periods and inbound in PM peak periods.

At an average of approximately 1 trip per 2 minutes for the preferred scenario and less than a trip per minute for the worst case scenario, the traffic impacts of all the proposed land use options are expected to be negligible and accordingly detailed intersection analysis is not considered warranted.

Parking Provision

The Parramatta DCP - Part 3 Development Principles, specifies the following parking requirement for residential flat developments located within 400m of a transit way bus stop with a service frequency of 10 minutes or less during peak periods, as follows:

- 1 space per one bedroom apartments;
- 1 space per two bedroom apartments;
- 1.2 spaces per spaces per three bedroom apartments; and
- 1 visitor space per 4 dwellings.

Details of the bedroom types associated with each option is not currently available, accordingly for the purposes of a preliminary analysis a conservative average parking rate of 1.1 spaces per apartment has been adopted.

The DCP further specifies the provision of bicycle parking at 1 space per 2 dwellings.

The parking provision requirements for each of the proposed development options is presented below in Table 2.

Table 2 – Parking Specifications

Option	Apartments	Resident Parking	Visitor Parking	Total Car Parking	Bicycle Parking
1	23	25	6	31	12
2	116	128	29	157	58
3	174	191	44	235	87
4	231	254	58	312	116

Accordingly the proposed development will require approximately 31 – 312 vehicle parking spaces depending on the applicable FSR/dwelling yield, while the preferred option (Option 3) will require approximately 235 vehicle parking spaces and 87 bicycle parking spaces.

Parking should be designed to comply with Australian Standards AS2890.1 for residential developments – User Class 1. Therefore, parking spaces should be 5.4m long and a minimum of 2.4m wide. The parking aisle for accessing spaces must be a minimum of 5.8m wide.

In accordance with DCP specifications, one car sharing space is to be provided for any residential development with 50 or more units within 400m of a bus stop with service frequencies of 15 minutes or less during morning peak periods (7:00am – 9:00am).

Bicycle parking should be supplied in accordance with Australian Standard AS 2890.3 1993 Parking facilities, which for residential development typically consists of bicycle racks located in secure locations within basement parking levels.

Access Arrangements

Other specifications of the DCP that would be applicable to access arrangements for the proposed residential development includes the following:

- Parking and vehicular access points are to be located to minimize conflict between pedestrians and vehicles;
- Vehicular ramps for all development types are to be designed with sufficient width for safe and efficient ingress and egress; and
- Visitor parking is to be marked or signposted to enable easy recognition.

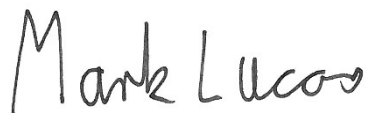
In accordance with the layout of the subject site it is assumed that an access driveway will be provided from Harold Street, further for car parks with approximately 250 parking bays (which is consistent with Option 3) a single access/egress driveway is typically sufficient to accommodate the expected demand.

Summary of Findings

MRCagney has been commissioned to undertake an assessment of the traffic and parking impacts of the proposed residential development located at 53 Sorrell Street and 23, 25 and 27 Harold Street, North Parramatta. Our summary of findings include the following:

- Harold Street North Parramatta Urban Design Strategy & Design Options has undertaken a review of the subject site and its surrounding context and has developed a number of design options corresponding to the application of a number of floor space ratios and the corresponding apartment yield, as follows:
 - Option 1 - 3 storeys and 23 apartments – based upon the existing site restriction of 0.8:1 FSR;
 - Option 2 – 22 storeys and 116 apartments – based on an 4.0:1 FSR;
 - Option 3a and 3b – 31 storeys and 174 apartments - based on a 6.0:1 FSR (as recommended by the Parramatta CBD Framework Study); and
 - Option 4 – 44 storeys and 231 apartments – based on an 8.0:1 FSR.
- It is noted that the Built Form Framework Review for the Parramatta City Centre prepared by Architectus for Parramatta City Council recommends that the FSR applicable to the subject site (and surrounding areas) be increased to 6.0:1. It is noted that option 3 utilises the recommended FSR ratio and therefore from a design perspective has been identified as the preferred option.
- The subject site is very well served by current public transport services, in addition it is located in proximity to a large number of planned proposed public transport services such as Western Sydney Light Rail Network.
- The analysis utilising RMS trip generation rates indicates that for the worst case scenario (option 4) the development would generate up to approximately 35 - 44 peak hour vehicle trips, while for the preferred option (option 3) the development would generate 26 – 33 trips.
- At an average of approximately 1 trip per 2 minutes for the preferred scenario and less than a trip per minute for the worst case scenario, the traffic impacts of the proposed development are expected to be negligible.
- The parking provision for the proposed development should be supplied in accordance with Parramatta DCP - Part 3 Development Principles and the parking layout for the proposed development should be designed in accordance with Australian Standards.

Yours sincerely,



Mark Lucas
Senior Consultant
MRCagney