Albion Hotel Parramatta

135 George Street, Parramatta

Traffic and Transport Assessment

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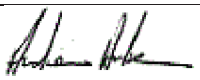
		Signature			
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1 Introduction

1.1 Background

The owners of Albion Hotel commissioned Arup to undertake a transport assessment of the proposed rezoning at 135 George Street (and 118 Harris Street) Parramatta. The site is located on the corner of George Street and Harris Street within the Parramatta City Centre within the Parramatta Local Government Area (LGA). Reference is made to the relevant Parramatta City Council (PCC): Development Control Plan (DCP) and Local Environment Plans (LEP).

The site currently contains a two storey hotel building with an adjacent at-grade car park. It is proposed to change the use of the site to accommodate two buildings, consisting of a restaurant, a pub and a residential tower.

1.2 Scope

This traffic impact assessment supports the rezoning application for the Albion Hotel site and will outline the following:

- Existing transport conditions
- Forecast traffic generation
- Road network impacts
- Parking provisions
- Access arrangements
- Public transport availability

2 Existing conditions

2.1 Site location

The site is located on the north-eastern corner of the Parramatta City Centre, on the corner of George Street and Harris Street. The site is made up of two lots, with addresses at 135 George Street and 118 Harris Street, Parramatta.

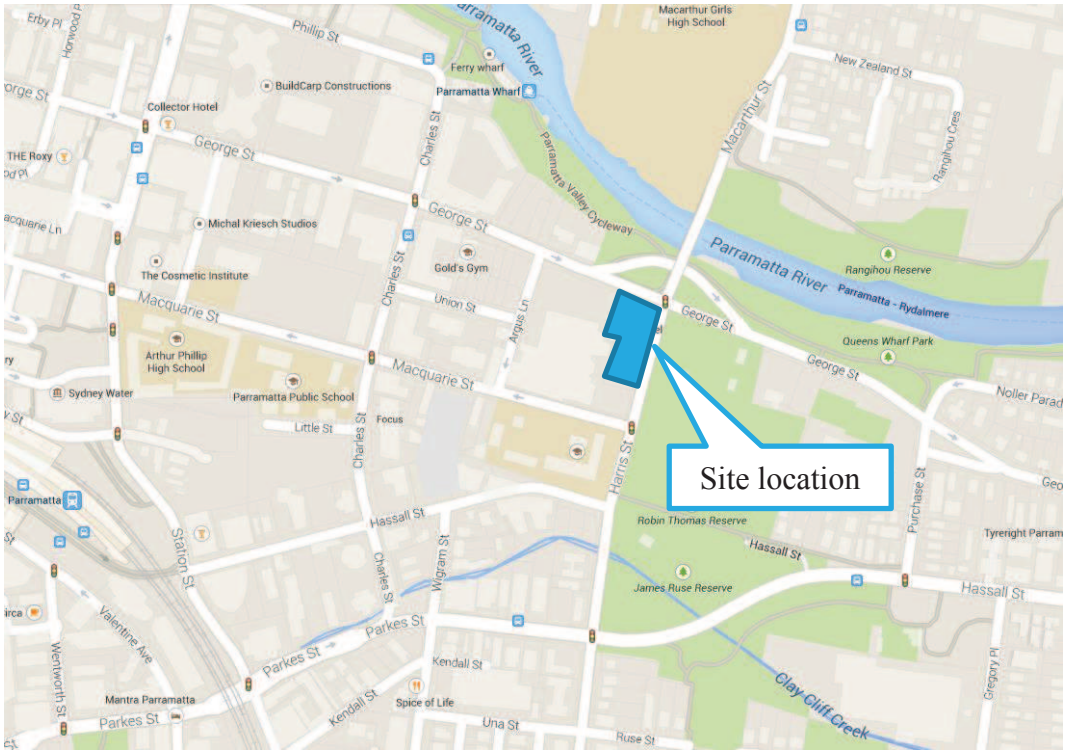

Figure 1: Site location

2.2 Road network and access

Harris Street / Macarthur Street is a regional road, connecting to Parkes Street south of the site and Victoria Road north of the site. Parkes Street is the main east-west regional road crossing the railway corridor, connecting Church Street / Great Western Highway with James Ruse Drive.

Macquarie Street and George Street are local east-west roads, operating as one way pairs into and out of the Parramatta CBD respectively. A George Street underpass is located under Macarthur Street (Gasworks Bridge) as a bypass of the traffic signals.

Access to the site is currently provided on Harris Street. Two driveways provide separate in and out access for the at-grade car park. The site currently generates 7 trips during the AM peak hour and 58 trips in the PM peak hour.

Traffic surveys were undertaken during a typical weekday in late 2014 for the intersections surrounding the site. Detailed traffic diagrams are provided in Appendix A.

2.3 Parking

2.3.1 On-street parking

On-street parking surrounding the site is meter restricted (8am-6pm Monday-Saturday) within the Parramatta City Centre. 10P commuter parking is provided in Harris Street and George Street (east of Harris Street). Short-stay 2P/4P meter parking is provided in Macquarie Street and George Street (west of Harris Street).

2P/4P (unmetered) resident permit parking is provided in streets surrounding the City Centre. These are located east of Robin Thomas Reserve and the Workers Club, north of Parramatta River and south of Parkes Street.

Parking is generally provided at $2.50 per hour for short-stay areas and $1.50 per hour for commuter parking areas, with rates up to $3.50 within the central CBD. Rates are capped at a maximum of $7.70 or $6.00 per day.

A part-time (10pm-6am) taxi rank operates on Harris Street in front of the site.

2.3.2 Off-street parking

The site has an existing at-grade car park located on the land addressed as 118 Harris Street. 37 car parking spaces are provided within the car park. A kerb side drop off is also provided along the building frontage to the car park.

Parramatta also has a number of paid public parking stations within walking distance of the site. The relevant sites near the site include:

- Macquarie Street PCC Car Park
- Leabeter Street level parking PCC Car Park
- Horwood Street PCC Car Park
- Horwood Place Secure Parking
- 80 George Street Wilson Car Park
- Valentine Avenue Secure Parking
- Wentworth Secure Parking

2.4 Public transport network

2.4.1 Parramatta interchange

Parramatta is highly accessible by public transport. The Parramatta Interchange is located to the west of the site within 10 minutes walking distance and includes train services on the T1 North Shore, Northern & Western Line, Blue Mountains Line and the T5 Cumberland Line as shown in Figure 2.

The interchange also provides connection to a wide range of bus services including Transitway services on Argyle Street. Bus services operate to key centres surrounding Parramatta including Epping, Bankstown, Liverpool and Rouse Hill.

The site is also located within walking distance of the Parramatta ferry wharf. The wharf provides regular ferry services along Parramatta River to Circular Quay.

Figure 2: Sydney Trains map

2.4.2 Free shuttle bus

The Parramatta Shuttle Bus (formerly The Loop) is a free transport solution that connects tourists, residents and commuters to the commercial, retail and recreational landmarks of the city. A stop is located within five minutes walking distance west of the site. The free Parramatta Shuttle Bus runs every 10 minutes, seven days a week.

Figure 3: Parramatta Free Shuttle

2.4.3 Planned transport improvements

There are several transport planning documents related to the Western Sydney or Parramatta City area. Key plans developed by PCC which are likely to result in either a reduction in vehicle trips, or a redistribution of existing vehicle trips are as follows:

- **Western Sydney Light Rail Network** (PCC). This is a long term plan which identifies connections to Castle Hill, Macquarie Park, Rhodes and Bankstown. Connections to Castle Hill and Macquarie Park have been prioritised, which may have direct implications for the site.
- **Western Sydney Regional Ring Road** (PCC). This plan involves prioritised upgrades for key intersections on the roads surrounding greater Parramatta including Cumberland Highway, James Ruse Drive and M4 Motorway. It is understood that this will improve efficiency in the surrounding road network and take through traffic away from the centre.
- **Integrated Transport Plan for Parramatta City Centre** (PCC). This plan involves prioritising active and communal transport opportunities over commuter and private vehicle movements. The Strategy Plan covers key aspects of travel behaviours into the centre.

2.5 Walking and cycling network

The site is in an established urban area with a good network of footpaths on either side of the road. The site is within 10 minutes' walk to the City Centre and key transport nodes. Crossing facilities are provided at all signalised intersections on approach to the site.

A number of dedicated cycleways are located in close vicinity of the site, including the Parramatta Valley Cycleway, which is located north of the site. This 12km cycleway connects Putney to Elizabeth Street, Parramatta via the Parramatta River. Cycleways within Parramatta are presented in Figure 4.

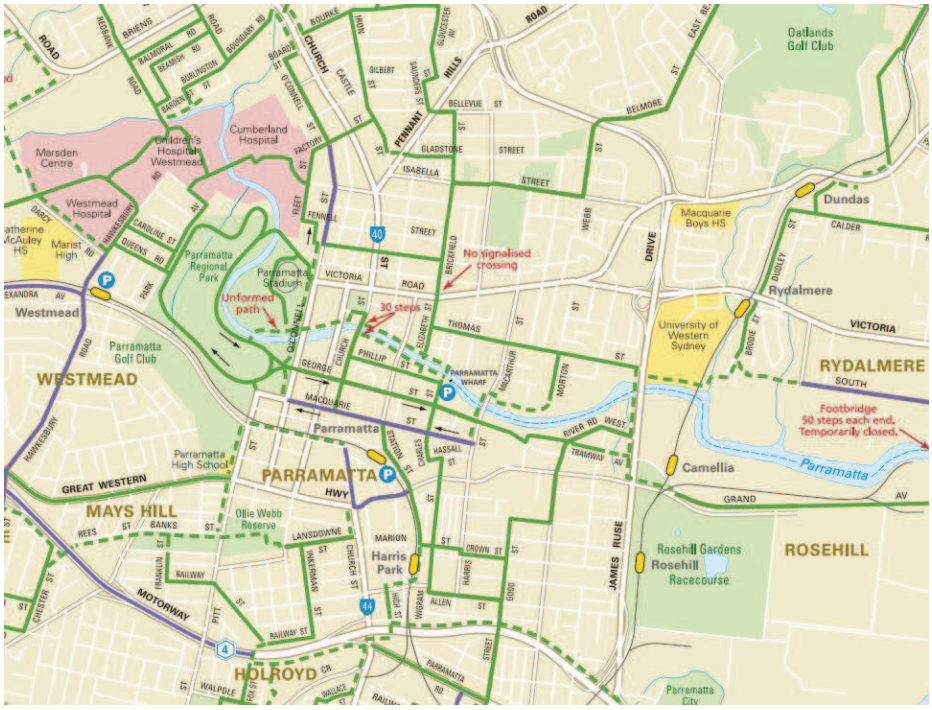

Figure 4: Cycleways in the vicinity of the site

3 Proposed development

3.1 Description of proposed works

The planning proposal involves the rezoning of the site. It is proposed to demolish the existing building and car park, and provide two separate buildings, with a through site link in-between the buildings. The site is proposed to have common basement levels for car parking and loading spread under the two buildings. The total Gross Floor Area (GFA) of the design concept is approximately 26,579 square metres.

Figure 5: Proposed site layout

Building A is proposed to contain a residential tower consisting of 35 storeys with 291 residential apartments (see schedule in Table 1). The ground floor will contain a lobby, and approximately 825 square metres restaurant uses.

Table 1: Residential schedule

Apartment	Number of units
Studio	2
1 Bed	56
2 Bed	204
3 Bed	29
Total	**291**

Building B will house the existing pub uses of approximately 1,500 square metres over three levels.

3.2 Proposed site access

The proposed vehicular site access is proposed by two separate driveways. A driveway within Building B will provide car and light vehicle access via a ramp to the basement levels and the other driveway within Building A will provide access via a service vehicle lift to the basement level. The lift will be capable of handling large service vehicles such as waste and delivery trucks.

Pedestrian access to the residential tower is proposed via a lift lobby, accessed from Harris Street. A through site link to the adjacent proposed development at the News Corp site will provide active pedestrian street frontages within the current bounds of the site.

4 Transport and parking assessment

4.1 Parking assessment

Part 4 of the PCC DCP 2011 was consulted for parking and service vehicle provisions as the site falls within the boundary of the Parramatta City Centre. Reference was also made to Clause 22C of the Parramatta City Centre LEP 2007 and Part 3 of the PCC DCP 2011 with reference to loading provisions.

4.1.1 Car parking

PCC development plans indicate that the site has maximum parking rates. Therefore, parking was reduced to applicable rates for the development as provided in Table 2.

Table 2: Proposed parking provision

Proposed use of building	Number of units / GFA	Maximum number of parking spaces (LEP)	Proposed parking provided	Proposed parking
Multi dwelling housing: 1, 2 and 3 beds	291	1 per dwelling	1 parking space per dwelling	291
		Plus 1 for every 5 dwellings	Shared parking component with restaurant/pub	-
Restaurant / Pub uses	2,325m^2	1 per 10m^2 GFA or 1 for every 4 seats (whichever is the lesser)	1 parking space for every 30m^2 GFA	78
Total parking spaces provided				**369**

Car share parking is also required for developments containing more than 50 residential units and within 800m of a railway station. At least one space is to be provided within the development. This may be included as either visitor or residential parking, and be easily accessible within the building.

It is assumed that the food and beverage land use will be predominately used by ‘walk-in’ residents or residents already making a trip from the proposed development and surrounding sites. Given parking is constrained surrounding the site, it is not unreasonable to allow for sharing of visitor spaces with the food and beverage uses. This will encourage further use of active and public transport to access the site.

4.1.2 Service/loading provisions

There is no specific guidance on the service vehicle provisions within the Parramatta City Centre. Given that on-street loading will likely be prohibited, adequate provision for loading should be provided on-site. The retail rate from the DCP suggests one loading space per 400m2 GFA. This would allow for five loading/service bays. These may also be used for the residential component as well as waste removal. At least two bays designed for larger vehicles.

4.1.3 Bicycle parking

Bicycle parking from the PCC development plans is to be provided at the following rates:

- 1 bicycle space per 2 dwellings
- 1 bicycle space per 200m^2 GFA

On this basis, up to 158 bicycle spaces will need to be provided for the development. Secure bicycle parking in the form of lockers would need to be provided, along with adequate end of trip facilities.

4.2 Road network impacts

4.2.1 Forecast traffic generation

Traffic generation rates were adopted from the RMS Technical Direction (TDT 2013/04a) re-released in August 2013 and the RTA Guide to Traffic Generating Developments, Version 2.2, October 2002 where applicable. The relevant rates for the concept development are shown below in Table 3.

Table 3: Peak hour traffic generation rates

Land use	Peak hour generation rate (RMS, 2013)	
High density residential (per apartment)	Weekday AM	0.15
	Weekday PM	0.25

1. GLFA is assumed the same as the GFA

It should be noted that the existing site also generates traffic in the peak hours (see Section 2.2). This traffic is assumed to remain given that these uses will continue at this site. Therefore, the proposed concept development has been assessed with a conservative traffic generation, given the reduced parking provision. Trips for the proposed restaurant component have therefore been assumed as a proportional increase of the total rate for the existing pub.

Based on the indicative development schedule outlined in Section 3.1, a maximum development yield of approximately 291 units with 2,325m^2 pub/restaurant uses are envisaged.

Table 4: Additional peak hour trips generated

Land use	AM peak hour trips	PM peak hour trips
Residential	55	44
Restaurant/Pub	4	32
Total trips	**59**	**76**

4.2.2 Trip distribution

The distributed development traffic was based on the 2011 JTW data for travel zone 1054. During the AM peak, it is assumed that there will be 20% traffic into the development and 80% out of the development as the traffic will be residential only. During the PM peak, the food and beverage has been assumed entering the development, and the residential component has been split to 20% of traffic in and 80% of traffic into the development. The current distribution applied across both peak hours is described below in Table 5.

Table 5: Peak distribution of trips

Zone	Origin/Destination	In	Out
1	Macarthur Street (N)	11%	11%
2	George Street (W)	9%	-
3	Macquarie Street (W)	-	9%
4	Parkes Street (W)	52%	45%
5	Harris Street (S)	5%	8%
6	Parkes Street (E)	23%	17%
7	George Street (E)	-	9%

The assumed distribution of trips to the local network reflects the observed journey to work patterns and the most likely routes which will be taken by future vehicular traffic travelling to and from the site.

4.2.3 Background traffic growth

The assumed 2020 background traffic includes the adjacent development proposal traffic at 142 George Street applied, as well as a 1.5% per annum growth rate consistent with the modelling performed for the nearby development (TTM, 2014). This is relatively conservative and reflects the high number of developments planned within Greater Parramatta.

4.2.4 Traffic modelling

The intersections have been assessed using RMS approved software SIDRA software. The existing intersection performance is assessed in this report in terms of the following three factors for each intersection.

- Degree of Saturation
- Average Delay (Seconds per vehicle)
- Level of Service

In urban areas, the traffic capacity of the major road network is generally a function of the performance of key intersections. This performance is quantified in terms of Level of Service (LoS), is based on the average delay per vehicle. LoS ranges from A = very good to F = unsatisfactory (see Table 6).

Table 6: Level of service criteria for intersections

Level of Service	Average delay (seconds)	Description
A	Less than 14	Good operation
B	15 to 28	Good with acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Operating near capacity
E	57 to 70	At Capacity. At signals, incidents will cause excessive delays. Roundabouts require other control mode
F	Greater than 71	Unsatisfactory with excessive queuing

Another common measure of intersection performance is the degree of saturation (DoS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DoS of 1.0 indicates that an intersection is operating at capacity. The desirable maximum degree of saturation for an intersection is 0.9.

The results of the surrounding intersections are summarised in Table 7. This includes three scenarios:

- Existing 2015 scenario to calibrate to existing traffic conditions,
- Background scenario as the 2020 Base case with traffic growth including the adjacent development at the News Corp site,
- Future scenario as the proposed full development with Background traffic within the existing traffic network.

Table 7: Existing Intersection layouts

Intersection	Scenario		LoS	Delay	DoS
George Street and Harris Street / Macarthur Street	AM Peak	Existing	B	17	0.85
		Base	C	37	0.98
		Base+Development	C	39	0.99
	PM Peak	Existing	B	25	0.70
		Base	B	28	0.82
		Base+Development	B	28	0.83
Macquarie Street and Harris Street	AM Peak	Existing	A	14	0.78
		Base	A	18	0.93
		Base+Development	B	21	0.95
	PM Peak	Existing	A	12	0.74
		Base	A	13	0.79
		Base+Development	A	14	0.83
Parkes Street and Harris Street	AM Peak	Existing	D	55	1.03
		Base	E	66	1.08
		Base+Development	E	69	1.09
	PM Peak	Existing	C	42	0.79
		Base	D	46	0.93
		Base+Development	D	49	0.97

4.2.5 Summary of impacts

The traffic modelling results indicate that the Parkes Street / Harris Street intersection is operating over capacity under the existing conditions in the AM peak hour. The intersection is also operating near practical capacity in the PM peak. However, the intersection operates within acceptable ranges of delay and LoS within an urban context for both peak hours. As a result of the additional Base case traffic, there are slight increases in intersection delay and DoS.

The George Street / Harris Street intersection is operating under capacity in both the existing and future traffic conditions. The resulting additional traffic from the Base case brings the intersection near practical capacity in both peak hours with minimal change from the development. This concludes that the development traffic will have minimal impact on the intersection.

The Macquarie Street / Harris Street intersection is operating under capacity under both the existing and future traffic conditions. Therefore, the modelling concludes that the additional traffic generated by the site will have minimal impact on the operation of the surrounding intersections.

4.3 Walking and cycling access

There are changes proposed to the walking and cycling network interface to the site by way of a through site link to the adjacent development. The provision of walking/cycling facilities provided within the development will be integrated with the surrounding and well-connected network to contribute to active transport within the site. The current surrounding external network is deemed both adequate and appropriate for the proposed site development.

Secure bicycle parking will need to be provided as a component of the proposed development, with complementary end of trip facilities such as lockers and showers. Provision of these facilities will encourage active travel, such as cycling as a viable mode of transport to the site. This will further contribute to a reduced car mode share of trips.

5 Conclusions

This review has described the potential traffic and transport impacts of the proposed rezoning at Albion Hotel, Parramatta. Key findings of the review are as follows:

- The site is located within Parramatta City Centre with a constrained parking environment;
- The rezoned development would be responsible for a minor increase in peak hour traffic flows along surrounding key roads;
- Traffic modelling demonstrates that the adjacent intersections operate satisfactorily following completion of the development up to 2020;
- Up to 369 off-street parking bays (with one car share space) are proposed for the concept development with rates in accordance with Parramatta City Council DCP and LEP;
- On-site loading and servicing is proposed for the concept development;
- Secure bicycle parking is to be provided as a component of the proposed development

Appendix A

Traffic counts

AM Peak

			138	L			
			36	T	0	832	260
George			117	R	R	T	L
	L	T	R				
	0	584	17				

Macarthur

Harris

			2	L	2		
			1	R	R		
			L				
			2				
			0	L	218	772	
Macquarie			0	R	R	T	
			L	T			
			411	631			

Hassall

			212	L			
			501	T	334	308	54
Parkes			1	R	R	T	L
	L	T	R		R	372	
	30	445	33		T	372	
					L	34	

PM Peak

			219	L			
			105	T	0	659	156
George			206	R	R	T	L
	L	T	R				
	0	668	31				
					Harris		
			15	L	17		
			6	R	R		
			L	T			
			20				
			0	L	192	791	
Macquarie			0	R	R	T	
			L	T			
			177	742			
	Hassall						
			279	L			
			433	T	296	364	74
Parkes			0	R	R	T	L
	L	T	R		R	220	
	39	315	43		T	364	
					L	32	

Macarthur